CHAPTER

32

LANDING GEAR



CHAPTER 32 LANDING GEAR

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
32-EFFECTIVE	E PAGES		32-09 TASKS	(cont)		32-09 TASKS	(cont)	
1 thru 4	JUN 15/2016		212	Feb 15/2015		O 248	Jun 15/2016	
32-HOW TO U	SE THE FIM		213	Feb 15/2015		O 249	Jun 15/2016	
1	Feb 15/2013		214	Feb 15/2015		O 250	Jun 15/2016	
2	Feb 15/2013		215	Feb 15/2015		O 251	Jun 15/2016	
3	Feb 15/2013		216	Jun 15/2015		O 252	Jun 15/2016	
4	Feb 15/2013		217	Jun 15/2015		O 253	Jun 15/2016	
5	Feb 15/2013		O 218	Jun 15/2016		O 254	Jun 15/2016	
6	Feb 15/2013		O 219	Jun 15/2016		O 255	Jun 15/2016	
32-FAULT COI	DE INDEX		O 220	Jun 15/2016		O 256	Jun 15/2016	
101	Feb 15/2014		O 221	Jun 15/2016		O 257	Jun 15/2016	
102	Jun 15/2013		O 222	Jun 15/2016		O 258	Jun 15/2016	
103	Jun 15/2013		O 223	Jun 15/2016		O 259	Jun 15/2016	
104	BLANK		O 224	Jun 15/2016		R 260	Jun 15/2016	
32-MAINT MS	G INDEX		O 225	Jun 15/2016		R 261	Jun 15/2016	
101	Oct 15/2015		O 226	Jun 15/2016		R 262	Jun 15/2016	
R 102	Jun 15/2016		O 227	Jun 15/2016		R 263	Jun 15/2016	
103	Feb 15/2013		O 228	Jun 15/2016		R 264	Jun 15/2016	
104	Feb 15/2015		O 229	Jun 15/2016		R 265	Jun 15/2016	
105	Feb 15/2016		O 230	Jun 15/2016		R 266	Jun 15/2016	
106	Feb 15/2016		O 231	Jun 15/2016		R 267	Jun 15/2016	
107	Feb 15/2016		O 232	Jun 15/2016		R 268	Jun 15/2016	
108	Feb 15/2016		O 233	Jun 15/2016		R 269	Jun 15/2016	
109	Feb 15/2016		O 234	Jun 15/2016		O 270	Jun 15/2016	
110	BLANK		O 235	Jun 15/2016		O 271	Jun 15/2016	
32-09 TASKS			O 236	Jun 15/2016		O 272	Jun 15/2016	
201	Jun 15/2013		O 237	Jun 15/2016		O 273	Jun 15/2016	
202	Feb 15/2013		O 238	Jun 15/2016		O 274	Jun 15/2016	
O 203	Jun 15/2016		O 239	Jun 15/2016		O 275	Jun 15/2016	
O 204	Jun 15/2016		O 240	Jun 15/2016		O 276	Jun 15/2016	
O 205	Jun 15/2016		O 241	Jun 15/2016		A 277	Jun 15/2016	
O 206	Jun 15/2016		O 242	Jun 15/2016		A 278	BLANK	
O 207	Jun 15/2016		O 243	Jun 15/2016		32-09 TASK S		
O 208	Jun 15/2016		O 244	Jun 15/2016		301	Feb 15/2013	
O 209	Jun 15/2016		O 245	Jun 15/2016		302	Oct 15/2013	
210	Feb 15/2015		O 246	Jun 15/2016		002	301 10/2013	
211	Feb 15/2015		O 247	Jun 15/2016				

 $\mbox{A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change} \label{eq:added}$



CHAPTER 32 LANDING GEAR

Subject/Page	Date	coc	Subject/Page	Date	COC	Subject/Page	Date	coc
32-30 TASKS			32-30 TASKS	(cont)		32-32 TASKS	(cont)	
201	Jun 15/2015		237	Oct 15/2015		216	Feb 15/2013	
202	Feb 15/2013		O 238	Jun 15/2016		217	Jun 15/2015	
203	Feb 15/2013		O 239	Jun 15/2016		218	Jun 15/2015	
204	Jun 15/2015		O 240	Jun 15/2016		219	Oct 15/2015	
205	Oct 15/2015		O 241	Jun 15/2016		220	BLANK	
206	Feb 15/2013		O 242	Jun 15/2016		32-42 TASKS		
207	Feb 15/2013		O 243	Jun 15/2016		201	Jun 15/2013	
208	Oct 15/2015		O 244	Jun 15/2016		202	Jun 15/2015	
209	Feb 15/2013		O 245	Jun 15/2016		203	Oct 15/2015	
210	Jun 15/2015		O 246	Jun 15/2016		204	Feb 15/2013	
211	Oct 15/2015		O 247	Jun 15/2016		205	Feb 15/2013	
212	Jun 15/2015		O 248	Jun 15/2016		206	Feb 15/2013	
213	Oct 15/2015		O 249	Jun 15/2016		207	Feb 15/2013	
214	Jun 15/2015		O 250	Jun 15/2016		208	Feb 15/2013	
215	Jun 15/2015		O 251	Jun 15/2016		209	Feb 15/2013	
216	Jun 15/2015		O 252	Jun 15/2016		210	Feb 15/2013	
217	Oct 15/2015		O 253	Jun 15/2016		211	Feb 15/2013	
218	Oct 15/2015		O 254	Jun 15/2016		212	Feb 15/2013	
219	Oct 15/2015		O 255	Jun 15/2016		O 213	Jun 15/2016	
220	Oct 15/2015		O 256	Jun 15/2016		O 214	Jun 15/2016	
221	Oct 15/2015		32-32 TASKS			215	Feb 15/2013	
222	Jun 15/2015		201	Jun 15/2015		216	Feb 15/2013	
223	Feb 15/2013		202	Jun 15/2015		217	Feb 15/2013	
224	Feb 15/2013		203	Feb 15/2013		218	Feb 15/2013	
225	Oct 15/2015		204	Feb 15/2013		219	Feb 15/2013	
226	Oct 15/2015		205	Oct 15/2015		220	Feb 15/2015	
227	Oct 15/2015		206	Oct 15/2015		221	Feb 15/2013	
228	Oct 15/2015		207	Oct 15/2015		222	Feb 15/2015	
229	Oct 15/2015		208	Oct 15/2015		223	Feb 15/2015	
230	Oct 15/2015		209	Jun 15/2015		O 224	Jun 15/2016	
231	Jun 15/2015		210	Feb 15/2013		O 225	Jun 15/2016	
232	Jun 15/2015		211	Feb 15/2013		O 226	Jun 15/2016	
233	Oct 15/2015		212	Oct 15/2015		O 227	Jun 15/2016	
234	Oct 15/2015		213	Feb 15/2013		O 228	Jun 15/2016	
235	Oct 15/2015		214	Jun 15/2015		O 229	Jun 15/2016	
236	Oct 15/2015		215	Oct 15/2015		O 230	Jun 15/2016	

 $A = Added, \ R = Revised, \ D = Deleted, \ O = Overflow, \ C = Customer \ Originated \ Change$



CHAPTER 32 LANDING GEAR

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
32-42 TASKS	(cont)		32-42 TASKS	(cont)		32-51 TASKS	(cont)	
O 231	Jun 15/2016		O 267	Jun 15/2016		215	Oct 15/2014	
O 232	Jun 15/2016		O 268	Jun 15/2016		216	Oct 15/2014	
O 233	Jun 15/2016		O 269	Jun 15/2016		217	Oct 15/2014	
O 234	Jun 15/2016		O 270	Jun 15/2016		218	Jun 15/2015	
235	Feb 15/2013		O 271	Jun 15/2016		219	Oct 15/2014	
236	Jun 15/2014		272	BLANK		220	Oct 15/2014	
237	Jun 15/2014		32-44 TASKS			221	Jun 15/2015	
238	Jun 15/2014		201	Feb 15/2014		222	Oct 15/2014	
239	Jun 15/2014		202	Oct 15/2015		223	Feb 15/2016	
240	Oct 15/2015		203	Oct 15/2013		224	Feb 15/2016	
241	Oct 15/2015		204	Oct 15/2013		225	Feb 15/2016	
242	Oct 15/2015		205	Oct 15/2013		226	Feb 15/2016	
243	Oct 15/2015		206	Oct 15/2015		227	Oct 15/2014	
244	Oct 15/2015		207	Feb 15/2014		228	BLANK	
245	Oct 15/2015		208	Oct 15/2013		32-61 TASKS		
246	Oct 15/2015		209	Oct 15/2013		201	Jun 15/2013	
247	Oct 15/2015		210	Oct 15/2013		202	Jun 15/2014	
O 248	Jun 15/2016		211	Feb 15/2014		203	Feb 15/2016	
O 249	Jun 15/2016		212	Feb 15/2014		204	Feb 15/2016	
O 250	Jun 15/2016		213	Feb 15/2014		205	Feb 15/2016	
O 251	Jun 15/2016		214	BLANK		206	Feb 15/2016	
O 252	Jun 15/2016		32-51 TASKS			207	Feb 15/2016	
O 253	Jun 15/2016		201	Oct 15/2015		208	Feb 15/2016	
O 254	Jun 15/2016		202	Feb 15/2013		209	Feb 15/2016	
O 255	Jun 15/2016		203	Jun 15/2015		210	Feb 15/2016	
O 256	Jun 15/2016		204	Feb 15/2013		211	Feb 15/2016	
O 257	Jun 15/2016		205	Jun 15/2015		212	Feb 15/2016	
O 258	Jun 15/2016		206	Jun 15/2013		213	Feb 15/2016	
O 259	Jun 15/2016		207	Jun 15/2013		214	Feb 15/2016	
O 260	Jun 15/2016		208	Oct 15/2015		O 215	Jun 15/2016	
O 261	Jun 15/2016		209	Jun 15/2013		O 216	Jun 15/2016	
O 262	Jun 15/2016		210	Jun 15/2013		217	Feb 15/2016	
O 263	Jun 15/2016		211	Jun 15/2015		218	Feb 15/2016	
O 264	Jun 15/2016		212	Oct 15/2014		219	Feb 15/2016	
O 265	Jun 15/2016		213	Oct 15/2014		220	Feb 15/2016	
O 266	Jun 15/2016		214	Jun 15/2015		221	Feb 15/2016	

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change



CHAPTER 32 LANDING GEAR

Subject/Page	Date	COC	Subject/Page	Date	COC	Subject/Page	Date	COC
32-61 TASKS	(cont)		32-61 TASKS	(cont)				
222	Feb 15/2016		O 258	Jun 15/2016				
223	Feb 15/2016		O 259	Jun 15/2016				
224	Feb 15/2016		O 260	Jun 15/2016				
225	Feb 15/2016		O 261	Jun 15/2016				
226	Feb 15/2016		O 262	Jun 15/2016				
227	Feb 15/2016		O 263	Jun 15/2016				
228	Feb 15/2016		O 264	Jun 15/2016				
229	Feb 15/2016		O 265	Jun 15/2016				
230	Feb 15/2016		O 266	Jun 15/2016				
231	Feb 15/2016		O 267	Jun 15/2016				
232	Feb 15/2016		268	BLANK				
O 233	Jun 15/2016		32-61 TASK S	UPPORT				
O 234	Jun 15/2016		301	Feb 15/2013				
O 235	Jun 15/2016		302	Feb 15/2013				
O 236	Jun 15/2016		303	Feb 15/2013				
237	Feb 15/2016		304	Feb 15/2013				
238	Feb 15/2016		305	Feb 15/2013				
O 239	Jun 15/2016		306	Feb 15/2013				
O 240	Jun 15/2016		307	Feb 15/2013				
O 241	Jun 15/2016		308	Feb 15/2013				
O 242	Jun 15/2016							
O 243	Jun 15/2016							
O 244	Jun 15/2016							
O 245	Jun 15/2016							
O 246	Jun 15/2016							
O 247	Jun 15/2016							
O 248	Jun 15/2016							
O 249	Jun 15/2016							
O 250	Jun 15/2016							
O 251	Jun 15/2016							
O 252	Jun 15/2016							
O 253	Jun 15/2016							
O 254	Jun 15/2016							
O 255	Jun 15/2016							
O 256	Jun 15/2016							
O 257	Jun 15/2016							

A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change



YOU FIND A FAULT WITH AN AIRPLANE SYSTEM

These are the possible types of faults:

- 1. Observed Fault
- 2. Cabin Fault

USE BITE TO GET MORE INFORMATION

If you did a BITE test already, then you can go directly to the fault isolation procedure for the maintenance message.

For details, see Figure 2

GO TO THE FAULT ISOLATION TASK IN THE FIM

Use the fault code or description to find the task in the FIM. There is a numerical list of fault codes in each chapter. There are lists of fault descriptions at the front of the FIM.

For details, see Figure 3 -

FOLLOW THE STEPS OF THE FAULT ISOLATION TASK

The fault isolation task explains how to find the cause of the fault. When the task says "You corrected the fault" you know that the fault is gone.

For details, see Figure 4 ──►

G04902 S0000148576_V1

Basic Fault Isolation Process Figure 1

AKS ALL

32-HOW TO USE THE FIM

Page 1 Feb 15/2013



Some airplane systems have built-in test equipment (BITE). If the system finds a fault when you do a BITE test, it will give you a maintenance message.

A maintenance message can be any of these:

- a code
- a text message
- a light
- an indication.

To find the fault isolation task for a maintenance message, go to the Maintenance Message Index in the chapter for the applicable system.

If you do not know which chapter is the correct one, look at the list at the front of any Maintenance Message Index. For each system or component (LRU) that has BITE, this list gives the chapter number where you can find the Index that you need.

Find the maintenance message for the applicable LRU or system in the Index. Then find the task number on the same line as the maintenance message. Go to the task in the FIM and do the steps of the task (see Figure 4).

G04950 S0000148578_V1

Getting Fault Information from BITE Figure 2

AKS ALL

32-HOW TO USE THE FIM

Page 2 Feb 15/2013



IF YOU HAVE:

THEN DO THIS TO FIND THE TASK IN THE FIM:

FAULT CODE

- 1. The first two digits of the fault code are the FIM chapter that you need. Go to the Fault Code Index in that chapter and find the fault code. If the fault code starts with a letter, then go to the Cabin Fault Code Index at the front of the FIM.
- 2. Find the task number on the same line as the fault code. Go to the task in the FIM and do the steps in the task (see Figure 4).

OBSERVED FAULT
DESCRIPTION

- 1. Go to the Observed Fault List at the front of the FIM and find the best description for the fault.
- 2. Find the task number on the same line as the fault description. Go to the task in the FIM and do the steps of the task (see Figure 4).

CABIN FAULT DESCRIPTION

- 1. Go to the Cabin Fault List at the front of the FIM and find the best description for the fault.
- 2. Find the task number on the same line as the fault description. Go to the task in the FIM and do the steps of the task (see Figure 4).

MAINTENANCE MESSAGE (FROM BITE)

- Go to the Maintenance Message Index in the chapter for the LRU (the front of each Index gives you the chapter number for all LRUs). Find the maintenance message in the Index.
- 2. Find the task number on the same line as the maintenance message. Go to the task in the FIM and do the steps in the task (see Figure 4).

G04979 S0000148579_V2

Finding the Fault Isolation Task in the FIM Figure 3

AKS ALL

32-HOW TO USE THE FIM

Page 3 Feb 15/2013



ASSUMED CONDITIONS AT START OF TASK

- External electrical power is ON
- Hydraulic power and pneumatic power are OFF
- Engines are shut down
- No equipment in the system is deactivated

POSSIBLE CAUSES

- The list of possible causes has the most likely cause first and the least likely cause last.
- You can use the maintenance records of your airline to determine if the fault occurred before. Compare the list of possible causes to the past maintenance actions. This will help prevent repetition of the same maintenance actions.

INITIAL EVALUATION PARAGRAPH

- The primary purpose of the Initial Evaluation paragraph at the start of the task is to help you find out if you can detect the fault right now:
 - If you cannot detect the fault right now, then the task cannot isolate the fault and the Initial Evaluation paragraph will say that there was an intermittent fault.
 - If you have an intermittent fault, you must use your judgement (and follow your airline's policy) to decide which maintenance action to take. Then monitor the airplane to see if the fault happens again on subsequent flights.
- The Initial Evaluation paragraph can also help you find out which Fault Isolation Procedure to use to isolate and correct the fault.

FAULT ISOLATION STEPS

- The FIM task steps are presented in a specified order. The "If... then" statements will guide you along a logical path. But if you do not plan to follow the FIM task exactly, make sure that you read it before you start to isolate the fault. Some FIM procedures start with important steps that have an effect on the other steps in the procedure.
- When you are at the endpoint of the path, the step says "...you corrected the fault." Complete the step and exit the procedure.

G05009 S0000148580_V3

Doing the Fault Isolation Task Figure 4

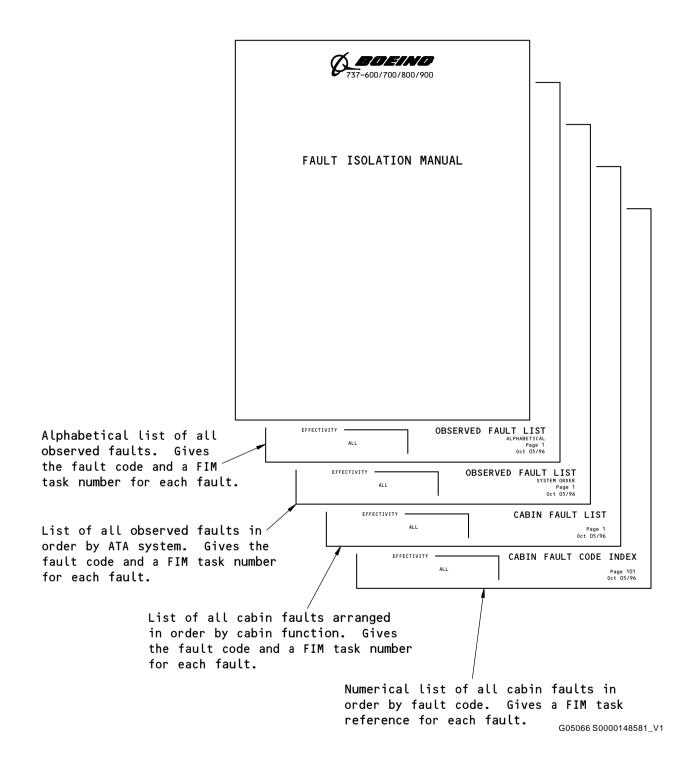
EFFECTIVITY AKS ALL

32-HOW TO USE THE FIM

Page 4 Feb 15/2013



FAULT ISOLATION MANUAL

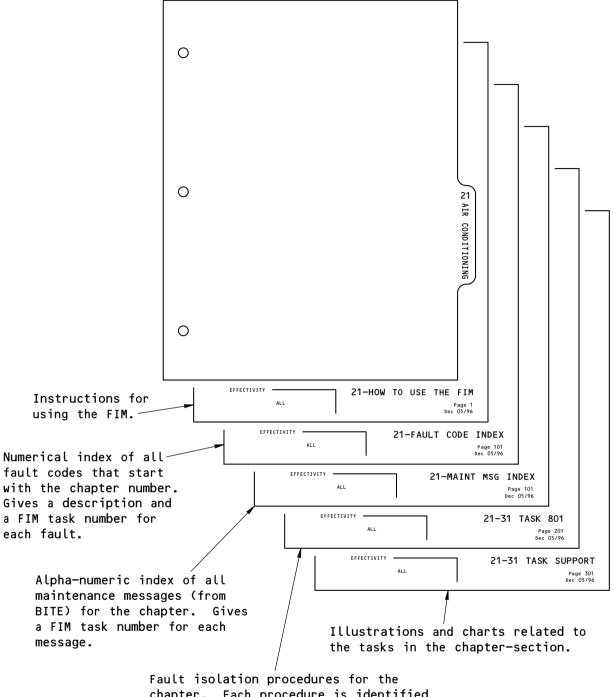


Subjects at Front of FIM Figure 5

32-HOW TO USE THE FIM - EFFECTIVITY · **AKS ALL**

> Page 5 Feb 15/2013 D633A103-AKS





chapter. Each procedure is identified by a chapter-section number and a 3-digit task number.

G05102 S0000148582_V1

Subjects in Each FIM Chapter Figure 6

32-HOW TO USE THE FIM EFFECTIVITY **AKS ALL**

Page 6 Feb 15/2013



FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
320 020 00	Air mode: Shows with the airplane on the ground.	32-09 TASK 801
320 030 00	Ground mode: Shows with airplane in the air.	32-09 TASK 801
320 040 00	PSEU: BITE display is blank.	32-09 TASK 811
320 050 00	PSEU light: light on.	32-09 TASK 801
320 060 00	PSEU light: light does not come on during test.	33-10 TASK 801
323 010 00	Landing gear lever: does not move to the UP position in flight, is free to move to the UP position when the lock override is used.	32-30 TASK 813
323 080 41	Main landing gear: Slow to retract - left.	32-32 TASK 804
323 080 42	Main landing gear: Slow to retract - right.	32-32 TASK 804
323 080 48	Main landing gear: Slow to retract - left and right.	32-32 TASK 803
323 090 41	Main landing gear: slow to extend - left.	32-32 TASK 804
323 090 42	Main landing gear: slow to extend - right.	32-32 TASK 804
323 090 48	Main landing gear: slow to extend - left and right.	32-32 TASK 803
323 120 00	Nose landing gear: slow to extend.	32-30 TASK 806
323 130 00	Nose landing gear: Slow to retract.	32-30 TASK 806
323 140 00	Nose landing gear: NOSE GEAR red light on, airplane on ground.	32-30 TASK 814
324 010 00	Brake pressure indicator: low/zero with parking brake released.	32-44 TASK 805
324 020 00	Brake pressure indicator: does not operate.	32-44 TASK 806
324 030 00	Brakes: grab, drag, or lock.	32-42 TASK 816
324 040 00	Brakes: pull to the left.	32-42 TASK 817
324 050 00	Brakes: pull to the right.	32-42 TASK 817
324 070 00	ANTISKID INOP light: light on.	32-42 TASK 829
324 080 00	AUTO BRAKE DISARM light: light on.	32-42 TASK 828
324 090 00	Autobrakes: deceleration rate is not correct.	32-42 TASK 807
324 095 00	Autobrakes: brakes grab during landing when using autobrakes.	32-42 TASK 832
324 097 00	Autobrakes: AUTO BRAKE DISARM light comes on during landing.	32-42 TASK 833
324 110 00	Brake pressure indicator: low/zero with parking brake set.	32-44 TASK 805
324 120 00	Parking brake: lever does not release.	32-44 TASK 807
324 130 00	Parking brake: lever does not set.	32-44 TASK 807
324 141 00	Parking brake: light on control stand stays off when parking brake is set.	32-44 TASK 803
324 142 00	Parking brake: light on control stand comes on when parking brake is not set.	32-44 TASK 804
324 145 00	Parking brake: PARKING BRAKE light on external power panel is not on when parking brake is set.	32-42 TASK 830

AKS ALL

32-FAULT CODE INDEX

Page 101 Feb 15/2014



FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
324 150 01	Tire problem - main gear left outboard.	32-42 TASK 820
324 150 02	Tire problem - main gear left inboard.	32-42 TASK 820
324 150 03	Tire problem - main gear right inboard.	32-42 TASK 820
324 150 04	Tire problem - main gear right outboard.	32-42 TASK 820
324 150 05	Tire problem - nose gear left.	32-42 TASK 820
324 150 06	Tire problem - nose gear right.	32-42 TASK 820
325 010 00	Nose wheel: makes a loud noise in the wheel well.	32-51 TASK 801
325 020 00	Nose wheel: Strut bottoms during taxi.	32-51 TASK 802
325 030 00	Nose wheel: Vibrates at gear retraction.	32-51 TASK 803
325 040 00	Nose wheel: Vibrates at landing.	32-51 TASK 804
325 045 00	Nose wheel: Vibrates during taxi.	32-51 TASK 804
325 050 00	Nose wheel: Vibrates at takeoff.	32-51 TASK 804
325 060 00	Rudder pedal steering: does not operate, tiller steering normal.	32-51 TASK 805
325 061 00	Rudder pedal steering: does not steer straight.	32-51 TASK 810
325 070 00	Tiller steering: does not operate.	32-51 TASK 806
325 080 00	Tiller steering: response is sluggish.	32-51 TASK 807
325 090 00	Tiller steering: Steers in left direction only.	32-51 TASK 808
325 100 00	Tiller steering: Steers in right direction only.	32-51 TASK 808
326 010 00	Landing gear position lights: lights not correct.	32-09 TASK 801
326 040 41	Main landing gear: LEFT GEAR green light does not come on with landing gear lever at DN, LEFT GEAR red light on, alternate gear extension was attempted.	32-32 TASK 805
326 040 42	Main landing gear: RIGHT GEAR green light does not come on with landing gear lever at DN, RIGHT GEAR red light on, alternate gear extension was attempted.	32-32 TASK 805
326 050 41	Main landing gear: LEFT GEAR green light does not come on with landing gear lever at DN, LEFT GEAR red light on, indications normal after alternate gear extension.	32-32 TASK 802
326 050 42	Main landing gear: RIGHT GEAR green light does not come on with landing gear lever at DN, RIGHT GEAR red light on, indications normal after alternate gear extension.	32-32 TASK 802
326 060 41	Main landing gear: LEFT GEAR green light does not go off with landing gear lever at UP, LEFT GEAR red light on.	32-32 TASK 801
326 060 42	Main landing gear: RIGHT GEAR green light does not go off with landing gear lever at UP, RIGHT GEAR red light on.	32-32 TASK 801
326 070 00	Landing gear, main and nose: Gears (all) extends with landing gear lever at OFF, NOSE GEAR, RIGHT GEAR, and LEFT GEAR green lights on.	32-30 TASK 809

AKS ALL

32-FAULT CODE INDEX

Page 102 Jun 15/2013



FAULT CODE	FAULT DESCRIPTION	GO TO FIM TASK
326 072 00	Landing gear: LEFT GEAR, RIGHT GEAR, and NOSE GEAR red and green lights (all) are on at the same time.	32-30 TASK 816
326 075 00	Landing gear, main and nose: does not retract when landing gear lever moved to UP position.	32-30 TASK 815
326 076 00	Landing gear, main and nose: Does not extend when landing gear lever moved to DN position.	32-30 TASK 816
326 080 00	Nose landing gear: NOSE GEAR green light does not come on with landing gear lever at DN, NOSE GEAR red light on, alternate gear extension was attempted.	32-30 TASK 807
326 090 00	Nose landing gear: NOSE GEAR green light does not go off with landing gear lever at UP, NOSE GEAR red light on.	32-30 TASK 810
326 110 00	Nose landing gear: NOSE GEAR green light does not come on with landing gear lever at DN, NOSE GEAR red light on.	32-30 TASK 812
326 115 00	Nose landing gear: NOSE GEAR green light off with landing gear lever at UP, NOSE GEAR red light on.	32-30 TASK 811

32-FAULT CODE INDEX

AKS ALL

D633A103-AKS

Page 103 Jun 15/2013



LRU/SYSTEM	SHORT NAME	CHAPTER
Air Data Inertial Reference System	ADIRS	34
Air Traffic Controller Transponder - 1 (Left)	ATC XPDR - 1 (L)	34
Air Traffic Controller Transponder - 2 (Right)	ATC XPDR - 2 (R)	34
Airborne Vibration Monitor System Signal Conditioner	AVM SIG COND	77
Antiskid Control Unit	ANTISKID	32
Attendant Control Panel	ACP	23
Automatic Direction Finder Receiver - 1	ADF RECVR - 1	34
Automatic Direction Finder Receiver - 2	ADF RECVR - 2	34
Autothrottle System	A/T	22
Auxiliary Power Unit	APU	49
Auxiliary Power Unit Generator Control Unit	APU GCU	24
Bus Power Control Unit	BPCU	24
Cabin Pressure Controller	CAB PRESS CON	21
Cargo Electronic Unit - Forward	CEU - FWD	26
Cargo Electronic Unit - Lower	CEU - LOWER	26
Cargo Electronic Unit - Main Aft	CEU - MAIN AFT	26
Cargo Electronic Unit - Main Forward	CEU - MAIN FWD	26
Common Display System	CDS	31
Compartment Overheat Detection Control Module	WING/BODY OHT	26
Digital Flight Control System	DFCS	22
Distance Measurement Equipment Interrogator	DME INTRROGTR	34
Electrical Meters, Battery, and Galley Power Module	P5-13	24
Electronic Engine Controller - 1	ENGINE - 1	73
Electronic Engine Controller - 2	ENGINE - 2	73
Emergency Locator Transmitter	ELT	23
Engine Accessory Unit	EAU	78
Engine Accessory Unit/TR DEPLOY ENG 1	EAU/TR DPLOY-ENG 1	78
Engine Accessory Unit/TR DEPLOY ENG 2	EAU/TR DPLOY-ENG 2	78
Engine Accessory Unit/TR STOW ENG 1	EAU/TR STOW-ENG 1	78
Engine Accessory Unit/TR STOW ENG 2	EAU/TR STOW-ENG 2	78
Engine and Auxiliary Power Unit Fire Detection Control Module	ENG/APU FIRE	26
Flap/Slat Electronics Unit	FSEU	27
Flight Data Acquisition Unit	FDAU	31
Flight Management Computer System	FMCS	34
Fuel Quantity Indicating System	FQIS	28

AKS ALL

32-MAINT MSG INDEX



LRU/SYSTEM	SHORT NAME	CHAPTER
Generator Control Unit - 1	GCU - 1	24
Generator Control Unit - 2	GCU - 2	24
Ground Proximity Computer	GROUND PROX	34
High Frequency Transceiver	HF XCVR	23
Multi-Mode Receiver	MMR	34
Nitrogen Generation System BITE Display Unit	NGS	47
Pack Flow Temperature Controller	PFTC	21
Pack/Zone Temperature Controller - Left	PACK/ZN CON - L	21
Pack/Zone Temperature Controller - Right	PACK/ZN CON - R	21
Proximity Switch Electronics Unit	PSEU	32
Radio Altimeter Receiver/Transmitter	RADIO ALTIMTR	34
Stall Management Yaw Damper Computer - 1	SMYD - 1	27
Stall Management Yaw Damper Computer - 2	SMYD - 2	27
Traffic Alert and Collision Avoidance System Computer	TCAS COMPUTER	34
VHF Omnidirectional Ranging Marker Beacon Receiver	VOR/MKR RCVR	34
Very High Frequency Transceiver	VHF XCVR	23
Waste Tank Logic Control Module	WASTE TANK	38
Weather Radar Receiver/Transmitter	WEATHER RADAR	34
Window Heat Control Unit - Left Forward	WHCU - L FWD	30
Window Heat Control Unit - Left Side	WHCU - L SIDE	30
Window Heat Control Unit - Right Forward	WHCU - R FWD	30
Window Heat Control Unit - Right Side	WHCU - R SIDE	30

AKS ALL

32-MAINT MSG INDEX

Page 102 Jun 15/2016



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
ANTISKID	A/B CONT	32-42 TASK 807
ANTISKID	A/B SEL	32-42 TASK 821
ANTISKID	A/B SOL	32-42 TASK 808
ANTISKID	A/B SYS	32-42 TASK 803
ANTISKID	A/G 1	32-42 TASK 823
ANTISKID	A/G 2	32-42 TASK 823
ANTISKID	A/G SW	32-42 TASK 823
ANTISKID	ADIRU L	32-42 TASK 824
ANTISKID	ADIRU R	32-42 TASK 825
ANTISKID	BOX 1-4	32-42 TASK 803
ANTISKID	BOX 1	32-42 TASK 803
ANTISKID	BOX 2-3	32-42 TASK 803
ANTISKID	BOX 2	32-42 TASK 803
ANTISKID	BOX 3	32-42 TASK 803
ANTISKID	BOX 4	32-42 TASK 803
ANTISKID	BOX A/B	32-42 TASK 803
ANTISKID	BOX BITE	32-42 TASK 803
ANTISKID	CNTLP SW	32-42 TASK 810
ANTISKID	GEARSW1	32-42 TASK 812
ANTISKID	GEARSW2	32-42 TASK 812
ANTISKID	PARKBRK	32-42 TASK 811
ANTISKID	PRESL	32-42 TASK 822
ANTISKID	PRESR	32-42 TASK 822
ANTISKID	PWR 1-4	32-42 TASK 802
ANTISKID	PWR 2-3	32-42 TASK 802
ANTISKID	PWR A/B	32-42 TASK 826
ANTISKID	PWR BITE	32-42 TASK 826
ANTISKID	SOL P SW	32-42 TASK 809
ANTISKID	SP CO LI	32-42 TASK 803
ANTISKID	SP CO RO	32-42 TASK 803
ANTISKID	SP SW LI	32-42 TASK 806
ANTISKID	SP SW LO	32-42 TASK 806
ANTISKID	SP SW RI	32-42 TASK 806
ANTISKID	SP SW RO	32-42 TASK 806
ANTISKID	SPLRHDL	32-42 TASK 827

AKS ALL

32-MAINT MSG INDEX

Page 103 Feb 15/2013



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
ANTISKID	THR L 1	32-42 TASK 813
ANTISKID	THR L 2	32-42 TASK 813
ANTISKID	THR R 1	32-42 TASK 813
ANTISKID	THR R 2	32-42 TASK 813
ANTISKID	THR SW	32-42 TASK 813
ANTISKID	VLV 1-2	32-42 TASK 805
ANTISKID	VLV 1	32-42 TASK 804
ANTISKID	VLV 2	32-42 TASK 804
ANTISKID	VLV 3-4	32-42 TASK 805
ANTISKID	VLV 3	32-42 TASK 804
ANTISKID	VLV 4	32-42 TASK 804
ANTISKID	XDCR 1	32-42 TASK 806
ANTISKID	XDCR 2	32-42 TASK 806
ANTISKID	XDCR 3	32-42 TASK 806
ANTISKID	XDCR 4	32-42 TASK 806
PSEU	27-62001 SPDBRK DN FAULT	27-62 TASK 808
PSEU	27-62002 SBRK GT ARMD FLT	27-62 TASK 809
PSEU	27-62003 ALT L LT 800 FLT	32-61 TASK 823
PSEU	27-62004 ALT R LT 800 FLT	32-61 TASK 823
PSEU	27-65001 ALT L LT 800	32-61 TASK 823
PSEU	27-65002 ALT R LT 800	32-61 TASK 823
PSEU	27-65003 SBRK GT ARMED	27-62 TASK 809
PSEU	27-65004 SPDBRK DOWN	27-62 TASK 808
PSEU	27-66001 SPDBRK EXT FLT	27-62 TASK 810
PSEU	29-20001 NO LGTV PRI PWR	29-20 TASK 807
PSEU	29-20002 NO LGTV SEC PWR	29-20 TASK 808
PSEU	29-22001 ENG RUN L FAULT	29-20 TASK 809
PSEU	29-22002 HYD QTY B FAULT	29-20 TASK 810
PSEU	29-22003 HYD QTY BITE FLT	29-20 TASK 811
PSEU	29-22004 ALT NOSE STRG FLT	29-20 TASK 812
PSEU	29-22005 LGTV SET FAULT	29-20 TASK 813
PSEU	29-23001 ENG NOT RUNNING	29-20 TASK 809
PSEU	29-23002 ALT NOSE STRG SEL	29-20 TASK 812
PSEU	29-24001 PRI LGTV FAIL	29-20 TASK 805
PSEU	29-24002 SEC LGTV FAIL	29-20 TASK 806

EFFECTIVITY -

32-MAINT MSG INDEX

Page 104 Feb 15/2015



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	29-24003 LGTV RESET	29-20 TASK 813
PSEU	31-51001 GSBV CL FAULT	32-61 TASK 825
PSEU	31-51101 GSBV CL FAULT	32-61 TASK 825
PSEU	31-52001 TOW INHB FAULT	32-09 TASK 810
PSEU	31-52002 TRA L LT 53 FAULT	32-09 TASK 815
PSEU	31-52003 TRA R LT 53 FAULT	32-09 TASK 815
PSEU	31-52004 STAB TRIM DISAGREE	32-09 TASK 817
PSEU	31-52005 LE FLAPS EXT FLT	32-09 TASK 812
PSEU	31-52006 T/O FLPS A FAULT	32-09 TASK 814
PSEU	31-52007 T/O FLPS B FAULT	32-09 TASK 814
PSEU	31-52008 GS PRESS A FAULT	32-61 TASK 824
PSEU	31-52009 GS PRESS B FAULT	32-61 TASK 824
PSEU	31-52010 SPDBRK UP FAULT	27-62 TASK 808
PSEU	31-52011 LE FP EX BITE FLT	32-09 TASK 812
PSEU	31-52012 LE EXT IN FAULT	32-09 TASK 812
PSEU	31-53001 GS PRESS A GT 750	31-51 TASK 804
PSEU	31-53002 GS PRESS B GT 750	31-51 TASK 804
PSEU	31-53003 NOT STAB TRM GRN	31-51 TASK 821
PSEU	31-53007 SPDBRK HDL UP or NOT SBRK HDL DOWN	27-62 TASK 808
PSEU	31-53008 NOT T/O FLAPS A	32-09 TASK 814
PSEU	31-53009 NOT T/O FLAPS B	32-09 TASK 814
PSEU	31-53010 LE FLAPS NOT EXT	32-09 TASK 812
PSEU	31-55001 GS PRESS A	31-51 TASK 804
PSEU	31-55002 GS PRESS B	31-51 TASK 804
PSEU	31-55003 GSBV CLOSED	31-51 TASK 805
PSEU	31-55004 LE FLAPS EXTEND	32-09 TASK 812
PSEU	31-55005 SPDBRK UP	31-51 TASK 806
PSEU	31-55006 STAB TRM GREEN	31-51 TASK 820
PSEU	31-55007 STAB TRM NOT GRN	31-51 TASK 821
PSEU	31-55008 T/O WARN INHIBIT	31-51 TASK 809
PSEU	31-55009 TAKEOFF FLAPS A	31-51 TASK 810
PSEU	31-55010 TAKEOFF FLAPS B	31-51 TASK 811
PSEU	31-55011 TRA LT 53 LEFT	32-09 TASK 815
PSEU	31-55012 TRA LT 53 RIGHT	32-09 TASK 815
PSEU	31-56001 GSBV CL OUT FLT	32-09 TASK 813

AKS ALL

32-MAINT MSG INDEX

Page 105 Feb 15/2016



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	31-56002 T/O WARN 1 FAULT	31-51 TASK 801
PSEU	31-56003 T/O WARN 2 FAULT	31-51 TASK 801
PSEU	32-01001 L ON GND A FAULT	32-09 TASK 803
PSEU	32-01002 N ON GND A FAULT	32-09 TASK 802
PSEU	32-01003 R ON GND A FAULT	32-09 TASK 803
PSEU	32-01004 L ON GND B FAULT	32-09 TASK 803
PSEU	32-01005 N ON GND B FAULT	32-09 TASK 802
PSEU	32-01006 R ON GND B FAULT	32-09 TASK 803
PSEU	32-01007 AIR/GND FAIL	32-09 TASK 819
PSEU	32-02001 PARK BRK FAULT	32-09 TASK 806
PSEU	32-03001 PARK BRK A SET	32-09 TASK 806
PSEU	32-03002 PARK BRK B SET	32-09 TASK 806
PSEU	32-04001 AIR/GND OVERRIDE	32-09 TASK 818
PSEU	32-05001 PARK A	32-09 TASK 806
PSEU	32-05002 PARK B	32-09 TASK 806
PSEU	32-06001 AIR/GND R584 FLT	32-09 TASK 804
PSEU	32-06002 AIR/GND R593 FLT	32-09 TASK 804
PSEU	32-06003 AIR/GND R587 FLT	32-09 TASK 804
PSEU	32-06004 AIR/GND R583 FLT	32-09 TASK 804
PSEU	32-06005 AIR/GND R589 FLT	32-09 TASK 804
PSEU	32-06006 AIR/GND R592 FLT	32-09 TASK 804
PSEU	32-06007 AIR/GND R594 FLT	32-09 TASK 804
PSEU	32-06008 LG LVR LCH FLT	32-09 TASK 807
PSEU	32-06009 AIR/GND R585 FLT	32-09 TASK 804
PSEU	32-06010 AIR/GND R588 FLT	32-09 TASK 804
PSEU	32-06011 AIR/GND R595 FLT	32-09 TASK 804
PSEU	32-06012 AIR/GND R586 FLT	32-09 TASK 804
PSEU	32-06013 AIR/GND R590 FLT	32-09 TASK 804
PSEU	32-06014 AIR/GND R591 FLT	32-09 TASK 804
PSEU	32-06015 AIR/GND R597 FLT	32-09 TASK 804
PSEU	32-06016 NGS RLY FAULT	32-61 TASK 813
PSEU	32-60001 NO 28V A POWER	32-09 TASK 808
PSEU	32-60002 NO 28V B POWER	32-09 TASK 822
PSEU	32-61001 L DN LKD A FAULT	32-61 TASK 801
PSEU	32-61002 L UP LKD A FAULT	32-61 TASK 802

EFFECTIVITY -

32-MAINT MSG INDEX

Page 106 Feb 15/2016



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	32-61003 NOSE LKD A FAULT	32-61 TASK 804
PSEU	32-61004 NOSE DN A FAULT	32-61 TASK 803
PSEU	32-61005 R DN LKD A FAULT	32-61 TASK 801
PSEU	32-61006 R UP LKD A FAULT	32-61 TASK 802
PSEU	32-61007 L DN LKD B FAULT	32-61 TASK 801
PSEU	32-61008 L UP LKD B FAULT	32-61 TASK 802
PSEU	32-61009 NOSE DN B FAULT	32-61 TASK 803
PSEU	32-61010 NOSE LKD B FAULT	32-61 TASK 804
PSEU	32-61011 R DN LKD B FAULT	32-61 TASK 801
PSEU	32-61012 R UP LKD B FAULT	32-61 TASK 802
PSEU	32-61013 NOSE DN DISAGREE	32-61 TASK 803
PSEU	32-62001 TRA L LT 44 FAULT	32-09 TASK 816
PSEU	32-62002 TRA R LT 44 FAULT	32-09 TASK 816
PSEU	32-62003 TRA L LT 64 FAULT	32-09 TASK 820
PSEU	32-62004 TRA R LT 64 FAULT	32-09 TASK 820
PSEU	32-62005 ALT L LT 200 FLT	32-61 TASK 805
PSEU	32-62006 ALT R LT 200 FLT	32-61 TASK 806
PSEU	32-62007 LEVER DN FAULT	32-61 TASK 809
PSEU	32-62008 LEVER UP FAULT	32-61 TASK 809
PSEU	32-62009 LDG FLAP A FAULT	32-61 TASK 815
PSEU	32-62010 LDG FLAP B FAULT	32-61 TASK 815
PSEU	32-62011 LDG WARN INHB FLT	32-61 TASK 822
PSEU	32-62014 LDG FLAP DISAGREE	32-61 TASK 815
PSEU	32-64001 INTERNAL FAULT	32-09 TASK 809
PSEU	32-64003 DISPATCH PER MEL	32-09 TASK 818
PSEU	32-64004 NO DISP FAULT	32-09 TASK 818
PSEU	32-65001 LANDING FLAPS A	32-61 TASK 815
PSEU	32-65002 LANDING FLAPS B	32-61 TASK 815
PSEU	32-66001 L GRN LT 1 FAULT	32-61 TASK 810
PSEU	32-66002 NOSE GRN LT 1 FLT	32-61 TASK 810
PSEU	32-66003 R GRN LT 1 FAULT	32-61 TASK 810
PSEU	32-66004 L RED LT 1 FAULT	32-61 TASK 810
PSEU	32-66005 NOSE RED LT 1 FLT	32-61 TASK 810
PSEU	32-66006 R RED LT 1 FAULT	32-61 TASK 810
PSEU	32-66007 DISPATCH 1 FAULT	32-61 TASK 818

EFFECTIVITY -

32-MAINT MSG INDEX

Page 107 Feb 15/2016



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	32-66010 NO DISP 1 FAULT	32-61 TASK 818
PSEU	32-66011 L GRN LT 2 FAULT	32-61 TASK 811
PSEU	32-66012 NOSE GRN LT 2 FLT	32-61 TASK 811
PSEU	32-66013 R GRN LT 2 FAULT	32-61 TASK 811
PSEU	32-66014 L RED LT 2 FAULT	32-61 TASK 812
PSEU	32-66015 NOSE RED LT 2 FLT	32-61 TASK 812
PSEU	32-66016 R RED LT 2 FAULT	32-61 TASK 812
PSEU	32-66017 DISPATCH 2 FAULT	32-61 TASK 818
PSEU	32-66018 LDG WARN FAULT	32-61 TASK 816
PSEU	32-66020 NO DISP 2 FAULT	32-61 TASK 818
PSEU	52-71001 FWD ENTR DR OPEN	52-10 TASK 801
PSEU	52-71002 FWD SERV DR OPEN	52-10 TASK 801
PSEU	52-71003 AFT ENTR DR OPEN	52-10 TASK 801
PSEU	52-71004 AFT SER DR OPEN	52-10 TASK 801
PSEU	52-72001 FWD CGO DR OPEN	52-30 TASK 803
PSEU	52-72002 AFT CGO DR OPEN	52-30 TASK 803
PSEU	52-72003 FWD ACC DR OPEN	52-40 TASK 801
PSEU	52-72004 EE ACC DR OPEN	52-40 TASK 802
PSEU	52-72005 L FL SW FAULT	52-20 TASK 801
PSEU	52-72006 L FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72007 L FL SW FAULT	52-20 TASK 801
PSEU	52-72008 R FL SW FAULT	52-20 TASK 801
PSEU	52-72009 R FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72010 L OW SW A FAULT	52-20 TASK 802
PSEU	52-72011 L OW SW B FAULT	52-20 TASK 802
PSEU	52-72012 L FWD OW SW A FLT	52-20 TASK 802
PSEU	52-72013 L FWD OW SW B FLT	52-20 TASK 802
PSEU	52-72014 R OW SW A FAULT	52-20 TASK 802
PSEU	52-72015 R OW SW B FAULT	52-20 TASK 802
PSEU	52-72016 R FWD OW SW A FLT	52-20 TASK 802
PSEU	52-72017 R FWD OW SW B FLT	52-20 TASK 802
PSEU	52-72018 ENG RUN R FAULT	52-20 TASK 803
PSEU	52-72019 OVWG OPT FAULT	52-20 TASK 804
PSEU	52-72020 L OW SW DISAGREE	52-20 TASK 805
PSEU	52-72021 L FWD OW SW DSGR	52-20 TASK 805

EFFECTIVITY -

32-MAINT MSG INDEX

Page 108 Feb 15/2016



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	52-72022 R OW SW DISAGREE	52-20 TASK 805
PSEU	52-72023 R FWD OW SW DSGR	52-20 TASK 805
PSEU	52-72024 FOUR OW OPT FLT	52-20 TASK 804
PSEU	52-72106 L FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72107 L FL SW FAULT	52-20 TASK 801
PSEU	52-72108 R FL SW FAULT	52-20 TASK 801
PSEU	52-72109 R FWD FL SW FAULT	52-20 TASK 801
PSEU	52-74001 L OVWG OPEN	52-20 TASK 806
PSEU	52-74002 L FWD OW OPEN	52-20 TASK 806
PSEU	52-74003 R OVWG OPEN	52-20 TASK 806
PSEU	52-74004 R FWD OW OPEN	52-20 TASK 806
PSEU	52-76001 EQPT WARN FLT	52-10 TASK 802
PSEU	52-76003 AFT CGO WARN FLT	52-10 TASK 802
PSEU	52-76004 AFT ENTR WARN FLT	52-10 TASK 802
PSEU	52-76005 AFT SERV WARN FLT	52-10 TASK 802
PSEU	52-76012 AIRSTAIR WARN FLT	52-10 TASK 802
PSEU	52-76014 FWD CGO WARN FLT	52-10 TASK 802
PSEU	52-76015 FWD ENTR WARN FLT	52-10 TASK 802
PSEU	52-76016 FWD SERV WARN FLT	52-10 TASK 802
PSEU	52-76017 FL RELAY 1 FAULT	52-20 TASK 807
PSEU	52-76018 FL RELAY 2 FAULT	52-20 TASK 807
PSEU	52-76019 LOW WARN FLT	52-20 TASK 808
PSEU	52-76020 L FWD OW WARN FLT	52-20 TASK 808
PSEU	52-76021 R OW WARN FLT	52-20 TASK 808
PSEU	52-76022 R FWD OW WARN FLT	52-20 TASK 808

AKS ALL

32-MAINT MSG INDEX

Page 109 Feb 15/2016



801. Proximity Switch Electronics Unit (PSEU) BITE Procedure

A. General

- (1) You do the Proximity Switch Electronics Unit (PSEU) BITE test at the front of the PSEU module. The PSEU is in the forward electrical equipment bay. These are the menu items in the PSEU display panel that you will use in this task to read out stored faults or test for faults
 - (a) EXISTING FAULTS
 - (b) FAULT HISTORY
 - (c) GROUND TEST -> SELF TEST
- (2) If the PSEU light is currently ON in the flight deck, the EXISTING FAULTS report will list both active and latched faults resulting from the PSEU continuous testing of discrete inputs and outputs, sensor interfaces, and PSEU internal testing. Do the steps in the "B" BITE Procedure to see EXISTING FAULTS. These faults generate fault messages on the PSEU display. A maintenance message identifies a specific failure which is found by the PSEU. The maintenance messages have English text and a seven digit number.
- (3) (3) If the PSEU light was ON during the most recent flight, but is currently OFF, the EXISTING FAULTS will display NO FAULTS. Check for inactive faults in the most recent flight leg of the FAULT HISTORY report. The faults are grouped by flight leg. Flight leg 0 (LEG 0) is the most recent flight and includes faults that occurred on the ground after the most recent flight. Do the steps in the "C" BITE Procedure to see FAULT HISTORY.
- (4) Do the steps in the "D" Repair Confirmation if you performed maintenance for a PSEU fault message to see if the fault still exists. The PSEU SELF TEST is used for this purpose.

B. BITE Procedure to display Existing Faults

- (1) Check for Existing Faults. Use the PSEU BITE panel: (Figure 201, Figure 202)
 - (a) Open this access panel:

Number Name/Location
112A Forward Access Door

(b) Push the ON/OFF switch.

NOTE: The display will show EXISTING FAULTS?

- If the BITE display stays blank, then, do this task: No BITE Display on the PSEU -Fault Isolation, 32-09 TASK 811.
- (c) Push the YES switch. The display will show:
 - 1) Either the number of faults.
 - 2) Or the display will show NO FAULTS.
- (d) If there are existing faults, then the display will show the number of faults in the PSEU. Do these steps:

NOTE: You should display and record all the existing faults before you perform any fault isolation. Maintenance messages could be added to, or removed, from the existing faults list when you perform the fault isolation.

- 1) Push the down arrow to show the first fault.
- 2) Push the down arrow to show MORE DETAILS?.
- 3) Do these steps to show the details on the fault:
 - a) Push the YES switch.
 - Record the maintenance message numbers.

AKS ALL

32-09 TASK 801



c) Refer to the table at the end of this task to find the fault isolation task for the maintenance message.

NOTE: Some maintenance messages report status of the PSEU. These maintenance messages, 32-04001, 32-64003, and 32-64004, are not faults. Continue to show the other existing maintenance messages to perform fault isolation.

- d) Push the down arrow to see if the message is latched.
- e) Push the down arrow to see if there is any additional information on the fault.
- f) RETURN TO LIST will show when there are no more details for the fault. Push the YES button to return to the fault message list.
- 4) The next fault will show on the BITE display. Repeat the previous steps to show all the existing faults and details.
- (e) If the test shows NO FAULTS, then do these steps then continue.
 - 1) Push the MENU switch to return to the EXISTING FAULTS display.
 - 2) Push the down arrow switch until the display shows FAULT HISTORY?.
 - 3) Push the YES switch.

NOTE: The display will show FLIGHT LEG 0?

- 4) Push the YES switch.
- 5) Write the maintenance message details.
- 6) Push the down arrow switch to look for faults in FLIGHT LEG 0.
- 7) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

C. BITE Procedure to display FAULT HISTORY

- (1) Check for Existing Faults. Use the PSEU BITE panel: (Figure 201, Figure 202)
 - (a) Open this access panel:

Number112AForward Access Door

(b) Push the ON/OFF switch.

NOTE: The display will show EXISTING FAULTS?

- 1) If the BITE display stays blank, then, do this task: No BITE Display on the PSEU Fault Isolation, 32-09 TASK 811.
- (c) Push the NO switch.
- (d) Push the down arrow switch until the display shows FAULT HISTORY?.

NOTE: The display will show FLIGHT LEG 0?

- 1) Push the YES switch.
- 2) Write the maintenance message details.
- Push the down arrow switch.
- 4) Write the fault type data. These are the possible fault types:
 - a) HARD
 - b) INTERMITTENT
 - c) REPEAT

AKS ALL

32-09 TASK 801



5) Push the MENU Switch

NOTE: This will return you to the FLIGHT LEG 0? display

- 6) Push the down arrow switch to look for faults in other flight legs.
- 7) Refer to the table at the end of this task to find the fault isolation task for the applicable maintenance message.

D. Repair Confirmation using PSEU Self Test.

- Close this door: Forward Entry Door, FORWARD ENTRY DOOR MAINTENANCE PRACTICES, AMM 52-11-00/201.
- (2) Prepare to do the SELF TEST for the PSEU:
 - (a) If it is necessary, open the

<u>Number</u>	Name/Location
112A	Forward Access Door

(b) If the PSEU is not on, then push the ON/OFF switch.

NOTE: The display will show EXISTING FAULTS?

- (c) If it is necessary, push the MENU switch until EXISTING FAULTS? shows.
- (3) Do the SELF TEST for the PSEU:
 - (a) Push the down arrow until GROUND TEST? shows.
 - (b) Push the YES switch. The display will show REPLACE TEST.
 - (c) Push the down arrow until SELF TEST? shows.
 - (d) Push the YES switch to start the SELF TEST.
 - (e) SEE WARNINGS will show on the BITE display.
 - (f) ARE YOU SURE? will show on the BITE display.

WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL SURFACES. THESE COMPONENTS CAN MOVE SUDDENLY WHEN THE SELF TEST IS RUN. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (g) Make sure that all persons and equipment are clear on the flight control surfaces.
- (h) Push the YES switch after you completed the previous step.
- (i) TEST IN PROGRESS will show while the test runs.
- (i) When the self test is complete either:
 - 1) The number of faults will show.
 - 2) Or, TEST PASS will show.
 - 3) If the faults show, then repeat these steps until END OF LIST shows:

NOTE: RESET LATCHES will display before you reach the END OF LIST. Push the down arrow or NO switch. Do not push the YES switch unless you want to reset the latched faults.

- a) Push the down arrow to show the first fault.
- b) Push the down arrow to show MORE DETAILS?.
- c) Push the YES switch to show the message number.
- d) Record the message number.

AKS ALL 32-09 TASK 801

Page 203

Jun 15/2016



- e) Push the MENU switch to return to the fault list.
- f) Push the down arrow to show the next fault.
- 4) IF TEST PASS shows, then the self test passed with no faults found. You corrected the condition which caused the PSEU fault.
- (k) If you recorded faults, then examine the faults to determine if the original fault still exists.
- (I) If the original fault still exists, then return to the fault isolation procedure.
- (m) If other faults exist, then refer to the table at the end of this task to find the fault isolation task for the maintenance message.

NOTE: Some maintenance messages report status of the PSEU. These maintenance messages, 32-04001, 32-64003, and 32-64004, are not faults.

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	27-62001 SPDBRK DN FAULT	27-62 TASK 808
PSEU	27-62002 SBRK GT ARMD FLT	27-62 TASK 809
PSEU	27-62003 ALT L LT 800 FLT	32-61 TASK 823
PSEU	27-62004 ALT R LT 800 FLT	32-61 TASK 823
PSEU	27-65001 ALT L LT 800	32-61 TASK 823
PSEU	27-65002 ALT R LT 800	32-61 TASK 823
PSEU	27-65003 SBRK GT ARMED	27-62 TASK 809
PSEU	27-65004 SPDBRK DOWN	27-62 TASK 808
PSEU	27-66001 SPDBRK EXT FLT	27-62 TASK 810
PSEU	29-20001 NO LGTV PRI PWR	29-20 TASK 807
PSEU	29-20002 NO LGTV SEC PWR	29-20 TASK 808
PSEU	29-22001 ENG RUN L FAULT	29-20 TASK 809
PSEU	29-22002 HYD QTY B FAULT	29-20 TASK 810
PSEU	29-22003 HYD QTY BITE FLT	29-20 TASK 811
PSEU	29-22004 ALT NOSE STRG FLT	29-20 TASK 812
PSEU	29-22005 LGTV SET FAULT	29-20 TASK 813
PSEU	29-23001 ENG NOT RUNNING	29-20 TASK 809
PSEU	29-23002 ALT NOSE STRG SEL	29-20 TASK 812
PSEU	29-24001 PRI LGTV FAIL	29-20 TASK 805
PSEU	29-24002 SEC LGTV FAIL	29-20 TASK 806
PSEU	29-24003 LGTV RESET	29-20 TASK 813
PSEU	31-51001 GSBV CL FAULT	32-61 TASK 825
PSEU	31-51101 GSBV CL FAULT	32-61 TASK 825
PSEU	31-52001 TOW INHB FAULT	32-09 TASK 810
PSEU	31-52002 TRA L LT 53 FAULT	32-09 TASK 815
PSEU	31-52003 TRA R LT 53 FAULT	32-09 TASK 815
PSEU	31-52004 STAB TRIM DISAGREE	32-09 TASK 817

EFFECTIVITY
AKS ALL

32-09 TASK 801

Page 204 Jun 15/2016



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	31-52005 LE FLAPS EXT FLT	32-09 TASK 812
PSEU	31-52006 T/O FLPS A FAULT	32-09 TASK 814
PSEU	31-52007 T/O FLPS B FAULT	32-09 TASK 814
PSEU	31-52008 GS PRESS A FAULT	32-61 TASK 824
PSEU	31-52009 GS PRESS B FAULT	32-61 TASK 824
PSEU	31-52010 SPDBRK UP FAULT	27-62 TASK 808
PSEU	31-52011 LE FP EX BITE FLT	32-09 TASK 812
PSEU	31-52012 LE EXT IN FAULT	32-09 TASK 812
PSEU	31-53001 GS PRESS A GT 750	31-51 TASK 804
PSEU	31-53002 GS PRESS B GT 750	31-51 TASK 804
PSEU	31-53003 NOT STAB TRM GRN	31-51 TASK 821
PSEU	31-53007 SPDBRK HDL UP or NOT SBRK HDL DOWN	27-62 TASK 808
PSEU	31-53008 NOT T/O FLAPS A	32-09 TASK 814
PSEU	31-53009 NOT T/O FLAPS B	32-09 TASK 814
PSEU	31-53010 LE FLAPS NOT EXT	32-09 TASK 812
PSEU	31-55001 GS PRESS A	31-51 TASK 804
PSEU	31-55002 GS PRESS B	31-51 TASK 804
PSEU	31-55003 GSBV CLOSED	31-51 TASK 805
PSEU	31-55004 LE FLAPS EXTEND	32-09 TASK 812
PSEU	31-55005 SPDBRK UP	31-51 TASK 806
PSEU	31-55006 STAB TRM GREEN	31-51 TASK 820
PSEU	31-55007 STAB TRM NOT GRN	31-51 TASK 821
PSEU	31-55008 T/O WARN INHIBIT	31-51 TASK 809
PSEU	31-55009 TAKEOFF FLAPS A	31-51 TASK 810
PSEU	31-55010 TAKEOFF FLAPS B	31-51 TASK 811
PSEU	31-55011 TRA LT 53 LEFT	32-09 TASK 815
PSEU	31-55012 TRA LT 53 RIGHT	32-09 TASK 815
PSEU	31-56001 GSBV CL OUT FLT	32-09 TASK 813
PSEU	31-56002 T/O WARN 1 FAULT	31-51 TASK 801
PSEU	31-56003 T/O WARN 2 FAULT	31-51 TASK 801
PSEU	32-01001 L ON GND A FAULT	32-09 TASK 803
PSEU	32-01002 N ON GND A FAULT	32-09 TASK 802
PSEU	32-01003 R ON GND A FAULT	32-09 TASK 803
PSEU	32-01004 L ON GND B FAULT	32-09 TASK 803
PSEU	32-01005 N ON GND B FAULT	32-09 TASK 802

AKS ALL

32-09 TASK 801

Page 205 Jun 15/2016



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	32-01006 R ON GND B FAULT	32-09 TASK 803
PSEU	32-01007 AIR/GND FAIL	32-09 TASK 819
PSEU	32-02001 PARK BRK FAULT	32-09 TASK 806
PSEU	32-03001 PARK BRK A SET	32-09 TASK 806
PSEU	32-03002 PARK BRK B SET	32-09 TASK 806
PSEU	32-04001 AIR/GND OVERRIDE	32-09 TASK 818
PSEU	32-05001 PARKA	32-09 TASK 806
PSEU	32-05002 PARK B	32-09 TASK 806
PSEU	32-06001 AIR/GND R584 FLT	32-09 TASK 804
PSEU	32-06002 AIR/GND R593 FLT	32-09 TASK 804
PSEU	32-06003 AIR/GND R587 FLT	32-09 TASK 804
PSEU	32-06004 AIR/GND R583 FLT	32-09 TASK 804
PSEU	32-06005 AIR/GND R589 FLT	32-09 TASK 804
PSEU	32-06006 AIR/GND R592 FLT	32-09 TASK 804
PSEU	32-06007 AIR/GND R594 FLT	32-09 TASK 804
PSEU	32-06008 LG LVR LCH FLT	32-09 TASK 807
PSEU	32-06009 AIR/GND R585 FLT	32-09 TASK 804
PSEU	32-06010 AIR/GND R588 FLT	32-09 TASK 804
PSEU	32-06011 AIR/GND R595 FLT	32-09 TASK 804
PSEU	32-06012 AIR/GND R586 FLT	32-09 TASK 804
PSEU	32-06013 AIR/GND R590 FLT	32-09 TASK 804
PSEU	32-06014 AIR/GND R591 FLT	32-09 TASK 804
PSEU	32-06015 AIR/GND R597 FLT	32-09 TASK 804
PSEU	32-06016 NGS RLY FAULT	32-61 TASK 813
PSEU	32-60001 NO 28V A POWER	32-09 TASK 808
PSEU	32-60002 NO 28V B POWER	32-09 TASK 822
PSEU	32-61001 L DN LKD A FAULT	32-61 TASK 801
PSEU	32-61002 L UP LKD A FAULT	32-61 TASK 802
PSEU	32-61003 NOSE LKD A FAULT	32-61 TASK 804
PSEU	32-61004 NOSE DN A FAULT	32-61 TASK 803
PSEU	32-61005 R DN LKD A FAULT	32-61 TASK 801
PSEU	32-61006 R UP LKD A FAULT	32-61 TASK 802
PSEU	32-61007 L DN LKD B FAULT	32-61 TASK 801
PSEU	32-61008 L UP LKD B FAULT	32-61 TASK 802
PSEU	32-61009 NOSE DN B FAULT	32-61 TASK 803

AKS ALL

32-09 TASK 801

Page 206 Jun 15/2016



PSEU 32-61010 NOSE LKD B FAULT 32-61 TASK 804 PSEU 32-61011 R DN LKD B FAULT 32-61 TASK 801 PSEU 32-61012 R UP LKD B FAULT 32-61 TASK 802 PSEU 32-61013 NOSE DN DISAGREE 32-61 TASK 803 PSEU 32-62001 TRAL LT 44 FAULT 32-09 TASK 816 PSEU 32-62002 TRAR LT 64 FAULT 32-09 TASK 820 PSEU 32-62003 TRAL LT 64 FAULT 32-09 TASK 820 PSEU 32-62004 TRAR LT 64 FAULT 32-09 TASK 820 PSEU 32-62005 ALT LLT 200 FLT 32-61 TASK 805 PSEU 32-62006 ALT RAT 200 FLT 32-61 TASK 806 PSEU 32-62007 LEVER DN FAULT 32-61 TASK 806 PSEU 32-62007 LEVER DN FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62008 LEVER DF FAULT 32-61 TASK 809 PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-62014 LDG FLAP LOF SAGREE	LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU 32-61012 R UP LKD B FAULT 32-61 TASK 802 PSEU 32-61013 NOSE DN DISAGREE 32-61 TASK 803 PSEU 32-62001 TRA L LT 44 FAULT 32-09 TASK 816 PSEU 32-62002 TRA R LT 44 FAULT 32-09 TASK 816 PSEU 32-62003 TRA L LT 64 FAULT 32-09 TASK 820 PSEU 32-62004 TRA R LT 64 FAULT 32-09 TASK 820 PSEU 32-62005 ALT L LT 200 FLT 32-61 TASK 806 PSEU 32-62006 ALT R LT 200 FLT 32-61 TASK 806 PSEU 32-62007 LEVER DN FAULT 32-61 TASK 806 PSEU 32-62007 LEVER DN FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62001 LOG FLAPA FAULT 32-61 TASK 815 PSEU 32-62010 LOG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LOG WARN INHB FLT 32-61 TASK 815 PSEU 32-62014 LOG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64003 INTERNAL FAULT 32-09 TASK 818 PSEU 32-64003 INTERNAL FAULT 32-09 TASK 818 PSEU 32-64003 INTERNAL FAUL	PSEU	32-61010 NOSE LKD B FAULT	32-61 TASK 804
PSEU 32-611013 NOSE DN DISAGREE 32-61 TASK 803 PSEU 32-62001 TRAL LT 44 FAULT 32-09 TASK 816 PSEU 32-62002 TRAR LT 44 FAULT 32-09 TASK 816 PSEU 32-62003 TRAL LT 64 FAULT 32-09 TASK 820 PSEU 32-62004 TRAR LT 64 FAULT 32-09 TASK 820 PSEU 32-62005 ALT LLT 200 FLT 32-61 TASK 805 PSEU 32-62006 ALT R LT 200 FLT 32-61 TASK 806 PSEU 32-62007 LEVER DN FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62009 LDG FLAP A FAULT 32-61 TASK 815 PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 815 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 816 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 818 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-61 TASK 816 PSEU 32-65001 LANDING FLAPS B	PSEU	32-61011 R DN LKD B FAULT	32-61 TASK 801
PSEU 32-62001 TRA L LT 44 FAULT 32-09 TASK 816 PSEU 32-62002 TRA R LT 44 FAULT 32-09 TASK 816 PSEU 32-62003 TRA L LT 64 FAULT 32-09 TASK 820 PSEU 32-62004 TRA R LT 64 FAULT 32-09 TASK 820 PSEU 32-62005 ALT L LT 200 FLT 32-61 TASK 805 PSEU 32-62006 ALT R LT 200 FLT 32-61 TASK 806 PSEU 32-62007 LEVER DN FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62009 LDG FLAP A FAULT 32-61 TASK 815 PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 815 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-61 TASK 818 PSEU 32-65001 LANDING FLAPS	PSEU	32-61012 R UP LKD B FAULT	32-61 TASK 802
PSEU 32-62002 TRA R LT 44 FAULT 32-09 TASK 816 PSEU 32-62003 TRA L LT 64 FAULT 32-09 TASK 820 PSEU 32-62004 TRA R LT 64 FAULT 32-09 TASK 820 PSEU 32-62005 ALT L LT 200 FLT 32-61 TASK 805 PSEU 32-62006 ALT R LT 200 FLT 32-61 TASK 806 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62009 LDG FLAP A FAULT 32-61 TASK 805 PSEU 32-62001 LDG FLAP A FAULT 32-61 TASK 815 PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 815 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 818 PSEU 32-64001 NO DISP FAULT 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B	PSEU	32-61013 NOSE DN DISAGREE	32-61 TASK 803
PSEU 32-62003 TRA L LT 64 FAULT 32-09 TASK 820 PSEU 32-62004 TRA R LT 64 FAULT 32-09 TASK 820 PSEU 32-62005 ALT L LT 200 FLT 32-61 TASK 805 PSEU 32-62006 ALT R LT 200 FLT 32-61 TASK 806 PSEU 32-62007 LEVER DN FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62009 LDG FLAP A FAULT 32-61 TASK 815 PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 815 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 818 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 818 PSEU 32-64001 NO DISP FAULT 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT <td>PSEU</td> <td>32-62001 TRA L LT 44 FAULT</td> <td>32-09 TASK 816</td>	PSEU	32-62001 TRA L LT 44 FAULT	32-09 TASK 816
PSEU 32-62004 TRA R LT 64 FAULT 32-09 TASK 820 PSEU 32-62005 ALT L LT 200 FLT 32-61 TASK 805 PSEU 32-62006 ALT R LT 200 FLT 32-61 TASK 806 PSEU 32-62007 LEVER DN FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62009 LDG FLAP A FAULT 32-61 TASK 815 PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 815 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 816 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 LGRN LT 1 FAULT 32-61 TASK 810 PSEU 32-660	PSEU	32-62002 TRA R LT 44 FAULT	32-09 TASK 816
PSEU 32-62005 ALT L LT 200 FLT 32-61 TASK 805 PSEU 32-62006 ALT R LT 200 FLT 32-61 TASK 806 PSEU 32-62007 LEVER DN FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62009 LDG FLAP A FAULT 32-61 TASK 815 PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 815 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65001 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66001 NO DISP 1 FAUL	PSEU	32-62003 TRA L LT 64 FAULT	32-09 TASK 820
PSEU 32-62006 ALT R LT 200 FLT 32-61 TASK 806 PSEU 32-62007 LEVER DN FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62009 LDG FLAP A FAULT 32-61 TASK 815 PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 822 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT<	PSEU	32-62004 TRA R LT 64 FAULT	32-09 TASK 820
PSEU 32-62007 LEVER DN FAULT 32-61 TASK 809 PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62009 LDG FLAP A FAULT 32-61 TASK 815 PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 822 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAU	PSEU	32-62005 ALT L LT 200 FLT	32-61 TASK 805
PSEU 32-62008 LEVER UP FAULT 32-61 TASK 809 PSEU 32-62009 LDG FLAP A FAULT 32-61 TASK 815 PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 822 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65001 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FL 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-6011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 F	PSEU	32-62006 ALT R LT 200 FLT	32-61 TASK 806
PSEU 32-62009 LDG FLAP A FAULT 32-61 TASK 815 PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 822 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 810 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-6601 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-6601 NOSE GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN L	PSEU	32-62007 LEVER DN FAULT	32-61 TASK 809
PSEU 32-62010 LDG FLAP B FAULT 32-61 TASK 815 PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 822 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT	PSEU	32-62008 LEVER UP FAULT	32-61 TASK 809
PSEU 32-62011 LDG WARN INHB FLT 32-61 TASK 822 PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812	PSEU	32-62009 LDG FLAP A FAULT	32-61 TASK 815
PSEU 32-62014 LDG FLAP DISAGREE 32-61 TASK 815 PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FL 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812	PSEU	32-62010 LDG FLAP B FAULT	32-61 TASK 815
PSEU 32-64001 INTERNAL FAULT 32-09 TASK 809 PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812	PSEU	32-62011 LDG WARN INHB FLT	32-61 TASK 822
PSEU 32-64003 DISPATCH PER MEL 32-09 TASK 818 PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-62014 LDG FLAP DISAGREE	32-61 TASK 815
PSEU 32-64004 NO DISP FAULT 32-09 TASK 818 PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-64001 INTERNAL FAULT	32-09 TASK 809
PSEU 32-65001 LANDING FLAPS A 32-61 TASK 815 PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-64003 DISPATCH PER MEL	32-09 TASK 818
PSEU 32-65002 LANDING FLAPS B 32-61 TASK 815 PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-64004 NO DISP FAULT	32-09 TASK 818
PSEU 32-66001 L GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-65001 LANDING FLAPS A	32-61 TASK 815
PSEU 32-66002 NOSE GRN LT 1 FLT 32-61 TASK 810 PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 811 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-65002 LANDING FLAPS B	32-61 TASK 815
PSEU 32-66003 R GRN LT 1 FAULT 32-61 TASK 810 PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-66001 L GRN LT 1 FAULT	32-61 TASK 810
PSEU 32-66004 L RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-66002 NOSE GRN LT 1 FLT	32-61 TASK 810
PSEU 32-66005 NOSE RED LT 1 FLT 32-61 TASK 810 PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-66003 R GRN LT 1 FAULT	32-61 TASK 810
PSEU 32-66006 R RED LT 1 FAULT 32-61 TASK 810 PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-66004 L RED LT 1 FAULT	32-61 TASK 810
PSEU 32-66007 DISPATCH 1 FAULT 32-61 TASK 818 PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-66005 NOSE RED LT 1 FLT	32-61 TASK 810
PSEU 32-66010 NO DISP 1 FAULT 32-61 TASK 818 PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-66006 R RED LT 1 FAULT	32-61 TASK 810
PSEU 32-66011 L GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-66007 DISPATCH 1 FAULT	32-61 TASK 818
PSEU 32-66012 NOSE GRN LT 2 FLT 32-61 TASK 811 PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-66010 NO DISP 1 FAULT	32-61 TASK 818
PSEU 32-66013 R GRN LT 2 FAULT 32-61 TASK 811 PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-66011 L GRN LT 2 FAULT	32-61 TASK 811
PSEU 32-66014 L RED LT 2 FAULT 32-61 TASK 812 PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-66012 NOSE GRN LT 2 FLT	32-61 TASK 811
PSEU 32-66015 NOSE RED LT 2 FLT 32-61 TASK 812	PSEU	32-66013 R GRN LT 2 FAULT	32-61 TASK 811
	PSEU	32-66014 L RED LT 2 FAULT	32-61 TASK 812
PSEU 32-66016 R RED LT 2 FAULT 32-61 TASK 812	PSEU	32-66015 NOSE RED LT 2 FLT	32-61 TASK 812
	PSEU	32-66016 R RED LT 2 FAULT	32-61 TASK 812

AKS ALL

32-09 TASK 801

Page 207 Jun 15/2016



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	32-66017 DISPATCH 2 FAULT	32-61 TASK 818
PSEU	32-66018 LDG WARN FAULT	32-61 TASK 816
PSEU	32-66020 NO DISP 2 FAULT	32-61 TASK 818
PSEU	52-71001 FWD ENTR DR OPEN	52-10 TASK 801
PSEU	52-71002 FWD SERV DR OPEN	52-10 TASK 801
PSEU	52-71003 AFT ENTR DR OPEN	52-10 TASK 801
PSEU	52-71004 AFT SER DR OPEN	52-10 TASK 801
PSEU	52-72001 FWD CGO DR OPEN	52-30 TASK 803
PSEU	52-72002 AFT CGO DR OPEN	52-30 TASK 803
PSEU	52-72003 FWD ACC DR OPEN	52-40 TASK 801
PSEU	52-72004 EE ACC DR OPEN	52-40 TASK 802
PSEU	52-72005 L FL SW FAULT	52-20 TASK 801
PSEU	52-72006 L FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72007 L FL SW FAULT	52-20 TASK 801
PSEU	52-72008 R FL SW FAULT	52-20 TASK 801
PSEU	52-72009 R FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72010 L OW SW A FAULT	52-20 TASK 802
PSEU	52-72011 L OW SW B FAULT	52-20 TASK 802
PSEU	52-72012 L FWD OW SW A FLT	52-20 TASK 802
PSEU	52-72013 L FWD OW SW B FLT	52-20 TASK 802
PSEU	52-72014 R OW SW A FAULT	52-20 TASK 802
PSEU	52-72015 R OW SW B FAULT	52-20 TASK 802
PSEU	52-72016 R FWD OW SW A FLT	52-20 TASK 802
PSEU	52-72017 R FWD OW SW B FLT	52-20 TASK 802
PSEU	52-72018 ENG RUN R FAULT	52-20 TASK 803
PSEU	52-72019 OVWG OPT FAULT	52-20 TASK 804
PSEU	52-72020 L OW SW DISAGREE	52-20 TASK 805
PSEU	52-72021 L FWD OW SW DSGR	52-20 TASK 805
PSEU	52-72022 R OW SW DISAGREE	52-20 TASK 805
PSEU	52-72023 R FWD OW SW DSGR	52-20 TASK 805
PSEU	52-72024 FOUR OW OPT FLT	52-20 TASK 804
PSEU	52-72106 L FWD FL SW FAULT	52-20 TASK 801
PSEU	52-72107 L FL SW FAULT	52-20 TASK 801
PSEU	52-72108 R FL SW FAULT	52-20 TASK 801
PSEU	52-72109 R FWD FL SW FAULT	52-20 TASK 801

EFFECTIVITY -

32-09 TASK 801

Page 208 Jun 15/2016



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
PSEU	52-74001 L OVWG OPEN	52-20 TASK 806
PSEU	52-74002 L FWD OW OPEN	52-20 TASK 806
PSEU	52-74003 R OVWG OPEN	52-20 TASK 806
PSEU	52-74004 R FWD OW OPEN	52-20 TASK 806
PSEU	52-76001 EQPT WARN FLT	52-10 TASK 802
PSEU	52-76003 AFT CGO WARN FLT	52-10 TASK 802
PSEU	52-76004 AFT ENTR WARN FLT	52-10 TASK 802
PSEU	52-76005 AFT SERV WARN FLT	52-10 TASK 802
PSEU	52-76012 AIRSTAIR WARN FLT	52-10 TASK 802
PSEU	52-76014 FWD CGO WARN FLT	52-10 TASK 802
PSEU	52-76015 FWD ENTR WARN FLT	52-10 TASK 802
PSEU	52-76016 FWD SERV WARN FLT	52-10 TASK 802
PSEU	52-76017 FL RELAY 1 FAULT	52-20 TASK 807
PSEU	52-76018 FL RELAY 2 FAULT	52-20 TASK 807
PSEU	52-76019 LOW WARN FLT	52-20 TASK 808
PSEU	52-76020 L FWD OW WARN FLT	52-20 TASK 808
PSEU	52-76021 R OW WARN FLT	52-20 TASK 808
PSEU	52-76022 R FWD OW WARN FLT	52-20 TASK 808

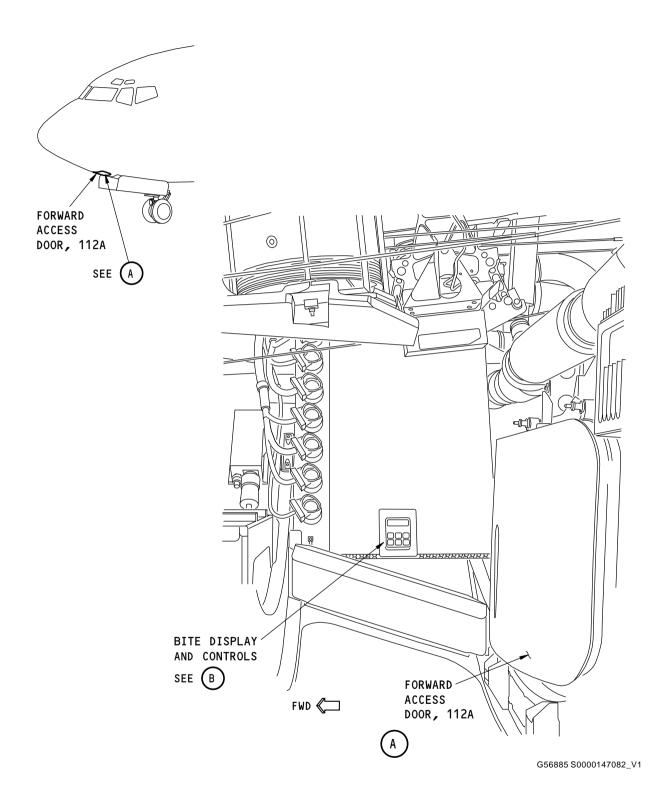
----- END OF TASK -----

EFFECTIVITY -

32-09 TASK 801

Page 209 Jun 15/2016





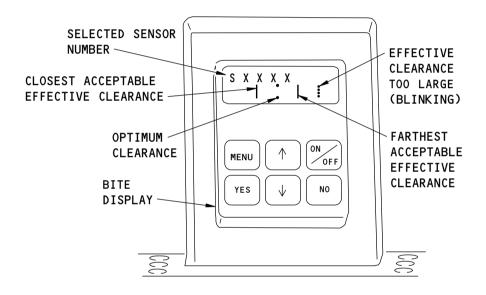
Proximity Switch Electronics Unit (PSEU) BITE Figure 201/32-09-00-990-808 (Sheet 1 of 2)

AKS ALL

32-09 TASK 801

Page 210 Feb 15/2015





BITE DISPLAY AND CONTROLS

(B)

G56888 S0000147083_V1

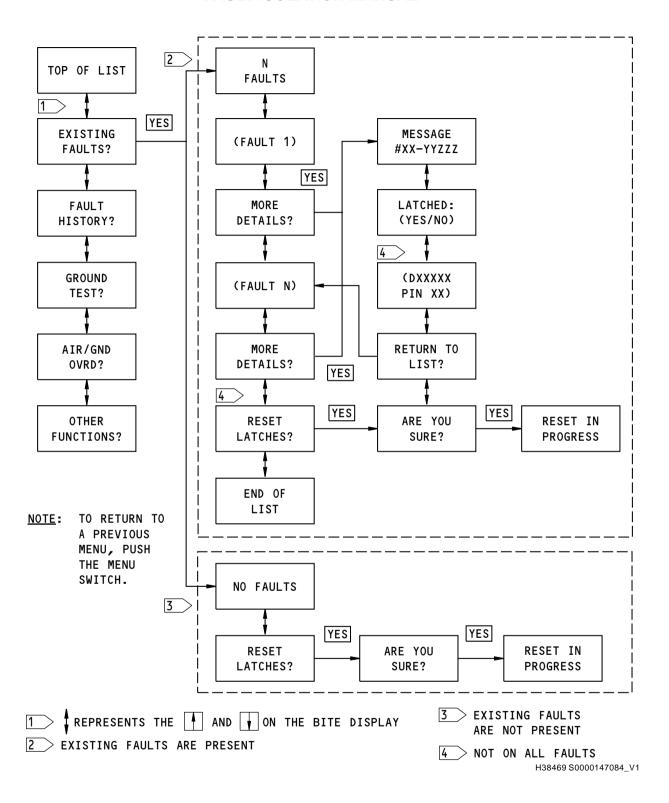
Proximity Switch Electronics Unit (PSEU) BITE Figure 201/32-09-00-990-808 (Sheet 2 of 2)

AKS ALL

32-09 TASK 801

Page 211 Feb 15/2015





PSEU Bite Tree - Display Existing Fault Data Figure 202/32-09-00-990-809 (Sheet 1 of 2)

EFFECTIVITY

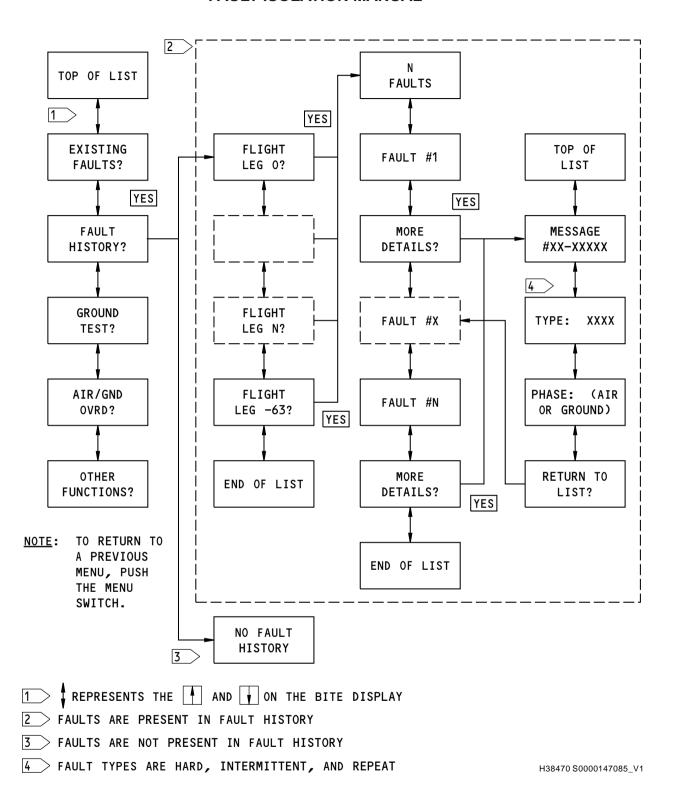
AKS ALL

Page 212

D633A103-AKS

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details





PSEU Bite Tree - Display Existing Fault Data Figure 202/32-09-00-990-809 (Sheet 2 of 2)

EFFECTIVITY

AKS ALL

Page 213

D633A103-AKS

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details



802. Nose Landing Gear Air/Ground Sensor Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-01002 N ON GND A FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 32-01102 N ON GND A FAULT

AKS ALL

(c) 32-01005 N ON GND B FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 32-01105 N ON GND B FAULT

AKS ALL

(2) These maintenance messages show that there is a problem with a nose landing gear air/ground sensor.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) Maintenance message number 32-01002 is set for this condition:
 - 1) Sensor S1014 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.
 - 2) There is sensor S1014 wiring fault.
- (b) Maintenance message number 32-01102 is set for this condition:
 - 1) Sensor S1014 shows the airplane on the ground with the airplane in the air mode.
 - 2) There is sensor S1014 wiring fault.
- (c) Maintenance message number 32-01005 is set for this condition:
 - 1) Sensor S1015 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.
 - 2) There is sensor S1015 wiring fault.
- (d) Maintenance message number 32-01105 is set for this condition:
 - 1) Sensor S1015 shows the airplane on the ground with the airplane in the air mode.
 - 2) There is sensor S1015 wiring fault.

AKS ALL

B. Possible Causes

- (1) Nose landing gear air/ground sensor, S1014 or S1015
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

EFFECTIVITY AKS ALL



D. Related Data

- (1) Component Location (Figure 301)
- (2) (SSM 32-09-11)
- (3) (SSM 32-09-12)
- (4) (WDM 32-31-11)
- (5) (WDM 32-31-12)

E. Initial Evaluation

- (1) Look for any obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find any damage, then do the Fault Isolation Procedure below.
 - (b) If there is no obvious damage, then continue.
- (2) Do these steps to show the status of the applicable air/ground sensor:
 - (a) Push the MENU switch until EXISTING FAULTS? shows.
 - (b) Push the down switch until OTHER FUNCTNS? shows.
 - (c) Push the YES switch to select OTHER FUNCTNS.
 - (d) Push the down switch until I/O MONITOR? shows.
 - (e) Push the YES switch to select I/O MONITOR.
 - (f) Push the down switch until SENSORS? shows.
 - (g) Push the YES switch to select SENSORS.
 - (h) Push the down or up switch until the sensor number shows.
 - 1) For maintenance message number 32-01002, show sensor S1014.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

2) For maintenance message number 32-01102, show sensor S1014.

AKS ALL

3) For maintenance message number 32-01005, show sensor S1015.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

4) For maintenance message number 32-01105, show sensor S1015.

AKS ALL

- (i) If the sensor status is TGT NEAR, then do this test of the other sensor state:
 - 1) Put a deactuator on the face of the sensor face.
 - NOTE: The deactuator is part of this tool set: proximity sensor test set, SPL-1690.
 - If the display shows TGT FAR, then there was an intermittent fault.
 - NOTE: You may measure the clearance between the sensor and target. This can help you determine if the sensor clearance is incorrect, (AMM TASK 32-09-02-220-801). An incorrect clearance can cause intermittent faults.
 - If the display shows TGT NEAR, then do the Fault Isolation Procedure below.
- (j) If the sensor status is TGT FAR or FAILSAFE, then do the Fault Isolation Procedure below.

AKS ALL



F. Fault Isolation Procedure

- (1) If you found any obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
 - (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
 - (c) If the Repair Confirmation is not satisfactory, then continue.
- (2) If the sensor status is TGT NEAR, with a deactuator installed, then do these steps:
 - (a) Perform a resistance check of the sensor and wires, these are the steps:
 - For maintenance message number 32-01002, disconnect connector D11142 from the PSEU.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

2) For maintenance message number 32-01102, disconnect connector D11142 from the PSEU.

AKS ALL

 For maintenance message number 32-01005, disconnect connector D10988 from the PSEU.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

4) For maintenance message number 32-01105, disconnect connector D10988 from the PSEU.

AKS ALL

- 5) Verify that the resistance values for the sensor connections listed in the table below are within these limits:
 - Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the blue and yellow sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.
 - d) Push the L/C/R meter DATA HOLD button once.
 - e) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
 - NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.
 - f) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
 - g) The resistance between the blue and yellow leads should be 344.5–351.5 Ohm.



<1> The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 ohms.

NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

- Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the red and yellow sensor leads.
- i) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
- j) Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.
- k) Push the L/C/R meter DATA HOLD button once.
- I) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
 - NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.
- m) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
- n) The resistance between the red and yellow leads should be 27–33 Ohm.
 - <1> The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 ohms.

NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

6) Re-connect connector D11142 or D10988 to the PSEU.

AKS ALL



- 7) If the resistance values are out of tolerance then cut the wires at the sensor splices and recheck the resistance of the sensors.
- 8) These are the connections on the sensor and the PSEU to check the resistances at:

Tak	N۸	വ	14

SENSOR	SENSOR LEAD	PSEU CONNECTOR
S1014	YELLOW	 GROUND
		D11142
	BLUE	 pin 36
		D11142
	RED	 pin 60
S1015	YELLOW	 GROUND
		D10988
	BLUE	 pin 23
		D10988
	RED	 pin 42

- (b) If the resistances values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (SWPM 20-20-00).
 - 1) Make sure that the resistance is less than 0.001 ohm.
 - 2) If the resistance is greater than 0.001 ohm, then inspect and repair the ground between the sensor connection and structure ground.
 - 3) If you do not find a problem with the sensor ground, then continue.
- (c) If the resistance values are out of tolerance and there are no problems with the sensor ground then replace the sensor. These are the tasks:
 - Nose Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-02-000-801
 - Nose Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-02-400-802
 - 1) Do the Repair Confirmation at the end of this task.
- (d) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground then you have determined that the wiring is faulty. Do the wiring check below.
- (3) If the sensor status is TGT FAR without a deactuator installed, then do these steps:
 - (a) Measure the clearance between the sensor and target. To measure the clearance, do this task: Nose Landing Gear Air/Ground Sensor Clearance Measurement, AMM TASK 32-09-02-220-801.
 - (b) If the sensor clearance is not correct, then do these steps:
 - 1) Adjust the sensor clearance. To adjust the clearance, do this task: Nose Landing Gear Air/Ground Sensor Clearance Adjustment, AMM TASK 32-09-02-400-801.
 - 2) Do the Repair Confirmation at the end of this task.
 - a) If the Repair Confirmation is not satisfactory, then continue.
 - (c) If the sensor clearance is correct, then do these steps:

AKS ALL



- 1) Replace the applicable sensor, S1014 or S1015. These are the tasks:
 - Nose Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-02-000-801
 - Nose Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-02-400-802
- 2) Do the Repair Confirmation at the end of this task.
 - a) If the Repair Confirmation is not satisfactory, then continue.
- (4) If the sensor status is FAILSAFE, then do this test of the wiring:
 - (a) Disconnect the sensor leads from the applicable junction box. See AMM TASK 32-09-02-000-801 for details.
 - (b) Temporarily install the leads from a replacement sensor to the applicable junction box connector. See AMM TASK 32-09-02-400-802 for details.
 - (c) Make sure the sensor is away from all metal objects.
 - (d) Do the steps to show the sensor status again.
 - (e) If the sensor status is TGT FAR, then the installed sensor has a fault. Do these steps:
 - 1) Replace the applicable sensor, S1014 or S1015. These are the tasks:
 - Nose Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-02-000-801
 - Nose Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-02-400-802
 - 2) Do the Repair Confirmation at the end of this task.
 - (f) If the sensor status is FAILSAFE, then do these steps and continue:
 - 1) Remove the replacement sensor leads from the junction box connector.
 - 2) Re-install the leads from the current air/ground sensor.
- (5) Do this check of the wiring:
 - (a) Do a wiring check between these connections on the sensor and the PSEU:

Table 202

SENSOR	SENSOR LEAD	PSEU CONNECTOR
S1014	YELLOW	 GROUND
		D11142
	BLUE	 pin 36
		D11142
	RED	 pin 60
S1015	YELLOW	 GROUND
		D10988
	BLUE	 pin 23
		D10988
	RED	 pin 42

- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - Do the Repair Confirmation at the end of this task.
- (c) If you do not find a problem with the wiring, then continue.

AKS ALL



- (6) Do these steps to replace the PSEU, M2061:
 - (a) These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.

G. Repair Confirmation

- (1) Do this test of the applicable air/ground sensor:
 - (a) Put a deactuator on the face of the sensor face.
 - (b) Remove the deactuator from the face of the sensor face.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.



803. Main Landing Gear Air/Ground Sensor Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-01001 L ON GND A FAULT

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

(b) 32-01101 L ON GND A FAULT

AKS ALL

(c) 32-01003 R ON GND A FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 32-01103 R ON GND A FAULT

AKS ALL

(e) 32-01004 L ON GND B FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(f) 32-01104 L ON GND B FAULT

AKS ALL

(g) 32-01006 R ON GND B FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(h) 32-01106 R ON GND B FAULT

AKS ALL

AKS ALL

(2) These maintenance messages show that there is a problem with a main landing gear air/ground sensor.

32-09 TASKS 802-803



AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) Maintenance message number 32-01001 is set for this condition:
 - 1) Sensor S1012 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.
 - 2) There is sensor S1012 wiring fault.
- (b) Maintenance message number 32-01101 is set for this condition:
 - 1) Sensor S1012 shows the airplane on the ground with the airplane in the air mode.
 - 2) There is sensor S1012 wiring fault.
- (c) Maintenance message number 32-01003 is set for this condition:
 - 1) Sensor S1010 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.
 - 2) There is sensor S1010 wiring fault.
- (d) Maintenance message number 32-01103 is set for this condition:
 - 1) Sensor S1010 shows the airplane on the ground with the airplane in the air mode.
 - 2) There is sensor S1010 wiring fault.
- (e) Maintenance message number 32-01004 is set for this condition:
 - Sensor S1013 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.
 - 2) There is sensor S1013 wiring fault.
- (f) Maintenance message number 32-01104 is set for this condition:
 - 1) Sensor S1013 shows airplane on the ground with the airplane in the air mode.
 - 2) There is sensor S1013 wiring fault.
- (g) Maintenance message number 32-01006 is set for this condition:
 - 1) Sensor S1011 does not show the airplane on the ground with the airplane on the ground and the trailing edge flaps are up.
 - 2) There is sensor S1011 wiring fault.
- (h) Maintenance message number 32-01106 is set for this condition:
 - 1) Sensor S1011 shows airplane on the ground with the airplane in the air mode.
 - 2) There is sensor S1011 wiring fault.

AKS ALL

B. Possible Causes

- (1) Left main landing gear air/ground sensor, S1012 or S1013
- (2) Right main landing gear air/ground sensor, S1010 or S1011
- (3) Wiring problem
- (4) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row Col Number Name

D 1 C01399 PSEU PRI

AKS ALL



(Continued)

F/O Electrical System Panel, P6-3

<u>Row</u>	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C01400	PSEU ALTN

D. Related Data

- (1) Component Location (Figure 302)
- (2) (SSM 32-09-11)
- (3) (SSM 32-09-12)
- (4) (WDM 32-31-11)
- (5) (WDM 32-31-12)

E. Initial Evaluation

- (1) Look for any obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find any damage, then do the Fault Isolation Procedure below.
 - (b) If there is no obvious damage, then continue.
- (2) Do these steps to show the status of the applicable air/ground sensor:
 - (a) Push the MENU switch until EXISTING FAULTS? shows.
 - (b) Push the down switch until OTHER FUNCTNS? shows.
 - (c) Push the YES switch to select OTHER FUNCTNS.
 - (d) Push the down switch until I/O MONITOR? shows.
 - (e) Push the YES switch to select I/O MONITOR.
 - (f) Push the down switch until SENSORS? shows.
 - (g) Push the YES switch to select SENSORS.
 - (h) Push the down or up switch until the sensor number shows:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- 1) For maintenance message number 32-01001 or 32-01101, show sensor S1012.
- 2) For maintenance message number 32-01003 or 32-01103, show sensor S1010.
- 3) For maintenance message number 32-01004 or 32-01104, show sensor S1013.
- For maintenance message number 32-01006 or 32-01106, show sensor S1011.

AKS ALL

- (i) If the sensor status is TGT NEAR, then do this test of the other sensor states:
 - 1) Put a deactuator on the face of the sensor face.
 - NOTE: The deactuator is part of this tool set: proximity sensor test set, SPL-1690.
 - If the display shows TGT FAR, then there was an intermittent fault.
 - NOTE: You may measure the clearance between the sensor and target. This can help you determine if the sensor clearance is incorrect, (Main Landing Gear Air/Ground Sensor Clearance Measurement, AMM TASK 32-09-01-400-802). An incorrect clearance can cause intermittent faults.
 - 3) If the display shows TGT NEAR, then do the Fault Isolation Procedure below.

AKS ALL



(j) If the sensor status is TGT FAR or FAILSAFE, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you found any obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
 - (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
 - (c) If the Repair Confirmation is not satisfactory, then continue.
- (2) If the sensor status is TGT NEAR, with a deactuator installed, then do these steps:
 - (a) Perform a resistance check of the sensor and wires, these are the steps:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- 1) For maintenance message number 32-01001, 32-01101 or 32-01003 or 32-01103, disconnect connector D11142 from the PSEU.
- For maintenance message number 32-01004, 32-01104, 32-01006 or 32-01106, disconnect connector D10988 from the PSEU.

AKS ALL

- 3) Verify that the resistance values for the sensor connections listed in the table below are within these limits:
 - a) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the blue and yellow sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.
 - d) Push the L/C/R meter DATA HOLD button once.
 - e) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
 - NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.
 - f) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
 - g) The resistance between the blue and yellow leads should be 344.5–351.5 Ohm.



<1> The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 ohms.

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

- h) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the red and yellow sensor leads.
- i) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
- j) Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.
- k) Push the L/C/R meter DATA HOLD button once.
- I) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
 - NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.
- m) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
- n) The resistance between the red and yellow leads should be 27–33 Ohm.
 - <1> The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 ohms.

NOTE: On- wing resistance readings deviating from the CMM limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

4) Re-connect connector D11142 or D10988 to the PSEU.

AKS ALL



- 5) If the resistance values are out of tolerance then cut the wires at the sensor splices and recheck the resistance of the sensors.
- 6) These are the connections on the sensor and the PSEU to check the resistances at:

Table	203
-------	-----

		Table 203	
SENSOR	SENSOR LEAD		PSEU CONNECTOR
S1010	YELLOW		GROUND
			D11142
	BLUE		pin 35
			D11142
	RED		pin 18
S1011	YELLOW		GROUND
			D10988
	BLUE		pin 10
			D10988
	RED		pin 24
S1012	YELLOW		GROUND
			D11142
	BLUE		pin 61
			D11142
	RED		pin 38
S1013	YELLOW		GROUND
			D10988
	BLUE		pin 40
			D10988
	RED		pin 41

- (b) If the resistances values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (SWPM 20.
 - 1) Make sure that the resistance is less than 0.001 ohm.
 - If the resistance is greater than 0.001 ohm, then inspect and repair the ground between the sensor connection and structure ground.
 - 3) If you do not find a problem with the sensor ground, then continue.
- (c) If the resistance values are out of tolerance and there are no problems with the sensor ground then replace the sensor. These are the tasks:
 - Main Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-01-020-801
 - Main Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-01-400-801
 - 1) Do the Repair Confirmation at the end of this task.
- (d) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground then you have determined that the wiring is faulty. Do the wiring check below.

AKS ALL



- (3) If the sensor status is TGT FAR without a deactuator installed, then do these steps:
 - (a) Measure the clearance between the sensor and target. To measure the clearance, do this task: Main Landing Gear Air/Ground Sensor Clearance Measurement, AMM TASK 32-09-01-400-802.
 - (b) If the sensor clearance is not correct, then do these steps:
 - 1) Adjust the sensor clearance. To adjust the clearance, do this task: Main Landing Gear Air/Ground Sensor Clearance Adjustment, AMM TASK 32-09-01-820-801.
 - 2) Do the Repair Confirmation at the end of this task.
 - a) If the Repair Confirmation is not satisfactory, then continue.
 - (c) If the sensor clearance is correct, then do these steps:
 - 1) Replace the applicable sensor. These are the tasks:
 - Main Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-01-020-801
 - Main Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-01-400-801
 - Do the Repair Confirmation at the end of this task.
 - a) If the Repair Confirmation is not satisfactory, then continue.
- (4) If the sensor status is FAILSAFE, then do this test of the wiring:
 - (a) Disconnect the sensor leads from the applicable junction box. See (AMM TASK 32-09-01-020-801) for details.
 - (b) Temporarily install the leads from a replacement sensor to the applicable junction box connector. See (AMM TASK 32-09-01-400-801) for details.
 - (c) Make sure the sensor is away from all metal objects.
 - (d) Do the steps to show the sensor status again.
 - (e) If the sensor status is TGT FAR, then the installed sensor has a fault. Do these steps:
 - 1) Replace the applicable sensor. These are the tasks:
 - Main Landing Gear Air/Ground Sensor Removal, AMM TASK 32-09-01-020-801
 - Main Landing Gear Air/Ground Sensor Installation, AMM TASK 32-09-01-400-801
 - Do the Repair Confirmation at the end of this task.
 - (f) If the sensor status is FAILSAFE, then do these steps and continue:
 - 1) Remove the replacement sensor leads from the junction box connector.
 - 2) Re-install the leads from the current air/ground sensor.
- (5) Do this check of the wiring:
 - (a) Do a wiring check between these connections on the sensor and the PSEU:

		Table 204	
SENSOR	SENSOR LEAD		PSEU CONNECTOR
S1010	YELLOW		GROUND
			D11142
	BLUE		pin 35
			D11142
	RED		pin 18

AKS ALL



Table 204 (Continued)

S1011	YELLOW	 GROUND
		D10988
	BLUE	 pin 10
		D10988
	RED	 pin 24
S1012	YELLOW	 GROUND
		D11142
	BLUE	 pin 61
		D11142
	RED	 pin 38
S1013	YELLOW	 GROUND
		D10988
	BLUE	 pin 40
		D10988
	RED	 pin 41

- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do the Repair Confirmation at the end of this task.
- (c) If you do not find a problem with the wiring, then continue.
- (6) Do these steps to replace the PSEU, M2061:
 - (a) These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.

G. Repair Confirmation

- (1) Do this test of the applicable air/ground sensor:
 - (a) Put a deactuator on the face of the sensor face.
 - (b) Remove the deactuator from the face of the sensor face.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.

	O = TA	017	
 FND	OF TA	SK	

AKS ALL



804. Air/Ground Relay Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-06001 AIR/GND R584 FLT
 - (b) 32-06002 AIR/GND R593 FLT
 - (c) 32-06003 AIR/GND R587 FLT
 - (d) 32-06004 AIR/GND R583 FLT
 - (e) 32-06005 AIR/GND R589 FLT
 - (f) 32-06006 AIR/GND R592 FLT
 - (g) 32-06007 AIR/GND R594 FLT
 - (h) 32-06009 AIR/GND R585 FLT
 - (i) 32-06010 AIR/GND R588 FLT
 - (j) 32-06011 AIR/GND R595 FLT
 - (k) 32-06012 AIR/GND R586 FLT
 - (I) 32-06013 AIR/GND R590 FLT
 - (m) 32-06014 AIR/GND R591 FLT
 - (n) 32-06015 AIR/GND R597 FLT
- (2) These maintenance messages show that there is a problem with a air/ground relay.
 - (a) The PSEU does not sense the expected load from the applicable air/ground relay.

B. Possible Causes

- (1) System 1 air/ground relay, R584, R587, R589, R592, R593, or R594
- (2) System 2 air/ground relay, R585, R588, R590, R591, R595, or R596
- (3) Wiring problem
- (4) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C01355	LANDING GEAR AIR/GND SYS 2
D	15	C01401	LANDING GEAR AIR/GND RELAY

D. Related Data

- (1) (SSM 32-09-11)
- (2) (SSM 32-09-12)
- (3) (WDM 32-31-11)
- (4) (WDM 32-31-12)

EFFECTIVITY 32-09 TASK 804



E. Initial Evaluation

(1) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C01355	LANDING GEAR AIR/GND SYS 2
D	15	C01401	LANDING GEAR AIR/GND RELAY

- (a) If a circuit breaker opens, continue to troubleshoot.
- (b) If the circuit breaker was open and stays closed, do the Repair Confirmation steps at the end of the procedure.
- (2) Make sure the relay is installed tightly in the J20 or J22 panel.
 - (a) If the relay is loose, then do these steps:
 - 1) Tighten the relay.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the relay is secure, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check for power to the applicable relay:
 - (a) Remove the applicable relay.
 - (b) Do a check for 28 VDC between pin X1 of the relay socket and structure ground.
 - 1) If there is not 28 VDC at pin X1, then do these steps:
 - a) Repair the wiring between the circuit breaker and relay.
 - b) Re-install the relay.
 - c) Do the Repair Confirmation at the end of this task.
 - 2) If there is 28 VDC at pin X1, then continue.
- (2) Install a new relay.
 - (a) Do the Repair Confirmation at the end of this task.
 - 1) If the Repair Confirmation is not satisfactory, then continue.
- (3) Do this check of the wiring:
 - (a) Do a wiring check between these connections on the relay and PSEU:

NOTE: Relays R583, R586, and R597 are not installed.

Table 205

RELAY	RELAY LOCATION	RELAY CONNECTOR	INTERFACE
R583	SEE NOTE	SEE NOTE	PSEU - D111138 - PIN 36 CONNECTED TO PIN 39
R584	J22	X1	C1356 - PANEL P6-3 C16
		X2	PSEU - D11138 - PIN 59
R585	J24	X1	C1401 - PANEL P6-3 D15
		X2	PSEU - D11140 - PIN 39
R586	SEE NOTE	SEE NOTE	PSEU - D11140 - PIN 20 CONNECTED TO PIN 9

EFFECTIVITY '



Table 205 (Continued)

RELAY	RELAY LOCATION	RELAY CONNECTOR	INTERFACE
R587	J22	X1	C1356 - PANEL P6-3 C16
		X2	PSEU - D11138 - PIN 35
R588	J20	X1	C1401 - PANEL P6-3 D15
		X2	PSEU - D11140 - PIN 43
R589	J22	X1	C1356 - PANEL P6-3 C16
		X2	PSEU - D11138 - PIN 21
R590	J20	X1	C1401 - PANEL P6-3 D15
		X2	PSEU - D11140 - PIN 9
R591	J20	X1	C1401 - PANEL P6-3 D15
		X2	PSEU - D11140 - PIN 44
R592	J22	X1	C1355 - PANEL P6-3 C15
		X2	PSEU - D11138 - PIN 39
R593	J22	X1	C1356 - PANEL P6-3 C16
		X2	PSEU - D11138 - PIN 20
R594	J22	X1	C1356 - PANEL P6-3 C16
		X2	PSEU - D11138 - PIN 58
R595	J20	X1	C1355 - PANEL P6-3 C15
		X2	PSEU - D11140 - PIN 21
R596	J20	X1	C1355 - PANEL P6-3 C15
		X2	PSEU - D11140 - PIN 24
R597	SEE NOTE	SEE NOTE	PSEU - D11140 - PIN 23 CONNECTED TO PIN 44

- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do the Repair Confirmation at the end of this task.
- (c) If you do not find a problem with the wiring, then continue.
- (4) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the post installation test in the PSEU installation procedure.
 - (b) If the test operates correctly, then you corrected the fault.

AKS ALL 32-09 TASK 804



G. Repair Confirmation

WARNING: OBEY THE PROCEDURE THAT PREPARES TO PUT THE AIRPLANE IN THE AIR MODE. IN THE AIR MODE, MANY OF THE AIRPLANE SYSTEMS CAN OPERATE. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) Prepare to put the airplane in the air mode. Do this task: Prepare to Put the Airplane in the Air Mode, AMM TASK 32-09-00-840-801.
- (2) Put the airplane in the air mode. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
- (3) Put the airplane back to the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
- (4) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then you corrected the fault.



806. Parking Brake Switch Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-02001 PARK BRK FAULT
 - (b) 32-02002 PARK BRK A FAULT
 - (c) 32-02003 PARK BRK B FAULT
 - (d) 32-03001 PARK BRK A SET
 - (e) 32-03002 PARK BRK B SET
 - (f) 32-05001 PARK A
 - (g) 32-05002 PARK B
- (2) These maintenance messages show that there is a problem with a parking brake switch.
 - (a) Maintenance message number 32-02001 shows that the parking brake A and B switch conditions are not both true or both false.
 - NOTE: The parking brake A input is true when the input is grounded. The parking brake B input is true when the input is open.
 - (b) Maintenance message number 32-02002 shows that the parking brake A switch was set with the airplane in the air.
 - (c) Maintenance message number 32-02003 shows that the parking brake B switch was set with the airplane in the air.
 - (d) Maintenance message numbers 32-03001 and 32-03002 are not faults. These messages show the cause of the last takeoff warning.
 - (e) Maintenance message numbers 32-05001 and 32-05002 will show when input from the parking brake switch has not been cycled between the on and off state during the current flight leg.

B. Possible Causes

· EFFECTIVITY ·

AKS ALL

- (1) Parking brake switch, S100
- (2) Wiring problem

32-09 TASKS 804-806

Page 231 Jun 15/2016



(3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) (SSM 32-44-11)
- (2) (WDM 32-44-11)

E. Initial Evaluation

- (1) Make sure chocks are installed at the landing gear wheels.
 - (a) If chocks are not installed, install the chocks.
- (2) Do this test of the parking brake switch in the "not set" position:
 - (a) Make sure that the parking brake lever is not set:
 - (b) Show the input status for these parking brake switch outputs on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

- 1) D10984 pin 28 (Parking Brake B)
- 2) D10982 pin 61 (Parking Brake A)
- 3) Make sure that the status of D10984 pin 28 is GND.
- 4) Make sure that the status of D10982 pin 61 is NO GND.
- (c) If the status of the pins are not correct, then do the Fault Isolation Procedure below.
- (d) If the status of the pins are correct, then continue.
- 3) Do this test of the parking brake switch with the parking brake lever in the SET position:
 - (a) Put the parking brake lever in the SET position.
 - (b) Show the input status for these parking brake switch outputs on the PSEU display:
 - 1) D10984 pin 28
 - 2) D10982 pin 61
 - 3) Make sure that the status of D10984 pin 28 is NO GND.
 - 4) Make sure that the status of D10982 pin 61 is GND.
 - (c) If the status of the pins are correct, then there was an intermittent fault.
 - (d) If the status of the pins are not correct, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

NOTE: You must do the steps in the Initial Evaluation before you do these steps.

- (1) Do this test of the parking brake switch:
 - (a) Remove the connector from the parking brake switch.
 - (b) Examine the connector and socket for damage and unwanted material.
 - (c) If the Initial Evaluation failed with the parking brake lever in the "not set" position, then do these steps:

AKS ALL



- 1) Put the parking brake lever in the "not set" position.
- 2) Measure the resistance between these pins on the parking brake switch:

Table 206

PARKING BRAKE SWITCH EXPECTED CONDITION pin 2C ------ pin 2NC continuity pin 2C ------ pin 2NO open

- (d) If the Initial Evaluation failed with the parking brake lever in the SET position, then do these steps:
 - 1) Put the parking brake lever in the SET position.
 - 2) Measure the resistance between these pins on the parking brake switch:

Table 207

PARKING BRAKE SWITCH			EXPECTED CONDITION
pin 2C		pin 2NC	open
pin 2C		pin 2NO	continuity

- (e) If the conditions in the tables do not exist, then do these steps:
 - 1) Replace the parking brake switch, S100. These are the tasks:
 - Parking Brake Latch Switch Removal, AMM TASK 32-44-11-000-804
 - Parking Brake Latch Switch Installation, AMM TASK 32-44-11-400-804
 - 2) Do the Repair Confirmation at the end of this task.
- f) If the conditions in the tables exist, then continue.
- (2) Do this test to make sure the parking brake switch is grounded:
 - (a) Do a continuity check between pin 2C on the connector to the parking brake switch and structure ground.
 - (b) If there is not continuity, then do these steps:
 - 1) Repair the wiring between the connector and structure ground.
 - 2) Re-connect the connector on the parking brake switch.
 - 3) Do the Repair Confirmation at the end of this task.
 - (c) If there is continuity, then continue.
- (3) Do this check of the PSEU:
 - (a) Remove the connectors, D10984 and D10982 from the PSEU.
 - (b) Show the input status for these parking brake switch outputs on the PSEU display:
 - 1) D10984 pin 28
 - 2) D10982 pin 61
 - (c) If the status of both pins are NO GND, then do these steps:
 - 1) Ground the pins with jumpers.
 - Show the input status for the parking brake switch outputs on the PSEU display.
 - 3) If the input status of both pins show GND, then do these steps:
 - a) Repair the wiring between the parking brake switch and the PSEU.

AKS ALL



- b) Re-connect the connector on the parking brake switch.
- c) Re-connect the connectors on the PSEU.
- d) Do the Repair Confirmation at the end of this task.
- 4) If the input status of either pin is NO GND, then continue.
- (d) If the status of either pin is GND, then continue.
- (4) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the parking brake switch:
 - (a) If it is necessary, re-connect the connector on the parking brake switch.
 - (b) If it is necessary, re-connect the connectors on the PSEU.
 - (c) Put the parking brake lever in the "not set" position.
 - (d) Put the parking brake lever in the set position.
 - (e) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.



807. Landing Gear Lever Latch Fault - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 32-06008 LG LVR LCH FLT
- (2) This maintenance message shows that there is a problem with the landing gear lever latch solenoid. The PSEU does not sense the expected load from the solenoid.

B. Possible Causes

- (1) Landing gear control lever, M1952
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	17	C00129	LANDING GEAR LATCH & PRESS WARN

D. Related Data

EFFECTIVITY

- (1) (SSM 32-09-11)
- (2) (WDM 32-31-11)

32-09 TASKS 806-807



E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Do this test of the landing gear control lever and wiring:
 - (a) Remove the connector D11138 from the PSEU.
 - (b) Do a check for 28 VDC between pin 19 of connector D11138 and structure ground.
 - (c) If there is 28 VDC at pin 19 of D11138, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the post installation test in the PSEU installation procedure.
 - 3) If the test operates correctly, you corrected the fault.
 -) If there is not 28 VDC at pin 19 of D11138, then continue.
- (3) Do this test for power to the landing gear control lever lock solenoid:
 - (a) Do the applicable steps in (AMM TASK 32-31-31-020-801) to remove the connector D11990 from the landing gear control lever.
 - (b) Do a check for 28 VDC between pin 9 of connector D11990 and structure ground.
 - (c) If there is not 28 VDC at pin 9 of D11990, then do these steps:
 - 1) Do a check of the wiring between the control lever lock solenoid and the following circuit breaker:
 - a) This is the circuit breaker:

F/O Electrical System Panel, P6-3

NOW	<u>C01</u>	Number	<u>Name</u>
В	17	C00129	LANDING GEAR LATCH & PRESS WARN

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector on the PSEU.
 - c) Re-connect the connector on the control lever.
 - d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - e) If you do not find the maintenance message, then you corrected the fault.

AKS ALL



- 3) If you do not find a problem with the wiring, then do these steps:
 - a) Replace this circuit breaker:
 - <1> This is the circuit breaker:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	17	C00129	LANDING GEAR LATCH & PRESS WARN

- b) Re-connect the connector on the PSEU.
- c) Re-connect the connector on the control lever.
- d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- e) If you do not find the maintenance message, then you corrected the fault.
- (d) If there is 28 VDC at pin 9 of D11990, then continue:
- (4) Replace the landing gear lever lock solenoid, M1952. These are the tasks:
 - Landing Gear Control Lever Lock Solenoid Removal, AMM TASK 32-31-31-020-801
 - Landing Gear Control Lever Lock Solenoid Installation, AMM TASK 32-31-31-400-801
 - (a) Re-connect the connector on the PSEU.
 - (b) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (c) If you do not find the maintenance message, then you corrected the fault.
 - (d) If you find the maintenance message, then continue.
- (5) Do this wiring check between the landing gear lever lock solenoid and the PSEU:
 - (a) Do the applicable steps in (AMM TASK 32-31-31-020-801) to remove the connector D11990 from the landing gear control lever.
 - (b) Remove the connector D11138 from the PSEU.
 - (c) Do a check for continuity between these pins:

Table 208

LG LEVER LATCH SOLENOID - D11990pin 8 ------ pin 19

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-connect the connector on the lever latch solenoid.
 - 4) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 5) If you do not find the maintenance message, then you corrected the fault.

		-
 FND	OF TASK	·

32-09 TASK 807

EFFECTIVITY AKS ALL



808. No 28 VDC A Input Power to PSEU - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 32-60001 NO 28V A POWER
- (2) This maintenance message shows that there is not 28 VDC primary input power to the PSEU.

B. Possible Causes

- (1) Wiring problem
- (2) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3				
Row	<u>Col</u>	<u>Number</u>	<u>Name</u>	
D	1	C01399	PSEU PRI	

D. Related Data

- (1) (SSM 32-64-11)
- (2) (SSM 32-64-12)
- (3) (WDM 32-64-11)
- (4) (WDM 32-64-12)

E. Initial Evaluation

- Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the 28 VDC input to the PSEU:
 - (a) Remove the connector D11138 from the PSEU.
 - (b) Examine the connector and socket for damage or unwanted material.
 - (c) Do a check for 28 VDC between pin 61 of the connector and structure ground.
 - (d) If there is not 28 VDC at pin 61, then do these steps:
 - 1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3				
Row	<u>Col</u>	<u>Number</u>	<u>Name</u>	
D	1	C01399	PSEU PRI	

2) Do a check for continuity between these pins:

Table 209

CIRCUIT BREAKER C1399 - P6-3 D1	PSEU - D11138
pin 1	 pin 61

AKS ALL



- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector on the PSEU.
 - c) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI

- d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- e) If you do not find the maintenance message, then you corrected the fault.
- 4) If you do not find a problem with the wiring, then do these steps:
 - a) Replace this circuit breaker:
 - <1> This is the circuit breaker:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	Name
D	1	C01399	PSEU PRI

- b) Re-connect the connector on the PSEU.
- c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- d) If you do not find the maintenance message, then you corrected the fault.
- (e) If there is 28 VDC at pin 61, then continue.
- (2) Do this test of the primary ground for the PSEU:
 - (a) Do a check for continuity between pin 41 of the connector and structure ground.
 - (b) If pin 41 does not have continuity to ground, then do these steps:
 - 1) Repair the wiring between D11138 pin 41 and structure ground.
 - 2) Re-connect the connector on the PSEU.
 - 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If you do not find the maintenance message, then you corrected the fault.
 - (c) If pin 41 has continuity to structure ground, then continue.
- (3) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the post installation test in the PSEU installation procedure.
 - (b) If the test operates correctly, then you corrected the fault.

END	OF TA	CIZ	
-NI	OF TA	15K -	

32-09 TASK 808

EFFECTIVITY



809. Proximity Switch Electronics Unit (PSEU) Internal Fault - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 32-64001 INTERNAL FAULT

B. Possible Causes

- (1) Proximity switch electronics unit (PSEU), M2061(Internal Fault).
- (2) Wiring from PSEU power circuit breakers or ground return.

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) SSM 32-61-11, 12
- (2) (WDM 32-64-11, 12)

E. Fault Isolation Procedure

- (1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- (2) Do the post installation test in the PSEU installation procedure.
- (3) If you do not find the maintenance message, then you corrected the fault.
- (4) If you find the maintenance message then continue.
- (5) Remove connectors D11138 and D1140 from the PSEU.
 - (a) Examine the socket and respective connector for damage or unwanted material.
 - (b) Re-connect the connectors on the PSEU
- (6) Do this check of the wiring:
 - (a) Refer to the table below for resistance values. Veriify that the resistance values are within the limits below.

NOTE: Use an Ohm Meter capable of making accurate resistance measurements at low resistances.

Table 210

BUNDLE	WIRE	FROM	то	RESISTANCE (OHMS)	
C01399	PSEU PRIMARY POWER				
286A0044	274	C01399	D40820J	0.23	
286A6208	575	D40820P	D40818P	0.20	
286A0111	745	D40818J	D40452J	0.10	
286A5156	544	D40452P	D11138 (Pin 61)	0.32	

EFFECTIVITY • AKS ALL



Table 210 (Continued)

BUNDLE	WIRE	FROM	то	RESISTANCE (OHMS)
286A5156	545	D11138 (Pin 41)	GD00044	0.03
Contacts				0.25
Airframe				0.25
Meter				1.00
			Total	2.39
			Limit	2.75
C1400	PSEU ALTER	RNATE POWER		
286A0044	275	C01400	D40750J	0.13
286A5158	589	D40750P	D11140 (Pin 41)	0.22
286A5158	590	D11140 (Pin 61)	GD00034	0.04
Contacts				0.15
Airframe				0.25
Meter				1.00
			Total	1.79
			Limit	2.00

- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring:
 - 2) Do the Repair Confirmation at the end of this task.
- (c) If the test operates correctly, then you corrected the fault.

F. Repair Confirmation

- (1) Prepare to put the airplane in the air mode. Do this task: Prepare to Put the Airplane in the Air Mode, AMM TASK 32-09-00-840-801.
- (2) Put the airplane in the air mode. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
- (3) Put the airplane back to the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
- (4) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then you corrected the fault.

----- END OF TASK -----

810. Take Off Warning (TOW) Inhibit Fault - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 31-52001 TOW INHB FAULT
- (2) This maintenance message shows that TOW INHIBIT (Landing Gear Takeoff Warning Cutoff) is true.

AKS ALL

32-09 TASKS 809-810



B. Possible Causes

- (1) Circuit breaker, C1398
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

D. Related Data

- (1) (SSM 31-53-11)
- (2) (WDM 31-53-11)

E. Initial Evaluation

(1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

- (2) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault or the circuit breaker was open.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this test of the input from the landing gear takeoff warning switch:
 - (a) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

- (b) Show D10982 pin 52.
- (c) If the status of the pin is GND, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the post installation test in the PSEU installation procedure.
 - 3) If the test operates correctly, then you corrected the fault.
- (d) If the status of the pin is NO GND, then continue.
- (2) Do this check of the PSEU:
 - (a) Remove the connector D10982 from the PSEU.
 - (b) Make sure pin 52 on the connector has continuity to structure ground.

AKS ALL



- (c) If the pin is grounded, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the post installation test in the PSEU installation procedure.
 - If the test operates correctly, then you corrected the fault.
- (d) If the pin is not grounded, then continue.
- (3) Do this check of the circuit breaker:
 - (a) Get access to the circuit breaker terminals.
 - (b) Do a check for continuity between the two terminals on the circuit breaker.
 - (c) If there is not continuity, then do these steps:
 - 1) Replace this circuit breaker:
 - a) This is the circuit breaker:

F/O Electrical System Panel, P6-3 Row Col Number Name

IXOVV	<u>001</u>	Hullibel	<u>ivanie</u>
С	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

- 2) Re-connect connector D10982 to the PSEU.
- 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- 4) If you do not find the maintenance message, then you corrected the fault.
- (d) If there is continuity, then continue.
- (4) Do this check of the wiring:
 - (a) Get access to the circuit breaker terminals.
 - (b) Do a check for continuity between pin L on the circuit breaker and structure ground.
 - (c) If the pin does not have continuity to ground, then do these steps:
 - 1) Repair the wiring between the circuit breaker and structure ground.
 - 2) Re-connect connector D10982 to the PSEU.
 - 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If you do not find the maintenance message, then you corrected the fault.
 - (d) If the pin has continuity to ground, then continue.
- (5) Do this wiring check between the PSEU and this circuit breaker:
 - (a) This is the circuit breaker:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF

(b) Remove the connector D10982 from the PSEU.

AKS ALL



(c) Do a check for continuity between these pins on the circuit breaker and connector D10982 for the PSEU:

Table 211

CIRCUIT BREAKER C1398 PSEU terminal B ------- pin 52

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If you do not find the maintenance message, then you corrected the fault.



811. No BITE Display on the PSEU - Fault Isolation

- A. Description
 - (1) The PSEU BITE display does not come on when the ON/OFF switch on the PSEU is pushed.
- B. Possible Causes
 - (1) Forward access door switch, S196
 - (2) Wiring problem
 - (3) Proximity switch electronics unit (PSEU), M2061
- C. Circuit Breakers
 - (1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

· EFFECTIVITY ·

AKS ALL

- (1) (SSM 52-71-12)
- (2) (WDM 52-71-12)
- E. Initial Evaluation
 - (1) Make sure that these circuit breakers are open:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

Wait a minimum of five (5) seconds.

32-09 TASKS 810-811

Page 243 D633A103-AKS Jun 15/2016



Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

- (2) Push the ON/OFF switch on the PSEU BITE display.
 - (a) If the display does not come on, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this test of the forward access door switch:
 - (a) Remove the terminal lug from the common terminal of the forward access door switch.
 - (b) Push the ON/OFF switch on the PSEU BITE panel.
 - (c) If the display comes on, then do these steps:
 - 1) Replace the forward access door switch, S196. These are the tasks:
 - Forward Access Door Indication Switch Removal, AMM TASK 52-71-41-000-801
 - Forward Access Door Indication Switch Installation, AMM TASK 52-71-41-400-801
 - 2) Push the ON/OFF switch on the PSEU BITE.
 - 3) If the BITE display comes on, then you corrected the fault.
 - (d) If the display does not come on, then continue.
- (2) Do this wiring check between the forward access door switch and the PSEU:
 - (a) Remove the connector D10988 from the PSEU.
 - (b) Do a check for continuity between these pins:

FORWARD	
ACCESS DOOR)
CMITCH	

SWITCH	PSEU
COMMON	 pin 6

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Push the ON/OFF switch on the PSEU BITE.
 - 4) If the BITE display comes on, then you corrected the fault.
- (d) If you did not find a problem with the wiring, then continue.
- (3) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the post installation test in the PSEU installation procedure.
 - (b) If the test operates correctly, then you corrected the fault.

 END	OF TA	1 SK	
	OI 17	7017	

AKS ALL



812. Leading Edge Flaps Position Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 31-52005 LE FLAPS EXT FLT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 31-52105 LE FLAPS EXT FLT

AKS ALL

(c) 31-52011 LE FP EX BITE FLT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 31-52111 LE FP EX BITE FLT

AKS ALL

- (e) 31-52012 LE EXT IN FLT
- (f) 31-53010 LE FLAPS NOT EXT
- (g) 31-55004 LE FLAPS EXTEND
- (2) These maintenance messages show that there is a fault with a flap position sensor.

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

- (a) Maintenance message number 31-52005 is set for this condition:
 - 1) A leading edge did not go to the not extended position while in the air and the flight was longer than 25 minutes.
- (b) Maintenance message number 31-52105 is set for this condition:
 - 1) The leading edges are not detected as extended and these conditions exist:
 - a) The thrust lever resolver angles are not less than 53.
 - b) Takeoff flaps A or Takeoff flaps B is true.
 - c) The airplane is on the ground.
- (c) Maintenance message number 31-52011 is set for this condition:
 - 1) The leading edge flaps extension BITE did not go FALSE since the last takeoff and the flight was longer than 25 minutes.
- (d) Maintenance message number 31-52111 is set for this condition:
 - The leading edges flaps extension BITE is false and these conditions exist:
 - a) The thrust lever resolver angles are not less than 53.
 - b) Takeoff flaps A or Takeoff flaps B is true.
 - c) The airplane is on the ground.

AKS ALL

- (e) Maintenance message number 31-52012 shows that there is a problem with the signal from the FSEU.
- (f) Maintenance message number 31-53010. This indicates that the FSEU has annunciated a position error in the leading edge flaps/slats or trailing edge flaps. Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
- (g) Maintenance message number 32-55004 shows that the input has not toggled since the last take off.

AKS ALL



B. Possible Causes

- Flap slat electronics unit (FSEU), M1746, annunciation of a position error in leading edge flaps/slats or trailing edge flaps
- (2) Wiring
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

CAPT Electrical System Panel. P18-2

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ε	7	C01208	STALL WARN ASYM MODE

F/O Electrical System Panel, P6-2

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	8	C00211	FLIGHT CONTROL FSEU DC 1
Α	9	C01468	FLIGHT CONTROL FSEU DC 2

D. Related Data

- (1) (SSM 27-81-11)
- (2) (SSM 31-53-11)
- (3) (WDM 27-81-11)
- (4) (WDM 31-53-11)

E. Initial Evaluation

- (1) Do this test of the leading edge flaps position indication:
 - (a) Make sure that the leading edge flaps are not extended.
 - (b) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

- 1) D10986 pin 27
- 2) D10986 pin 48
- (c) Make sure that the status of both pins is GND.
- (d) Extend the leading edge slats.
- (e) Make sure that the status of these pins is NO GND:
 - 1) D10986 pin 27
 - 2) D10986 pin 48
- (f) If the status of the pins are not correct, then do the Fault Isolation Procedure below.
- (g) If the status of the pins are correct, then there was an intermittent fault.

F. Fault Isolation Procedure

- (1) Do the EXISTING FAULTS test on the FSEU. Do this task: Flap/Slat Electronics Unit (FSEU) BITE Procedure, 27-51 TASK 801.
 - (a) If any FSEU maintenance messages show, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.

32-09 TASK 812

AKS ALL

EFFECTIVITY

Page 246 Jun 15/2016



- a) If the Repair Confirmation is not satisfactory, then continue.
- (b) If no FSEU maintenance messages show, then continue.
- (2) Do this test of the FSEU:
 - (a) Remove the FSEU. To remove the FSEU, do this task: Flap/Slat Electronics Unit Removal, AMM TASK 27-51-01-000-801.
 - (b) Examine the connector pins and sockets for damage and unwanted material.
 - (c) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

- 1) D10986 pin 27
- 2) D10986 pin 48
- (d) If the status of both pins is NO GND, then do these steps:
 - 1) Ground pin B12 on the FSEU connector with a jumper wire.
 - 2) Show the input status for the pins again.
 - 3) If the status of both pins is GND, then do these steps:
 - a) Install a new FSEU, M1746. Do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
 - b) Do the Repair Confirmation at the end of this task.
 - 4) If the status of either pin is NO GND, then continue.
- (e) If the status of either pin is GND, then continue.
- (3) Do this test of the PSEU:
 - (a) Remove the connector D10986 from the PSEU.
 - (b) Examine the connector pins and sockets for damage and unwanted material.
 - (c) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

- 1) D10986 pin 27
- 2) D10986 pin 48
- (d) If the status of either pin is GND, then continue.
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (e) If the status of both pins is NO GND, then do these steps:
 - 1) Ground pins 27 and 48 on the PSEU with a jumper wire.
 - 2) Show the input status for the pins again.
 - 3) If the status of either pin is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:

AKS ALL 32-09 TASK 812



- Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
- Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- b) Do the Repair Confirmation at the end of this task.
- 4) If the status of both pins is GND, then continue.
- (4) Do this check of the wiring between the PSEU and the FSEU:
 - (a) Do a wiring check between these pins of connector D728A at the FSEU and connector D10986 at the PSEU:

D728A	D10986
pin B12	 pin 27
pin B12	 pin 48

- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the connector on the PSEU.
 - 3) Re-install the FSEU. To install the FSEU, do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
 - 4) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the leading edge flaps position indication:
 - (a) If it is necessary, re-install the FSEU. Do this task: Flap/Slat Electronics Unit Installation, AMM TASK 27-51-01-400-801.
 - (b) If it is necessary, re-connect the connectors on the PSEU.
 - (c) Extend the leading edge flaps. Do this task: Extend the Trailing Edge Flaps, AMM TASK 27-51-00-860-803.
 - (d) Retract the leading edge flaps. Do this task: Retract the Trailing Edge Flaps, AMM TASK 27-51-00-860-804.
 - (e) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.



813. Ground Spoiler Interlock Valve Position Test Connector - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 31-56001 GSBV CL OUT FLT
- (2) There is a fault with the ground spoiler interlock valve position test connector on the E1-1 shelf.

B. Possible Causes

- (1) Wiring problem
- (2) Proximity switch electronics unit (PSEU), M2061

AKS ALL

32-09 TASKS 812-813



C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	Number	Name
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 31-53-11)
- (2) (WDM 31-53-11)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this wiring check between the test connector D10064 on the E1-1 shelf and the PSEU:
 - (a) Remove the connector D11142 from the PSEU.
 - (b) Do a check for continuity between these pins of the test connector D10064 and connector D11142:

D10064	D11142
pin 45	pin 7

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If the maintenance message does not show, then you corrected the fault.
- (d) If you do not find a problem with the wiring, then continue.
- (2) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the post installation test in the PSEU installation procedure.
 - (b) If the test operates correctly, then you corrected the fault.

EN	ND OF	TASK -	
----	-------	--------	--

814. Takeoff Flaps - Fault Isolation

A. Description

- (1) These tasks are for these maintenance messages:
 - (a) 31-52006 T/O FLPS A FAULT

AKS ALL

32-09 TASKS 813-814

Page 249 Jun 15/2016



AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 31-52106 T/O FLPS A FAULT

AKS ALL

(c) 31-52007 T/O FLPS B FAULT

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

(d) 31-52107 T/O FLPS B FAULT

AKS ALL

- (e) 31-53008 NOT T/O FLAPS A
- (f) 31-53009 NOT T/O FLAPS B
- (2) There is a fault with the trailing edge takeoff flaps signal from the stall management yaw damper (SMYD).

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) Maintenance message number 31-52006 is set for this condition:
 - Upon landing, whenever TAKEOFF FLAPS A has not been false (SMYD 2 reporting that the Left TE flaps are in takeoff configuration (extended)) for at least 1.5 seconds, while the airplane was in air for at least 5 seconds and
 - The time from takeoff to landing has exceeded 25 minutes.
- (b) Maintenance message number 31-52106 is set for this condition:
 - 1) TAKEOFF FLAPS A is false (SMYD 2 reporting that the Left TE flaps are in takeoff configuration) and
 - 2) The thrust lever resolver angles are greater than 53 degrees for both Left and Right resolvers, and
 - 3) LE FLAPS EXT (leading edge flaps are extended) and
 - 4) TAKEOFF FLAPS B is true (SYMD 1 reporting that the Right TE flaps are not in takeoff configuration) and
 - 5) Aircraft is on ground for at least 5 seconds.
- (c) Maintenance message number 31-52007 is set for this condition:
 - Upon landing, whenever TAKEOFF FLAPS B has not been false (SMYD 1 reporting that the Right TE flaps are in takeoff configuration (extended)) for at least 1.5 seconds, while the airplane was in air for at least 5 seconds and
 - 2) The time from takeoff to landing has exceeded 25 minutes.
- (d) Maintenance message number 31-52107 is set for this condition:
 - 1) The TAKEOFF FLAPS B is false (SMYD 1 reporting that the Right TE flaps are in takeoff configuration) and
 - The thrust lever resolver angles are greater than 53 degrees for both Left and Right resolvers and
 - 3) LE FLAPS EXT (leading edge flaps are extended) and
 - TAKEOFF FLAPS A is true (SYMD 2 reporting that the Left TE flaps are not in takeoff configuration) and
 - 5) Aircraft is on ground for at least 5 seconds.

AKS ALL

AKS ALL



(e) Maintenance message numbers 31-53008 and 31-53009 are not faults. These show the cause of the last takeoff warning.

B. Possible Causes

- (1) Loose or contaminated connectors
- (2) Wiring between T428 and SMYD 1 or T427 and SMYD 2
- (3) Wiring between one or more SMYDs and PSEU
- (4) Stall management yaw damper M1747 (SMYD 1), or M1748 (SMYD 2)
- (5) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 27-32-11)
- (2) (SSM 27-32-21)
- (3) (SSM 31-53-11)
- (4) (SSM 32-61-21)
- (5) (WDM 27-32-11)
- (6) (WDM 27-32-21)
- (7) (WDM 31-53-11)
- (8) (WDM 32-64-21)

E. Initial Evaluation

AKS ALL

- (1) Do FIM 27-32 task 811 para E or task 812 para E.
 - (a) If a maintenance message shows, perform the corresponding FIM procedure.
 - (b) If a maintenance message does not show, then continue.

F. Fault Isolation Procedure

- (1) Do FIM 27-32 task 811 para F.2 or task 812 para F.2.
- (2) Check connectors from T428 and/or T427 Flap position transmitter to Stall management yaw damper M1747 (SMYD 1) and/or M1748 (SMYD 2).
 - (a) Look for looseness or contaminants which could indicate of generating nuisance faults.
- (3) Do this test of the trailing edge flaps position indication:
 - (a) Make sure that the trailing edge flaps are not extended.
 - (b) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: 32-09 TASK 821

- 1) D10982 pin 15
- 2) D10982 pin 31



- (c) Make sure that the status of both pins is GND.
- (d) Put the trailing edge flaps in a takeoff configuration. Do this task: Extend the Trailing Edge Flaps, AMM TASK 27-51-00-860-803.
- (e) Make sure that the status of these pins is NO GND:
 - 1) D10982 pin 15
 - 2) D10982 pin 31
- (f) If the status of the pins are not correct, then do the Fault Isolation Procedure steps 1 and 2.
- (g) If the status of the pins are correct, continue
- (h) Return the trailing edge flaps to their usual configuration. Do this task:Retract the Trailing Edge Flaps, AMM TASK 27-51-00-860-804
- (4) Replace the PSEU, M2061 if internal fault found. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the post installation test in the PSEU installation procedure.
 - (b) If the test operates correctly, then you corrected the fault.
- (5) Replace SMYD if internal fault found. These are the tasks:
 - Stall Management Yaw Damper (SMYD) Removal, AMM TASK 27-32-42-000-801
 - Stall Management Yaw Damper (SMYD) Installation, AMM TASK 27-32-42-400-801
 - (a) Do the post installation test in the SMYD installation procedure.
 - (b) If the test operates correctly, then you corrected the fault.

----- END OF TASK -----

815. TRA Sensor Input for Take Off Warning Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 31-52002 TRA L LT 53 FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 31-52102 TRA L LT 53 FAULT

AKS ALL

(c) 31-52003 TRA R LT 53 FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 31-52103 TRA R LT 53 FAULT

AKS ALL

AKS ALL

- (e) 31-55011 TRA LT 53 LEFT
- (f) 31-55012 TRA LT 53 RIGHT
- (2) These maintenance messages show that there is a problem with an autothrottle switchpack or associated wiring.

32-09 TASKS 814-815



AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) Maintenance message number 31-52002 is set for this condition:
 - 1) The left thrust lever resolver angle is less than 53 during takeoff.
- (b) Maintenance message number 31-52102 is set for this condition:
 - 1) The left thrust lever resolver angle is not less than 53 while landing.
- (c) Maintenance message number 31-52003 is set for this condition:
 - 1) The right thrust lever resolver angle is less than 53 during takeoff.
- (d) Maintenance message number 31-52103 is set for this condition:
 - 1) The right thrust lever resolver angle is not less than 53 while landing.

AKS ALL

- (e) Maintenance message number 31-55011 shows that the input the left thrust lever less than 53 switch did not change condition since the last takeoff.
- (f) Maintenance message number 31-55012 shows that the right thrust lever less than 53 switch did not change condition since the last takeoff.

B. Possible Causes

- (1) Autothrottle microswitch pack, M1766 (left) or M1767 (right)
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) (SSM 31-53-11)
- (2) (WDM 31-53-11)

E. Initial Evaluation

- (1) Do this test of the TRA outputs:
 - (a) Make sure the throttles are in the idle position.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

- 1) For maintenance messages 31-52002, 31-52102, and 31-55011, show the status of D10982 pin 42.
- 2) For maintenance messages 31-52003, 31-52103, and 31-55012, show the status of D10984 pin 42.

AKS ALL

- (c) Make sure that the status of the pin is NO GND.
- (d) Put the throttles in a position greater than 53 degrees.

AKS ALL



- (e) Make sure that the status of the pin is GND.
- (f) If the status of the pins are not correct, then do the Fault Isolation Procedure below.
- (g) If the status of the pins are correct, then there was an intermittent fault.

F. Fault Isolation Procedure

WARNING: OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. WHEN YOU MOVE THE THRUST LEVER FORWARD, THE WEATHER RADAR SYSTEM COMES ON AUTOMATICALLY WHILE THE CIRCUIT BREAKER IS CLOSED. MAKE SURE THAT ALL PERSONNEL ARE MORE THAN 15 FT (5 M) FROM THE ANTENNA WHEN IT TRANSMITS RF ENERGY. RF ENERGY CAN KILL OR CAUSE INJURIES TO PERSONS, AND CAUSE DAMAGE TO EQUIPMENT.

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

(1) If the Initial Evaluation failed in the idle position, then do this check of the autothrottle switch pack:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance messages 31-52002, 31-52102, and 31-55011, remove the connector D11128 from the left autothrottle switch pack.
- (b) For maintenance messages 31-52003, 31-52103, and 31-55012, remove the connector D11132 from the right autothrottle switch pack.

AKS ALL

- (c) Examine the connector and socket for damage or unwanted material.
- (d) Make sure the throttles are in the idle position.
- (e) Make sure pin 17 on the connector has continuity to ground.
- (f) If there is not continuity, then do these steps:
 - 1) Repair the wiring between pin 17 and structure ground
 - 2) Re-connect the connector on the autothrottle switch pack.
 - 3) Do the Repair Confirmation at the end of this task.
- (g) If there is continuity, then continue.
- (h) Do a check for continuity between pins 16 and 17 on the autothrottle switch pack.
- (i) If there is continuity, then do these steps:
 - Replace the switch in the applicable autothrottle switch pack, M1766 (left) or M1767 (right). These are the tasks:
 - AMM TASK 76-11-07-020-802-F00
 - AMM TASK 76-11-07-400-802-F00
 - 2) Do the Repair Confirmation at the end of this task.
- (j) If there is not continuity, then continue.
- (2) If the Initial Evaluation failed in a throttle position greater than 53, then do this check of the autothrottle switch pack:
 - (a) Put the throttles in a position greater than 53 degrees.

32-09 TASK 815

EFFECTIVITY '



AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) For maintenance messages 31-52002, 31-52102, and 31-55011, remove the connector D11128 from the left autothrottle switch pack.
- (c) For maintenance messages 31-52003, 31-52103, and 31-55012, remove the connector D11132 from the right autothrottle switch pack.

AKS ALL

- (d) Examine the connector and socket for damage or unwanted material.
- (e) Do a check for continuity between pins 16 and 17 on the autothrottle switch pack.
- (f) If there is not continuity, then do these steps:
 - Replace the switch in the applicable autothrottle switch pack, M1766 (left) or M1767 (right). These are the tasks:
 - AMM TASK 76-11-07-020-802-F00
 - AMM TASK 76-11-07-400-802-F00
 - Do the Repair Confirmation at the end of this task.
- (g) If there is continuity, then continue.
- (3) Do this test of the wiring to the autothrottle switchpack:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance messages 31-52002, 32-52102, and 31-55011, remove the connector D10982 from the PSEU.
- (b) For maintenance messages 31-52003, 32-52103, and 31-55012, remove the connector D10984 from the PSEU.

AKS ALL

(c) Examine the connector and socket for damage or unwanted material.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) For maintenance messages 31-52002, 32-52102, and 31-55011, show the input status for connector D11182 pin 42.

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

(e) For maintenance messages 31-52003, 32-52103, and 31-55012, show the input status for connector D11184 pin 42.

AKS ALL

- (f) If the status of the pin is NO GND, then do these steps:
 - 1) Ground pin 42 with a jumper.
 - 2) If the status changes to GND, then do these steps:
 - a) Repair the wiring between pin 42 on the PSEU and pin 16 on the autothrottle switchpack.
 - b) Do the Repair Confirmation at the end of this task.
 - 3) If the status is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801

AKS ALL



- Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- b) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the autothrottle switch packs:
 - (a) Re-connect the connectors on the PSEU and autothrottle switch pack.
 - (b) Put the throttles in the idle position.
 - (c) Put the throttles in a position greater than 53 degrees.
 - (d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.



816. TRA Greater Than 44 Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-62001 TRA L LT 44 FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 32-62101 TRA L LT 44 FAULT

AKS ALL

(c) 32-62002 TRA R LT 44 FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 32-62102 TRA R LT 44 FAULT

AKS ALL

(2) These maintenance messages show that there is a problem with an autothrottle switchpack or associated wiring.

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

- (a) Maintenance message number 32-62001 is set for this condition:
 - 1) The left thrust lever resolver angle is less than 44 during takeoff.
- (b) Maintenance message number 32-62101 is set for this condition:
 - 1) The left thrust lever resolver angle is not less than 44 while landing.
- (c) Maintenance message number 32-62002 is set for this condition:
 - 1) The right thrust lever resolver angle is less than 44 during takeoff.
 - d) Maintenance message number 32-62102 is set for this condition:
 - 1) The right thrust lever resolver angle is not less than 44 while landing.

AKS ALL

B. Possible Causes

- (1) Autothrottle microswitch pack, M1766 (left) or M1767 (right)
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

AKS ALL 32-09 TASKS 815-816



C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

E. Initial Evaluation

- (1) Do this test of the TRA outputs:
 - (a) Make sure the throttles are in the idle position.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

- 1) For maintenance message 32-62001 and 32-62101, show the status of D10982 pin 40
- 2) For maintenance message 32-62002 and 32-62102, show the status of D10984 pin 40.

AKS ALL

- (c) Make sure that the status of the pin is GND.
- (d) Put the throttles in a position greater than 44 degrees.
- (e) Make sure that the status of the pin is NO GND.
- (f) If the status of the pins are not correct, then do the Fault Isolation Procedure below.
- (g) If the status of the pins are correct, then there was an intermittent fault.

F. Fault Isolation Procedure

WARNING: OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. WHEN YOU MOVE THE THRUST LEVER FORWARD, THE WEATHER RADAR SYSTEM COMES ON AUTOMATICALLY WHILE THE CIRCUIT BREAKER IS CLOSED. MAKE SURE THAT ALL PERSONNEL ARE MORE THAN 15 FT (5 M) FROM THE ANTENNA WHEN IT TRANSMITS RF ENERGY. RF ENERGY CAN KILL OR CAUSE INJURIES TO PERSONS, AND CAUSE DAMAGE TO EQUIPMENT.

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

(1) If the Initial Evaluation failed in the idle position, then do this check of the autothrottle switch pack:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message 32-62001 and 32-62101, remove the connector D11128 from the left autothrottle switch pack.
- (b) For maintenance message 32-62002 and 32-62102, remove the connector D11132 from the right autothrottle switch pack.

AKS ALL

AKS ALL



- (c) Examine the connector and socket for damage or unwanted material.
- (d) Make sure the throttles are in the idle position.
- (e) Make sure pin 2 on the connector has continuity to ground.
- (f) If there is not continuity, then do these steps:
 - Repair the wiring between pin 2 and structure ground
 - 2) Re-connect the connector on the autothrottle switch pack.
 - 3) Do the Repair Confirmation at the end of this task.
- (g) If there is continuity, then continue.
- (h) Do a check for continuity between pins 2 and 3 on the autothrottle switch pack.
- (i) If there is not continuity, then do these steps:
 - Replace the applicable autothrottle switch pack, M1766 (left) or M1767 (right).
 These are the tasks:
 - AMM TASK 76-11-07-020-802-F00
 - AMM TASK 76-11-07-400-802-F00
 - 2) Do the Repair Confirmation at the end of this task.
- (j) If there is continuity, then continue.
- (2) If the Initial Evaluation failed in a position greater than 44, then do this check of the autothrottle switch pack:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message 32-62001 and 32-62101, remove the connector D11128 from the left autothrottle switch pack.
- (b) For maintenance message 32-62002 and 32-62102, remove the connector D11132 from the right autothrottle switch pack.

AKS ALL

- (c) Examine the connector and socket for damage or unwanted material.
- (d) Put the throttles in a position greater than 44 degrees.
- (e) Do a check for continuity between pins 2 and 3 on the autothrottle switch pack.
- (f) If there is continuity, then do these steps:
 - Replace the applicable autothrottle switch pack, M1766 (left) or M1767 (right).
 These are the tasks:
 - AMM TASK 76-11-07-020-802-F00
 - AMM TASK 76-11-07-400-802-F00
 - 2) Do the Repair Confirmation at the end of this task.
- (g) If there is not continuity, then continue.
- (3) Do this test of the wiring to the autothrottle switchpack:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(a) For maintenance message 32-62001 and 32-62101, remove the connector D10982 from the PSEU.

AKS ALL



AKS ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

(b) For maintenance message 32-62002 and 32-62102, remove the connector D10984 from the PSEU..

AKS ALL

(c) Examine the connector and socket for damage or unwanted material.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) For maintenance message 32-62001 and 32-62101, show the input status for connector D10982 pin 40.

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

(e) For maintenance message 32-62002 and 32-62102, show the input status for connector D10984 pin 40.

AKS ALL

- (f) If the status of the pin is NO GND, then do these steps:
 - 1) Ground pin 40 with a jumper.
 - 2) If the status changes to GND, then do these steps:
 - Repair the wiring between pin 40 on the PSEU and pin 3 on the autothrottle switchpack.
 - b) Do the Repair Confirmation at the end of this task.
 - 3) If the status is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the autothrottle switch packs:
 - (a) Re-connect the connectors on the PSEU and autothrottle switch pack.
 - (b) Put the throttles in the idle position.
 - (c) Put the throttles in a position greater than 44 degrees.
 - (d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.

	OF TAS	S IZ

EFFECTIVITY 32-09 TASK 816



817. Stab Trim Position Disagree - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 31-52004 STAB TRM DISAGREE

NOTE: This message is not applicable to airplanes that have PSEU PN: 285A1600-6 installed. PSEU (-6) software removed this fault message.

- (2) This message will show on the proximity switch electronic units (PSEU) BITE display when one of these conditions occur:
 - (a) Input from the stabilizer take off warning switches, S546 or S132, are both true or both false
 - (b) Input from the stabilizer take off warning switches, S1183 or S1184, are both true or both false.

B. Possible Causes

- Stabilizer take off warning nose down switch, S546
- (2) Stabilizer take off warning nose down switch, S1183
- (3) Stabilizer take off warning nose up switch, S132
- (4) Stabilizer take off warning nose up switch, S1184
- (5) Proximity switch electronics unit (PSEU), M2061
- (6) Wiring problem

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	Col	<u>Number</u>	<u>Name</u>
С	18	C01398	LANDING GEAR TAKEOFF WARNING CUTOFF
D	18	C00451	LANDING GEAR AURAL WARN

D. Related Data

- (1) (SSM 31-53-11)
- (2) (WDM 31-53-11)

E. Initial Recommended Action

- (1) A PSEU light illumination caused by disagreement between paired Stab Trim switches, may be considered a probable nuisance fault. Boeing suggests the following steps, to determine if the PSEU light illumination may be considered a nuisance:
- (2) Interrogate the PSEU BITE to confirm fault code 31-52004 exists.
- (3) If fault code 31-52004 is found in existing faults do the following:

WARNING: BEFORE YOU PRESSURIZE THE HYDRAULIC SYSTEM, MAKE SURE THAT THE REVERSERS, FLAPS, SPOILERS, NOSEWHEEL, ELEVATORS, RUDDER, SLATS, RUDDER PEDALS, AND CONTROL COLUMNS ARE CLEAR OF PERSONS AND EQUIPMENT. THIS WILL HELP PREVENT INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Pressurize the hydraulic systems. To do this, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

AKS ALL



- (b) Perform one cycling of the stabilizer, starting in the green band, moving to a position UP beyond the green band, then DOWN beyond the green band and back to center of the green band.
 - 1) If the PSEU light extinguishes, the 31-52004 fault was intermittent and may be considered a nuisance fault. The airplane may be dispatched with no PSEU light.
- (4) If the light does not extinguish, there is likely another cause of the light illumination.

 Troubleshoot for 31-52004 per the rest of FIM 32- 09 Task 817 (Stab Trim Position Disagree Fault Isolation).

F. Evaluation

- (1) Do this test of the stabilizer trim switches:
 - (a) Make sure the stabilizer trim position is in the green band.
 - (b) If the trim position is not in the green band, then do these steps:

WARNING: MAKE SURE ALL PERSONNEL AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR AREAS. THE CONTROL SURFACES AND LANDING GEAR DOORS CAN MOVE WHEN YOU PRESSURIZE THE HYDRAULIC SYSTEMS. THIS CAN CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- 1) Pressurize the hydraulic systems. To do this, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- 2) Put the trim position in the green band.
- (c) Do these steps to find the status of the stabilizer trim inputs with the trim lever in the green band:

NOTE: You will use the status of the inputs for the fault isolation procedure below. Make sure you record the input status that you find.

- 1) Show the input status for connector D10982 pin 51 on the PSEU display.
 - NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).
- 2) Write down the status of the pin.
- 3) Show the input status for connector D10984 pin 51 on the PSEU display.
- 4) Write down the status of the pin.
- (d) Do these steps to find the status of the stabilizer trim inputs with the trim lever in the NOSE UP position:
 - 1) Put the trim position in the NOSE UP position.
 - 2) Show the input status for connector D10982 pin 51 on the PSEU display.
 - 3) Write down the status of the pin.
 - 4) Show the input status for connector D10984 pin 51 on the PSEU display.
 - 5) Write down the status of the pin.
- (e) Do these steps to find the status of the stabilizer trim inputs with the trim lever in the NOSE DOWN position:
 - Put the trim position in the NOSE DOWN position.
 - 2) Show the input status for connector D10982 pin 51 on the PSEU display.
 - 3) Write down the status of the pin.
 - 4) Show the input status for connector D10984 pin 51 on the PSEU display.

AKS ALL 32-09 TASK 817



- 5) Write down the status of the pin.
- (f) Compare the inputs to this table:

Table 212

STAB TRIM POSITION	D10982 PIN 51	D10984 PIN 51
GREEN BAND	NO GND	GND
UP	GND	NO GND
DOWN	GND	NO GND

(g) If the status of the pins are not correct, then do the applicable Fault Isolation Procedure below.

NOTE: The fault isolation is divided into 3 parts: Green Band Disagree, Up Position
Disagree, and Down Position Disagree. If the status of the pins disagree with the
table for more than one stab trim position, then do the fault isolation in the order
below

(h) If the status of the pins are correct, then there was an intermittent fault.

G. Fault Isolation Procedure - Green Band Disagree

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

- (1) Do these steps to prepare for fault isolation:
 - (a) Put the trim position in the green band.
 - (b) Remove the pressure from the hydraulic systems. Do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (2) Examine the stabilizer take off warning switches and surrounding area:
 - (a) If there is damage, then do these steps:
 - Repair the damage that you find.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If any of the switches appear to be actuated, then do these steps:
 - 1) Remove and re-install the switch. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If there is no damage and the switches are not actuated, then continue.
- (3) If the input status of connector D10984 pin 51 is NO GND, then do this test:
 - (a) Disconnect the splice SP54 from the take off warning nose down switch S1183.
 - (b) Ground the wire from the PSEU at the splice SP54 with a jumper wire.
 - (c) Show the input status for connector D10984 pin 51 on the PSEU display.
 - (d) If the status of the pin is GND, then do this test of the take off warning nose switches:
 - 1) Disconnect the splice SP58 from the take off warning nose down switch S1183.
 - 2) Do a check for continuity between D-C and D-F on the take off warning nose down switch S1183.
 - 3) If there is not continuity, then do these steps:

AKS ALL



- a) Replace the take off warning nose down switch, S1183. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
- b) Re-connect the splices on the take off warning switch.
- c) Do the Repair Confirmation at the end of this task.
- 4) If there is continuity, then continue.
- 5) Do a check for continuity between C-C and ground on the take off warning nose up switch S1184.
- 6) If there is not continuity, then do these steps:
 - a) Replace the take off warning nose up switch, S1184. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - b) Re-connect the splices on the take off warning switches.
 - c) Do the Repair Confirmation at the end of this task.
- 7) If there is continuity, then do these steps:
 - a) Re-connect the splices on the take off warning switches.
 - b) Do the Repair Confirmation at the end of this task.
 - c) If the repair confirmation operates correctly, then there may have been an open splice or other wiring problem.
- (e) If the status of the pin is NO GND, then do this test of the PSEU:
 - 1) Remove the connector D10984 from the PSEU.
 - 2) Examine the connector and socket for damage or unwanted material.
 - 3) Ground pin 51 on the PSEU connector with a jumper wire.
 - 4) If the status of the pin is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Re-connect the splice on the take off warning nose down switch.
 - c) Do the Repair Confirmation at the end of this task.
 - 5) If the status of the pin is GND, then do these steps:
 - a) Repair the wiring between the PSEU pin 51 and the take off warning nose down switch, S546.
 - b) Re-connect the connector on the PSEU.
 - c) Re-connect the splice on the take off warning nose down switch.
 - d) Do the Repair Confirmation at the end of this task.
- (4) If the input status of connector D10982 pin 51 is GND, then do this test:
 - (a) Remove the splice SP56 from the take off warning down switches.
 - (b) Show the input status for connector D10982 pin 51 on the PSEU display.

AKS ALL



- (c) If the status of the pin is NO GND, then do these steps:
 - 1) Do a check for continuity between the take off warning nose down switch S546 terminal A-D and structure ground.
 - 2) If there is continuity, then do these steps:
 - a) Replace the take off warning nose down switch, S546. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - b) Do the Repair Confirmation at the end of this task.
 - 3) If there is not continuity, then do a check for continuity between the take off warning nose up switch S132 terminal B-D and structure ground.
 - 4) If there is continuity, then do these steps:
 - a) Replace the take off warning nose up switch, S132. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - b) Do the Repair Confirmation at the end of this task.
- (d) If the status of the pin is GND, then do these steps:
 - 1) Remove the connector D10982 from the PSEU.
 - 2) Examine the connector and socket for damage or unwanted material.
 - 3) Show the input status for connector D10982 pin 51 on the PSEU display.
 - 4) If the status of the pin is GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Re-connect the splices for the take off warning switches.
 - c) Do the Repair Confirmation at the end of this task.
 - 5) If the status of the pin is NO GND, then do a check of the wiring between the PSEU connector D10982 pin 51 and the splice SP56.
 - 6) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector on the PSEU.
 - c) Re-connect the splice for the take off warning switches.
 - d) Do the Repair Confirmation at the end of this task.
- H. Fault Isolation Procedure Up Position Disagree

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

(1) Do these steps to move the stabilizer to the NOSE UP trim position:

AKS ALL 32-09 TASK 817



WARNING: MAKE SURE ALL PERSONNEL AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR AREAS. THE CONTROL SURFACES AND LANDING GEAR DOORS CAN MOVE WHEN YOU PRESSURIZE THE HYDRAULIC SYSTEMS. THIS CAN CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- (a) Pressurize the hydraulic systems. To do this, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (b) Put the trim position in the NOSE UP position.
- (c) Remove the pressure from the hydraulic systems. Do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (2) Examine the stabilizer take off warning switches and surrounding area:
 - (a) If there is damage, then do these steps:
 - 1) Repair the damage that you find.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If either the take off warning nose up switch S132 or S1184 is not actuated, then do these steps:
 - 1) Remove and re-install the switch. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If either the take off warning nose down switch S546 or S1183 is actuated, then do these steps:
 - 1) Remove and re-install the switch. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (d) If there is no damage and the switches are in the correct position, then continue.
- (3) If the input status of connector D10984 pin 51 is GND, then do this test:
 - (a) Remove the splice SP58 from the take off warning nose down switch S1183.
 - (b) Show the input status for connector D10984 pin 51 on the PSEU display.
 - (c) If the status of the pin is NO GND, then do these steps:
 - 1) Replace the take off warning nose up switch, S1184. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (d) If the status of the pin is GND, then do these steps:
 - 1) Remove the splice SP54 from the take off warning nose down switch S1183.
 - 2) Show the input status for connector D10984 pin 51 on the PSEU display.
 - 3) If the status of the pin is NO GND, then do these steps:
 - Replace the take off warning nose down switch, S1183. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801

AKS ALL



- Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
- b) Do the Repair Confirmation at the end of this task.
- 4) If the status of the pin is GND, then continue.
- 5) Remove the connector D10984 from the PSEU.
- 6) Examine the connector and socket for damage or unwanted material.
- 7) Show the input status for connector D10984 pin 51 on the PSEU display.
- 8) If the status of the pin is GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Re-connect the connector on the PSEU.
 - c) Re-connect the splices on the take off warning down switches.
 - d) Do the Repair Confirmation at the end of this task.
- 9) If the status of the pin is NO GND, then do these steps:
 - a) Repair the wiring between the PSEU pin 51 and the splice SP54 for the take off warning nose down switches.
 - b) Re-connect the connector on the PSEU.
 - c) Re-connect the splices on the take off warning down switches.
 - d) Do the Repair Confirmation at the end of this task.
- (4) If the input status of connector D10982 pin 51 is NO GND, then do this test:
 - (a) Remove the splice SP56 from the take off warning nose up switch S132.
 - (b) Ground the wire from the PSEU with a jumper wire.
 - (c) Show the input status for connector D10982 pin 51 on the PSEU display.
 - (d) If the status of the pin is GND, then do this check of the switch S132:
 - 1) Do a check for continuity between pin B-D on the switch, S132 and structure ground.
 - 2) If there is not continuity, then do these steps:
 - a) Replace the take off warning up switch, S132. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - b) Do the Repair Confirmation at the end of this task.
 - 3) If there is continuity, then do these steps:
 - a) Re-connect the splice on the take off warning switches.
 - b) Do the Repair Confirmation at the end of this task.
 - c) If the repair confirmation operates correctly, then there may have been an open splice or another wiring problem.
 - (e) If the status of the pin is NO GND, then do these steps:
 - 1) Remove the connector D10982 from the PSEU.

AKS ALL 32-09 TASK 817



- 2) Examine the connector and socket for damage or unwanted material.
- 3) Ground pin 51 on the PSEU connector with a jumper wire.
- 4) Show the input status for connector D10982 pin 51 on the PSEU display.
- 5) If the status of the pin is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Re-connect the connector on the PSEU.
 - c) Re-connect the splice on the take off warning up switches.
 - d) Do the Repair Confirmation at the end of this task.
- 6) If the status of the pin is GND, then do these steps:
 - a) Repair the wiring between the PSEU and the take off warning up switch, S132 pin 5.
 - b) Re-connect the connector on the PSEU.
 - c) Re-connect the splice on the take off warning up switches.
 - d) Do the Repair Confirmation at the end of this task.
- I. Fault Isolation Procedure Down Position Disagree

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

(1) Do these steps to move the stabilizer to the NOSE DOWN trim position:

WARNING: MAKE SURE ALL PERSONNEL AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR AREAS. THE CONTROL SURFACES AND LANDING GEAR DOORS CAN MOVE WHEN YOU PRESSURIZE THE HYDRAULIC SYSTEMS. THIS CAN CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- (a) Pressurize the hydraulic systems. Do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (b) Put the trim position in the NOSE DOWN position.
- (c) Remove the pressure from the hydraulic systems. Do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (2) Examine the stabilizer take off warning switches and surrounding area:
 - (a) If there is damage, then do these steps:
 - 1) Repair the damage that you find.
 - Do the Repair Confirmation at the end of this task.
 - (b) If either of the take off warning nose up switches S132 or S1184 is actuated, then do these steps:
 - 1) Remove and re-install the switch. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.

32-09 TASK 817

AKS ALL

EFFECTIVITY



- (c) If either of the take off warning nose down switch S546 or S1183 is not actuated, then do these steps:
 - 1) Remove and re-install the switch. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - Do the Repair Confirmation at the end of this task.
- (d) If there is no damage and the switches are in the correct position, then continue.
- (3) If the input status of connector D10984 pin 51 is GND, then do these steps:
 - (a) Replace the take off warning nose down switch, S1183. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - (b) Do the Repair Confirmation at the end of this task.
- (4) If the input status of connector D10982 pin 51 is NO GND, then do this test:
 - (a) Remove the splice SP56 from the switch S546.
 - (b) Do a check for continuity between terminal A-D on the switch S546 and structure ground.
 - (c) If there is not continuity, then do these steps:
 - 1) Replace the take off warning nose down switch, S546. These are the tasks:
 - Stabilizer Takeoff Warning Switch Removal, AMM TASK 31-51-02-000-801
 - Stabilizer Takeoff Warning Switch Installation, AMM TASK 31-51-02-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (d) If there is continuity, then do these steps:
 - 1) Re-connect the splice on the take off warning switches.
 - 2) Do the Repair Confirmation at the end of this task.
 - 3) If the repair confirmation operates correctly, then there may have been an open splice or another wiring problem.

J. Repair Confirmation

(1) If it is necessary, re-connect the connectors on the PSEU and the splices on the take off warning nose up and down switches.

WARNING: MAKE SURE ALL PERSONNEL AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR AREAS. THE CONTROL SURFACES AND LANDING GEAR DOORS CAN MOVE WHEN YOU PRESSURIZE THE HYDRAULIC SYSTEMS. THIS CAN CAUSE INJURY TO PERSONNEL OR DAMAGE TO EQUIPMENT.

- (2) Pressurize the hydraulic systems. Do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (3) Set the stabilizer trim outside the green band toward nose down.
- (4) Set the stabilizer trim outside the green band toward nose up.
- (5) Set the stabilizer trim inside the green band.
- (6) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show, then you corrected the fault.

AKS ALL



(7) If hydraulic pressure is no longer needed, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

------ END OF TASK ------

818. PSEU Status Messages - Fault Isolation

A. Description

- (1) This task is for these status messages:
 - (a) 32-04001 AIR/GND OVERRIDE
 - (b) 32-64003 DISPATCH PER MEL
 - (c) 32-64004 NO DISP FAULT

NOTE: This message text for 32-64004 will show as DO NOT DISPATCH.

- (2) These messages are status messages which show these conditions:
 - (a) Message 32-04001 AIR/GND OVERRIDE shows that the PSEU outputs are in the override condition. This is not a fault.
 - (b) Message 32-64003 DISPATCH PER MEL shows that there is an existing dispatch type fault (the PSEU light can be turned off).
 - (c) Message 32-64004 NO DISP FAULT shows that there is an existing no dispatch type fault (the fault must be corrected to turn off the PSEU light).

B. Initial Evaluation

- (1) Maintenance message 32-04001 AIR/GND OVERRIDE shows that the PSEU outputs are in the override condition. If the override condition is not necessary, then you can put the PSEU back in the normal condition. To put the PSEU back to the normal condition, do this task: Return the Airplane Systems Back to Their Normal On Ground Condition, AMM TASK 32-09-00-840-802.
- (2) Maintenance messages 32-64003 and 32-64004 are status messages. There are other maintenance messages in the PSEU which must be corrected before you can remove the status message. Continue to show the other fault messages to perform fault isolation. To show the other fault messages, do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.

——— END OF TASK ———

819. More Than One Air/Ground Sensor Faults - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 32-01007 AIR/GND FAIL
- (2) This maintenance message shows that there are more than one air/ground sensor faults. This message shows if one of these conditions are correct:
 - (a) Maintenance message numbers 32-01002 and 32-01005 are both set.
 - (b) Maintenance message numbers 32-01001 and 32-01004 are both set.
 - (c) Maintenance message numbers 32-01003 and 32-01006 are both set.

B. Possible Causes

- (1) Nose landing gear air/ground sensor, S1014 or S1015
- (2) Left main landing gear air/ground sensor, S1012 or S1013

AKS ALL

32-09 TASKS 817-819



- (3) Right main landing gear air/ground sensor, S1010 or S1011
- (4) Wiring problem
- (5) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) Component Location (Figure 301)
- (2) Component Location (Figure 302)
- (3) (SSM 32-09-11)
- (4) (SSM 32-09-12)
- (5) (WDM 32-31-11)
- (6) (WDM 32-31-12)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find any maintenance messages, then there was an intermittent fault.
 - (b) If you find the maintenance message, then show and record all the maintenance messages in the PSEU.
 - (c) Look for these PSEU maintenance messages:
 - 1) For maintenance message numbers 32-01002 and 32-01005, do this task: Nose Landing Gear Air/Ground Sensor Fault Fault Isolation, 32-09 TASK 802.
 - 2) For maintenance message numbers 32-01001, 30-01003, 32-01004, and 32-01006, do this task: Main Landing Gear Air/Ground Sensor Fault Fault Isolation, 32-09 TASK 803.



820. TRA Greater Than 64 Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-62003 TRA L LT 64 FAULT
 - (b) 32-62004 TRA R LT 64 FAULT
- (2) These maintenance messages show that there is a problem with an autothrottle switchpack or associated wiring.
 - (a) Maintenance message number 32-62003 is set for one of these conditions:
 - 1) The left and right TRA LT64 switches disagree during takeoff.
 - 2) The left thrust lever resolver angle is not less than 64 while landing.
 - (b) Maintenance message number 32-62004 is set for one of these conditions:

AKS ALL

32-09 TASKS 819-820



- 1) The left and right TRA LT64 switches disagree during takeoff.
- 2) The right thrust lever resolver angle is not less than 64 while landing.

B. Possible Causes

- (1) Autothrottle microswitch pack, M1766 (left) or M1767 (right)
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	Number	<u>Name</u>
В	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) (SSM 32-61-21
- (2) (WDM 32-64-21)

E. Initial Evaluation

WARNING: OPEN THE CIRCUIT BREAKER FOR THE WEATHER RADAR SYSTEM. WHEN YOU MOVE THE THRUST LEVER FORWARD, THE WEATHER RADAR SYSTEM COMES ON AUTOMATICALLY WHILE THE CIRCUIT BREAKER IS CLOSED. MAKE SURE THAT ALL PERSONNEL ARE MORE THAN 15 FT (5 M) FROM THE ANTENNA WHEN IT TRANSMITS RF ENERGY. RF ENERGY CAN KILL OR CAUSE INJURIES TO PERSONS, AND CAUSE DAMAGE TO EQUIPMENT.

- (1) Do this test of the TRA outputs:
 - (a) Make sure the throttles are in the idle position.
 - (b) Show the input status for these pins on the PSEU display:

NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).

- 1) For maintenance message 32-62003, show the status of D10982 pin 41.
- 2) For maintenance message 32-62004, show the status of D10984 pin 41.
- (c) Make sure that the status of the pin is GND.
- (d) Put the throttles in a position greater than 64 degrees.
- (e) Make sure that the status of the pin is NO GND.
- (f) If the status of the pins are not correct, then do the Fault Isolation Procedure below.
- (g) If the status of the pins are correct, then there was an intermittent fault.

F. Fault Isolation Procedure

NOTE: You must do the steps in the Initial Evaluation before you can do these steps.

- (1) If the Initial Evaluation failed in the idle position, then do this check of the autothrottle switch pack:
 - (a) For maintenance message 32-62003, remove the connector D11128 from the left autothrottle switch pack.
 - (b) For maintenance message 32-62004, remove the connector D11132 from the right autothrottle switch pack.

AKS ALL



- (c) Examine the connector and socket for damage or unwanted material.
- (d) Make sure the throttles are in the idle position.
- (e) Make sure pin 23 on the connector has continuity to ground.
- (f) If there is not continuity, then do these steps:
 - 1) Repair the wiring between pin 23 and structure ground
 - 2) Re-connect the connector on the autothrottle switch pack.
 - 3) Do the Repair Confirmation below.
- (g) If there is continuity, then continue.
- (h) Use a multimeter, STD-1231 to measure for continuity between pins 23 and 24 on the autothrottle switch pack.
- (i) If there is not continuity, then do these steps:
 - 1) Replace the applicable autothrottle switch pack, M1766 (left) or M1767 (right). These are the tasks:
 - AMM TASK 76-11-07-020-802-F00
 - AMM TASK 76-11-07-400-802-F00
 - 2) Do the Repair Confirmation at the end of this task.
- (j) If there is continuity, then continue.
- (2) If the Initial Evaluation failed in a position greater than 64, then do this check of the autothrottle switch pack:
 - (a) For maintenance message 32-62003, remove the connector D11128 from the left autothrottle switch pack.
 - (b) For maintenance message 32-62004, remove the connector D11132 from the right autothrottle switch pack.
 - (c) Examine the connector and socket for damage or unwanted material.
 - (d) Put the throttles in a position greater than 64 degrees.
 - (e) Do a check for continuity between pins 23 and 24 on the autothrottle switch pack.
 - (f) If there is continuity, then do these steps:
 - Replace the autothrottle switch pack, M1766 (left) or M1767 (right). These are the tasks:
 - AMM TASK 76-11-07-020-802-F00
 - AMM TASK 76-11-07-400-802-F00
 - 2) Do the Repair Confirmation at the end of this task.
 - (g) If there is not continuity, then continue.
- (3) Do this test of the wiring to the autothrottle switchpack:
 - (a) For maintenance message 32-62003, remove the connector D10982 from the PSEU.
 - (b) For maintenance message 32-62004, remove the connector D10984 from the PSEU.
 - (c) Examine the connector and socket for damage or unwanted material.
 - (d) For maintenance message 32-62003, show the input status for connector D10982 pin 41.
 - NOTE: If you need instructions on how to show the input status, then go to this task: (32-09 TASK 821).
 - (e) For maintenance message 32-62004, show the input status for connector D10984 pin 41.

AKS ALL



- (f) If the status of the pin is NO GND, then do these steps:
 - 1) Ground pin 41 with a jumper.
 - 2) If the status changes to GND, then do these steps:
 - a) Repair the wiring between pin 41 on the PSEU and pin 24 on the autothrottle switchpack.
 - b) Do the Repair Confirmation at the end of this task.
 - 3) If the status is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the autothrottle switch packs:
 - (a) Re-connect the connectors on the PSEU and autothrottle switch pack.
 - (b) Put the throttles in the idle position.
 - (c) Put the throttles in a position greater than 64 degrees.
 - (d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.



821. Proximity Switch Electronics Unit (PSEU) Input Monitoring Procedure

A. General

(1) You do the Proximity Switch Electronics Unit (PSEU) input monitoring at the front of the PSEU module. The PSEU is in the forward electrical equipment bay.

B. Procedure

- (1) Do the input monitoring procedure for the PSEU: (Figure 203)
 - (a) Open this access panel:

Number Name/Location
112A Forward Access Door

(b) Push the ON/OFF switch.

NOTE: The display will show EXISTING FAULTS?

- (c) Push the down arrow until OTHER FUNCTNS? shows.
- (d) Push the YES switch.

NOTE: The display will show T/O WARN REPORT?.

- (e) Push the down arrow until I/O MONITOR? shows.
- (f) Push the YES switch.

NOTE: The display will show SENSORS?.

(g) Push the down arrow until INPUTS? shows.

AKS ALL

32-09 TASKS 820-821



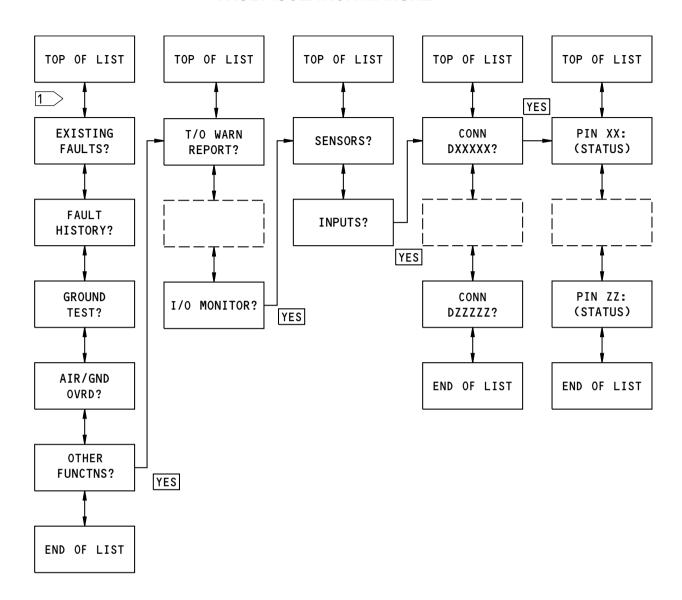
- (h) Push the YES switch.
 - NOTE: The display will show CONN Dxxxxx? where Dxxxxx is a connector number.
- (i) Push the down arrow or up arrow until the required connector shows.
- (i) Push the YES switch.
 - NOTE: The display will show a pin number and status. The status can be GND, NO GND, or a voltage.
- (k) Push the down arrow or up arrow until the required pin shows.
- (I) Use the connector/pin status as required for fault isolation.
- (m) In the course of this procedure use the MENU switch to go to a previous menu level.



32-09 TASK 821

· EFFECTIVITY ·





NOTE: TO RETURN TO A PREVIOUS MENU, PUSH THE MENU SWITCH.

 \uparrow REPRESENTS THE \uparrow AND \downarrow ON THE BITE DISPLAY

H38471 S0000147088 V1

PSEU Bite Tree - Display Input/Output Status Figure 203/32-09-00-990-803

AKS ALL

Page 275

D633A103-AKS

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details



822. No 28 VDC B Input Power to PSEU - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 32-60002 NO 28V B POWER
- (2) These maintenance messages show that there is not 28 VDC input power to the PSEU.

B. Possible Causes

- (1) Wiring problem
- (2) Proximity switch electronics unit (PSEU), M2061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical	System	Panel,	P6-3
----------------	--------	--------	------

<u>Row</u>	Col	<u>Number</u>	<u>Name</u>
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 32-61-11)
- (2) (SSM 32-61-12)
- (3) (WDM 32-64-11)
- (4) (WDM 32-64-12)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the 28 VDC input to the PSEU:
 - (a) Remove the connector D11140 from the PSEU.
 - (b) Examine the connector and socket for damage or unwanted material.
 - (c) Do a check for 28 VDC between pin 41 of connector D11140 and structure ground.
 - (d) If there is not 28 VDC at pin 41, then do these steps:
 - 1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C01400	PSEU ALTN

2) Do a check for continuity between these pins:

Table 213

 CIRCUIT BREAKER C1400 - P6-3 D2
 PSEU - D11140

 pin 1
 ----- pin 41

AKS ALL



- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	Number	<u>Name</u>
D	2	C01400	PSEU ALTN

- c) Re-connect the connector on the PSEU.
- d) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- e) If you do not find the maintenance message, then you corrected the fault.
- 4) If you do not find a problem with the wiring, then do these steps:
 - a) Replace this circuit breaker:
 - <1> This is the circuit breaker:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C01400	PSEU ALTN

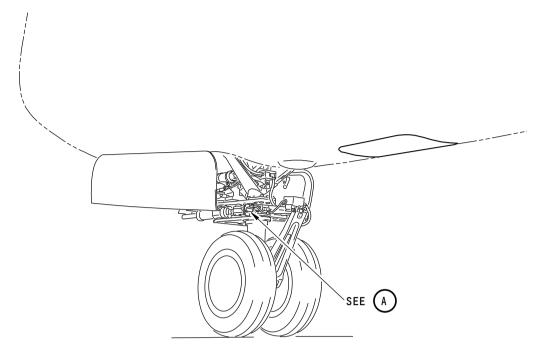
- b) Re-connect the connector on the PSEU.
- c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- d) If you do not find the maintenance message, then you corrected the fault.
- (e) If there is 28 VDC at pin 41, then continue.
- (2) Do this test of the primary ground for the PSEU:
 - (a) Do a check for continuity between pin 61 of connector D11140 and structure ground.
 - (b) If pin 61 does not have continuity to ground, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If you do not find the maintenance message, then you corrected the fault.
 - (c) If pin 61 has continuity to structure ground, then continue.
- (3) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the post installation test in the PSEU installation procedure.
 - (b) If the test operates correctly, then you corrected the fault.

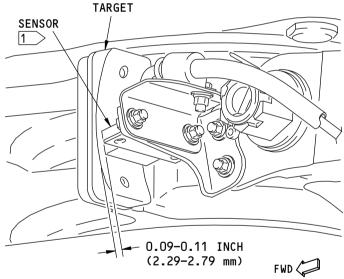
 FND	OF TA	ASK .	

32-09 TASK 822

EFFECTIVITY '







1	SYSTEM NO.	SENSOR NO.	LOCATION
	1	S1014	L
	2	\$1015	R

LEFT SENSOR (RIGHT SENSOR IS OPPOSITE)



G56890 S0006743670_V1

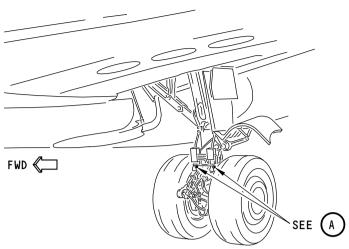
Nose Landing Gear Air/Ground Sensor Component Location Figure 301/32-09-00-990-801

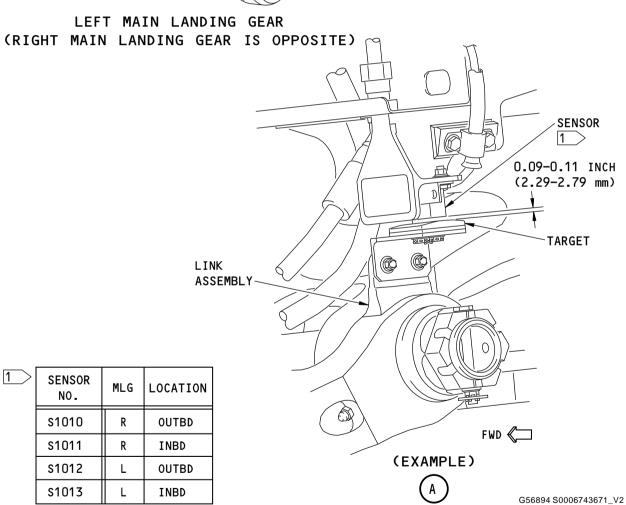
AKS ALL

32-09 TASK SUPPORT

Page 301 Feb 15/2013







Main Landing Gear Air/Ground Sensor Component Location Figure 302/32-09-00-990-802

AKS ALL 32-09 TASK SUPPORT



801. NOSE GEAR, LEFT GEAR, and RIGHT GEAR Red Lights On (On Ground Only) - Fault Isolation

A. Description

- (1) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these landing gear conditions:
 - (a) Landing gear down and locked
 - (b) Disagree
 - (c) Gear not down warning.
- (2) The red NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights comes on for these conditions:
 - (a) Disagree: lever down, nose, left, and right gear not down and locked
 - (b) Disagree: lever not down, nose, left, and right gear not up and locked
 - (c) Gear not down warning.
- (3) (SDS SUBJECT 32-61-00)

B. Possible Causes

- (1) Wiring problem
- (2) Proximity switch electronics unit (PSEU), M2061
- (3) Landing gear control lever module, M1952
- (4) Landing gear control cable out of adjustment

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11)
- (3) (SSM 32-61-12)
- (4) (WDM 32-64-11)
- (5) (WDM 32-64-12)

E. Initial Evaluation

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Make sure the control lever for the landing gear is fully in the detent for the DN position.
- (3) If the red NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights are on then do the Fault Isolation Procedure below.
- (4) If the red NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights do not come on, and the green NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights are on, then you corrected the fault.

AKS ALL

32-30 TASK 801



F. Fault Isolation Procedure

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the PSEU BITE shows a PSEU internal fault or NOSE, L, or R RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) If the PSEU BITE does not show a PSEU internal fault or NOSE, L, or R RED LT FLT, then continue.
- (2) Do this check for power at the landing gear control lever module:
 - (a) Remove the landing gear control lever module, M1952. To remove it, do this task: Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801.
 - (b) Do a check for 28 VDC, from the PSEU, at pin 2 of connector D11990 in the flight compartment.

NOTE: The connector D11990 is located at the control lever module, M1952, on the P2-3 panel.

- (c) If there is not 28 VDC at pin 2 of connector D11990, then do these steps:
 - 1) Disconnect connector D10982 for the landing gear lever switch.

NOTE: The connector D10982 is located on the PSEU, M2061 on the E-11 rack in the forward electrical equipment bay.

2) Repair the wiring between these pins of connector D11990 in the flight compartment and connector D10982 at the E-11 rack:

D10982		D11990
pin 1	 	pin 2

- 3) Re-connect the connector D10982 to the PSEU, M2061.
- 4) Re-connect the connector D11990 at the control lever module, M1952.
- 5) Re-install the control lever module. To install it, do this task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801.
- 6) Do the Repair Confirmation at the end of this task.
- (d) If there is 28 VDC at pin 2 of connector D11990, then continue.
- (3) Do this check of the switch and wiring on the control lever module, M1952:
 - (a) Do a check for an open circuit between pin 1 and pin 2 of connector D11990 on the control lever module, M1952.
 - (b) If there is not continuity between pin 1 and pin 2 of connector D11990 on the control lever module, then do these steps:
 - 1) Replace the control lever module. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - Do the Repair Confirmation at the end of this task.
 - (c) If there is continuity between pin 1 and pin 2 of connector D11990 on the control lever module, then do these steps:
 - 1) Clean the connector D11990 and make sure the pins are not damaged
 - 2) Re-connect the connector D11990

32-30 TASK 801

AKS ALL

EFFECTIVITY



- 3) Re-install the control lever module, do this task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801.
- 4) Do the Repair Confirmation at the end of this task.
- (4) Do a check of the landing gear control cable adjustment. Do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.

G. Repair Confirmation

(1) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR.
WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND
CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (3) If the red NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights are not on, and the green NOSE GEAR, LEFT GEAR, and RIGHT GEAR lights are on, then you corrected the fault.



806. Nose Landing Gear Slow to Retract or Extend - Fault Isolation

A. Description

- (1) The nose landing gear extension and retraction system has these hydraulic components:
 - (a) Retract actuator
 - (b) Lock mechanism
 - (c) Lock actuator
 - (d) Lock valve manifold
 - (e) Transfer cylinder
 - (f) Selector/bypass valve
 - (g) Landing gear control cable system
- (2) The sequence for nose gear retraction is as follows:
 - (a) The landing gear selector/bypass valve supplies up pressure when the control lever for the landing gear is moved to the UP position.
 - (b) Up pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the down side. This gives a time delay to let the lock actuator unlock the lock mechanism before the retract actuator gets up pressure.
 - (c) Up pressure goes to the lock actuator. The lock actuator retracts and unlocks the lock mechanism.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, up pressure goes to the up side of the retract actuator. The retract actuator moves to retract the nose gear.
 - (e) When the nose gear moves into the up position the lock mechanism moves to the lock position.
 - (f) The lock springs hold the lock mechanism in the overcenter locked position.
- (3) The sequence for nose gear extension is as follows:
 - (a) The landing gear selector valve supplies down pressure when the control lever for the landing gear is moved to the DN position.

AKS ALL

32-30 TASKS 801-806



- (b) Down pressure moves the piston in the transfer cylinder to the up side. This momentarily applies an up force to the nose landing gear to decrease the forces in the lock mechanism. Then the lock actuator can unlock the lock mechanism.
- (c) Down pressure goes to the lock actuator. The lock actuator extends and unlocks the lock mechanism.
- (d) When the piston in the transfer cylinder gets to the end of the up side, down pressure goes to the down side of the gear actuator. The gear actuator moves to extend the nose gear.
- (e) When the nose gear moves into the down position the lock actuator extends to move the lock mechanism to the lock position.
- (f) The lock springs hold the lock mechanism in the overcenter locked position.
- (4) (SDS SUBJECT 32-32-00)

B. Possible Causes

- (1) A restriction or internal leakage in one of these components for the nose gear:
 - (a) Lock actuator
 - (b) Lock valve manifold
 - (c) Retract actuator
 - (d) Check valves in the gear Up and gear Down lines for the steering return pressure
 - (e) Transfer cylinder
- (2) A restriction in the hydraulic lines from/to the selector valve
- (3) Nose gear wheel well door rigging
- (4) Landing gear selector/bypass valve
- (5) The attach points for the drag strut assembly on the nose gear
- (6) Nose gear trunnion bushings
- (7) Rigging of the landing gear selector/bypass valve

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	Number	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

D. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

E. Initial Evaluation

- (1) Do the operational test for the nose landing gear. Do this task: Operational Test for the Nose Landing Gear, AMM TASK 32-33-00-710-801.
- (2) If the nose landing gear extends or retracts very slowly, then do the Fault Isolation Procedure below.

AKS ALL

32-30 TASK 806



- (3) If the retraction/extension time for the nose landing gear is acceptable, then there was an intermittent fault. Do these steps to complete this task:
 - (a) Make sure the downlock pin is installed on the nose landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (b) Make sure the control lever for the landing gear is in the DN position.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

F. Fault Isolation Procedure

- (1) Make sure there are no restrictions or internal leakage in the lock actuator, the lock valve manifold, the retract actuator, the steering system check valves, or the transfer cylinder for the nose gear.
 - (a) If there is a restriction in one of the above components then do these steps, as applicable:
 - 1) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 2) Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 3) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 4) Replace the nose gear steering system check valves.
 - 5) Replace the nose gear transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - Do the Repair Confirmation at the end of this task.
 - (b) If there is not a restriction in the lock actuator, the lock valve manifold, the retract actuator, the steering system check valves, or the transfer cylinder then continue.
- (2) Make sure there are no restrictions in the hydraulic lines from the landing gear selector/bypass valve.
 - (a) If there is a restriction in the hydraulic lines from the selector/bypass valve to the components for nose landing gear extension/retraction, then do these steps:
 - 1) Flush or change the hydraulic lines.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If there is not a restriction in the hydraulic lines, then continue.
- (3) Adjust the nose landing gear wheel well door linkage, do this task: Nose Gear Wheel Well Door Linkage Adjustment and Check, AMM TASK 32-33-61-820-802.
- (4) Replace the landing gear selector/bypass valve. These are the tasks:
 - Landing Gear Selector Valve Removal, AMM TASK 32-31-51-020-801

AKS ALL 32-30 TASK 806



- Landing Gear Selector Valve Installation, AMM TASK 32-31-51-400-801
- (a) Do the Repair Confirmation at the end of this task.
- (5) Inspect the pins and bushings at the attach points for the drag strut on the nose landing gear.
 - (a) If the pins or bushings are damaged, then do these steps:
 - 1) Replace the drag strut for the nose landing gear. To do this, these are the tasks:
 - Nose Landing Gear Drag Strut Removal, AMM TASK 32-21-21-000-801
 - Nose Landing Gear Drag Strut Installation, AMM TASK 32-21-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the pins or bushings at the hinge points for the side strut are not damaged, make sure they are well lubricated and then continue.
- (6) Inspect the trunnion pin installation on the nose landing gear, do this task: Nose Landing Gear Inspection, AMM TASK 32-21-00-200-801.
 - (a) If the trunnion pin freeplay is not correct or a trunnion pin is damaged, then do these steps:
 - 1) Make sure the trunnion pin freeplay is correct or replace the damaged trunnion pin These are the tasks:
 - Nose Landing Gear Removal, AMM TASK 32-21-00-000-801
 - Nose Landing Gear Installation, AMM TASK 32-21-00-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the trunnion pin freeplay is correct or the pins are not damaged, make sure they are well lubricated and then continue.
- (7) Make sure the landing gear control system is adjusted correctly. Do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - (a) If the landing gear control system is not adjusted correctly, then do these steps:
 - 1) Do the adjustment of the landing gear control system. To adjust it, do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the landing gear control system is adjusted correctly, then continue.

G. Repair Confirmation

- (1) Do the operational test for the nose landing gear. Do this task: Operational Test for the Nose Landing Gear, AMM TASK 32-33-00-710-801.
 - (a) If the operational test for the nose landing gear is satisfactory, then you corrected the fault.

 FND	OF T	TASK	

807. NOSE GEAR Green Light Not On With Gear Lever DN, NOSE GEAR Red Light On, Alternate Gear Extension Attempted - Fault Isolation

A. Description

- (1) The nose landing gear extension and retraction system has these hydraulic components:
 - (a) Retract actuator
 - (b) Lock mechanism
 - (c) Lock actuator

32-30 TASKS 806-807

AKS ALL

Page 206 Feb 15/2013



- (d) Lock valve manifold
- (e) Transfer cylinder
- (f) Selector/bypass valve
- (g) Landing gear control cable system
- (2) The sequence for nose gear retraction is as follows:
 - (a) The landing gear selector/bypass valve supplies up pressure when the control lever for the landing gear is moved to the UP position.
 - (b) Up pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the down side. This gives a time delay to let the lock actuator unlock the lock mechanism before the retract actuator gets up pressure.
 - (c) Up pressure goes to the lock actuator. The lock actuator retracts and unlocks the lock mechanism.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, up pressure goes to the up side of the retract actuator. The retract actuator moves to retract the nose gear.
 - (e) When the nose gear moves into the up position the lock mechanism moves to the lock position.
 - (f) The lock springs hold the lock mechanism in the overcenter locked position.
- (3) The sequence for nose gear extension is as follows:
 - (a) The landing gear selector valve supplies down pressure when the control lever for the landing gear is moved to the DN position.
 - (b) Down pressure moves the piston in the transfer cylinder to the up side. This momentarily applies an up force to the nose landing gear to decrease the forces in the lock mechanism. Then the lock actuator can unlock the lock mechanism.
 - (c) Down pressure goes to the lock actuator. The lock actuator extends and unlocks the lock mechanism.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, down pressure goes to the down side of the gear actuator. The gear actuator moves to extend the nose gear.
 - (e) When the nose gear moves into the down position the lock actuator extends to move the lock mechanism to the lock position.
 - (f) The lock springs hold the lock mechanism in the overcenter locked position.
- (4) (SDS SUBJECT 32-32-00)

B. Possible Causes

- (1) Damage to, or jammed nose gear shock strut, drag brace or lock link
- (2) Damage to, or jammed nose gear wheel well door linkage
- (3) Damage to, or jammed nose gear lock actuator or retract actuator
- (4) Obstruction in nose gear lock link
- (5) Restriction or internal leakage in one of these components:
 - (a) Lock actuator
 - (b) Lock valve manifold
 - (c) Retract actuator
 - (d) Transfer cylinder

AKS ALL



- (6) Proximity Sensor Electronics Unit (PSEU)
- (7) Electrical Wiring Problem

C. Related Data

(1) (SSM 32-30-00)

D. Fault Isolation Procedure

(1) Do these steps to prepare for fault isolation:

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (b) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (2) Visually examine the NLG shock strut, NLG drag brace and NLG lock link for damage and if the components cannot move freely.
 - (a) If the NLG shock strut is damaged or cannot move freely, then do these steps.
 - 1) If the shock strut cannot move freely, then adjust the shock strut until the shock strut can move freely.
 - 2) If the shock strut is damaged, then replace the shock strut. These are the tasks:
 - Nose Landing Gear Removal, AMM TASK 32-21-00-000-801
 - Nose Landing Gear Installation, AMM TASK 32-21-00-400-801
 - 3) Do the Repair Confirmation at the end of this task.
 - (b) If the shock strut can move freely and is not damaged, then continue.
 - (c) If the NLG drag strut is damaged or cannot move freely, then do these steps.
 - 1) If the drag strut cannot move freely, then adjust the drag strut until the shock strut can move freely.
 - If the drag strut is damaged, then replace the drag strut. These are the tasks:
 - Nose Landing Gear Drag Strut Inspection, AMM TASK 32-21-21-200-801
 - Nose Landing Gear Drag Strut Removal, AMM TASK 32-21-21-000-801
 - Nose Landing Gear Drag Strut Installation, AMM TASK 32-21-21-400-801
 - Do the Repair Confirmation at the end of this task.
 - (d) If the drag strut can move freely and is not damaged, then continue.
 - (e) If the NLG lock links are damaged or cannot move freely, then do these steps.
 - 1) If the lock links cannot move freely, then remove all objects that do not let the lock links move freely. Adjust the lock links until the lock links can move freely.
 - 2) If the lock links are damaged, then replace the lock links. These are the tasks:

NOTE: The Task Nose Gear Lock Mechanism Inspection, AMM
TASK 32-33-51-200-801 gives the tolerance of the components of the lock links.

AKS ALL



- Nose Landing Gear Lock Mechanism Removal, AMM TASK 32-33-51-000-801
- Nose Gear Lock Mechanism Installation, AMM TASK 32-33-51-400-801
- 3) Do the Repair Confirmation at the end of this task.
- (f) If the lock links can move freely and are not damaged, then continue.
- (3) Visually examine the NLG wheel well door linkage for damage and if the components cannot move freely.
 - (a) If the NLG wheel well door linkage is damaged or cannot move freely, then do these steps.
 - 1) If the wheel well door linkage cannot move freely, then adjust the wheel well door linkage until the wheel well door linkage can move freely. This is the task:
 - Nose Gear Wheel Well Door Linkage Adjustment and Check, AMM TASK 32-33-61-820-802
 - 2) If the wheel well door linkage is damaged, then replace the wheel well door linkage. These are the tasks:

NOTE: The Task Nose Gear Wheel Well Door Linkage Inspection, AMM TASK 32-33-61-200-801 gives the tolerance of the components of the wheel well door linkage.

- Nose Gear Wheel Well Door Linkage Removal, AMM TASK 32-33-61-000-801
- Nose Gear Wheel Well Door Linkage Installation, AMM TASK 32-33-61-400-801
- 3) Do the Repair Confirmation at the end of this task.
- (b) If the wheel well door linkage can move freely and is not damaged, then continue.
- (4) Visually examine the NLG lock actuator and retract actuator for damage and if the components cannot move freely.
 - (a) If the NLG lock actuator is damaged or cannot move freely, then do these steps.
 - 1) If the lock actuator cannot move freely, then adjust the lock actuator until the lock actuator can move freely.
 - 2) If the lock actuator door linkage is damaged, then replace the lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 3) Do the Repair Confirmation at the end of this task.
 - (b) If the lock actuator can move freely and is not damaged, then continue.
 - (c) If the NLG retract actuator is damaged or cannot move freely, then do these steps.
 - If the retract actuator cannot move freely, then adjust the retract actuator until the lock actuator can move freely.
 - If the retract actuator door linkage is damaged, then replace the retract actuator.
 These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 3) Do the Repair Confirmation at the end of this task.
 - (d) If the retract actuator can move freely and is not damaged, then continue.



- (5) Make sure there are no restrictions or internal leakage in the lock actuator, the lock valve manifold, the retract actuator or the transfer cylinder, for the nose gear.
 - (a) If there is a restriction in one of the above components then do these steps, as applicable:
 - 1) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 3) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 4) Replace the nose gear transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - 5) Do the Repair Confirmation at the end of this task.
 - (b) If there is not a restriction in the transfer cylinder, the downlock actuator, the lock valve manifold, or the retract actuator, then continue.
- (6) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the PSEU BITE shows a PSEU internal fault or NOSE RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) If the PSEU BITE does not show a PSEU internal fault, a NOSE GRN LT FLT, or a NOSE RED LT FLT, then continue.

E. Repair Confirmation

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (1) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) If the airplane is not on jacks, then do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (3) Put the control lever for the landing gear in the OFF position.
- (4) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (5) Put the control lever to the DN position to hydraulically extend the nose gear.
- (6) If the red NOSE GEAR light is not on, and the green NOSE GEAR light is on, then you corrected the fault. Do these steps to complete the task:



WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (a) Install the downlock pins on the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (b) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (c) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

	END	of t <i>f</i>	\SK	
--	------------	---------------	------------	--

809. <u>Landing Gear Extends With Landing Gear Lever at OFF, NOSE GEAR, LEFT GEAR, RIGHT GEAR</u> Green Lights on - Fault Isolation

A. Description

- (1) The landing gear control system controls the extension and retraction of the nose and main landing gear.
- (2) The landing gear control system has these components:
 - (a) Landing gear control lever assembly
 - (b) Landing gear push/pull control cable
 - (c) Forward quadrant and system cables
 - (d) Selector valve
 - (e) Transfer valve
- (3) Move the landing gear control lever to control the extension and retraction of the landing gear. The control lever moves the selector valve through cables.
- (4) The control lever operates a push/pull cable which moves the forward quadrant assembly. The forward quadrant assembly is below the flight compartment floor.
- (5) The forward quadrant moves the landing gear selector valve through control cables and the selector valve quadrant.
- (6) The landing gear selector valve supplies hydraulic pressure to extend and retract the nose and main landing gear. The selector valve is in the main landing gear wheel well on the upper bulkhead.
- (7) The three positions of the landing gear selector valve are as follows:
 - (a) UP pressurized to retract
 - (b) OFF extension and retraction components are not pressurized
 - (c) DN pressurized to extend
- (8) (SDS SUBJECT 32-31-00)

B. Possible Causes

- (1) Landing gear control lever moved past OFF position when moving from UP to OFF
- (2) Landing gear control lever moved too fast from UP to OFF after red lights go out
- (3) Rigging of the landing gear control system cables
- (4) Landing gear selector valve
- (5) Landing gear control lever assembly

32-30 TASKS 807-809



C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11)
- (3) (SSM 32-61-12)
- (4) (WDM 32-64-11)
- (5) (WDM 32-64-12)

D. Fault Isolation Procedure

(1) Do these steps to prepare for fault isolation:

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (b) Electrically ground the airplane. Do this task: Static Grounding, AMM TASK 20-40-11-910-801.
- (c) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (d) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
С	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

- (e) Make sure the control lever for the landing gear is in the DN position.
- (f) Remove the downlock pins from the nose and main landing gear. To remove the downlock pins, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.
- (g) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (h) Move the two thrust levers to the full forward position.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (i) Move the control lever for the landing gear to UP to retract the landing gear.
- (j) Make sure the NOSE, LEFT GEAR, and RIGHT GEAR green lights and red lights are off.
- (2) Do these steps to make sure the landing gear control system is adjusted correctly:
 - (a) Move the control lever for the landing gear to the OFF position.

32-30 TASK 809

Page 212 Jun 15/2015



- (b) If the landing gear extended and the NOSE, LEFT GEAR, and RIGHT GEAR green lights came on when you put the control lever to the OFF position, then do these steps:
 - 1) Put the control lever for the landing gear to the DN position.
 - Do the landing gear control system adjustment. Do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - 3) Do the Repair Confirmation at the end of this task.
 - 4) If the Repair Confirmation is not satisfactory, then continue.
- (3) Replace the landing gear selector valve. These are the tasks:
 - Landing Gear Selector Valve Removal, AMM TASK 32-31-51-020-801
 - Landing Gear Selector Valve Installation, AMM TASK 32-31-51-400-801
 - (a) Do the Repair Confirmation at the end of this task.
 - (b) If the Repair Confirmation is not satisfactory, then continue.
- (4) Replace the landing gear control lever assembly. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (5) Clean the landing gear control lever between the outer shaft and the outer lever sleeve using alcohol, B50073 spray or liquid.

E. Repair Confirmation

- (1) Remove the downlock pins from the nose and main landing gear. To remove the downlock pins, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.
- (2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (3) Move the control lever for the landing gear to UP to retract the landing gear.
- (4) Move the control lever for the landing gear to the OFF position.
- (5) If the landing gear did not extend when you put the control lever to the OFF position, then you corrected the fault. Do these steps to complete this task:
 - (a) Move the control lever to the DN position to extend the landing gear.
 - (b) Install the downlock pins on the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

END	OF T	VCK	
	UF I	AON	

AKS ALL



810. Nose Gear Commanded Up, NOSE GEAR Green Light and NOSE GEAR Red Light On - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) Nose Landing Gear: NOSE GEAR green light does not go off with landing gear lever at UP. NOSE GEAR red light on.
- (2) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these nose gear conditions:
 - (a) Gear position (Up, Down, In-transit)
 - (b) Landing gear control lever and gear position disagree
 - (c) Throttle position and gear position disagree.
 - (d) The red NOSE GEAR light comes on for these conditions:
 - (e) Disagree: lever down, nose gear not down and locked
 - (f) Disagree: lever not down, nose gear not up and locked
 - (g) Disagree: nose gear not down, throttle retarded and altitude below 800 ft (244 m)
- (3) (SDS SUBJECT 32-61-00)

B. Possible Causes

- (1) Ground lock pin installed
- Proximity switch electronics unit (PSEU), M2061
- (3) Nose gear lock actuator
- (4) Nose gear lock valve manifold
- (5) Nose gear retract actuator
- (6) Check valves in the gear Up and Down lines for steering return pressure
- (7) Nose gear transfer cylinder
- (8) Nose gear retract fuse
- (9) A blocked hydraulic line
- (10) Nose gear lock mechanism
- (11) Position sensors damaged or not adjusted correctly

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

D. Initial Evaluation

- (1) Make sure the control lever for the landing gear is in the DN position.
- (2) Do a check to make sure the groundlock pin was installed. If it was, then remove it and you corrected the fault. If not, then continue.



WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (3) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (4) Examine these components on the nose gear and in the nose wheel well for damage:
 - (a) Wiring and sensors
 - (b) Sensor brackets
 - (c) Lock links
 - (d) Lock springs
 - (e) Retract actuator
 - (f) Lock actuator
 - (g) Ground lock pin
 - (h) Lock manifold
 - (i) Transfer cylinder

WARNING: REMOVE PERSONS AND EQUIPMENT FROM THE NOSE GEAR PATH. WHEN THE NOSE GEAR RETRACTS, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (5) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (6) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (7) Remove the downlock pin for the nose landing gear. To remove the downlock pin, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (8) Move the control lever for the landing gear to the UP position.
 - (a) If the red NOSE GEAR light and the green NOSE GEAR lights stay on, then do the Fault Isolation Procedure Nose Gear Retraction.
 - (b) If the red NOSE GEAR light goes out, and the green NOSE GEAR light is not on, then there was an intermittent fault. Do these steps to complete this task:
 - 1) Move the control lever for the landing gear to the DN position.
 - 2) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 3) Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.



E. Fault Isolation Procedure - Nose Gear Retraction

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the PSEU BITE shows a PSEU internal fault or NOSE RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) If the PSEU BITE does not show a PSEU internal fault or NOSE RED LT FLT, then continue.

F. Fault Isolation Procedure - Internal Leakage Check

WARNING: MAKE SURE YOU CONNECT A HOSE TO HYDRAULIC PORTS THAT ARE OPENED TO THE ATMOSPHERE FOR THIS CHECK AND THAT IT GOES TO A SUITABLE CONTAINER FOR EXCESS FLOW. HYDRAULIC FLUID THAT SPRAYS FREELY INTO THE AIR CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONNEL.

NOTE: One procedure to use to find internal leakage without component removal is to disconnect the hydraulic line from the port on that component that will not have flow. If there is flow, the component is bad.

- (1) Do this check for internal leakage:
 - (a) Move the control lever for the landing gear to the DN position.

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. Do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (d) Listen for noise as the hydraulic fluid flows through the components.

WARNING: DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

(e) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (f) Move the control lever for the landing gear to the UP position.
- (g) Listen for noise as the hydraulic fluid flows through the components.

<u>WARNING</u>: DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

(h) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.

AKS ALL



- (i) Move the control lever for the landing gear to the DN position.
- (j) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (k) Replace the leaking parts.
- After the replacement of one or more components do the Repair Confirmation at the end of this task.
- (m) If the nose gear did not operate correctly after you replaced the leaking part, then continue.
- (2) Examine the quantity of flow per minute:
 - (a) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (d) Disconnect the gear DOWN line from the nose gear lock actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (e) Move the control lever for the landing gear to the OFF position.

WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES.
PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL,
AND DAMAGE TO EQUIPMENT.

(f) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (g) Move the control lever for the landing gear to the UP position.
- (h) Measure the quantity of fluid that leaks out of the gear DOWN port.

NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.

- (i) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.

32-30 TASK 810

Page 217 (S Oct 15/2015

EFFECTIVITY •

AKS ALL



- (j) If the internal leakage is less than 30 cc/min, then continue.
- (k) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (I) Move the control lever for the landing gear to the DN position.
- (m) Connect the gear DOWN line to the nose gear lock actuator.
- (n) Disconnect the gear DOWN line from the lock valve manifold.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (o) Move the control lever for the landing gear to the OFF position.

WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES.
PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL,
AND DAMAGE TO EQUIPMENT.

(p) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (q) Move the control lever for the landing gear to the UP position.
- (r) Measure the quantity of fluid that leaks out of the gear DOWN port.

NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.

- (s) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - Do the Repair Confirmation at the end of this task.
- (t) If the internal leakage is less than 30 cc/min, then continue.
- (u) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (v) Move the control lever for the landing gear to the DN position.
- (w) Connect the gear DOWN line to the lock valve manifold.
- (x) Disconnect the gear DOWN line from the gear retract actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.

AKS ALL

(y) Move the control lever for the landing gear to the OFF position.

EFFECTIVITY 32-30 TASK 810



WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(z) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (aa) Move the control lever for the landing gear to the UP position.
- (ab) Measure the quantity of fluid that leaks out of the gear DOWN port.

NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.

- (ac) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (ad) If the internal leakage is less than 30 cc/min, then continue.
- (ae) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (af) Move the control lever for the landing gear to the DN position.
- (ag) Connect the gear DOWN line to the gear retract actuator.
- (ah) Disconnect the gear DOWN line from the transfer cylinder.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (ai) Move the control lever for the landing gear to the OFF position.

WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES.
PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL,
AND DAMAGE TO EQUIPMENT.

(aj) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (ak) Move the control lever for the landing gear to the UP position.
- (al) Measure the quantity of fluid that leaks out of the gear DOWN port.

NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.

AKS ALL



- (am) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (an) If the internal leakage is less than 30 cc/min, then continue.
- (ao) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (ap) Move the control lever for the landing gear to the DN position.
- (aq) Connect the gear DOWN line to the transfer cylinder.
- (ar) If no problem is found with the components, then continue:
- (3) Replace these components one at a time and do a check of nose gear operation after you replace each component:
 - (a) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (b) Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (c) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - If the Repair Confirmation is not satisfactory, then continue.
 - (d) Replace the check valves in the gear Up and Down lines for steering Supply and Return pressure.
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (e) Replace the nose gear retract pressure fuse. These are the tasks:
 - Removal of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-000-801
 - Installation of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (f) Replace the nose gear transfer cylinder. These are the tasks:

32-30 TASK 810

EFFECTIVITY



- Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
- Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
- 1) Do the Repair Confirmation at the end of this task.
- 2) If the Repair Confirmation is not satisfactory, then continue.
- (g) Replace the nose gear lock mechanism. These are the tasks:
 - Nose Landing Gear Lock Mechanism Removal, AMM TASK 32-33-51-000-801
 - Nose Gear Lock Mechanism Installation, AMM TASK 32-33-51-400-801

G. Repair Confirmation

- (1) After the replacement of one of more components, test the extension/retraction system for the nose landing gear. Do this task: Nose Landing Gear Test - Component Replacement, AMM TASK 32-33-00-710-802.
- (2) If the NOSE GEAR green light goes off and the NOSE GEAR red light is off, then you corrected the fault. Do these steps to complete the task:
 - (a) Move the control lever for the landing gear to DN to extend the landing gear.
 - (b) Install the downlock pin in the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Nose, AMM TASK 07-11-06-580-803.



811. Nose Gear Commanded Up, NOSE GEAR Green Light Off, NOSE GEAR Red Light On - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) Nose Landing Gear: NOSE GEAR green light goes off with landing gear lever at UP. NOSE GEAR red light on.
- (2) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these nose gear conditions:
 - (a) Gear position (Up, Down, In-transit)
 - (b) Landing gear control lever and gear position disagree
 - (c) Throttle position and gear position disagree.
 - (d) The red NOSE GEAR light comes on for these conditions:
 - (e) Disagree: lever down, nose gear not down and locked
 - (f) Disagree: lever not down, nose gear not up and locked
 - (g) Disagree: nose gear not down, throttle retarded and altitude below 800 feet
- (3) (SDS SUBJECT 32-61-00)

B. Possible Causes

EFFECTIVITY '

AKS ALL

- (1) Proximity switch electronics unit (PSEU), M2016
- (2) Nose gear doors are not adjusted correctly
- (3) Nose gear lock valve manifold

32-30 TASKS 810-811



- (4) Nose gear retract actuator
- (5) Check valves in the gear Up and Down lines for steering Return pressure
- (6) Nose gear transfer cylinder
- (7) Nose gear retract pressure fuses
- (8) Position sensors damaged or not adjusted correctly

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

D. Initial Evaluation

(1) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (3) Examine these components on the nose gear and in the nose wheel well for damage:
 - (a) Wiring and sensors
 - (b) Sensor brackets
 - (c) Lock links
 - (d) Lock springs
 - (e) Retract actuator
 - (f) Lock actuator
 - (g) Lock manifold
 - (h) Transfer cylinder

WARNING: REMOVE PERSONS AND EQUIPMENT FROM THE NOSE GEAR PATH. WHEN THE NOSE GEAR RETRACTS, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (4) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (5) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (6) Remove the downlock pin for the nose landing gear. To remove the downlock pin, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.
- (7) Place the thrust levers in the fully forward position.

32-30 TASK 811

EFFECTIVITY



WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (8) Move the control lever for the landing gear to the UP position.
 - (a) If the green NOSE GEAR light goes out and the red NOSE GEAR light stays on, then do the Fault Isolation Procedure Nose Gear Retraction.
 - (b) If the red NOSE GEAR light goes out, and the green NOSE GEAR light is not on, then there was an intermittent fault. Do these steps to complete this task:
 - 1) Move the control lever for the landing gear to the DN position.
 - 2) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

E. Fault Isolation Procedure - Nose Gear Retraction

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the PSEU BITE shows a PSEU internal fault or NOSE RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) If the PSEU BITE does not show for a PSEU internal fault or NOSE RED LT FLT, then continue.
- (2) Do this check of the nose gear door adjustment:
 - (a) Move the control lever for the landing gear to the DN position to extend the nose gear.
 - (b) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) Disconnect the nose gear doors from the trunnion clevis on the nose gear. Tie the door linkage so it is out of the way of the nose gear.
 - (d) Remove the downlock pin for the nose landing gear. To remove the downlock pin, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (e) Move the control lever for the landing gear to the UP position.
- (f) If the red NOSE GEAR light goes out, and the green NOSE GEAR light is not on, then do these steps:

NOTE: The nose gear doors are not adjusted correctly.

- 1) Move the control lever for the landing gear to the DN position.
- 2) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.



- Do the adjustment for the door linkage on the nose wheel well doors. To to this, do this task: Nose Gear Wheel Well Door Linkage Adjustment and Check, AMM TASK 32-33-61-820-802.
- (g) If the red NOSE GEAR light is on, then do these steps and continue:
 - Move the control lever for the landing gear to the DN position to extend the nose gear.
 - 2) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - Re-connect the nose gear doors to the trunnion clevis on the nose gear. Do this task: Nose Gear Wheel Well Door Linkage Installation, AMM TASK 32-33-61-400-801.
- (3) Replace these components one at a time and do a check of nose gear operation after you replace each component, or, do the Fault Isolation Procedure - Internal Leakage Check to find the bad component:
 - (a) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (b) Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (c) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - If the Repair Confirmation is not satisfactory, then continue.
 - (d) Replace the check valves in the gear Up and Down lines for steering Supply and Return pressure.
 - 1) Do the Repair Confirmation at the end of this task.
 - If the Repair Confirmation is not satisfactory, then continue.
 - (e) Replace the nose gear retract pressure fuse. These are the tasks:
 - Removal of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-000-801
 - Installation of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-400-801
 - Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (f) Replace the nose gear transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801

AKS ALL



- Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
- 1) Do the Repair Confirmation at the end of this task.
- 2) If the Repair Confirmation is not satisfactory, then continue.
- F. Fault Isolation Procedure Internal Leakage Check
 - WARNING: MAKE SURE YOU CONNECT A HOSE TO HYDRAULIC PORTS THAT ARE OPENED TO THE ATMOSPHERE FOR THIS CHECK AND THAT IT GOES TO A SUITABLE CONTAINER FOR EXCESS FLOW. HYDRAULIC FLUID THAT SPRAYS FREELY INTO THE AIR CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONNEL.
 - NOTE: One procedure to use to find internal leakage without component removal is to disconnect the hydraulic line from the port on that component that will not have flow. If there is flow, the component is bad.
 - (1) Do this check for internal leakage:
 - (a) Make sure the control lever for the landing gear is in the DN position.
 - WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.
 - (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801
 - (d) Listen for noise as the hydraulic fluid flows through the components.
 - WARNING: DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.
 - (e) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.
 - WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.
 - (f) Move the control lever for the landing gear to the UP position.
 - (g) Listen for noise as the hydraulic fluid flows through the components.
 - <u>WARNING</u>: DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.
 - (h) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.
 - (i) Move the control lever for the landing gear to the DN position.
 - (j) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

AKS ALL



- (k) Replace the leaking parts.
- After the replacement of one or more components do the Repair Confirmation at the end of this task.
- (m) If the nose gear did not operate correctly after you replaced the leaking part, then continue.
- (2) Examine the quantity of flow per minute:
 - (a) Make sure the control lever for the landing gear is in the DN position.
 - WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.
 - (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Disconnect the gear DOWN line from the nose gear lock actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
 - (e) Move the control lever for the landing gear to the OFF position.
 - **WARNING:** KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.
 - (f) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.
 - (g) Move the control lever for the landing gear to the UP position.
 - (h) Measure the quantity of fluid that leaks out of the gear DOWN port.
 - NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
 - (i) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (j) If the internal leakage is less than 30 cc/min, then continue.
 - (k) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

AKS ALL



- (I) Move the control lever for the landing gear to the DN position.
- (m) Connect the gear DOWN line to the nose gear lock actuator.
- (n) Disconnect the gear DOWN line from the lock valve manifold.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (o) Move the control lever for the landing gear to the OFF position.

WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(p) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (q) Move the control lever for the landing gear to the UP position.
- (r) Measure the quantity of fluid that leaks out of the gear DOWN port.

NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.

- (s) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (t) If the internal leakage is less than 30 cc/min, then continue.
- (u) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (v) Move the control lever for the landing gear to the DN position.
- (w) Connect the gear DOWN line to the lock valve manifold.
- (x) Disconnect the gear DOWN line from the gear retract actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (y) Move the control lever for the landing gear to the OFF position.

WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(z) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

AKS ALL



WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (aa) Move the control lever for the landing gear to the UP position.
- (ab) Measure the quantity of fluid that leaks out of the gear DOWN port.
 - NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (ac) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (ad) If the internal leakage is less than 30 cc/min, then continue.
- (ae) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (af) Move the control lever for the landing gear to the DN position.
- (ag) Connect the gear DOWN line to the gear retract actuator.
- (ah) Disconnect the gear DOWN line from the transfer cylinder.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- (ai) Move the control lever for the landing gear to the OFF position.

WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES.
PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL,
AND DAMAGE TO EQUIPMENT.

- (aj) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.
- (ak) Move the control lever for the landing gear to the UP position.
- (al) Measure the quantity of fluid that leaks out of the gear DOWN port.
 - NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (am) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801

AKS ALL



- 2) Do the Repair Confirmation at the end of this task.
- (an) If the internal leakage is less than 30 cc/min, then continue.
- (ao) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (ap) Move the control lever for the landing gear to the DN position.
- (aq) Connect the gear DOWN line to the transfer cylinder.
- (ar) If no problem is found with the components, then continue.
- (3) Replace these components one at a time and do a check of nose gear operation after you replace each component:
 - (a) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (b) Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (c) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (d) Replace the check valves in the gear Up and Down lines for steering Supply and Return pressure.
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (e) Replace the nose gear retract pressure fuse. These are the tasks:
 - Removal of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-000-801
 - Installation of the Retract Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (f) Replace the nose gear transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.



- (g) Replace the nose gear lock mechanism. These are the tasks:
 - Nose Landing Gear Lock Mechanism Removal, AMM TASK 32-33-51-000-801
 - Nose Gear Lock Mechanism Installation, AMM TASK 32-33-51-400-801

G. Repair Confirmation

- (1) After the replacement of one of more components, test the extension/retraction system for the nose landing gear. Do this task: Nose Landing Gear Test - Component Replacement, AMM TASK 32-33-00-710-802.
- (2) If the NOSE GEAR green light goes off and the NOSE GEAR red light is off, then you corrected the fault. Do these steps to complete the task:
 - (a) Move the control lever for the landing gear to DN to extend the landing gear.
 - (b) Install the downlock pin in the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Nose, AMM TASK 07-11-06-580-803.



812. Nose Gear Commanded Down, NOSE GEAR Green Light Off, NOSE GEAR Red Light On - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) Nose Landing Gear: NOSE GEAR green light does not go on with landing gear lever at DOWN. NOSE GEAR red light on.
- (2) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these nose gear conditions:
 - (a) Gear position (Up, Down, In-transit)
 - (b) Landing gear control lever and gear position disagree
 - (c) Throttle position and gear position disagree
 - (d) The red NOSE GEAR light comes on for these conditions:
 - (e) Disagree: lever down, nose gear not down and locked
 - (f) Disagree: lever not down, nose gear not up and locked
- (3) (SDS SUBJECT 32-61-00)

B. Possible Causes

- Proximity switch electronics unit (PSEU), M2061
- (2) Nose gear lock actuator
- (3) Nose gear lock valve manifold
- (4) Nose gear retract actuator
- (5) Check valves in the gear Up and Down lines for steering return pressure
- (6) Nose gear transfer cylinder
- (7) Nose gear extend fuse
- (8) High internal leakage in the steering system for the nose gear

AKS ALL

32-30 TASKS 811-812



- (9) A blocked hydraulic line
- (10) Nose gear lock mechanism
- (11) Position sensors damaged or not adjusted correctly

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

D. Initial Evaluation

(1) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (3) Examine these components on the nose gear and in the nose wheel well for damage:
 - (a) Wiring and sensors
 - (b) Sensor brackets
 - (c) Lock links
 - (d) Lock springs
 - (e) Retract actuator
 - (f) Lock actuator
 - (g) Ground lock pin
 - (h) Lock manifold
 - (i) Transfer cylinder

WARNING: REMOVE PERSONS AND EQUIPMENT FROM THE NOSE GEAR PATH. WHEN THE NOSE GEAR RETRACTS, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (4) Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (5) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (6) Remove the downlock pin for the nose landing gear. To remove the downlock pin, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (7) Move the control lever for the landing gear to the UP position to retract the nose gear.
 - (a) Move the control lever for the landing gear to the DN position.

AKS ALL



- (b) If the red NOSE GEAR light is on, and the NOSE GEAR green light does not come on, then do the Fault Isolation Procedure - Nose Gear Retraction.
- (c) If the red NOSE GEAR light goes out, and the green NOSE GEAR light is on, then there was an intermittent fault. Do these steps to complete this task:
 - 1) Install the downlock pin for the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

E. Fault Isolation Procedure

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the PSEU BITE shows a PSEU internal fault or NOSE RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) If the PSEU BITE does not show a PSEU internal fault or NOSE RED LT FLT, then continue.
- (2) Do the adjustment for the door linkage on the nose wheel well doors. Do this task: Nose Gear Wheel Well Door Linkage Adjustment and Check, AMM TASK 32-33-61-820-802.
 - (a) If the nose gear operated correctly after you did the adjustment for the door linkage, then you corrected the fault.

F. Fault Isolation Procedure - Internal Leakage Check

WARNING: MAKE SURE YOU CONNECT A HOSE TO HYDRAULIC PORTS THAT ARE OPENED TO THE ATMOSPHERE FOR THIS CHECK AND THAT IT GOES TO A SUITABLE CONTAINER FOR EXCESS FLOW. HYDRAULIC FLUID THAT SPRAYS FREELY INTO THE AIR CAN CAUSE DAMAGE TO EQUIPMENT OR INJURY TO PERSONNEL.

NOTE: One procedure to use to find internal leakage without component removal is to disconnect the hydraulic line from the port on that component that will not have flow. If there is flow, the component is bad. The internal leakage test will not find leakage at the nose gear steering metering valve and system check valves. Steps are included for the nose gear steering metering valve and system check valves.

- (1) Do this check for internal leakage:
 - (a) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (d) Listen for noise as the hydraulic fluid flows through the components.



WARNING: DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

(e) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering metering valve, the nose gear system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (f) Move the control lever for the landing gear to the UP position.
- (g) Listen for noise as the hydraulic fluid flows through the components.

WARNING: DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

- (h) Feel for heat in the lock actuator, the lock valve manifold, the retract actuator, the nose gear steering metering valve, the nose gear system check valves, the transfer cylinder, the fuses, and the hydraulic lines, caused by internal hydraulic fluid leakage.
- (i) Move the control lever for the landing gear to the DN position.
- (j) If noise is heard or heat is felt, for hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (k) Replace the leaking parts.
- (I) After the replacement of one or more components do the Repair Confirmation at the end of this task.
- (m) If the nose gear did not operate correctly after you replaced the leaking part, then continue.
- (2) Examine the quantity of flow per minute:
 - (a) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (d) Disconnect the gear UP line from the nose gear lock actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.

WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES.
PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL,
AND DAMAGE TO EQUIPMENT.

(e) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

AKS ALL



WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (f) Measure the quantity of fluid that leaks out of the gear UP port.
 - NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (g) If the amount of fluid that leaks out of the gear UP port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (h) If the internal leakage is less than 30 cc/min, then continue.
- (i) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (j) Move the control lever for the landing gear to the DN position.
- (k) Connect the gear UP line to the nose gear lock actuator.
- (I) Disconnect the gear UP line from the lock valve manifold.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.
- WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES.
 PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL,
 AND DAMAGE TO EQUIPMENT.
- (m) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.
- (n) Measure the quantity of fluid that leaks out of the gear UP port.
 - NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (o) If the amount of fluid that leaks out of the gear UP port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (p) If the internal leakage is less than 30 cc/min, then continue.



- (q) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (r) Move the control lever for the landing gear to the DN position.
- (s) Connect the gear UP line to the lock valve manifold.
- (t) Disconnect the gear UP line from the gear retract actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.

WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES.
PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL,
AND DAMAGE TO EQUIPMENT.

(u) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (v) Measure the quantity of fluid that leaks out of the gear UP port.
 - NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.
- (w) If the amount of fluid that leaks out of the gear UP port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (x) If the internal leakage is less than 30 cc/min, then continue.
- (y) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (z) Move the control lever for the landing gear to the DN position.
- (aa) Connect the gear UP line to the gear retract actuator.
- (ab) Disconnect the gear UP line from the transfer cylinder.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.

WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(ac) For hydraulic system A slowly increase the pressure to 3000 psi (20,684 kPa), do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.



WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(ad) Measure the quantity of fluid that leaks out of the gear UP port.

NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.

- (ae) If the amount of fluid that leaks out of the gear UP port is equal to or greater than 30 cc/min, then do these steps:
 - 1) Replace the transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - Do the Repair Confirmation at the end of this task.
- (af) If the internal leakage is less than 30 cc/min, then continue.
- (ag) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (ah) Move the control lever for the landing gear to the DN position.
- (ai) Connect the gear UP line to the transfer cylinder.
- (aj) If no problem is found with the components, then do these steps:
 - 1) Replace the nose gear steering metering valves. These are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
- (ak) Do the Repair Confirmation at the end of this task.
- (3) Replace these components one at a time and do a check of nose gear operation after you replace each component:
 - (a) Replace the nose gear lock actuator. These are the tasks:
 - Nose Landing Gear Lock Actuator Removal, AMM TASK 32-33-21-000-801
 - Nose Landing Gear Lock Actuator Installation, AMM TASK 32-33-21-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (b) Replace the nose gear lock valve manifold. These are the tasks:
 - Nose Gear Lock Valve Manifold Removal, AMM TASK 32-33-31-000-801
 - Nose Gear Lock Valve Manifold Installation, AMM TASK 32-33-31-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
 - (c) Replace the nose gear retract actuator. These are the tasks:
 - Nose Gear Retract Actuator Removal, AMM TASK 32-33-11-000-801
 - Nose Gear Retract Actuator Installation, AMM TASK 32-33-11-400-801
 - Do the Repair Confirmation at the end of this task.

32-30 TASK 812

Page 236 Oct 15/2015



- 2) If the Repair Confirmation is not satisfactory, then continue.
- (d) Replace the check valves in the gear Up and Down lines for steering Supply and Return pressure.
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
- (e) Replace the nose gear extend pressure fuse. These are the tasks:
 - Removal of the Extend Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-000-803
 - Installation of the Extend Pressure Fuse for the Nose Gear, AMM TASK 32-33-71-400-802
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
- (f) Replace the nose gear transfer cylinder. These are the tasks:
 - Nose Gear Transfer Cylinder Removal, AMM TASK 32-33-41-000-801
 - Nose Gear Transfer Cylinder Installation, AMM TASK 32-33-41-400-801
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
- (g) Replace the nose gear lock mechanism. These are the tasks:
 - Nose Landing Gear Lock Mechanism Removal, AMM TASK 32-33-51-000-801
 - Nose Gear Lock Mechanism Installation, AMM TASK 32-33-51-400-801

G. Repair Confirmation

- (1) After the replacement of one of more components, test the extension/retraction system for the nose landing gear. Do this task: Nose Landing Gear Test Component Replacement, AMM TASK 32-33-00-710-802.
- (2) If the NOSE GEAR green light comes on and the NOSE GEAR red light is off, then you corrected the fault. Do these steps to complete the task:
 - (a) Move the control lever for the landing gear to DN to extend the landing gear.
 - (b) Install the downlock pin in the nose landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Nose, AMM TASK 07-11-06-580-803.

FND	OF TA	SK —	

813. Landing Gear Control Lever Lock - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) The landing gear lever does not move to the UP position in flight. The lever is free to move to the UP position when the lock override is used.

EFFECTIVITY 32-30 TASKS 812-813



- (2) The control lever for the landing gear has a lever lock mechanism operated by a lever lock solenoid. The lever lock prevents accidental movement of the control lever to the UP position when the airplane is on the ground. When the airplane is in the air or on jacks with the weight off the landing gear and the GSBV (ground spoiler bypass valve) Interlock Valve is in the closed position, the solenoid gets electrical power and releases the lever lock.
- (3) (SDS SUBJECT 32-31-00)

B. Possible Causes

- (1) Circuit breakers
- (2) Lever latch solenoid
- (3) Wiring
- (4) The GSBV Interlock Valve proximity switch/actuation cable
- (5) Proximity switch electronics unit (PSEU), M2061
- (6) Landing gear lever module

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	17	C00129	LANDING GEAR LATCH & PRESS WARN

This is the circuit breaker:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	16	C01356	LANDING GEAR AIR/GND SYS 1

This is the circuit breaker:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C01355	LANDING GEAR AIR/GND SYS 2

D. Related Data

- (1) (SSM 31-53-11)
- (2) (SSM 32-09-11)
- (3) (SSM 32-30-00)
- (4) (SSM 32-31-11)
- (5) (SSM 32-61-11)
- (6) (WDM 32-31-11)
- (7) (WDM 32-64-11)

E. Initial Evaluation

(1) Make sure the control lever for the landing gear is in the DN position.

AKS ALL



WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (2) Make sure the downlock pins are installed in the nose and main landing gear. To install the pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (4) Prepare to put the airplane in the air mode, do this task: Prepare to Put the Airplane in the Air Mode, AMM TASK 32-09-00-840-801.
- (5) Put the airplane in the air mode, do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
 - NOTE: You must use the deactuators to put the airplane in the air mode or put the airplane on jacks. You cannot use the PSEU BITE for this test.
- (6) Do the steps that follow to make sure that the GSBV Interlock Valve is in the closed position:
 - NOTE: The interlock valve must be in the closed position for the landing gear lever lock solenoid to be energized. The interlock valve proximity switch gives a 'closed' (near) signal when the shock strut is fully extended, or when the interlock valve actuating cable lower end at the right main landing gear strut upper torsion link is disconnected and the cable is manually actuated to the 'closed' position.
 - (a) If the airplane is on jacks and the shock strut is fully extended the valve is in the closed position.
 - (b) If the airplane is not on jacks, do the following steps to manually actuate the GSBV Interlock actuating cable
 - Remove the bolt, washers, and nut to disconnect the cable end from the strut upper torsion link. Do the steps in this task: (AMM TASK 27-62-00-820-803) needed to disconnect the interlock valve actuator cable slider.
 - 2) Move the lower slider until you can easily install rig pin S/B-3 from the kit, F70207-109, through the yoke of the interlock valve.
- (7) Move the control lever for the landing gear to the UP position.
 - (a) If you can not move the control lever to the UP position, then do the Fault Isolation Procedure below.
 - (b) If you can move the control lever to the UP position, then there was an intermittent fault. Do these steps to complete the task:
 - 1) Move the control lever to the DN position

AKS ALL

- 2) Remove the rig pin S/B-3 from the yoke of the interlock valve.
- 3) Install the bolt, washers, and nut to reconnect the actuator cable end to the strut upper torsion link. Do the steps in this task: (AMM TASK 27-62-00-820-803) needed to reconnect the interlock valve actuator cable slider.
- 4) Perform PSEU self test to clear any induced maintenance faults, do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
- 5) Put the airplane back to the ground mode, do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.

EFFECTIVITY 32-30 TASK 813



F. Fault Isolation Procedure

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the PSEU BITE shows a PSEU internal fault or AIR/GND FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - 1) Do the Repair Confirmation at the end of this task.
 - (b) If the PSEU BITE does not show a PSEU internal fault or AIR/GND FLT, then continue.
- (2) Make sure, at the circuit breaker panel, P6-3, the 6b17 LANDING GEAR LATCH & PRESS WARN circuit breaker is in the closed position.
- (3) Do this check for power at the landing gear lever latch solenoid:
 - (a) Disconnect connector D11138 for the lever latch solenoid.
 - NOTE: The connector D11138 is located on the PSEU in the forward electrical equipment bay.
 - (b) Do a check for 28 VDC at pin 19 of connector D11138 from the lever lock solenoid.
 - If there is not 28 VDC at pin 19 of connector D11138, then do this check of the wiring:
 - Remove the landing gear control lever module, M1952. To remove it, do this task: Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801.

CAUTION: MAKE SURE THAT THE POWER AT THE POWER PANEL IS TURNED OFF BEFORE PERFORMING THE CONTINUITY CHECK BELOW. DAMAGE TO EQUIPMENT COULD OCCUR.

b) Do a check for an open circuit between these pins of connector D11990 in the flight compartment and connector D11138 at the E11 rack:

D11138	D11990
pin 19	pin 8

- c) If there is an open circuit, then do these steps:
- d) Repair the wiring.
- e) Re-install the landing gear control lever module, M1952. To install it, do this task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801.
- f) Re-connect the connector D11138 to the PSEU.
- g) Do the Repair Confirmation at the end of this task.
- If there is continuity between pin 19 of connector D11138 and pin 8 of connector D11990, then continue.
- 3) Do a check of the lever lock solenoid functionality by grounding pin 19 of connector D11138. If the solenoid does not energize, then do these steps:
 - a) Replace the lever latch solenoid. These are the tasks:
 - Landing Gear Control Lever Lock Solenoid Removal, AMM TASK 32-31-31-020-801
 - Landing Gear Control Lever Lock Solenoid Installation, AMM TASK 32-31-31-400-801
 - b) Re-connect the connector D11138 to the PSEU.

AKS ALL 32-30



c) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this check of the landing gear lever:
 - (a) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (d) Put the airplane in the air mode, do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
- (e) Move the control lever for the landing gear to the UP position.
- (f) If you can put the control lever to the UP position, then you corrected the fault.
 - 1) Move the control lever for the landing gear to the DN position.
 - 2) Put the airplane back to the ground mode, do this task: Return the Airplane to the Ground Mode. AMM TASK 32-09-00-860-802.



814. NOSE GEAR Red Light On (On Ground Only) - Fault Isolation

A. Description

WARNING: THIS CAN BE A VERY DANGEROUS CONDITION. IF THE NOSE LANDING GEAR IS NOT LOCKED IN THE DOWN POSITION IT CAN ACCIDENTALLY RETRACT. IF THE NOSE LANDING GEAR RETRACTS, INJURY OR DEATH TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

- (1) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these landing gear conditions:
 - (a) Landing gear down and locked
 - (b) Disagree
 - (c) Not down warning.
- (2) The red NOSE GEAR light comes on for these conditions:
 - (a) Disagree: lever down, nose gear not down and locked
 - (b) Disagree: lever not down, nose gear down and locked
 - (c) Gear not down warning.
- (3) (SDS SUBJECT 32-61-00)

B. Possible Causes

- (1) Nose landing gear is not in the locked position
- (2) Proximity sensor or wiring problem
- (3) Proximity switch electronics unit (PSEU), M2061

AKS ALL

32-30 TASKS 813-814



C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11)
- (3) (SSM 32-61-12)
- (4) (WDM 32-64-11)
- (5) (WDM 32-64-12)

D. Fault Isolation Procedure

WARNING: DO NOT LET YOURSELF OR ANOTHER PERSON BE UNDER THE AIRPLANE TO CHECK FOR THE DOWNLOCK PIN. IF THE NOSE LANDING GEAR RETRACTS, INJURY OR DEATH TO PERSONS AND DAMAGE TO EQUIPMENT CAN OCCUR.

(1) If you are not sure if the downlock pin for the nose landing gear is installed, then do these steps:

WARNING: DO NOT MOVE THE AIRPLANE. THE NOSE LANDING GEAR CAN INADVERTENTLY RETRACT IF IT IS NOT IN THE LOCKED POSITION AND THE DOWNLOCK PIN IS NOT INSTALLED. THIS CAN CAUSE INJURIES OR DEATH TO PERSONS AND DAMAGE TO EQUIPMENT.

- (a) Stop all maintenance and loading activity that can cause the airplane to bounce, shake or move
- (b) Make sure the configuration of the hydraulic systems is not changed.NOTE: If hydraulic power is supplied, leave it on and if it is not supplied, leave it off.
- (c) Make sure the parking brake is set.
- (d) Make sure that chocks are installed against the front and the back of at least one set of MAIN LANDING GEAR tires.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON THE MAIN LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(e) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.

WARNING: DO NOT LET YOURSELF OR ANOTHER PERSON UNDER THE AIRPLANE WHEN YOU PUT A CHOCK IN FRONT OF THE NOSE LANDING GEAR TIRE. IF THE NOSE LANDING GEAR RETRACTS, THIS CAN CAUSE INJURY OR DEATH TO PERSONS AND DAMAGE TO EQUIPMENT.

(f) Use ropes or a long pole to put a chock in front of the nose landing gear tires, if chocks are not already installed.

WARNING: DO NOT LET YOURSELF OR ANOTHER PERSON BE UNDER THE AIRPLANE WHEN YOU INSTALL THE JACK PAD. IF THE NOSE LANDING GEAR RETRACTS IT CAN CAUSE INJURIES OR DEATH TO PERSONS AND DAMAGE TO EQUIPMENT.

(g) Do the task to install a jack to lift the nose of the airplane, but do not lift the nose gear tire off the ground. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.

AKS ALL



(h) If hydraulic system A power is supplied, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (i) Install the downlock pin in the nose gear if the downlock pin is not installed. If the downlock pin cannot be installed, push the lock links to the locked position so that the downlock pin can be installed.
- (j) Check the following for damage and missing parts:
 - 1) Shock strut
 - 2) Drag brace
 - 3) Lock links
 - 4) Position sensors, targets and wiring
- (k) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If the PSEU BITE shows a PSEU internal falt or NOSE, L, R RED LT FLT, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - a) Do the Repair Confirmation at the end of this task.
 - If the PSEU BITE does not show a PSEU internal fault or NOSE, L, R RED LT FLT, then continue.
- (I) Do the operational test for the nose landing gear. Do this task: Operational Test for the Nose Landing Gear, AMM TASK 32-33-00-710-801.
 - 1) If the operational test for the nose landing gear was not normal, then do the applicable fault isolation for nose gear extension and retraction.
 - If the operational test for the nose landing gear was normal, then you corrected the fault.
- (m) Do these steps to put the airplane back to its usual condition:
 - 1) Make sure the control lever for the landing gear is in the OFF position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- 2) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- 3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- 4) Move the control lever for the landing gear to the DN position.
- 5) Make sure the red NOSE GEAR light does not come on, and the green NOSE GEAR light is on.
- 6) If the nose of the airplane is still lifted on jacks, then, do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
- 7) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.

AKS ALL 32-30 TASK 814



- (n) If the downlock pin is installed in the nose landing gear, then do this task: Landing Gear Position Indicating and Warning System Test, AMM TASK 32-61-00-710-801.
- (o) If the system test for landing gear position and indication was not normal, then do the applicable fault isolation.
- (p) If the system test for landing gear position and indication was normal, then you corrected the fault. Do these steps to put the airplane back to its usual condition:
 - 1) Make sure the control lever for the landing gear is in the OFF position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- 3) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- 4) Move the control lever for the landing gear to the DN position.
- 5) Make sure the red NOSE GEAR light does not come on, and the green NOSE GEAR light is on.
- 6) If the nose of the airplane is still lifted on jacks, then do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
- 7) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.



815. Landing Gear Commanded Up, NOSE, LEFT, and RIGHT GEAR Green and Red Lights On - Fault Isolation

A. Description

- (1) The landing gear control system controls the extension and retraction of the nose and main landing gear.
 - (a) The landing gear control system has these components:
 - 1) Landing gear control lever assembly
 - 2) Teleflex cable
 - 3) Forward quadrant and system cables
 - 4) Selector valve
 - 5) Transfer valve
 - (b) You move the landing gear control lever to control landing gear extension and retraction. The control lever moves the selector valve through cables.
 - (c) The control lever operates a teleflex cable which moves the forward quadrant assembly. The forward quadrant assembly is below the flight compartment floor.
 - (d) The forward quadrant moves the landing gear selector valve through control cables and the selector valve quadrant.

AKS ALL 32-30 TASKS 814-815



- (e) The landing gear selector valve supplies hydraulic pressure to extend and retract the nose and main landing gear. The selector valve is in the main wheel well on the upper bulkhead.
- (f) The three positions of the landing gear selector valve are as follows:
 - 1) UP pressurized to retract
 - 2) OFF extension and retraction components are not pressurized
 - 3) DN pressurized to extend.
- (g) (SDS SUBJECT 32-31-00)
- (2) The manual extension system for the landing gear has a limit switch in the manual extension access door. When the access door is opened for manual extension the switch sends a signal to the bypass valve that is in the landing gear selector valve. This moves the bypass valve to connect all hydraulic components in the landing gear system to the hydraulic system return.
 - (a) (SDS SUBJECT 32-34-00)
- (3) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for the nose, left, and right gear conditions.
 - (a) Indications are shown for these nose, left, and right gear conditions:
 - 1) Nose, Left, and right gear position (Up, Down, In-transit)
 - 2) Landing gear control lever and nose, left, and right gear position disagree
 - 3) Throttle position and gear position disagree.
 - (b) The red NOSE, LEFT, or RIGHT GEAR lights come on for these conditions:
 - 1) Disagree: lever down, nose, left, or right main gear not down and locked
 - 2) Disagree: lever not down, left or right main gear not up and locked
 - 3) Disagree: left or right main gear not down, throttle retarded and altitude below 800 feet
 - (c) (SDS SUBJECT 32-61-00)

B. Possible Causes

- (1) Ground lock pins installed
- (2) Manual extension limit switch, S1186, in the door open position.
- (3) Rigging of the landing gear control cables
- (4) Landing gear selector valve

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

D. Related Data

- (1) (SSM 32-30-00)
 - (a) (SSM 32-35-11)
 - (b) (SSM 32-61-11, 12)
 - (c) (WDM 32-35-11)

EFFECTIVITY AKS ALL



(d) (WDM 32-64-11, 12)

E. Fault Isolation Procedure

- (1) Visually check the following:
 - (a) Ground lock pins installed
 - (b) Alt extend access door open
 - (c) Landing gear selector valve
 - (d) Check landing gear selector valve linkage
- (2) Do these steps to prepare for fault isolation:

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (b) Electrically ground the airplane. To do this, do this task: Static Grounding, AMM TASK 20-40-11-910-801.
- (c) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (d) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
С	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

(e) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

- (f) Make sure the control lever for the landing gear is in the DN position.
- (g) Make sure the manual extension access door is fully closed.
 - Open the manual extension access door and verify that the door recess and the area around the manual extension access door switch are free of debris.
 - 2) If necessary clean the door recess and the area around the manual extension access door switch with a dry brush and alcohol.

NOTE: The location of the manual extension system access door [1] makes it likely to collect dirt and residue found in the cockpit.

(h) Remove the downlock pins from the nose and main landing gear. To remove the downlock pins, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.

EFFECTIVITY
AKS ALL

32-30 TASK 815

Page 246 Jun 15/2016



- (i) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (j) Move the two thrust levers to the full forward position.

WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE NOSE AND MAIN LANDING GEAR. FAST MOVEMENT OF THE LANDING GEAR CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (k) Move the control lever for the landing gear to UP to retract the landing gear.
- (I) If the landing gear retracted and the NOSE, LEFT GEAR, and RIGHT GEAR green and red lights are not on, then do these steps to complete this task:
 - 1) Move the control lever for the landing gear to the DN position.
 - 2) Install the downlock pins for the landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 3) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - 4) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.
- (m) If the landing gear did not retract and the NOSE, LEFT GEAR, and RIGHT GEAR green lights stayed on, and the NOSE, LEFT GEAR, and RIGHT GEAR red lights came on, then do the fault isolation procedure.
- (3) Do these steps to do the fault isolation procedure:
 - (a) Put the control lever for the landing gear to the DN position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (b) Install the downlock pins in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) Make sure the limit switch for the manual extension access door, S1186, is operable. Do these steps:
 - At the landing gear selector valve in the main wheel well, disconnect connector D46026P.
 - 2) Do a check for 28 VDC at pin 8 of connector D46026P.
 - 3) If there is 28 VDC at pin 8 of connector D46026P, then replace the limit switch for the manual extension access door, S1186.
 - Do this task: Removal of the Manual Extension System Access Door Switch, AMM TASK 32-34-11-820-801.
 - b) Do this task: Installation of the Manual Extension System Access Door Switch, AMM TASK 32-34-11-820-802.
 - c) Do the Repair Confirmation at the end of this task.
 - 4) If there is not 28 VDC at pin 8 of connector D46026P, then connect the connector D46026P and continue.
- (d) Make sure the limit switch for the manual extension access door is properly adjusted. To do this, do this task: Manual Extension System Access Door Switch Adjustment, AMM TASK 32-34-00-820-802.

AKS ALL



- (e) Do the landing gear control system adjustment. Do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - 1) Do the Repair Confirmation at the end of this task.
 - 2) If the Repair Confirmation is not satisfactory, then continue.
- (f) Replace the landing gear selector valve. These are the tasks:
 - Landing Gear Selector Valve Removal, AMM TASK 32-31-51-020-801
 - Landing Gear Selector Valve Installation, AMM TASK 32-31-51-400-801
 - 1) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (a) Electrically ground the airplane. Do this task: Static Grounding, AMM TASK 20-40-11-910-801.
 - (b) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
 - (c) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-2

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C00799	HYD SYS LDG GR SYS XFR VALVE SEC
С	16	C00781	HYD SYS LDG GR SYS XFR VALVE PRI

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

(d) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	16	C01432	LANDING GEAR ALTN EXTEND SOL

- (e) Make sure the control lever for the landing gear is in the DN position.
- (f) Make sure the manual extension access door is fully closed.
- (g) Remove the downlock pins from the nose and main landing gear. To remove the downlock pins, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.
- (h) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (i) Move the two thrust levers to the full forward position.

32-30 TASK 815

AKS ALL

EFFECTIVITY



WARNING: MAKE SURE ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE NOSE AND MAIN LANDING GEAR. FAST MOVEMENT OF THE LANDING GEAR CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (j) Move the control lever for the landing gear to UP to retract the landing gear.
- (k) Make sure the landing gear retracts and the NOSE, LEFT GEAR, and RIGHT GEAR green and red lights are not on, then do these steps to complete this task:
- (I) Move the control lever for the landing gear to the DN position.
- (m) Install the downlock pins for the landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (n) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (o) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.



816. <u>Landing Gear Commanded Down, NOSE, LEFT, and RIGHT GEAR Green and Red Lights On</u>-

A. Description

- (1) The landing gear control system controls the extension and retraction of the nose and main landing gear.
 - (a) The landing gear control system has these components:
 - 1) Landing gear control lever assembly
 - 2) Teleflex cable
 - 3) Forward quadrant and system cables
 - 4) Selector valve
 - 5) Transfer valve
 - 6) Aft Control Quadrant
 - (b) You move the landing gear control lever to control landing gear extension and retraction. The control lever moves the selector valve through cables.
 - The control lever operates a teleflex cable which moves the forward quadrant assembly. The forward quadrant assembly is below the flight compartment floor.
 - 2) The control lever also operates four switches within the landing gear lever module assembly. Two switches are at the UP position and two switches are at the DOWN position. There are no switches at the OFF position.
 - a) At the UP position, switches S3 and S4 provide input to the Anti-Skid System.
 - b) At the DOWN position, switch S1 provides input to the Landing Gear Lever/Landing Gear Position Disagree indicating system.
 - At the DOWN position, switch S2 provides input to the Passenger Sign Control System.
 - (c) The forward quadrant moves the landing gear selector valve through control cables and the selector valve quadrant.
 - (d) The landing gear selector valve supplies hydraulic pressure to extend and retract the nose and main landing gear. The selector valve is in the main wheel well on the upper bulkhead.

AKS ALL

32-30 TASKS 815-816



- (e) The three positions of the landing gear selector valve are as follows:
 - 1) UP pressurized to retract
 - 2) OFF extension and retraction components are not pressurized
 - DN pressurized to extend.
- (f) (SDS SUBJECT 32-31-00)
- (2) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these nose, left, and right gear conditions:
 - (a) Nose, Left, and right gear position (Up, Down, In-transit)
 - (b) Landing gear control lever and nose, left, and right gear position disagree
 - (c) Throttle position and gear position disagree.
 - (d) The red NOSE, LEFT, or RIGHT GEAR lights comes on for these conditions:
 - 1) Disagree: lever down, nose, left, or right main gear not down and locked
 - 2) Disagree: lever not down, left or right main gear not up and locked
 - 3) Disagree: left or right main gear not down, throttle retarded and altitude below 800 feet
 - (e) (SDS SUBJECT 32-61-00)

B. Possible Causes

- (1) The landing gear lever is not fully engaged in the landing gear lever module detent assembly, causing lack of contact with the disagree switch (S2).
 - (a) The Landing Gear Control Lever Module, M1952
 - (b) A wiring problem
 - (c) The Proximity Switch Electronics Unit (PSEU), M2061
- (2) The Landing Gear Control Cable out of adjustment
- (3) The Aft Control Quadrant hits its stop position before the landing gear lever is fully engaged in the landing gear lever module detent assembly.

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row Col		<u>Number</u>	<u>Name</u>	
D	1	C01399	PSEU PRI	
D	2	C01400	PSEU ALTN	

D. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11)
- (3) (WDM 32-64-11)
- (4) (WDM 32-64-12)

E. Fault Isolation Procedure

(1) Do these steps to prepare for the fault isolation procedure:

AKS ALL



WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (b) Do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (c) Electrically ground the airplane, do this task: Static Grounding, AMM TASK 20-40-11-910-801.
- (d) Do this task: Supply External Power, AMM TASK 24-22-00-860-813.
- (e) Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
 - NOTE: You must use proximity switch deactuators to put the airplane in the air mode or put the airplane on jacks. You cannot use the PSEU BITE for this test.
- (f) Put an actuator on the Ground Spoiler Interlock Valve Close Sensor (S1050).
 - NOTE: The actuator is part of this test set: Set A27092-61. For information on the Ground Spoiler Interlock Valve Close Sensor, refer to this task: (AMM TASK 27-62-61-400-808)
- (2) Do these steps to do the fault isolation procedure:
 - (a) Put the control lever for the landing gear in the DN position if not already in that position.
 - (b) Install the force gage equipment, SPL-6190 on the control lever for the landing gear.
 - (c) Pull the control lever for the landing gear out of the DN position detent with the force gage equipment, SPL-6190.
 - 1) Make sure that the force necessary to pull the control lever out of the detent is not more than 12 lbf (53 N).
 - (d) Remove the force gage equipment, SPL-6190.
 - (e) Pull the control lever completely out and release into the DN detent.
 - Make sure that the control lever goes freely into the detent and to the bottom of the detent without a push, or binding, or stickiness.
 - (f) If the NOSE, RIGHT GEAR and LEFT GEAR green lights are on, and the NOSE, LEFT GEAR and RIGHT GEAR red lights are not on, then the system has operated correctly, and no further testing is required.
 - (g) If the NOSE, RIGHT GEAR and LEFT GEAR green lights are on, and the NOSE, LEFT GEAR and RIGHT GEAR red lights came on, and stayed on; or if there was binding or stickiness detected between the outer lever shaft and outer lever sleeve, then do the following steps:
 - Clean the landing gear control lever between the outer lever shaft and the outer lever sleeve using alcohol, B50073 spray or liquid.
 - Repeat steps (a) through (e) above.
 - 3) If the landing gear NOSE, LEFT GEAR AND RIGHT GEAR red lights go out, then you have corrected the fault.
 - 4) If the landing gear NOSE, LEFT GEAR AND RIGHT GEAR lights still remain on, then continue.
 - (h) Do the following steps to check for power at the landing gear control lever module, M1952.

AKS ALL



- Remove the landing gear lever control module. To remove it, do this task: Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801.
- 2) Make sure that these circuit breakers are closed:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

 Do a check for 10-15 VDC, from the PSEU, at pin 2 of connector D11990 in the Flight Compartment.

NOTE: The connector D11990 is located at the control lever module, M1952, on the P2-3 panel (W0001).

- 4) If there is not 10-15 VDC at pin 2 of connector D11990, then do these steps:
 - a) Disconnect connector D10982 for the landing gear lever switch.

NOTE: The connector D10982 is located on the PSEU, M2061, in the forward electrical equipment bay through access door 112A.

b) Repair the wiring between these pins of connector D11990 in the flight compartment and connector D10982 :

D11990	D10982
pin 2	 pin 1

- c) Re-connect the connector D10982 to the PSEU, M2061.
- 5) Re-connect the connector D11990 at the control lever module, M1952.
- 6) Re-install the control lever module, M1952. To install it, do this task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
- 7) Do the repair confirmation at the end of this task.
- (i) If there is 10-15 VDC at pin 2 of connector D11990, then continue.
- (j) Do this check of the switch and wiring on the control lever module, M1952:

NOTE: Place the landing gear control lever is in the DN position if not already in that position.

- 1) Do a continuity check between pin 1 and pin 2 of connector D11990 on the control lever module, M1952.
- 2) If the resistance is greater than 10 ohms between pin 1 and pin 2 of connector D11990 on the control lever module, then do these steps:
 - a) Switch failure evident; replace the control lever module, M1952. To replace it, do this task: Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801 and, do this task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801.
 - b) Do the Repair Confirmation at the end of this task.
- 3) If the resistance is less than 10 ohms between between pin 1 and pin 2 of connector D11990 on the control lever module, then do these steps:

NOTE: Place landing gear control lever in the OFF or UP position

a) Do a continuity check between pin 1 and pin 3 of connector D11990 on the control lever module, M1952.

AKS ALL



- b) If the resistance is greater than 10 ohms between pin 1 and pin 3 of connector D11990 on the control lever module, then do these steps:
 - <1> Switch failure evident; replace the control lever module, M1952. To replace it, do these tasks:

Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801

Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801

- <2> Do the Repair Confirmation at the end of this task.
- c) Do the Repair Confirmation at the end of this task.
- 4) If the resistance is less than 10 ohms between pin 1 and pin 3 of connector D11990 on the control lever module, then do these steps:
 - a) Put the control lever for the landing gear in the DN position.
 - b) Re-connect the connector D11990.
 - Re-install the control lever module. Do this task: Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - d) Do the Repair Confirmation at the end of this task.
- (k) Do a check of the landing gear control cable adjustment. Do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - 1) Do the Repair Confirmation at the end of this task.
- (I) Do a check of the clearance of the Aft Control Quadrant Control System. Do this task: Landing Gear Selector Valve Quadrant Clearance Inspection, AMM TASK 32-31-61-200-802.
 - 1) Do the Repair Confirmation at the end of this task.
- (m) Examine the components of the Aft Control Quadrant for wear or damage. Do this task: Landing Gear Selector Valve Quadrant Inspection, AMM TASK 32-31-61-200-801.
 - 1) Do the Repair conformation at the end of the task.

F. Repair Confirmation

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR.
WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND
CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (a) Make sure the control lever for the landing gear is in the DN position.
 - (b) IF the landing gear NOSE, LEFT GEAR, and RIGHT GEAR green lights are on, and the NOSE, LEFT GEAR, and RIGHT GEAR red lights are not on, then you have corrected the fault.

FND	OF	TASK	
	UF	IASK	

AKS ALL 32-30 TASK 816



817. Nose Gear Alternate Extension Does Not Unlock Nose Gear When Pulled

A. Description

- (1) The manual extension system for the nose landing gear permits you to lower the nose landing gear from the up and locked position when hydraulic system A pressure fails.
- (2) The manual extension system for the nose landing gear has these components:
 - (a) Manual extension control mechanism.
 - (b) Manual extension release mechanism
 - (c) System cable
- (3) The manual extension system for the nose landing gear operates independently of the normal extension and retraction system.
- (4) To operate the system pull on the nose gear manual extension handle in the manual extension control mechanism. This pulls on the NLG manual extension system cable and turns the release mechanism.
- (5) When the release mechanism turns it moves the nose gear lock link to the unlock position. The nose landing gear extends by airloads and its own weight.

(6)

B. Possible Causes

- (1) Nose gear manual extension system out of adjustment
- (2) Damage to, or jammed, manual extension cable, pulley, drums, or release mechanism
- (3) Return spring broken
- (4) Stiff, seized or damaged bearing in release mechanism, cable pulley or cable drum

C. Related Data

(1) (SSM 32-30-00)

D. Fault Isolation Procedure

- (1) Do the nose gear manual extension system test. Do this task: Nose Gear Manual Extension System Test Airplane on Jacks, AMM TASK 32-35-00-730-801.
 - (a) If the nose gear did not freefall to the down and locked position, then do these steps:
 - 1) Put the control lever for the landing gear in the OFF position.
 - 2) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - Put the control lever to the DN position to hydraulically extend the nose gear.
 - 4) If the nose gear did not extend to the down and locked position, then do these steps:
 - a) Check for broken return springs in release mechanism.
 - b) Check for stiff, seized or corroded bearings in release mechanism.
 - c) Pull each cable to determine if more than cable drum moves at the same time.
 - d) Make sure the bolt through drum assy is not too tight.
 - e) Check cables per AMM PAGEBLOCK 20-20-31/601.
 - <1> Make sure cables are not kinked or damaged.
 - <2> Ensure cables are in pulleys.
 - <3> Check for stiff, seized or corroded pulleys.

AKS ALL



- <4> Check cable runs for frayed or loose wires.
- f) Remove the obstruction, if it is necessary.
- g) If it is damaged, replace the manual extension control mechanism, these are the tasks:
 - Main Gear Manual Extension Control Mechanism Removal, AMM TASK 32-34-11-000-801
 - Main Gear Manual Extension Control Mechanism Installation, AMM TASK 32-34-11-400-801
- h) If it is damaged, replace the nose gear manual extension release mechanism, these are the tasks:
 - Nose Gear Manual Extension Release Mechanism Removal, AMM TASK 32-35-11-000-801
 - Nose Gear Manual Extension Release Mechanism Installation, AMM TASK 32-35-11-400-801
- i) If they are damaged, replace the nose gear manual extension system cables, these are the tasks:
 - Nose Gear Manual Extension System Cables Removal, AMM TASK 32-35-21-000-801
 - Nose Gear Manual Extension System Cables Installation, AMM TASK 32-35-21-400-801
- j) Do the adjustment of the nose gear manual extension, do this task: Nose Landing Gear Manual Extension System Adjustment, AMM TASK 32-35-00-820-801 and the system test of the nose gear manual extension, do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-35-00-730-801 to complete the task.
- 5) If the nose gear did extend to the down and locked position, then do the adjustment of the nose gear manual extension, do this task: Nose Landing Gear Manual Extension System Adjustment, AMM TASK 32-35-00-820-801 and the system test of the nose gear manual extension, do this task: Nose Gear Manual Extension System Test Airplane on Jacks, AMM TASK 32-35-00-730-801 to complete the task.
- (b) If the nose gear did freefall to the down and locked position, but the force required to release the nose gear was too high, then continue.
- (2) Do these steps to look for damaged or jammed components in the manual extension system for the nose gear:
 - (a) Do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801
 - (b) Cycle the system several times, then do the nose gear manual extension system test again. To do the test, do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-35-00-730-801.
 - (c) If the force required to release the nose gear was still too high, then do these steps to complete the task:
 - 1) Check for broken return springs in release mechanism.
 - 2) Check for stiff, seized or corroded bearings in release mechanism
 - 3) Pull each cable to determine if more than cable drum moves at the same time
 - 4) Make sure the bolt through drum assy is not too tight.
 - 5) Check cables per AMM PAGEBLOCK 20-20-31/601.

32-30 TASK 817

AKS ALL



- a) Make sure cables are not kinked or damaged.
- b) Ensure cables are in pulleys.
- c) Check for stiff, seized or corroded pulleys.
- d) Check cable runs for frayed or loose wires.
- 6) Remove any obstruction, if it is necessary.
- 7) If it is damaged, then replace the manual extension control mechanism, these are the tasks:
 - Main Gear Manual Extension Control Mechanism Removal, AMM TASK 32-34-11-000-801
 - Main Gear Manual Extension Control Mechanism Installation, AMM TASK 32-34-11-400-801
- 8) If it is damaged, then replace the nose gear manual extension release mechanism, these are the tasks:
 - Nose Gear Manual Extension Release Mechanism Removal, AMM TASK 32-35-11-000-801
 - Nose Gear Manual Extension Release Mechanism Installation, AMM TASK 32-35-11-400-801
- 9) If they are damaged, then replace the nose gear manual extension system cables, these are the tasks:
 - Nose Gear Manual Extension System Cables Removal, AMM TASK 32-35-21-000-801
 - Nose Gear Manual Extension System Cables Installation, AMM TASK 32-35-21-400-801
- 10) If it is damaged, then replace the nose gear manual extension release mechanism spring, these are the tasks:
 - Nose Gear Manual Extension Spring Removal, AMM TASK 32-35-20-000-801
 - Nose Gear Manual Extension Spring Installation, AMM TASK 32-35-20-400-801
- Do the adjustment of the nose gear manual extension system. Do this task: Nose Landing Gear Manual Extension System Adjustment, AMM TASK 32-35-00-820-801.
- 12) Do the system test of the nose gear manual extension system. Do this task: Nose Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-35-00-730-801.
- 13) If the system test for manual extension of the nose gear was satisfactory, then you corrected the fault. Do these steps to complete the task:
 - a) Make sure the downlock pin is installed on the nose landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - b) Make sure the control lever for the landing gear is in the DN position.
 - c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - d) Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

	Εľ	ND	OF	TASK	
--	----	----	----	------	--

AKS ALL



801. <u>Landing Gear Commanded Up, LEFT or RIGHT GEAR Green Light and LEFT or RIGHT GEAR Red</u> Light On - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) Main Landing Gear: LEFT or RIGHT GEAR green light does not go off with landing gear lever at UP, LEFT or RIGHT GEAR red light stays on.
- (2) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these left and right main gear conditions:
 - (a) Left and right main gear position (Up, Down, In-transit)
 - (b) Landing gear control lever and left and right main gear position disagree
 - (c) Throttle position and gear position disagree.
- (3) The red LEFT or RIGHT GEAR light comes on for these conditions:
 - (a) Disagree: lever down, left or right main gear not down and locked
 - (b) Disagree: lever not down, left or right main gear not up and locked
 - (c) Disagree: left or right main gear not down, throttle retarded and altitude below 800 feet
- (4) (SDS SUBJECT 32-61-00)

B. Possible Causes

- (1) Groundlock pin installed
- (2) Damage to lock links, side strut, retract actuator or lock actuator
- (3) Proximity switch electronics unit (PSEU), E11
- (4) Position sensors damaged or not adjusted correctly
- (5) Hydraulic causes:
 - (a) Frangible fitting broken
 - (b) External hydraulic leak downstream of retract fuse
 - (c) Main gear downlock actuator (high internal leakage, plugged, or bent)
 - (d) Main gear retract actuator (high internal leakage or plugged)
 - (e) Main gear retract actuator (external leakage from cracks in the cylinder wall)
 - (f) Main gear transfer cylinder (high internal leakage)
 - (g) Hydraulic fuse (stuck closed, closed prematurely, or an internal leak in the system)
 - (h) Flow regulator plugged
 - (i) Hydraulic line blocked (from loose contamination in the system such as a piece of seal)
- (6) High friction in the lock mechanism
- (7) High friction in the side strut (the affected main gear does not fully unlock)

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

AKS ALL



D. Initial Evaluation

- (1) Make sure the control lever for the landing gear is in the DN position.
- (2) Do a check to make sure downlock pins are installed. If they were, then remove them and you corrected the fault. If not, then continue.

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (3) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (4) Examine these components on the applicable main gear and in the main wheel well for damage, foreign objects, or hydraulic leaks:
 - (a) Wiring and sensors
 - (b) Sensor brackets
 - (c) Lock links
 - (d) Lock springs
 - (e) Actuator piston rods, fittings, and head ends
 - (f) Actuator beam and attachments
 - (g) Hydraulic tubing, fittings and hoses
 - (h) Frangible fitting
 - (i) Flow regulator
 - (i) Transfer cylinder.

WARNING: REMOVE PERSONS AND EQUIPMENT FROM THE MAIN GEAR PATH. WHEN THE MAIN GEAR RETRACTS, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (5) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (6) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (7) Place the thrust levers in the fully forward position.
- (8) Check hydraulic tubing, hoses, actuators, flow regulator, and transfer cylinder for hydraulic leaks.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (9) Move the control lever for the landing gear to the UP position.
 - NOTE: Do not use the lever lock override trigger.
- (10) Check hydraulic tubing, hoses, actuators, flow regulator, and transfer cylinder for hydraulic leaks.
- (11) Move the control lever for the landing gear to the DN position.

AKS ALL



(12) Remove the downlock pins for the affected main landing gear. To remove the downlock pins, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (13) Move the control lever for the landing gear to the UP position.
 - (a) If the red LEFT or RIGHT GEAR light and the green LEFT or RIGHT GEAR lights stay on, and you observe that the left, right gear is down and locked then do the Fault Isolation Procedure Left or (Right) Gear Retraction.
 - (b) If the red LEFT or RIGHT GEAR light stays on, the green LEFT or RIGHT GEAR light is not on, and you observe that the left, right gear is in the up and locked position and stays there when the gear lever is put to OFF, then there is a sensor or PSEU problem. Do these steps to complete this task:
 - 1) Move the control lever for the landing gear to the DN position.
 - Install the downlock pins for the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 3) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.
 - (c) If the red LEFT or RIGHT GEAR light stays on, and the green LEFT or RIGHT GEAR light is not on, and you observe that the left, right gear stalls before it gets to the up and locked position, then there is high internal leakage in the retraction system. Do the Check for Internal Leakage.
- (14) Make sure the control lever for the landing gear is in the DN position.
- (15) Install the downlock pins for the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.

E. Fault Isolation Procedure - Main Gear Retraction

- (1) Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If a maintenance message shows for a PSEU internal failure or LEFT (RIGHT) RED LT FLT, then go to the FIM task.
 - (b) If a maintenance message does not show for a PSEU internal failure or LEFT (RIGHT) RED LT FLT, then continue.
- (2) Do the Fault Isolation Procedure Internal Leakage Check.
 - (a) If you were not able to find internal leakage with the Internal Leakage Check, replace the fuse in the gear UP line for the affected main gear. These are the tasks:
 - Removal of the Retract Pressure Fuses for the Main Gear, AMM TASK 32-32-21-000-801.
 - Installation of the Retract Pressure Fuses for the Main Gear, AMM TASK 32-32-21-400-801.
 - (b) Do this task:Main Landing Gear Test Component Replacement, AMM TASK 32-32-00-710-802. If the main gear retracts and extends correctly after you replaced the fuse, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.

If the main gear did not operate correctly after you replaced the fuse, then continue.

(3) Replace the flow regulator for the affected main gear. These are the tasks:

AKS ALL



- Removal of the Hydraulic Flow Regulator for the Main Gear, AMM TASK 32-32-72-000-801.
- Installation of the Hydraulic Flow Regulator for the Main Gear, AMM TASK 32-32-72-400-801.
- (a) Do this task:Main Landing Gear Test Component Replacement, AMM TASK 32-32-00-710-802. If the main gear retracts and extends correctly after you replaced the hydraulic flow regulator, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.

If the main gear did not operate correctly after you replaced the hydraulic flow regulator, then continue.

- (4) Replace the downlock actuator including the restrictor check valve. These are the tasks:
 - Main Gear Downlock Actuator Removal, AMM TASK 32-32-51-000-801.
 - Main Gear Downlock Actuator Installation, AMM TASK 32-32-51-400-801.
 - (a) Do this task:Main Landing Gear Test Component Replacement, AMM TASK 32-32-00-710-802. If the main gear retracts and extends correctly after you replaced the downlock actuator, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.

If the main gear did not operate correctly after you replaced the downlock actuator, then continue.

- (5) Replace the retract actuator. These are the tasks:
 - Removal of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-000-801.
 - Installation of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-400-801.
 - (a) Do this task:Main Landing Gear Test Component Replacement, AMM TASK 32-32-00-710-802. If the main gear retracts and extends correctly after you replaced the retract actuator, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.

If the main gear did not operate correctly after you replaced the retract actuator, then continue.

- (6) Replace the Main Gear Transfer Cylinder. These are the tasks:
 - Main Gear Transfer Cylinder Removal, AMM TASK 32-32-71-000-801.
 - Main Gear Transfer Cylinder Installation, AMM TASK 32-32-71-400-801.
 - (a) Do this task:Main Landing Gear Test Component Replacement, AMM TASK 32-32-00-710-802. If the main gear retracts and extends correctly after you replaced the Main Gear Transfer Cylinder, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.

If the main gear did not operate correctly after you replaced the Main Gear Transfer Cylinder, then continue.

- (7) Replace the Main Gear Downlock Strut for the affected main gear. These are the tasks:
 - Main Landing Gear Downlock Strut Removal, AMM TASK 32-11-89-000-801.
 - Main Landing Gear Downlock Strut Installation, AMM TASK 32-11-89-420-801.
 - (a) Do this task:Main Landing Gear Test Component Replacement, AMM TASK 32-32-00-710-802. If the main gear retracts and extends correctly after you replaced the Main Gear Downlock Strut, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.

AKS ALL



If the main gear did not operate correctly after you replaced the Main Gear Downlock Strut , then continue.

- (8) Replace the Main Gear Side Strut for the affected main gear. These are the tasks:
 - Main Landing Gear Side Strut Removal, AMM TASK 32-11-61-000-803.
 - Main Landing Gear Side Strut Installation, AMM TASK 32-11-61-400-803.
 - (a) Do this task:Main Landing Gear Test Component Replacement, AMM TASK 32-32-00-710-802. If the main gear retracts and extends correctly after you replaced the Main Gear Side Strut, then you corrected the fault.

Do the Repair Confirmation to put the airplane back to normal.

F. Fault Isolation Procedure - Internal Leakage Check

- (1) Do this check for internal leakage:
 - (a) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. Do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (d) Listen for noise as the hydraulic fluid flows through the components.

WARNING: DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

(e) Feel for heat in the actuators, tubing, valves, flow limiter and transfer cylinder caused by internal hydraulic fluid leakage.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (f) Move the control lever for the landing gear to the UP position.
- (g) Listen for noise as the hydraulic fluid flows through the components.

<u>WARNING</u>: DO NOT TOUCH HOT PARTS WITHOUT APPLICABLE GLOVES. HOT PARTS CAN CAUSE AN INJURY.

- (h) Feel for heat in the actuators, tubing, valves, flow limiter and transfer cylinder caused by internal hydraulic fluid leakage.
- (i) Move the control lever for the landing gear to the DN position.
- (j) If noise is heard or heat is felt, then remove the hydraulic system power. Do this task:
 - Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805
- (k) Replace the leaking part.
- (I) Do the extension/retraction test for the main landing gear. Do this task: Main Landing Gear Test Component Replacement, AMM TASK 32-32-00-710-802

AKS ALL



If the main gear retracts and extends correctly after you replaced the leaking part, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.

- (m) If the main gear did not operate correctly after you replaced the leaking part, then continue.
- (n) For hydraulic system A and B, including reservoirs, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (o) Disconnect the gear DOWN line from the downlock actuator.
 - 1) Cap the open tube and install a hose on the open port fitting.
 - 2) Direct hose into suitable container.

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (p) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (q) Use the override trigger to move the control lever for the landing gear from the DN position to the OFF position.
- (r) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (s) Put the control lever for the landing gear to the UP position.
- (t) Measure the quantity of fluid that leaks out of the gear DOWN port.

NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.

- (u) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, replace the downlock actuator assembly. Do this task:
 - Main Gear Downlock Actuator Removal, AMM TASK 32-32-51-000-801
 - Main Gear Downlock Actuator Installation. AMM TASK 32-32-51-400-801
- (v) Do the extension/retraction test for the main landing gear. Do this task: Main Landing Gear Test Component Replacement, AMM TASK 32-32-00-710-802

If the main gear retracts and extends correctly after you replaced the downlock actuator, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.

- (w) If the internal leakage is within limits, then continue.
- (x) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (y) Put the control lever for the landing gear to the DN position.
- (z) Connect the gear DOWN line to the downlock actuator.
- (aa) Disconnect the gear DOWN line from the transfer cylinder.

32-32 TASK 801

Page 206 Oct 15/2015



- Cap the open tube and install a hose on the open port fitting.
- 2) Direct hose into suitable container.
- (ab) Put the control lever for the landing gear to the OFF position.

WARNING: KEEP ALL PERSONNEL AWAY FROM DISCONNECTED HYDRAULIC LINES. PRESSURIZED HYDRAULIC FLUID CAN CAUSE INJURIES TO PERSONNEL, AND DAMAGE TO EQUIPMENT.

(ac) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (ad) Move the control lever for the landing gear to the UP position.
- (ae) Measure the quantity of fluid that leaks out of the gear DOWN port.

NOTE: You should wait a minimum two minutes after you apply pressure before you start the measurement. This is to let the fluid flow stabilize to a constant rate.

- (af) If the amount of fluid that leaks out of the gear DOWN port is equal to or greater than 30 cc/min, replace the transfer cylinder. Do this task:
 - Main Gear Transfer Cylinder Removal, AMM TASK 32-32-71-000-801
 - Main Gear Transfer Cylinder Installation, AMM TASK 32-32-71-400-801
- (ag) Do the extension/retraction test for the main landing gear. Do this task: Main Landing Gear Test Component Replacement, AMM TASK 32-32-00-710-802

If the main gear retracts and extends correctly after you replaced the transfer cylinder, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.

- (ah) If the internal leakage is within limits, then continue.
- (ai) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (aj) Move the control lever for the landing gear to the DN position.
- (ak) Connect the gear DOWN line to the transfer cylinder.
- (al) Return to Main Gear Retraction Fault Isolation procedure.
- (am) Do the Repair Confirmation to put the airplane back to the usual condition.

G. Repair Confirmation

- (1) Make sure the control lever for the landing gear is in the OFF position.
- (2) Make sure the thrust levers are in the fully aft position.

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONS, AND DAMAGE TO EQUIPMENT.

- (3) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (4) Move the control lever for the landing gear to the DN position.

AKS ALL



- (5) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805
- (6) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

----- END OF TASK -----

802. LEFT GEAR, RIGHT GEAR Red Light On (In Air Only) - Fault Isolation

A. Description

- (1) This task is for these observed faults:
 - (a) Main Landing Gear: LEFT GEAR green light does not come on with landing gear lever at DN. LEFT GEAR red light on, indications normal after alternate gear extension.
 - (b) Main Landing Gear: RIGHT GEAR green light does not come on with landing gear lever at DN. RIGHT GEAR red light on, indications normal after alternate gear extension.
- (2) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these left and right main gear conditions:
 - (a) Left, right main gear down and locked
 - (b) Disagree
 - (c) Not down warning.
- (3) The red LEFT, RIGHT GEAR light comes on for these conditions:
 - (a) Disagree: lever down, left, right gear not down and locked
 - (b) Disagree: lever not down, left, right gear not up and locked
 - (c) Gear not down warning.
- (4) (SDS SUBJECT 32-61-00)

B. Possible Causes

- (1) Proximity switch electronics unit (PSEU), E11
- (2) Main gear actuator
- (3) Main gear uplock or downlock actuator
- (4) Main gear transfer cylinder
- (5) Wiring or sensor problem
- (6) Uplock Mechanism

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

EFFECTIVITY

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

32-32 TASKS 801-802

AKS ALL



E. Initial Evaluation

- (1) Examine these components of the applicable main gear and main wheel well for damage and foreign objects:
 - (a) Uplock and Downlock Actuators
 - (b) Sensors
 - (c) Wiring
- (2) Look for any obvious damage to the applicable sensor, target, adjacent structure.
 - (a) If you find any damage, then do this task: Main Landing Gear Air/Ground Sensor Fault Fault Isolation, 32-09 TASK 803.
 - (b) If there is no obvious damage then continue.
- (3) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR.
WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND
CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(4) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.

WARNING: REMOVE PERSONS AND EQUIPMENT FROM THE MAIN GEAR PATH. WHEN THE NOSE GEAR RETRACTS, THEY CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- (5) Do this task: Lift the Airplane with the Jacks, AMM TASK 07-11-01-580-815.
- (6) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (7) Remove the downlock pin for the main landing gear you will troubleshoot. To remove the downlock pin, do this task: Landing Gear Downlock Pins Removal, AMM TASK 32-00-01-080-801.
- (8) Place the thrust levers in the fully forward position.

WARNING: MAKE SURE THAT ALL PERSONS AND EQUIPMENT ARE CLEAR OF THE CONTROL SURFACES AND LANDING GEAR DOOR AREAS. THE CONTROL SURFACES, THE LANDING GEAR, AND THE LANDING GEAR DOORS CAN MOVE WHEN YOU DO THE AIR MODE SIMULATION. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (9) Move the control lever for the landing gear to the UP position to retract the main gear.
- (10) Move the control lever for the landing gear to the DN position.
 - (a) If the red LEFT, RIGHT GEAR light is on, then do the Fault Isolation Procedure Main Gear Extension.
 - (b) If the red LEFT, RIGHT GEAR light goes out, and the green LEFT, RIGHT GEAR light is on, then there was an intermittent fault. Do these steps to complete this task:
 - 1) Install the downlock pin for the main landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - 2) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

AKS ALL 32-32 TASK 802



F. Fault Isolation Procedure - Main Gear Extension

- (1) If the LEFT, RIGHT GEAR red light was on during flight with the landing gear lever in the UP position, then do these steps:
 - (a) Do this task: Landing Gear Commanded Up, LEFT or RIGHT GEAR Green Light and LEFT or RIGHT GEAR Red Light On - Fault Isolation, 32-32 TASK 801
 If the left, right main gear operated correctly, then you corrected the fault. Do the Repair
 - Confirmation to put the airplane back to normal.
- (2) If the LEFT, RIGHT GEAR red light was on with the landing gear lever in the OFF position, then do these steps:
 - (a) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If any PSEU maintenance messages show, then go to the fault isolation task for the applicable maintenance message to correct the fault.
 - a) If the left, right main gear operated correctly, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.
- (3) If the left, right main gear did not unlock from the up and locked position and the LEFT, RIGHT GEAR red light stayed on, then do these steps:
 - (a) Replace the left, right main gear uplock actuator. These are the tasks:
 - Main Gear Uplock Actuator Removal, AMM TASK 32-32-41-000-801
 - Main Gear Uplock Actuator Installation, AMM TASK 32-32-41-400-801
 - (b) If the left, right main gear operated correctly when you did the installation test for the main gear uplock actuator, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.
 - (c) If the left, right main gear did not operate correctly when you did the installation test for the main gear uplock actuator, then do these steps:
 - 1) Replace the left, right main gear transfer cylinder. These are the tasks:
 - Main Gear Transfer Cylinder Removal, AMM TASK 32-32-71-000-801
 - Main Gear Transfer Cylinder Installation, AMM TASK 32-32-71-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (d) If the left, right main gear operated correctly when you did the installation test for the main gear transfer cylinder, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.
- (4) If the left, right main gear did not extend completely and the LEFT, RIGHT GEAR green light was not on, then do these steps:
 - (a) Replace the left, right main gear actuator. These are the tasks:
 - Removal of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-000-801
 - Installation of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-400-801
 - (b) If the left, right main gear operated correctly when you did the installation test for the main gear actuator, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.
 - (c) If the left, right main gear extended but the downlock strut did not lock when you did the installation test for the main gear actuator, then replace the left, right main gear downlock actuator or retract actuator. These are the tasks:
 - Main Gear Downlock Actuator Removal, AMM TASK 32-32-51-000-801

AKS ALL 32-32 TASK 802



- Main Gear Downlock Actuator Installation, AMM TASK 32-32-51-400-801
- (d) If the left, right main gear operated correctly when you did the installation test for the main gear downlock actuator, then you corrected the fault. Do the Repair Confirmation to put the airplane back to normal.

G. Repair Confirmation

- (1) Make sure the control lever for the landing gear is in the OFF position.
- (2) Make sure the thrust levers are in the fully aft position.
- (3) Install the downlock pin in the main landing gear. To install the downlock pin, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (4) Make sure the downlock pins are installed in the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (5) Move the control lever for the landing gear to the DN position.
- (6) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.



803. Both Main Landing Gear Slow to Retract or Extend - Fault Isolation

A. Description

- (1) The extension and retraction sequence is the same for the left and right main landing gear. The main landing gear extension and retraction system has these hydraulic components:
 - (a) Main gear actuator
 - (b) Downlock actuator
 - (c) Uplock actuator
 - (d) Transfer cylinder
- (2) The sequence for main gear retraction is as follows:
 - (a) The landing gear selector valve supplies up pressure when the control lever for the landing gear is moved to the UP position.
 - (b) Up pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the down side. This gives a time delay to let the downlock actuator unlock the downlock strut.
 - (c) Up pressure goes to the downlock actuator. The downlock actuator extends and unlocks the downlock strut.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, up pressure goes to the up side of the main gear actuator. The main gear actuator moves to retract the gear.
 - (e) When the uplock roller on the main gear moves into the hook of the uplock mechanism, the uplock mechanism moves to the locked position.
- (3) The sequence for main gear extension is as follows:
 - (a) The landing gear selector valve supplies down pressure when the control lever for the landing gear is moved to the DN position.

AKS ALL 32

32-32 TASKS 802-803



- (b) Down pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the up side. This momentarily applies a retract force to the main gear to decrease the forces in the uplock mechanism so the uplock actuator can operate it.
- (c) Down pressure goes to the uplock actuator. The uplock actuator retracts and unlocks the uplock mechanism.
- (d) When the piston in the transfer cylinder gets to the end of the up side, down pressure goes to the down side of the main gear actuator. The main gear actuator moves to extend the gear.
- (e) Down pressure goes to retract the downlock actuator. The downlock actuator moves the downlock strut to the locked position as the main landing gear extends.
- (4) (SDS SUBJECT 32-32-00)

B. Possible Causes

- (1) Rigging of the landing gear selector valve
- (2) Landing gear selector valve
- (3) A restriction in the hydraulic lines from the selector valve
- (4) High internal leakage in hydraulic system

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

E. Initial Evaluation

- (1) Do the operational test for the main landing gear. Do this task: Main Landing Gear Operational Test, AMM TASK 32-32-00-710-801.
- (2) If both main landing gear extend and retract very slowly, then do the Fault Isolation Procedure below.

NOTE: Slow gear operation is normal when only using the electric motor driven pumps for hydraulic power if more than one landing gear are operated together.

- (3) If the retraction and extension times for the main landing gear are acceptable, then there was an intermittent fault. Do these steps to complete this task:
 - (a) Make sure the downlock pins are installed on the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (b) Make sure the control lever for the landing gear is in the DN position.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

AKS ALL



F. Fault Isolation Procedure

- (1) Make sure the landing gear control system is adjusted correctly. Do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - (a) If the landing gear control system is not adjusted correctly, then do these steps:
 - Do the adjustment of the landing gear control system, do this task: Landing Gear Control System Adjustment, AMM TASK 32-31-00-820-801.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the landing gear control system is adjusted correctly, then continue.
- (2) Make sure there are no restrictions in the hydraulic lines from the landing gear selector valve.
 - (a) If there is a restriction in the hydraulic lines from the selector valve to the components for main landing gear extension/retraction, then do these steps:
 - 1) Flush or change the hydraulic lines.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If there is not a restriction in the hydraulic lines, then continue.
- (3) Replace the landing gear selector valve. These are the tasks:
 - Landing Gear Selector Valve Removal, AMM TASK 32-31-51-020-801
 - Landing Gear Selector Valve Installation, AMM TASK 32-31-51-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Do the internal leakage test:System A or System B Sub-System Internal Leakage Check, AMM TASK 29-00-00-790-803
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

(1) Do the operational test for the main landing gear. Do this task: Main Landing Gear Operational Test, AMM TASK 32-32-00-710-801.

----- END OF TASK -----

804. Right (Left) Main Landing Gear Slow to Retract or Extend - Fault Isolation

A. Description

- (1) The extension and retraction sequence is the same for the left and right main landing gear. The main landing gear extension and retraction system has these hydraulic components:
 - (a) Main gear actuator
 - (b) Downlock actuator
 - (c) Uplock actuator
 - (d) Transfer cylinder
 - (e) Landing gear selector valve
- (2) The sequence for main gear retraction is as follows:
 - (a) The landing gear selector valve supplies up pressure when the control lever for the landing gear is moved to the UP position.
 - (b) Up pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the down side. This gives a time delay to let the downlock actuator unlock the downlock strut.

AKS ALL

32-32 TASKS 803-804



- (c) Up pressure goes to the downlock actuator. The downlock actuator extends and unlocks the downlock strut.
- (d) When the piston in the transfer cylinder gets to the end of the up side, up pressure goes to the up side of the main gear actuator. The main gear actuator moves to retract the gear.
- (e) When the uplock roller on the main gear moves into the hook of the uplock mechanism, the uplock mechanism moves to the locked position.
- (3) The sequence for main gear extension is as follows:
 - (a) The landing gear selector valve supplies down pressure when the control lever for the landing gear is moved to the DN position.
 - (b) Down pressure goes to the transfer cylinder and moves the piston in the transfer cylinder to the up side. This momentarily applies a retract force to the main gear to decrease the forces in the uplock mechanism so the uplock actuator can operate it.
 - (c) Down pressure goes to the uplock actuator. The uplock actuator retracts and unlocks the uplock mechanism.
 - (d) When the piston in the transfer cylinder gets to the end of the up side, down pressure goes to the down side of the main gear actuator. The main gear actuator moves to extend the gear.
 - (e) Down pressure goes to retract the downlock actuator. The downlock actuator moves the downlock strut to the locked position as the main landing gear extends.
- (4) (SDS SUBJECT 32-32-00)

B. Possible Causes

- (1) A restriction in one of these components:
 - (a) Main gear transfer cylinder
 - (b) Main gear downlock actuator
 - (c) Main gear actuator
- (2) High internal leakage
- (3) A restriction in the hydraulic lines from and to the landing gear selector valve
- (4) Main gear trunnion bearings
- (5) Side strut assembly on the main gear.

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-61-11, 12)
- (3) (WDM 32-64-11, 12)

AKS ALL



E. Initial Evaluation

- (1) Do the operational test for the main landing gear. Do this task: Main Landing Gear Operational Test, AMM TASK 32-32-00-710-801.
- (2) If the right (left) main landing gear extends or retracts very slowly, then do the Fault Isolation Procedure below.
 - NOTE: Slow gear operation is normal when only using the electric motor driven pumps for hydraulic power if more than one landing gear are operated together.
- (3) If the extension/retraction times for the main landing gear are acceptable, then it was an intermittent fault. Do these steps to complete this task:
 - (a) Make sure the downlock pins are installed on the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (b) Make sure the control lever for the landing gear is in the DN position.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

F. Fault Isolation Procedure

AKS ALL

- (1) Make sure there are no restrictions in the transfer cylinder, the downlock actuator, the retract actuator, or the hydraulic lines from and to the landing gear selector valve, for the right (left) main landing gear.
 - (a) If there is a restriction in one of the above components then do these steps, as applicable:
 - 1) Replace the main gear transfer cylinder. These are the tasks:
 - Main Gear Transfer Cylinder Removal, AMM TASK 32-32-71-000-801
 - Main Gear Transfer Cylinder Installation, AMM TASK 32-32-71-400-801
 - 2) Replace the main gear downlock actuator. These are the tasks:
 - Main Gear Downlock Actuator Removal, AMM TASK 32-32-51-000-801
 - Main Gear Downlock Actuator Installation, AMM TASK 32-32-51-400-801
 - 3) Replace the main gear actuator. These are the tasks:
 - Removal of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-000-801
 - Installation of the Actuator Assembly for the Main Gear, AMM TASK 32-32-11-400-801
 - 4) Flush or replace the hydraulic lines from or to the landing gear selector valve.
 - 5) Do the Repair Confirmation at the end of this task.
- (2) Do the internal leakage test. Refer to Landing Gear Commanded Up, LEFT or RIGHT GEAR Green Light and LEFT or RIGHT GEAR Red Light On Fault Isolation, 32-32 TASK 801
- (3) Inspect the pins and bushings at the hinge points for the side strut assembly on the right (left) main landing gear.
 - (a) If the pins or bushings are damaged, then do these steps:
 - 1) Replace the side strut assembly for the main landing gear: These are the tasks:
 - Main Landing Gear Side Strut Removal, AMM TASK 32-11-61-000-803
 - Main Landing Gear Side Strut Installation, AMM TASK 32-11-61-400-803

EFFECTIVITY 32-32 TASK 804



- 2) Do the Repair Confirmation at the end of this task.
- (b) If the pins or bushings at the hinge points for the side strut are not damaged, then continue.
- (4) Inspect the trunnion bearings on the right (left) main landing gear.
 - (a) If the trunnion bearings are damaged, then do these steps:
 - 1) Replace the damaged bearings These are the tasks:
 - Main Landing Gear Forward Trunnion Bearing Assembly Removal, AMM TASK 32-11-83-000-801
 - Main Landing Gear Forward Trunnion Bearing Assembly Installation, AMM TASK 32-11-83-400-801
 - Landing Gear Support Beam Removal, AMM TASK 57-15-00-000-801
 - Landing Gear Support Beam Installation, AMM TASK 57-15-00-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the trunnion bearings are not damaged, then continue.

G. Repair Confirmation

- (1) Do the operational test for the main landing gear. Do this task: Main Landing Gear Operational Test, AMM TASK 32-32-00-710-801.
 - If the operational test for the main landing gear is satisfactory, then you corrected the fault.



805. <u>LEFT (RIGHT) GEAR Green Light Not On With Gear Lever DN, LEFT (RIGHT) GEAR Red Light On,</u> Alternate Gear Extension Attempted - Fault Isolation

A. Description

- (1) The landing gear position indicating and warning system uses lights in the flight compartment to show indications for these left and right main gear conditions:
 - (a) Left, right main landing gear down and locked
 - (b) Disagree
 - (c) Not down warning.
- (2) The red LEFT, RIGHT GEAR light comes on for these conditions:
 - (a) Disagree: lever down, left, right main landing gear not down and locked
 - (b) Disagree: lever not down, left, right main landing gear not up and locked
 - (c) Gear not down warning.
- (3) The manual extension system for the main landing gear permits you to lower the left and right main landing gear from the up and locked position when hydraulic system A pressure fails.
- (4) The manual extension system for the main landing gear has these components:
 - (a) Manual extension control mechanism.
 - (b) Manual extension linkage
 - (c) System cable
- (5) The manual extension system for the main landing gear operates independently of the normal extension and retraction system.

AKS ALL

32-32 TASKS 804-805



- (6) The manual extension system for the landing gear has a limit switch in the manual extension access door. When the access door is opened for manual extension the switch sends a signal to the bypass valve that is in the landing gear selector valve. This moves the bypass valve to connect all hydraulic components in the landing gear system to the hydraulic system return.
 - (a) (SDS SUBJECT 32-34-00)
- (7) To operate either the left or right system pull on the left or right main gear manual extension handle in the manual extension control mechanism. This pulls on the left or right MLG manual extension system cable which goes to that main gear manual extension linkage.
- (8) The main gear manual extension linkage moves the uplock mechanism for that main landing gear to the unlocked position. The main landing gears extend by airloads and their own weight.
- (9) (SDS SUBJECT 32-34-00)
- (10) (SDS SUBJECT 32-61-00)

B. Possible Causes

- Main gear alternate extension system out of adjustment
- (2) Damage to, or jammed, manual extension cable, pulley, drums, or manual extension linkage.

C. Related Data

- (1) (SSM 32-30-00)
- (2) (SSM 32-35-11)
- (3) (SSM 32-61-11, 12)
- (4) (WDM 32-35-11)
- (5) (WDM 32-64-11, 12)

D. Fault Isolation Procedure

- (1) Do the main gear manual extension system test for the main gear that is affected. Do this task: Main Gear Manual Extension System Test Airplane on Jacks, AMM TASK 32-34-00-730-801.
 - (a) If the affected main gear did not freefall to the down and locked position, then do these steps:
 - 1) Put the control lever for the landing gear in the OFF position.
 - For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - Put the control lever to the DN position to hydraulically extend the main gear.
 - 4) If the main gear did not extend to the down and locked position, then do these steps:
 - a) Visually examine the cables, pulleys, drums, and manual extension linkage to see if they are jammed or there is damage.
 - b) Remove the obstruction, if it is necessary.
 - c) If it is damaged, replace the manual extension control mechanism, these are the tasks:
 - Main Gear Manual Extension Control Mechanism Removal, AMM TASK 32-34-11-000-801
 - Main Gear Manual Extension Control Mechanism Installation, AMM TASK 32-34-11-400-801
 - d) If it is damaged, replace the manual extension mechanism for the main gear, these are the tasks:

AKS ALL



- Removal of the Manual Extension Mechanism for the Main Gear, AMM TASK 32-34-21-000-801
- Installation of the Manual Extension Mechanism for the Main Gear, AMM TASK 32-34-21-400-801
- e) If they are damaged, replace the main gear manual extension system cables, these are the tasks:
 - Main Gear Manual Extension System Cables Removal, AMM TASK 32-34-31-000-801
 - Main Gear Manual Extension System Cables Installation, AMM TASK 32-34-31-400-801
- f) Do the adjustment of the main gear manual extension, do this task: Main Landing Gear Manual Extension System Adjustment and Test, AMM TASK 32-34-00-820-801 and the system test of the main gear manual extension, do this task: Main Landing Gear Manual Extension System Adjustment and Test, AMM TASK 32-34-00-820-801 to complete the task.
- 5) If the main gear did extend to the down and locked position, then continue.
- 6) Do the adjustment of the main gear manual extension, do this task: Main Landing Gear Manual Extension System Adjustment and Test, AMM TASK 32-34-00-820-801 and the system test of the main gear manual extension, do this task: Main Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-34-00-730-801 to complete the task.
- (b) If the affected main gear did freefall to the down and locked position, but the force required to release the main gear was too high, then continue.
- (2) Do these steps to look for damaged or jammed components in the manual extension system for the main gear:
 - (a) Do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - (b) Cycle the system several times, then do the main gear manual extension system test again. Do this task: Main Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-34-00-730-801.
 - (c) If the force required to release the affected main gear was still too high, then do these steps to complete the task:
 - 1) Visually examine the cables, pulleys, drums, and manual extension mechanism to see if they are jammed or there is damage.
 - Remove the obstruction, if it is necessary.
 - 3) If it is damaged, replace the manual extension control mechanism, these are the tasks:
 - Main Gear Manual Extension Control Mechanism Removal, AMM TASK 32-34-11-000-801
 - Main Gear Manual Extension Control Mechanism Installation, AMM TASK 32-34-11-400-801
 - 4) If it is damaged, replace the manual extension mechanism for the main gear, these are the tasks:
 - Removal of the Manual Extension Mechanism for the Main Gear, AMM TASK 32-34-21-000-801

AKS ALL 32-32 TASK 805



- Installation of the Manual Extension Mechanism for the Main Gear, AMM TASK 32-34-21-400-801
- 5) If they are damaged, replace the main gear manual extension system cables, these are the tasks:
 - Main Gear Manual Extension System Cables Removal, AMM TASK 32-34-31-000-801
 - Main Gear Manual Extension System Cables Installation, AMM TASK 32-34-31-400-801
- 6) Do the adjustment of the main gear manual extension, do this task: Main Landing Gear Manual Extension System Adjustment and Test, AMM TASK 32-34-00-820-801 and the system test of the main gear manual extension, do this task: Main Gear Manual Extension System Test - Airplane on Jacks, AMM TASK 32-34-00-730-801 to complete the task.
- (3) If the system test for manual extension of the affected main gear was satisfactory, then there was an intermittent fault. Do these steps to complete the task:
 - (a) Make sure the downlock pins are installed on the main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
 - (b) Make sure the control lever for the landing gear is in the DN position.
 - (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (d) Do this task: Lower the Airplane Off the Jacks, AMM TASK 07-11-01-580-816.

----- END OF TASK -----

32-32 TASK 805

EFFECTIVITY '

AKS ALL



801. Antiskid/Autobrake Control Unit (AACU) BITE Procedure

A. General

- (1) The AACU will keep a record of faults in memory. These faults can be seen on the AACU message display by doing a Memory Recall.
- (2) You do the Antiskid/Autobrake Control Unit (AACU) BITE tests at the front panel of the AACU. The AACU is on the E1-3 shelf in the electronic equipment bay. These are the functions in the AACU BITE that you will use in this task:
 - (a) Display Test
 - (b) Antiskid/Autobrake Control Test
 - (c) Memory Recall
- (3) The AACU Display Test commands the display segments in the AACU display to come on. The ANTISKID INOP light in the flight compartment also comes on with the display test.
- (4) The Antiskid/Autobrake Control Test does the internal tests and external interfaces test. The faults that are found during this test are active.
- (5) If a maintenance message is displayed on the AACU and there is no fault procedure listed to correct it, it is assumed to be a failure of the AACU, do these steps:
 - (a) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - Do this task: Antiskid/Autobrake Control Unit Operational Test, AMM TASK 32-42-00-720-801.
 - 2) If the maintenance message does not show during the antiskid/autobrake functional test, then you corrected the fault.

B. BITE Procedure

- (1) Do the fault MEMORY RECALL for the AACU:
 - (a) Set the PRESS/TEST-BIT switch to the BIT position.
 - (b) If there are no faults, then the display will show TEST END.
 - (c) If there are faults in the memory, then the display will show the first maintenance message. Do these steps:
 - 1) Write the maintenance message.
 - Set the PRESS/TEST-BIT switch to the BIT position to look for more faults until the display show TEST END.
 - NOTE: The display shows TEST END when there are no fault in the memory. If you do not set the PRESS/TEST-BIT switch to the BIT position in 45 seconds, the test will end and the fault will be removed from the display.
- (2) Do the display test for the AACU:
 - (a) Set the PRESS/TEST-BIT switch to the PRESS/TEST position.
 - (b) Make sure all display segments on the AACU display come on in a checkerboard pattern.
 - (c) Make sure the ANTI SKID INOP light in the flight compartment also comes on with the display test.
 - (d) If some of the display segments do not come on, then do these steps:
 - 1) Replace the AACU, M162. These are the tasks:

AKS ALL

32-42 TASK 801



- Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
- Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
- Do the Antiskid/Autobrake Control Unit BITE again.
- 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (e) If the ANTISKID INOP amber light does not come on, then do these steps:
 - Push and release the ANTISKID INOP light, L2 (P2-2 panel) to use the press-to-test switch in the light. If press to test fails, replace the bulbs or troubleshoot wiring to master dim/test
 - 2) Do a wiring check between pin 8 of the light connector D339 and the following pins: pin 5 of D11402 (relay R626, J24), pin 5 of D11406 (relay R628, J22), and pin 3 of D11404 (relay R627, J22). If there is not continuity to all three pins, repair the wiring.
 - a) Do the Antiskid/Autobrake Control Unit BITE again.
 - b) If the ANTISKID INOP amber light comes on, then you corrected the fault.
- (3) Do the antiskid/autobrake control test for the AACU:
 - (a) Pressurize the hydraulic systems A and B. To pressurize them, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - (b) Make sure the autobrake selector switch is in the OFF position.
 - (c) Make sure the two thrust levers are in the IDLE position.
 - (d) Make sure the wheel chocks are installed.
 - (e) Make sure the parking brake is released.
 - (f) Make sure the landing gear control lever is in the down position.
 - (g) Make sure the speed brake lever is in the DOWN position.
 - (h) Make sure the airplane is in the ground mode. To put the airplane in the ground mode, do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
 - (i) Make sure the mode select switch for the air data inertial reference system (ADIRU) is in the NAV mode and wait for the alignment to complete.
 - Align the ADIRS. Do this task: Air Data Inertial Reference System Alignment from the ISDU, AMM TASK 34-21-00-820-802 or Air Data Inertial Reference System -Alignment from the FMC CDU, AMM TASK 34-21-00-820-801.
 - (j) Set the rotary switch on the AACU to the NORM position.
 - (k) Push and release the RESET switch on the AACU.
 - (I) Set the autobrake selector switch as follows:
 - 1) Set the autobrake switch to OFF position.
 - 2) Set the autobrake switch to position 1.
 - NOTE: The AUTO BRAKE DISARM amber lights will stay on if the autobrake is disabled or the above arming conditions are not met.
 - (m) Push and hold the ENABLE/VERIFY switch on the AACU.
 - (n) While you hold the ENABLE/VERIFY switch, push and hold the VERIFY switch on the AACU.

NOTE: The ANTISKID INOP and AUTO BRAKE DISARM amber lights in the flight compartment should illuminate briefly during this test.

AKS ALL

32-42 TASK 801



- (o) Release the ENABLE/VERIFY switch and VERIFY switch at the same time.
- (p) If the AUTOBRAKE DISARM amber light in the flight compartment does not come on during this test, then do these steps:
 - Push and release the AUTOBRAKE DISARM light, L1 (P2-2 panel) to use the press-to-test switch in the light. If press to test fails, replace the bulb or troubleshoot wiring to master dim/test.
 - With the Autobrake Selector switch armed in position 1, do a wiring continuity check between AACU connector D1040B, pin B7 (E1-3, M162), and AACU connector D1040A, pin D7. If there is not continuity to all these pins, repair the wiring or replace switch S4 in P2-2 panel.
 - a) Do the Antiskid/Autobrake Control Unit BITE again.
 - b) If the AUTOBRAKE DISARM amber light comes on, then you corrected the fault
- (q) If there are no faults, then the display will show TEST END. Do this step to complete the task:
 - 1) Remove hydraulic power from hydraulic systems A and B. To remove it, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (r) If the display shows BRK ####, then the test was initiated but not properly executed, you must repeat the test and make sure that you meet all of the initial conditions.
- (s) If there are existing faults, then the display on the AACU will show the first maintenance message. Do these steps:
 - 1) Write the maintenance message.
 - 2) Push the VERIFY switch to look for more faults until the display shows TEST END.
 - NOTE: The display shows TEST END when the test is completed. If you do not push the VERIFY switch in 45 seconds, the test will end and the fault will be removed from the display.
 - 3) Remove hydraulic power from hydraulic systems A and B. To remove it, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - 4) Refer to the table at the beginning of this chapter to find the fault isolation task for the applicable maintenance message.
- (t) If there are no existing faults, but there was an indication of a fault, then refer to the list of stored faults from step 1 above and the table at the end of this task to find the fault isolation task for the applicable maintenance message.

LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
ANTISKID	A/B CONT	32-42 TASK 807
ANTISKID	A/B SEL	32-42 TASK 821
ANTISKID	A/B SOL	32-42 TASK 808
ANTISKID	A/B SYS	32-42 TASK 803
ANTISKID	A/G 1	32-42 TASK 823
ANTISKID	A/G 2	32-42 TASK 823
ANTISKID	A/G SW	32-42 TASK 823
ANTISKID	ADIRU L	32-42 TASK 824

AKS ALL

32-42 TASK 801



LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
ANTISKID	ADIRU R	32-42 TASK 825
ANTISKID	BOX 1-4	32-42 TASK 803
ANTISKID	BOX 1	32-42 TASK 803
ANTISKID	BOX 2-3	32-42 TASK 803
ANTISKID	BOX 2	32-42 TASK 803
ANTISKID	BOX 3	32-42 TASK 803
ANTISKID	BOX 4	32-42 TASK 803
ANTISKID	BOX A/B	32-42 TASK 803
ANTISKID	BOX BITE	32-42 TASK 803
ANTISKID	CNTLP SW	32-42 TASK 810
ANTISKID	GEARSW1	32-42 TASK 812
ANTISKID	GEARSW2	32-42 TASK 812
ANTISKID	PARKBRK	32-42 TASK 811
ANTISKID	PRESL	32-42 TASK 822
ANTISKID	PRESR	32-42 TASK 822
ANTISKID	PWR 1-4	32-42 TASK 802
ANTISKID	PWR 2-3	32-42 TASK 802
ANTISKID	PWR A/B	32-42 TASK 826
ANTISKID	PWR BITE	32-42 TASK 826
ANTISKID	SOL P SW	32-42 TASK 809
ANTISKID	SP CO LI	32-42 TASK 803
ANTISKID	SP CO RO	32-42 TASK 803
ANTISKID	SP SW LI	32-42 TASK 806
ANTISKID	SP SW LO	32-42 TASK 806
ANTISKID	SP SW RI	32-42 TASK 806
ANTISKID	SP SW RO	32-42 TASK 806
ANTISKID	SPLRHDL	32-42 TASK 827
ANTISKID	THR L 1	32-42 TASK 813
ANTISKID	THR L 2	32-42 TASK 813
ANTISKID	THR R 1	32-42 TASK 813
ANTISKID	THR R 2	32-42 TASK 813
ANTISKID	THR SW	32-42 TASK 813
ANTISKID	VLV 1-2	32-42 TASK 805
ANTISKID	VLV 1	32-42 TASK 804
ANTISKID	VLV 2	32-42 TASK 804

AKS ALL

32-42 TASK 801

Page 204 Feb 15/2013

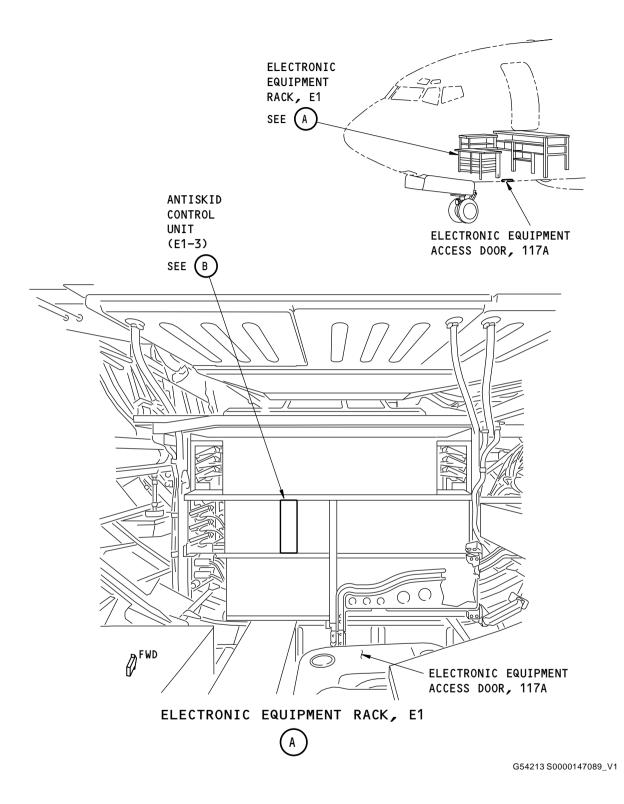


LRU/SYSTEM	MAINTENANCE MESSAGE	GO TO FIM TASK
ANTISKID	VLV 3-4	32-42 TASK 805
ANTISKID	VLV 3	32-42 TASK 804
ANTISKID	VLV 4	32-42 TASK 804
ANTISKID	XDCR 1	32-42 TASK 806
ANTISKID	XDCR 2	32-42 TASK 806
ANTISKID	XDCR 3	32-42 TASK 806
ANTISKID	XDCR 4	32-42 TASK 806

_____ END OF TASK _____

AKS ALL





Antiskid/Autobrake Control Unit Figure 201/32-42-00-990-803 (Sheet 1 of 2)

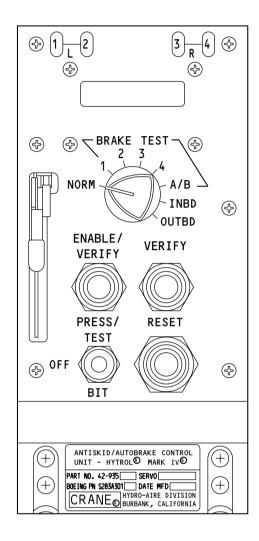
BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

AKS ALL D633A103-AKS

32-42 TASK 801

Page 206 Feb 15/2013





ANTISKID/AUTOBRAKE CONTROL UNIT



G54211 S0000147090_V1

Antiskid/Autobrake Control Unit Figure 201/32-42-00-990-803 (Sheet 2 of 2)

AKS ALL

32-42 TASK 801

Page 207 Feb 15/2013



802. Antiskid Autobrake Control Unit Power for Antiskid 1-4, or 2-3 Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) PWR 1-4
 - (b) PWR 2-3
- (2) The antiskid/autobrake control unit (AACU) does not receive power.

B. Possible Causes

- (1) Circuit breaker C195, or C196
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	Number	<u>Name</u>
Ε	16	C00196	LANDING GEAR ANTISKID INBD
Ε	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the power wiring:
 - (a) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) In the table below, find the electrical connector and the pair of pins for the applicable circuit breaker:

Table 201

ANTISKID WHEELS 1,2,3, and 4 (WDM 32-41-11)

CIRCUIT BREAKER EQUIPMENT NUMBER	CIRCUIT BREAKER CONNECTOR	AACU CONNECTOR
WHEEL 1&4	D40750P	D1040B
C195	pin 2	 pin C1
WHEEL 2&3	D46069P	D1040A

AKS ALL



Table 201 (Continued)

ANTISKID WHEELS 1,2,3, and 4 (WDM 32-41-11)

CIRCUIT BREAKER EQUIPMENT NUMBER

CIRCUIT BREAKER CONNECTOR

AACU CONNECTOR

C196

pin 8

pin C1

- (c) Do a check for 28V DC from pin C1 of the connector D1040B or D1040A to structure ground (WDM 32-41-11).
- (d) If there is not 28V DC at pin C1 of D1040A or D1040B, then do these steps:
 - 1) Open the P6-3 load control center panel.
 - 2) Do a check for 28V DC at the load terminal of circuit breaker C195 or C196.
 - 3) If there is not 28V DC at the load terminal, then do these steps:
 - a) Replace this circuit breaker, C195 or C196 (WDM 32-41-11):
 - <1> These are the circuit breakers:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ε	16	C00196	LANDING GEAR ANTISKID INBD
Ε	18	C00195	LANDING GEAR ANTISKID OUTBD

- b) Re-install the antiskid/autobrake control unit, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- d) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- 4) If there is 28V DC at the load terminal, then do these steps:
 - Repair the wiring between these pins of the connector D1040A or D1040B at the E1-3 shelf and the load terminal of circuit breaker C195 or C196 (WDM 32-41-11):
 - b) Re-install the antiskid/autobrake control unit, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - c) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - d) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (e) If there is 28V DC at pins C1 of the connector D1040A or D1040B, then continue.
- (2) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

	-		
FND	OF	TACV	
	UE	IASN	

AKS ALL



803. Antiskid/Autobrake System Control Unit Internal Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) BOX 1-4
 - (b) BOX 2-3
 - (c) BOX 1
 - (d) BOX 2
 - (e) BOX 3
 - (f) BOX 4
 - (g) BOX BITE
 - (h) BOX A/B
 - (i) SP CO LI
 - (j) SP CO RO
 - (k) A/B SYS
- (2) These messages indicate an internal failure of the antiskid/autobrake control unit (AACU), M162, or the auto speedbrake module (ASM), M980, or the alternate antiskid valves. The possible causes of each message is as follows:
 - (a) BOX 1-4 indicates a failure of the outboard antiskid card (5V DC, memory, communication, or code execution failure).
 - BOX 1-4 can also indicate an out of tolerance condition for normal antiskid valve 1 or normal antiskid valve 4.
 - 2) BOX 1-4 can also indicate an out of tolerance condition for the alternate antiskid valve which drives wheel pair 1 and 2.
 - 3) Do this task: Antiskid Valve Functional Test, AMM TASK 32-42-00-720-802.
 - a) A Box 1-4 fault message would indicate a potential problem with antiskid valve 1 or antiskid valve 4. To determine if either of the antiskid valves and/or associated wiring is out of tolerance do this task, Normal Antiskid Valve 1,2,3, or 4 Problem Fault Isolation, 32-42 TASK 804, for the applicable valves.
 - (b) BOX 2-3 indicates a failure of the inboard antiskid card (5V DC, memory, communication, or code execution failure).
 - 1) BOX 2-3 can also indicate an out of tolerance condition for normal antiskid valve 2 or normal antiskid valve 3.
 - 2) BOX 2-3 can also indicate an out of tolerance condition for the alternate antiskid valve which drives wheel pair 3 and 4.
 - Do this task: Antiskid Valve Functional Test, AMM TASK 32-42-00-720-802.
 - a) A Box 2-3 fault message would indicate a potential problem with antiskid valve 2 or antiskid valve 3. To determine if either of the antiskid valves and/or associated wiring is out of tolerance do these tasks, Normal Antiskid Valve 1,2,3, or 4 Problem - Fault Isolation, 32-42 TASK 804Normal Antiskid Valve 1,2,3, or 4 Problem - Fault Isolation, 32-42 TASK 804, for the applicable valves.
 - (c) BOX 1 indicates a wheel 1 transducer interface or valve driver failure.
 - (d) BOX 2 indicates a wheel 2 transducer interface or valve driver failure.

AKS ALL



- (e) BOX 3 indicates a wheel 3 transducer interface or valve driver failure.
- (f) BOX 4 indicates a wheel 4 transducer interface or valve driver failure.
- (g) BOX BITE indicates a BITE card failure (memory, comm, or code execution).
- (h) BOX A/B indicates an autobrake card failure (5v DC power, memory, comm, or code execution) when landing or RTO autobrake is selected.
 - 1) BOX A/B can also indicate a problem with a brake pedal pressure switch. Do the procedure in Antiskid Valve Functional Test, AMM TASK 32-42-00-720-802 and Autobrake Shuttle Valve Operational Test, AMM TASK 32-42-00-400-802.
 - a) If the Antiskid Valve Functional Test, AMM TASK 32-42-00-720-802 duplicated the fault code and the Autobrake Shuttle Valve Operational Test, AMM TASK 32-42-00-400-802 reveals a slight pressure rise but does not develop the pressure required for the time period required (15 seconds), then troubleshooting for a hydraulic pressure leak or faulty pressure switch is indicated. An internal autobrake shuttle valve leak can cause the S762 "Left" or S763 "Right" brake pedal pressure switches to activate and cause the test to terminate prematurely. A similar response can happen as a result of a faulty S762 "Left" or S763 "Right" brake pedal pressure switch. This pressure condition is a possibility.
 - b) If there is no pressure bump, the fault is probably internal and the AACU should be replaced.
- (i) SP CO LI indicates the left inboard wheel speed switch control disagrees with output for more than 3 seconds.
- (j) SP CO RO indicates the right outboard wheel speed switch control disagrees with output for more than 3 seconds.
- (k) A/B SYS indicates that the AACU detected a fault during the system test, but is unable to isolate the fault.

B. Possible Causes

- (1) Antiskid/autobrake control unit (AACU), M162
- (2) Normal antiskid valves.
- (3) Alternate antiskid valves.

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	Number	Name
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
Ε	16	C00196	LANDING GEAR ANTISKID INBD
Е	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

AKS ALL



E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.
- (2) Do this task when you get error messages "i" or "j" above: Auto Speed Brake/Antiskid Interface Test. 27-62 TASK 801
- (3) Do this task when you get error message "h" above: Antiskid/Autobrake System Adjustment/Test, AMM PAGEBLOCK 32-42-00/501 test 2 and test 6.

F. Fault Isolation Procedure

- (1) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801,
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - (c) If the maintenance message still shows, then continue.
- (2) Do this task: Normal Antiskid Valve 1,2,3, or 4 Problem Fault Isolation, 32-42 TASK 804.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - (b) If the maintenance message still shows, then continue.
- (3) Do this task: Alternate Antiskid Valve 1-2, or 3-4 Problem Fault Isolation, 32-42 TASK 805.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.



804. Normal Antiskid Valve 1,2,3, or 4 Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) VLV 1
 - (b) VLV 2
 - (c) VLV 3
 - (d) VLV 4

Message and Valve Correlation

Message	Antiskid Valve	Wheel	Tire Location
VLV 1	V9	No. 1	Left Outboard
VLV 2	V7	No. 2	Left Inboard
VLV 3	V8	No. 3	Right Inboard
VLV 4	V10	No. 4	Right Outboard

EFFECTIVITY AKS ALL

32-42 TASKS 803-804



(2) The antiskid/autobrake control unit (AACU) does not receive a valid signal from a normal antiskid valve.

B. Possible Causes

- (1) Antiskid valves V7 (wheel #2), V8 (wheel #3), V9 (wheel #1), V10 (wheel #4)
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ε	16	C00196	LANDING GEAR ANTISKID INBD
Е	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the normal antiskid valves:
 - (a) Disconnect the connector from the applicable normal antiskid valve.

Table 202

ANTISKID VALVE EQUIPMENT NUMBER	ANTISKID VALVE CONNECTOR NUMBER
LEFT OUTBOARD WHEEL	
V9	 D926
LEFT INBOARD WHEEL	
V7	 D924
RIGHT INBOARD WHEEL	
V8	 D930
RIGHT OUTBOARD WHEEL	
V10	 D932

- (b) Measure the resistance between pin 1 and pin 2 of the connector at the applicable normal antiskid valve.
- (c) If the resistance is not 180-240 ohms, then do these steps:
 - 1) Replace the applicable normal antiskid valve. These are the tasks:

AKS ALL



- Antiskid Valve Removal, AMM TASK 32-42-31-000-801
- Antiskid Valve Installation, AMM TASK 32-42-31-400-801
- 2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (d) If the resistance is 180-240 ohms, then continue.
- (2) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) In the table below, find the electrical connector and the pair of pins for the applicable normal antiskid valve:

Table 203

ANTISKID VALVE EQUIPMENT NUMBER	ANTISKID VALVE CONNECTOR NUMBER	AACU CONNECTOR
WHEEL#1	D926	D1040A
V9	pin 1	 pin B1
WHEEL #2	D924	D1040B
V7	pin 1	 pin A1
WHEEL#3	D930	D1040B
V8	pin 1	 pin A3
WHEEL #4	D932	D1040A
V10	pin 1	 pin B3

- (c) Do a wiring check between the pair of pins of the connector D1040A or D1040B at the E1-3 shelf and the connector at the normal antiskid valve.
- (d) Make sure there is continuity between pin 2 of the connector at the applicable normal antiskid valve, and structure ground.
- (e) Check for continuity between pin 1 of D932 to D926 and the back of the applicable connector.
- (f) If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - 2) Re-connect the connector to the normal antiskid valve.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (g) If you do not find a problem with the wiring, then continue:
 - 1) Re-connect the connector to the normal antiskid valve.

AKS ALL



- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

----- END OF TASK -----

805. Alternate Antiskid Valve 1-2, or 3-4 Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) VLV 1-2
 - (b) VLV 3-4
- (2) The antiskid/autobrake control unit (AACU) does not receive a valid signal from an alternate antiskid valve.

B. Possible Causes

- (1) Antiskid valves, V124 or V125
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ε	16	C00196	LANDING GEAR ANTISKID INBD
Ε	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

E. Initial Evaluation

- Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message show during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the alternate antiskid valves:
 - (a) Disconnect the connector D2872 (right ALT) or D2874 (left ALT) from the applicable alternate antiskid valve.
 - (b) Measure the resistance between pin 1 and pin 2 of the connector at the applicable alternate antiskid valve.
 - (c) If the resistance is not 180-240 ohms, then do these steps:
 - 1) Replace the applicable alternate antiskid valve. These are the tasks:

AKS ALL

32-42 TASKS 804-805



- Antiskid Valve Removal, AMM TASK 32-42-31-000-801
- Antiskid Valve Installation, AMM TASK 32-42-31-400-801
- 2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (d) If the resistance is 180-240 ohms, then continue.
- (2) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) In the table below, find the electrical connector and the pair of pins for the applicable alternate antiskid valve:

Table 204

ANTISKID VALVE EQUIPMENT NUMBER	ANTISKID VALVE CONNECTOR NUMBER	AACU CONNECTOR
WHEEL #1&2	D2874	D1040A
V125	pin 1	 pin A15
WHEEL #3&4	D2872	D1040B
V124	pin 1	 pin B15

- (c) Do a wiring check between the pair of pins of the connector D1040A or D1040B at the E1-3 shelf and the connector at the normal antiskid valve.
- (d) Make sure there is continuity between pin 2 of the connector at the applicable alternate antiskid valve, and structure ground.
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector to the alternate antiskid valve.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue:
 - 1) Re-connect the connector to the alternate antiskid valve.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

END	OF:	TASK	
END	UE	IASN	

EFFECTIVITY
AKS ALL



806. Antiskid Transducer Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) XDCR 1
 - (b) XDCR 2
 - (c) XDCR 3
 - (d) XDCR 4
 - (e) SP SW LI
 - (f) SP SW LO
 - (g) SP SW RI
 - (h) SP SW RO
- (2) The antiskid/autobrake control unit (AACU) does not receive a valid signal from an antiskid transducer.

B. Possible Causes

- (1) Antiskid transducer, T392, T393, T394, or T395
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring
- (4) Auto speedbrake module (ASM), M980

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
Е	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

E. Initial Evaluation

- Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message show during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.
- (2) Do this task if you get message "e", "f", "g", or "h" above: Auto Speed Brake/Antiskid Interface Test, 27-62 TASK 801.

F. Fault Isolation Procedure

- (1) Do this check of antiskid transducer:
 - (a) Disconnect connector from the applicable antiskid transducer.

AKS ALL



- (b) Measure the resistance between pin 1 and pin 3 of the connector at the applicable antiskid transducer.
- (c) If the resistance is not 130-800 ohms, do these steps:
 - 1) Replace the applicable antiskid transducer. These are the tasks:
 - Transducer Removal, AMM TASK 32-42-11-000-801
 - Transducer Installation, AMM TASK 32-42-11-400-801
 - 2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (d) If the resistance is 130-800 ohms, then continue.
- (2) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) In the table below, find the electrical connector and the pair of pins for the applicable antiskid transducer:

Table 205

TRANSDUCER EQUIPMENT NUMBER	AACU CONNECTOR	TRANSDUCER CONNECTOR NUMBER
WHEEL #1	D1040B	D11120
T392	pin A6	 pin 3
	pin A5	 pin 1
WHEEL #2	D1040B	D11122
T394	pin A13	 pin 3
	pin A12	 pin 1
WHEEL #3	D1040A	D11124
T393	pin B13	 pin 3
	pin B12	 pin 1
WHEEL#4	D1040A	D11126
T395	pin B6	 pin 3
	pin B5	 pin 1

- (c) Do a wiring check between the pairs of pins of connector D1040B or D1040A at the E1-3 shelf and the pins of the connector at the antiskid transducer.
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector to the antiskid transducer.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.

EFFECTIVITY AKS ALL



- Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue:
 - 1) Re-connect the connector to the antiskid transducer.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.



807. Autobrake Control Valve Module - Servo Valve Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) A/B CNTL
- (2) The possible cause of message A/B CNTL is the control pressure switch indicates low pressure, the solenoid pressure switch indicates high pressure, and the control valve is energized.
- (3) The antiskid/autobrake control unit (AACU) does not receive a valid signal from the servo valve of the autobrake control valve module.

B. Possible Causes

- (1) The servo valve of the autobrake control valve module.
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
Е	16	C00196	LANDING GEAR ANTISKID INBD
Ε	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.

AKS ALL

32-42 TASKS 806-807



(b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the autobrake control valve module:
 - NOTE: Steps (a) through (b) may be skipped if you do not wish to replace individual Line Replaceable Units.
 - (a) Disconnect the electrical connector D2574 from the servo valve.
 - (b) Measure the resistance between the pin 1 and pin 2 of the connector at the servo valve.
 - (c) If the resistance is not 400 600 ohms, then do these steps:
 - 1) Replace the servo valve. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
 - 2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - (d) If the resistance is 400 600 ohms, do these steps:
 - 1) Inspect and clean the connector D2574.
 - 2) Reconnect connector D2574.
 - 3) Replace the servo valve pressure switch. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
 - NOTE: The servo valve pressure switch is associated with connector D2576.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during during the antiskid/autobrake control/ test, then you corrected the fault.
 - (e) If the maintenance message still shows, then do these steps:
 - 1) Replace the autobrake control valve module. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
 - Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 3) If the maintenance message does not show during during the antiskid/autobrake control/ test, then you corrected the fault.
- (2) Do this check of the wiring:

AKS ALL



- (a) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
- (b) In the table below, find the electrical connector and the pair of pins for the servo valve and pressure switch:

AACU CONNECTOR	SERVO VALVE CONNECTOR
D1040A	D2574
pin D9	pin 2
pin C9	pin1

AACU CONNECTOR	PRESSURE SW CONNECTOR
D1040A	D2576
pin C7	pin 3

D1040B D2576 pin A10 pin 2

- (c) Do a wiring check between the pins of connector D1040A and D1040B at the E1-3 shelf and the pins of connector D2574 at the servo valve and connector D2576 at the pressure switch.
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector to the servo valve.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue:
 - 1) Re-connect the connector to the servo valve and pressure switch.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.

808. Autobrake Control Valve Module - Solenoid Valve Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) A/B SOL

AKS ALL

32-42 TASKS 807-808



- (2) The possible cause of message A/B SOL is the solenoid pressure switch indicates high pressure when the solenoid valve is commanded closed or the solenoid pressure switch indicates low pressure when the solenoid valve is commanded open.
- (3) The antiskid/autobrake control unit (AACU) does not receive a valid signal from the solenoid valve of the autobrake control valve module.

B. Possible Causes

- (1) The solenoid valve of the autobrake control valve module.
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	Col	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
Е	16	C00196	LANDING GEAR ANTISKID INBD
Ε	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If a maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the solenoid valve of the autobrake control valve module:
 - (a) Disconnect the solenoid valve from the autobrake control valve module, do this task: Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802.
 - (b) Make sure there is continuity between the pin 1 and pin 2 of the connector D2570 at the solenoid valve.
 - c) If you do not have continuity between pin 1 and pin 2 of D2570, then do these steps:
 - 1) Replace the solenoid valve. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
 - Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

AKS ALL



- 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (d) If you do have continuity between pin 1 and pin 2, then continue.
- (2) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit (AACU), M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) In the table below, find the electrical connector and the pair of pins for the solenoid valve:

	SOLENOID
AACU	VALVE
CONNECTOR	CONNECTOR
D1040A	D2570
pin B8	pin 2

- (c) Do a wiring check between pin B8 of connector D1040A at the E1-3 shelf and pin 2 of the connector for the solenoid valve.
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Connect solenoid valve to the autobrake control valve module, do this task: Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802.
 - Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue:
 - Connect solenoid valve to the autobrake control valve module, do this task: Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.



809. Autobrake Control Valve Module - Solenoid Pressure Switch Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) SOL PSW
- (2) The possible cause of message SOL P SW is the solenoid pressure switch indicates low pressure (<1000 psi).

AKS ALL

32-42 TASKS 808-809



(3) The antiskid/autobrake control unit (AACU) does not receive a valid signal from the solenoid pressure switch of the autobrake control valve module.

B. Possible Causes

- (1) The solenoid pressure switch on the autobrake control valve module.
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
Е	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the solenoid pressure switch:
 - a) Prepare to supply pressure through the autobrake control module:
 - 1) Make sure the two thrust levers are in the IDLE position.
 - 2) Make sure the landing gear control lever is in the DOWN position.
 - 3) Make sure the spoilers are stowed.
 - 4) Make sure the Right and Left ADIRSs are in the NAV mode.
 - Align the ADIRS. Do this task: Air Data Inertial Reference System Alignment from the ISDU, AMM TASK 34-21-00-820-802 or Air Data Inertial Reference System - Alignment from the FMC CDU, AMM TASK 34-21-00-820-801.
 - 5) Make sure the tires have chocks installed around them.
 - 6) Release the parking brake.



WARNING: KEEP PERSONS AND EQUIPMENT CLEAR OF THE FLIGHT CONTROL

SURFACES, THE THRUST REVERSERS, AND THE LANDING GEAR. THESE COMPONENTS CAN MOVE SUDDENLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- 7) For the normal (system B) hydraulic system, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- 8) Set the TEST SELECTOR switch on the antiskid control unit to A/B.
- (b) Disconnect the connector D2572 from the solenoid pressure switch.
- (c) Prepare to check the continuity between pin 1 and pin 2 of the solenoid pressure switch within 10 seconds of enabling the control module in the steps that follow.
- (d) Do the steps that follow for autobrake selector position "MAX" to supply pressure through the autobrake control module.
 - 1) Set the autobrake selector switch on the P2-2 panel to "MAX".
 - 2) Push and hold the ENABLE/VERIFY button on the antiskid control unit.
 - 3) While you hold the ENABLE/VERIFY button, push and hold the VERIFY button on the antiskid control unit.
 - 4) Release the ENABLE/VERIFY button and the VERIFY button at the same time.
 - NOTE: The antiskid control unit display will show BRK A/B4 during the test. The AUTOBRAKE DISARM light on the P2-2 panel will come on at the end of this test.
- (e) Make sure there is continuity between pin 1 and pin 2 of the solenoid pressure switch.
 - NOTE: The control module will supply 3000 psi to the brake for approximately 10 seconds.
- (f) Set the autobrake selector switch on the P2-2 panel to "OFF".
- (g) Set the autobrake selector switch on the antiskid control unit to NORM
- (h) Do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (i) If there is not continuity between pin 1 and pin 2 of the solenoid pressure switch, then do these steps:
 - 1) Replace the solenoid pressure switch. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
 - 2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (j) If there is continuity between pin 1 and pin 2 of the solenoid pressure switch, then continue.
- (2) Do this check of the wiring:

AKS ALL

(a) Disconnect electrical connector D2572 from the solenoid pressure switch.



- (b) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
- (c) In the table below, find the electrical connector and the pin for the solenoid pressure switch:

	SERVO VALVE
	PRESSURE
AACU	SWITCH
CONNECTOR	CONNECTOR
D1040B	D2572
pin D4	pin 1

- (d) Do a wiring check between pin D4 of connector D1040B at the E1-3 shelf and pin 1 of the connector for the solenoid pressure switch.
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector to the solenoid pressure switch.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue:
 - 1) Re-connect the connector to the solenoid pressure switch.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.



810. Autobrake Control Valve Module - Servo Valve Pressure Switch Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) CNTLP SW
- (2) The possible cause of message CNTLP SW is the servo valve pressure switch indicates low pressure (<1000 psi).
- (3) The antiskid/autobrake control unit (AACU) does not receive a valid signal from the servo valve of the autobrake control valve module.

B. Possible Causes

- (1) The servo valve of the autobrake control valve module.
- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Wiring

AKS ALL

32-42 TASKS 809-810



C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
Ε	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Replace the servo valve pressure switch. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802
 - Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (2) Do this check of the wiring:
 - (a) Disconnect electrical connector D2576 from the servo valve pressure switch.
 - (b) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (c) In the table below, find the electrical connector and the pins for the servo valve pressure switch:

Table 206

AACU CONNECTOR	AACU CONNECOR PIN NUMBER	SERVO VALVE PRESSURE SWITCH CONNECTOR PIN NUMBER	SERVO VALVE PRESSURE SWITCH CONNECTOR
D1040A	pin C7	pin 3	D2576
D1040B	pin A10	pin 2	

(d) Do a wiring check between the pins of connector D1040B or D1040A at the E1-3 shelf and the pins of the connector for the servo valve pressure switch.

AKS ALL



- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - Re-connect the connector to the servo valve pressure switch.
 - Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue:
 - 1) Re-connect the connector D2576 to the servo valve pressure switch.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.



811. Parking Brake Shutoff Valve Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) PARKBRK
- (2) The possible cause of message PARKBRK is the antiskid/autobrake control unit (AACU) does not receive a valid signal for more than two seconds.

B. Possible Causes

- (1) Parking brake valve, V11
- (2) Wiring problem
- (3) Park brake close sense relay, R613
- (4) Antiskid/autobrake control unit (AACU), M162

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) (SSM 32-44-11)
- (2) (WDM 32-44-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then do the steps that follow:

AKS ALL

32-42 TASKS 810-811



- 1) Fully push the brake pedals and set the parking brake.
- 2) Do a check for the maintenance message PARKBRK on the AACU.
- 3) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
- 4) Release the parking brake.
- (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the ground wire for the parking brake valve:
 - (a) Disconnect connector D928 from the parking brake valve, V11.
 - (b) Do a continuity check from pin 9 of connector D928 to structure ground.
 - (c) If there is no continuity at pin 9 of connector D928, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector D928.
 - 3) Do the Repair Confirmation at the end of this task.
 - (d) If there is continuity at pin 9 of connector D928, then continue.
- (2) Do these checks of the parking brake valve, V11:
 - (a) Do a continuity check between pin 8 and pin 9 on the parking brake valve, V11.
 - (b) If there is no continuity between pin 8 and pin 9 on the parking brake valve, V11, then do these steps:
 - 1) Replace the parking brake valve, V11. These are the tasks:
 - Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If there is continuity between pin 8 and pin 9 on the parking brake valve, V11, then continue.
 - 1) Re-connect the connector D928.
 - 2) Fully push the brake pedals and set the parking brake.
 - (d) Disconnect connector D928 from the parking brake valve, V11.
 - (e) Do a continuity check between pin 9 and pin 10 on the parking brake valve, V11.
 - (f) If there is no continuity between pin 9 and pin 10 on the parking brake valve, V11, then do these steps:
 - 1) Replace the parking brake valve, V11. These are the tasks:
 - Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (g) If there is continuity between pin 9 and pin 10 on the parking brake valve, V11, then continue.
- (3) Do this wiring check:
 - a) Disconnect connector D928 from the parking brake valve, V11 and connector D11154 from the park brake close sense relay, R613.

AKS ALL



(b) Do a wiring check between these pins of connector D928 at the parking brake valve, V11 and the pins of connector D11154 at the park brake close sense relay, R613:

D928	D11154
pin 10	 pin 4
pin 8	 pin 3
pin 4	 pin 12

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D928 and connector D11154.
 - 3) Do the Repair Confirmation at the end of this task.
- (d) If you do not find a problem with the wiring, then continue.
 - 1) Re-connect connector D928.
- (e) Do a continuity check from pin 6 of connector D11154 to structure ground.
- (f) If there is no continuity at pin 6 of connector D11154, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D11154.
 - 3) Do the Repair Confirmation at the end of this task.
- (g) If there is continuity at pin 6 of connector D11154, then continue.
- (h) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
- (i) Do the following wiring check:

Park Brake Close Sense

 Relay R613
 AACU M162

 D11154
 D1040A

 pin 5
 D15

- (j) If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - Re-connect connector D11154.
 - 4) Do the Repair Confirmation at the end of this task.
- (k) If you do not find a problem with the wiring, then continue.
 - 1) Re-connect connector D11154.
- (I) Fully push the brake pedals and set the parking brake.
- (m) Do a continuity check from pin D15 of connector D1040A to structure ground.
- (n) If there is no continuity at pin D15 of connector D1040A, then do these steps:
 - 1) Release the parking brake.

AKS ALL

32-42 TASK 811

Page 230 Jun 15/2016



- 2) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- 3) Re-connect connector D1040A.
- 4) Replace the park brake close sense relay, R613.
- 5) Do the Repair Confirmation at the end of this task.
- (o) If there is continuity at pin D15 of connector D1040A, then continue.
 - 1) Release the parking brake.
- (4) Replace the antiskid/autobrake control unit (AACU), M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then do these steps:
 - 1) Fully push the brake pedals and set the parking brake.
 - 2) Check for the maintenanc message PARKBRK on the AACU.
 - 3) If a maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - 4) Release the parking brake.



812. Landing Gear Lever Switch Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) GEARSW1
 - (b) GEARSW2
- (2) The possible cause of messages GEARSW1 and GEARSW2 is the antiskid/autobrake control unit (AACU) finds the gear lever not down during system test.

B. Possible Causes

- (1) Landing gear lever switch, S3
- (2) Landing gear lever switch, S4
- (3) Wiring problem
- (4) Antiskid/autobrake control unit (AACU), M162

C. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

D. Initial Evaluation

- (1) Make sure the landing gear control lever is in the DOWN position.
- (2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

AKS ALL

32-42 TASKS 811-812



- (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
- (b) If the maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

- (1) Do this check of the landing gear lever switch module, M1952:
 - (a) Disconnect connector D11990 from the landing gear lever switch module, M1952.
 - (b) Make sure the landing gear control lever is in the DOWN position.
 - (c) For the landing gear lever switch, S3, do these steps:
 - Do a continuity check between pin 14 and pin 16 of the landing gear lever switch module.
 - 2) Move the landing gear control lever to the UP position.
 - 3) Do a check for an open circuit between pin 14 and pin 16 of the landing gear lever switch module.
 - (d) For the landing gear lever switch, S4, do these steps:
 - Do a continuity check between pin 11 and pin 13 of the landing gear lever switch module.
 - 2) Move the landing gear control lever to the UP position.
 - Do a check for an open circuit between pin 11 and pin 13 of the landing gear lever switch module.
 - (e) If you find a problem with the landing gear lever switch module, then do these steps:
 - 1) Replace the landing gear lever switch module, M1952. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - 2) Re-connect connector D11990.
 - 3) Make sure the landing gear control lever is in the DOWN position.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
 - (f) If you do not find a problem with the landing gear switch module, then continue.
- (2) Do these checks of the wiring:
 - (a) Do a continuity check between pin 14 of connector D11990 at the center aisle panel, P2-3, and structure ground.
 - (b) Do a continuity check between pin 11 of connector D11990 at the center aisle panel, P2-3, and structure ground.
 - (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D11990.
 - 3) Make sure the landing gear control lever is in the DOWN position.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

AKS ALL



- 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (d) If you do not find a problem with the wiring, then continue.
- (e) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
- (f) Do a continuity check between these pins of connector D1040A at the antiskid/autobrake control unit and connector D11990 at the landing gear lever switch module, M1952:

D11990 pin 13	D1040A pin D1
D11990 pin 16	D1040B pin D1

- (g) If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - 2) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 3) Re-connect connector D11990.
 - 4) Make sure the landing gear control lever is in the DOWN position.
 - 5) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 6) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (h) If you do not find problem with the wiring, then continue.
 - 1) Re-connect connector D11990.
- (3) Replace the antiskid/autobrake control unit (AACU), M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.



813. Thrust Lever Switch Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) PWR A/B

<u>NOTE</u>: This message will appear when the autobrake system is deactivated. This is considered normal operation.

- (b) THR L 1
- (c) THR R 1
- (d) THR L 2

EFFECTIVITY AKS ALL

32-42 TASKS 812-813



- (e) THR R 2
- (f) THR SW
- (2) The possible cause of the messages is the antiskid/autobrake control unit (AACU) finds the thrust lever not retarded during system test.

B. Possible Causes

- (1) Right thrust lever switch, S2
- (2) Right thrust lever switch, S3
- (3) Left thrust lever switch, S2
- (4) Left thrust lever switch, S3
- (5) Wiring problem
- (6) Antiskid/autobrake control unit (AACU), M162

C. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

D. Initial Evaluation

- (1) Make sure the thrust levers are in the IDLE position.
- (2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show during the antiskid/autobrake control test, then there was an intermittent fault.
 - (b) If a maintenance message shows during the antiskid/autobrake control test, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

- (1) Do this check of the autothrottle switch packs, M1766 and M1767:
 - (a) Disconnect connector D11130 from the autothrottle switch pack, M1766.
 - (b) Disconnect connector D11134 from the autothrottle switch pack, M1767.
 - (c) Make sure the thrust levers are in the IDLE position.
 - (d) Do a continuity check between these pins of the autothrottle switch packs.

AUTOTHROTTLE SWITCH PACK #1

L ENG,	M1766
-	-
pin 2	pin 3
pin 5	pin 6

AUTOTHROTTLE SWITCH PACK #2

R ENG	M176	
-		-
pin 2		pin 3
pin 5		pin 6

- (e) Move the thrust levers to greater that 44 degrees advanced.
- (f) Do a continuity check between these pins of the autothrottle switch packs.

AKS ALL



AUTOTHROTTLE SWITCH PACK #1

L ENG	M1766	
-		-
pin 1		pin 2
pin 4		pin 5

AUTOTHROTTLE SWITCH PACK #2

R ENG	€,	M176
-		-
pin 1		pin 2
pin 4		pin 5

- (g) Move the thrust levers to the IDLE position.
- (h) If you find a problem with a autothrottle switch pack, then do these steps:
 - 1) Replace the thrust lever switch, S2 or S3, from the switch pack, M1767, or thrust lever switch, S2 or S3, from the switch pack, M1766.
 - Re-connect connector D11130 to the autothrottle switch pack, M1766.
 - 3) Re-connect connector D11134 to the autothrottle switch pack, M1767.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (i) If you do not find a problem with a autothrottle switch pack, then continue.
- (2) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit, M162 to get access to the electrical connectors. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Do a continuity check between the pins of connector D1040A and D1040B at the AACU, and the pins of connector D11130 at switch pack, M1766 and connector D11134 at switch pack, M1767.

D11134 pin 2	D1040A pin A7
D11130 pin 2	D1040A pin A7
D11134	D1040B
pin 3	pin D6
pin 5	pin B9
pin 6	pin A2

AKS ALL



D11130	D1040B
pin 3	pin A4
pin 5	pin B9
pin 6	pin A7

- (c) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (d) Re-connect connector D11130 to the autothrottle switch pack, M1766.
- (e) Re-connect connector D11134 to the autothrottle switch pack, M1767.
- (f) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 3) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.
- (g) If you do not find a problem with the wiring, then continue.
- (3) Replace the antiskid/autobrake control unit (AACU), M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show during the antiskid/autobrake control test, then you corrected the fault.



814. Brake Pressure Indication Low/Zero - Fault Isolation

- A. Description
 - (1) SDS 32-41-00
- B. Possible Causes
 - (1) Nitrogen gas leak at a tube connection
 - (2) Brake accumulator pressure transducer, T185
 - (3) Brake accumulator
- C. Related Data
 - (1) (SSM 32-40-00)
- D. Fault Isolation Procedure
 - Do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.

NOTE: Do this task first to ensure that the accumulator is properly serviced with the piston fully against its internal stop prior to checking for nitrogen gas leakage.

- (2) Do a check for nitrogen gas leakage at these locations:
 - (a) The gas pressure tube connection to the brake accumulator.
 - (b) The gas pressure tube connections to the manifold assembly.
 - (c) The gas pressure tube connections to the brake accumulator pressure gage.

AKS ALL

32-42 TASKS 813-814



- (d) The brake accumulator charging valve.
- (e) The brake accumulator pressure gage dial face and gage body.
- (f) If there is nitrogen gas leakage, then do these steps:
 - 1) Repair the leak.
 - Do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - 3) If the brake pressure indication does not show low/zero on subsequent flights, then you corrected the fault.
- (g) If there is no nitrogen gas leakage, then continue.
- (3) Replace the brake accumulator pressure transducer, T185. These are the tasks:
 - Brake Accumulator Pressure Transmitter Removal, AMM TASK 32-41-53-000-801
 - Brake Accumulator Pressure Transmitter Installation, AMM TASK 32-41-53-400-801
 - (a) Do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - (b) If the brake pressure indication does not show low/zero on subsequent flights, then you corrected the fault.
 - (c) If the brake pressure indication shows low/zero on subsequent flights, then continue.
- (4) Replace the brake accumulator. These are the tasks:
 - Hydraulic Brake Accumulator Removal, AMM TASK 32-41-51-000-801
 - Hydraulic Brake Accumulator Installation, AMM TASK 32-41-51-420-801
 - (a) Do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - (b) If the brake pressure indication does not show low/zero on subsequent flights, then you corrected the fault.



816. Brakes Grab, Drag, or Lock - Fault Isolation

A. Description

(1) SDS 32-41-00

B. Possible Causes

- (1) Brake quick disconnect not fully seated
- (2) Binding or friction in brake pedal linkage
- (3) Binding or friction in the brake metering valve linkage or aft brake cable quadrant
- (4) Brake Fuse damaged
- (5) Antiskid valve damaged
- (6) Brake adjustment
- (7) Brake metering valve

C. Related Data

(1) SSM 32-40-00

D. Initial Evaluation

- (1) Monitor the brake pistons while you apply and release the brakes.
 - (a) Fully push and hold the captain's brake pedals.
 - (b) Release the captain's brake pedals.

AKS ALL

32-42 TASKS 814-816



- (c) When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
- (d) If all of the brakes operated correctly, there was an intermittent fault.
- (e) If one of the brakes does not operate correctly, it is usually the result of a low hydraulic flow
- (f) If two brakes on the same landing gear do not operate correctly, it is usually an out of rig brake system, a defective brake metering valve, or binding in the brake system.

NOTE: It is possible that if two brakes on the same landing gear do not operate correctly, each did not operate independently.

E. Fault Isolation Procedure

- If one of the brakes does not operate correctly, make sure that the brake quick-disconnect is fully installed.
 - (a) Do the "Brake Disconnect Installation Test" (AMM PAGEBLOCK 32-41-11/401).
 - (b) If there is a leak, then replace the brake disconnect. These are the tasks:
 - Brake Disconnect Removal, AMM TASK 32-41-11-000-801
 - Brake Disconnect Installation, AMM TASK 32-41-11-400-801
 - (c) Monitor the brake pistons while you apply and release the brakes.
 - 1) Fully push and hold the captain's brake pedals.
 - 2) Release the captain's brake pedals.
 - 3) When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
 - 4) If the brakes operate correctly, then you corrected the fault.
 - a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - 5) If the brakes do not operate correctly, then continue.
- (2) If one of the brakes does not operate correctly, then replace the brake fuse. These are the tasks:
 - Brake Hydraulic Fuse (Alternate Brake System) Removal, AMM TASK 32-41-72-020-801
 - Brake Hydraulic Fuse (Alternate Brake System) Installation, AMM TASK 32-41-72-420-801
 - (a) Monitor the brake pistons while you apply and release the brakes.
 - 1) Fully push and hold the captain's brake pedals.
 - 2) Release the captain's brake pedals.
 - 3) When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
 - 4) If the brakes operate correctly, then you corrected the fault.
 - a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - 5) If the brakes do not operate correctly, then continue.
- (3) If one of the brakes does not operate correctly, then replace the antiskid valve. These are the tasks:
 - Antiskid Valve Removal, AMM TASK 32-42-31-000-801
 - Antiskid Valve Installation, AMM TASK 32-42-31-400-801

AKS ALL



- (a) Monitor the brake pistons while you apply and release the brakes.
 - 1) Fully push and hold the captain's brake pedals.
 - 2) Release the captain's brake pedals.
 - When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
 - 4) If the brakes operate correctly, then you corrected the fault.
 - Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - 5) If the brakes do not operate correctly, then continue.
- (4) If two brakes on the same landing gear do not operate correctly, then adjust the hydraulic brake system. Do this task: Hydraulic Brake System Adjustment, AMM TASK 32-41-00-820-801.
 - (a) Make sure that these have no binding:
 - 1) Brake pedal linkage.
 - 2) The aft cable quadrant.
 - 3) The brake metering valve linkage.
 - (b) Monitor the brake pistons while you apply and release the brakes.
 - 1) Fully push and hold the captain's brake pedals.
 - 2) Release the captain's brake pedals.
 - 3) When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
 - 4) If the brakes operate correctly, then you corrected the fault.
 - Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - 5) If the brakes do not operate correctly, then continue.
- (5) If two brakes on the same landing gear do not operate correctly, then replace the brake metering valve. These are the tasks:
 - Brake Metering Valve Removal, AMM TASK 32-41-31-000-801
 - Brake Metering Valve Installation, AMM TASK 32-41-31-400-801
 - (a) Monitor the brake pistons while you apply and release the brakes.
 - 1) Fully push and hold the captain's brake pedals.
 - 2) Release the captain's brake pedals.
 - When you release the brake pedals, make sure that the brake pistons retract away from the heat sink.
 - a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.



817. Brakes Pull to the Left or Right - Fault Isolation

A. Fault Isolation Procedure

- (1) Do this task: Brakes Grab, Drag, or Lock Fault Isolation, 32-42 TASK 816.
 - (a) If the brakes do not operate correctly, then continue.

AKS ALL

32-42 TASKS 816-817



- (2) Do a check of the landing gear tires pressure:
 - (a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - (b) If the landing gear tires pressure are not satisfactory, then do these steps:
 - 1) Do this task: Add Nitrogen or Air to the Tire, AMM TASK 12-15-51-610-802.
 - 2) If the brakes operate correctly on subsequent flights, then you corrected the fault.
 - a) Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
- (3) Inspect all transducer drive components on each wheel and hubcap if there is a pulling condition during braking.

FND	OF TA	CK	
	UF IA	3n —	_

820. Tire Problem - Fault Isolation

A. Fault Isolation Procedure

- (1) If the tire burst or is flat spotted, do this task:
 - Tire Tread Loss or Tire Burst Conditional Inspection, AMM TASK 05-51-54-210-801.
 - Flat Spotted Tires Conditional Inspection, AMM TASK 05-51-16-210-801
 - Antiskid/Autobrake Control Unit Operational Test, AMM TASK 32-42-00-720-801.
 - Antiskid Valve Operational Test, AMM TASK 32-42-00-720-803.
 - Transducer Functional Test, AMM TASK 32-42-00-710-801.
- (2) Do this task: Tires Inspection, AMM TASK 32-45-00-700-803.



821. Autobrake Selector Switch Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) A/B SEL
- (2) The Autobrake Selector Switch indicates more than one position selected.

B. Possible Causes

- (1) Autobrake Selector Switch, S4
- (2) Wiring
- (3) Antiskid/Autobrake Control Unit (AACU), M162

C. Related Data

- (1) SSM 32-42-11
- (2) WDM 32-42-11

D. Initial Evaluation

(1) For each position of the Autobrake Selector Switch, except OFF, do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.

NOTE: The Built-In-Test Equipment (BITE) test can be performed with the Selector Switch in any position except OFF. If you do the test in each possible position, you can detect a problem in the switch itself.

EFFECTIVITY =
AKS ALL

32-42 TASKS 817-821



- (a) If the maintenance message does not show, then there was an intermittent problem.
- (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

E. Fault Isolation Procedure

- (1) If the maintenance message does not show in a selector position, but does show in other selector positions, then do these steps:
 - (a) Replace the Autobrake Selector Switch, S4.
 - (b) Do the Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 1) If the maintenance message does not show, then you corrected the problem.
 - 2) If the maintenance message shows, then continue.
- (2) Do this check of the wiring (WDM 32-42-11):
 - (a) Remove the AACU. This is the task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Disconnect connector D333 from the P2-2 panel.
 - (c) Do a wiring check between these pins of connector D1040B at E1-3 shelf and connector D333 at the Autobrake Selector Switch, S4.

D1040B	D333
pin D7	. pin 32
pin D8	. pin 33
pin D12	. pin 36
pin D9	. pin 34
pin D10	. pin 35
pin C10	. pin 37
D222	

D333

pin 38 GD201B-DC

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - Re-connect connector D333.
 - 3) Re-install the AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do the Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - a) If the maintenance message does not show, then you corrected the problem.
- (e) If you do not find a problem with the wiring, then continue.
 - 1) Re-connect connector D333.
- (3) Install a new AACU, M162. This is the task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do the Antiskid/Autobrake Control Unit Operational Test, AMM TASK 32-42-00-720-801.
 - 1) If the maintenance message does not show during the Antiskid/Autobrake Operational Test, then you corrected the problem.

	\sim –		
FND	OF T	ΔSK.	

AKS ALL



822. Brake Pressure Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) PRESL
 - (b) PRESR
- (2) The antiskid/autobrake control unit (AACU) receives high brake pressure.

B. Possible Causes

- (1) Brake pedal switch, S762 or S763
- (2) Wiring
- (3) Antiskid/autobrake control unit (AACU), M162

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Е	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then there was an intermittent fault.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Replace the applicable brake pedal switch.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.
 - (c) If the maintenance message shows, then continue.
- (2) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit, M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Find the connector and the pair of pins for the applicable brake pedal switch:

LEFT SWITCH EQUIPMENT NUMBER S762

SWITCH	AACU	
CONNECTOR	CONNECTOR	
D2564	D1040B	
pin 2	pin B8	
pin 3	pin A9	

AKS ALL

32-42 TASK 822

Page 242 Oct 15/2015



RIGHT SWITCH EQUIPMENT NUMBER S763

SWITCH AACU CONNECTOR

 D2566
 D1040A

 pin 2
 pin A10

 pin 3
 pin B10

- (c) Disconnect the connector from the applicable brake pedal switch.
- (d) Do a wiring check between the pins of the connector at the E1-3 shelf and the connector at the applicable brake pedal switch.
- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector to the applicable brake pressure switch.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show, then you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
 - 1) Re-connect the connector to the applicable brake pressure switch.
- (3) Install a new AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.

----- END OF TASK -----

823. Air/Ground System Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) A/G 1
 - (b) A/G 2
 - (c) A/G SW
- (2) The antiskid/autobrake control unit (AACU) receives air mode signal from the air/ground system.

B. Possible Causes

(1) Wiring

EFFECTIVITY '

- (2) Antiskid/autobrake control unit (AACU), M162
- (3) Proximity switch electronics unit (PSEU), M2061

32-42 TASKS 822-823



C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ε	16	C00196	LANDING GEAR ANTISKID INBD
Е	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance messages A/G 1 and A/G 2 do not show, then there was an intermittent fault.
 - (b) If the maintenance message A/G 1 or A/G 2 shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit (AACU), M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Find the applicable air/ground system connector and pair of pins for the proximity switch electronics unit (PSEU), M2061:

AIR/GROUND SYSTEM 1

PSEU	AACU
CONNECTOR	CONNECTOR
D11142	D1040B
pin 48	pin C8
pin 49	pin A8

AIR/GROUND SYSTEM 2

PSEU	AACU
CONNECOR	CONNECTOR
D11140	D1040A
pin 48	pin C8
pin 49	pin A8

- (c) Disconnect the applicable connector from the PSEU, M2061.
- (d) Do a wiring check between the pins of the connector at the E1-3 shelf and the applicable connector at the PSEU, M2061.
- (e) If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - 2) Re-connect the applicable connector.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.

AKS ALL



- Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- 5) If the maintenance message does not show, then you corrected the fault.
- (f) If you do not find a problem with the wiring, then continue.
 - 1) Re-connect the applicable connector.
- (2) Install a new AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.
 - (c) If the maintenance message shows, then continue.
- (3) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.



824. Left ADIRU Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) ADIRU L
- (2) The antiskid/autobrake control unit (AACU) does not receive valid signal from the left air data inertial reference unit (ADIRU).

B. Possible Causes

- (1) Wiring
- (2) Air data inertial reference unit (ADIRU), M1749
- (3) Antiskid/autobrake control unit. M162

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ε	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then there was an intermittent fault.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

AKS ALL

32-42 TASKS 823-824



F. Fault Isolation Procedure

- (1) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit, M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Remove the left air data inertial reference unit (ADIRU), M1749. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.
 - (c) Do a wiring check between these pins of connector D1040A at E1-3 shelf and connector D3687B at the E5-2 shelf:

D1040A	D3687B
pin D11	 pin C10
pin D12	 pin C11

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the left ADIRU, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show, then you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
 - 1) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (2) Install a new left ADIRU, M1749. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.
 - (c) If the maintenance message shows, then continue.
- (3) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.

END O	F TASK	
-------	--------	--

825. Right ADIRU Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) ADIRU R
- (2) The antiskid/autobrake control unit (AACU) does not receive valid signal from the right air data inertial reference unit (ADIRU).

AKS ALL

32-42 TASKS 824-825



B. Possible Causes

- (1) Wiring
- (2) Air data inertial reference unit (ADIRU), M1752
- (3) Antiskid/autobrake control unit, M162

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	Number	<u>Name</u>
Ε	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then there was an intermittent fault.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit, M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Remove the right air data inertial reference unit (ADIRU), M1752. To remove it, do this task: Air Data Inertial Reference Unit Removal, AMM TASK 34-21-01-000-801.
 - (c) Do a wiring check between these pins of connector D1040B at E1-3 shelf and connector D3693B at the E5-2 shelf:

D1040B	D3693B
pin D13	 pin C10
pin D14	 pin C11

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-install the right ADIRU, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - If the maintenance message does not show, then you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.
 - 1) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.

AKS ALL



- (2) Install a new right ADIRU, M1752. To install it, do this task: Air Data Inertial Reference Unit Installation, AMM TASK 34-21-01-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.
 - (c) If the maintenance message shows, then continue.
- (3) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.



826. Power for Autobrake or AACU BITE Problem - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) PWR A/B

NOTE: This message will appear when the autobrake system is deactivated, this is considered normal operation.

- (b) PWR BITE
- (2) The antiskid/autobrake control unit (AACU) does not receive power for autobrake and BITE functions.

B. Possible Causes

- (1) Antiskid/autobrake control unit (AACU), M162
- (2) Circuit breakers C583 and C1345
- (3) Right thrust lever switch, S2
- (4) Right thrust lever switch, S3
- (5) Left thrust lever switch, S2
- (6) Left thrust lever switch, S3
- (7) Autobrake selector switch, S4.
- (8) Wiring

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
Е	16	C00196	LANDING GEAR ANTISKID INBD
Е	18	C00195	LANDING GEAR ANTISKID OUTBD

EFFECTIVITY AKS ALL

32-42 TASKS 825-826



D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then there was an intermittent fault.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the power wiring:
 - (a) Remove the antiskid/autobrake control unit (AACU), M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

- (c) Do a check for 28V DC from pin A11 and C9 of the connector D1040B at E1-3 shelf to structure ground (WDM 32-42-11).
- (d) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

- (e) If there is not 28V DC at pin A11 and C9, then do these steps:
 - 1) Open the P6-3 load control center panel.
 - 2) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

- Do a check for 28V DC from the load terminals of circuit breakers C583 and C1345 to structure ground.
- 4) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

- 5) If there is not 28V DC at the load terminals, then do these steps:
 - a) Replace one or both of the following circuit breakers (WDM 32-42-11):

AKS ALL



<1> These are the circuit breakers:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1

- b) Re-install the antiskid/autobrake control unit, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- d) If the maintenance message does not show, then you corrected the fault.
- 6) If there is 28V DC at the load terminals, then do these steps:
 - Repair the wiring between pin A11 of connector D1040B at the E1-3 shelf and the load terminal C583 at the panel P6.
 - b) Repair the wiring between pin C9 of connector D1040B at the E1-3 shelf and the load terminal C1345 at the panel P6.
 - c) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - e) If the maintenance message does not show, then you corrected the fault.
- (f) If there is 28V DC at the pin A11 or C9 of connector D1040B, then continue.
- (2) Check the thrust lever switches. Do this task: Thrust Lever Switch Problem Fault Isolation, 32-42 TASK 813.
- (3) Install a new AACU M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.
 - (c) If the maintenance message shows, then continue.
- (4) Check the autobrake selector switch S4. Do this task: Autobrake Selector Switch Problem -Fault Isolation, 32-42 TASK 821.
 - (a) If the maintenance message does not show, then you corrected the fault.

 END	OF TA	NCK.	
	UF I	43N :	

827. Speed Brake Lever Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) SPLRHDL
- (2) The antiskid/autobrake control unit (AACU) receives signal that the speed brake lever is not stowed.

AKS ALL

32-42 TASKS 826-827



B. Possible Causes

- (1) Wiring
- (2) Speed brake arming switch, S276
- (3) Antiskid/autobrake control unit (AACU), M162

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If the maintenance message does not show, then there was an intermittent fault.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the wiring:
 - (a) Remove the antiskid/autobrake control unit (AACU), M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (b) Disconnect connector D10199 from the speed brake arming switch, S276.
 - (c) Do a wiring check between these pins of connector D1040A and D1040B at E1-3 shelf and connector D10199 at the speed brake arming switch, S276:

D1040A	D10199
pin B7	 8 nig
r	
D1040B	D10199
pin C11	 pin 2

- (d) If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - 2) Re-connect connector D10199.
 - 3) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 4) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 5) If the maintenance message does not show, then you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.

AKS ALL 32-42 TASK 827



- 1) Re-connect connector D10199.
- 2) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (2) Do the check of the spped brake arming switch:
 - (a) Using the Ohmmeter, monitor between D1040A pin B7 and D1040B pin C11.
 - (b) If the impedance is not greater than 20 Mohms when the speedbrake handle is in the stowed position, or not less than 10 ohms when the speedbrake handle is in ARMED position, then replace the speedbrake arming switch, S276. These are the tasks:
 - Speed Brake Armed Switch and Speed Brake Handle Position Switch Removal, AMM TASK 27-62-34-000-801
 - Speed Brake Armed Switch and Speed Brake Handle Position Switch Installation, AMM TASK 27-62-34-400-801
 - Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (c) If the maintenance message does not show, then you corrected the fault.
 - (d) If the maintenance message shows, then continue.
- (3) Replace the AACU, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the maintenance message does not show, then you corrected the fault.

------ END OF TASK ------

828. AUTOBRAKE DISARM Light is ON - Fault Isolation

A. Description

- (1) The AUTOBRAKE DISARM light comes on when these conditions occur:
 - (a) When the autobrake selector switch is in the OFF position:
 - 1) When the solenoid pressure switch on the autobrake valve module indicates autobrake valve module pressure is greater than 1000 psi.
 - (b) When the autobrake selector switch is in position 1,2,3, or MAX:
 - During autobrake arming, the autobrake disarm light will come on momentarily when an autobrake position is selected.
 - 2) During autobrake arming, if any of these conditions exist, the autobrake disarm light will remain on:
 - a) Both air/ground signals do not indicate air -AND- all four thrust lever switches are not retarded -AND- more than 3 seconds elapsed since both air ground signals indicated air.
 - b) Both the left and right brake metered pressure switches do not indicate low pressure.
 - c) An autobrake system fault is detected.
 - d) An antiskid fault that illuminates the ANTISKID INOP light is detected.
 - e) ADIRU input not valid.

32-42 TASKS 827-828

AKS ALL

EFFECTIVITY

Page 252 Jun 15/2016



- 3) During autobrake disarming, if any of these conditions exist, the autobrake disarm light will remain on:
 - a) Any of the previous "arming" conditions exist.
 - The speedbrakes are stowed after they have been deployed when either air/ground signal indicates ground.
 - c) Any of the four thrust lever switches indicate advanced.
- (c) When the autobrake selector switch is in the RTO position:
 - 1) During RTO autobrake arming, the autobrake disarm light will come on momentarily when the RTO position is selected.
 - 2) During RTO autobrake arming, if any of these conditions exist, the autobrake disarm light will remain on:
 - a) Less than 2 seconds elapsed since the previous selection of RTO.
 - NOTE: More than 2 seconds is needed to complete the initialization check.
 - b) All four thrust lever switches are not retarded.
 - c) The antiskid/autobrake contol unit indicates the average wheel speed is greater the 60 knots.
 - d) Both air/ground signals do not indicate ground.
 - e) An autobrake system fault is detected.
 - f) An antiskid fault that illuminates the ANTISKID INOP light is detected.
 - During RTO autobrake disarming, if any of these conditions exist, the autobrake disarm light will remain on:
 - a) If the autobrake selector switch is not moved to OFF after lift off, then either air/ground signal indicates ground on the subsequent landing.
 - 4) At the initiation of RTO above 88 knots, if any of these conditions exist, the autobrake disarm light will remain on:
 - a) Either left or right brake metered pressure switches indicate high pressure.
 - b) The speedbrakes are stowed after they have been deployed when either air/ground signal indicates ground.
 - c) Any of the four thrust lever switches indicate advanced.
 - d) An autobrake system fault is detected.
 - e) An antiskid fault that illuminates the ANTISKID INOP light is detected.
- (2) If the autobrake disarm light is on when the autobrake selector switch is not in the OFF position, you can turn the light off by moving the selector switch to the OFF position.

B. Possible Causes

- (1) Wiring problem
- (2) AUTOBRAKE DISARM light, L1
- (3) Solenoid pressure switch on the autobrake pressure control module, V122.
- (4) Autobrake disarm relay, R1.
- (5) Antiskid/autobrake control unit (AACU), M162
- (6) Autothrottle switchpack, M1766 or M1767
- (7) Speedbrake Arming Switch (S276)
- (8) Brake Pressure Switch (S762 or S763)

AKS ALL 32-42 TASK 828



C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD
F	11	C00317	INDICATOR MASTER DIM SECT 5

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this check of the AUTOBRAKE DISARM light:
 - (a) Make sure the autobrake selector switch is in the OFF position.
 - If the AUTOBRAKE DISARM light turns off when the autobrake selector switch is moved to the OFF position, then the fault was intermittent or the antiskid/autobrake system detected a system fault.
 - a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - b) If a maintenance message does not show, then there was an intermittent fault.
 - c) If a maintenance message shows, then go to the fault isolation task for that maintenance message.
 - 2) If the AUTOBRAKE DISARM light stays on when the autobrake selector switch is moved to the OFF position, then do the Fault Isolation Procedure below.
- (2) Make sure that the thrust lever switch operates correctly.
 - (a) Compare all maintenance messages found in the autobrake non-volatile memory to the list in the task: Thrust Lever Switch Problem Fault Isolation, 32-42 TASK 813.
 - (b) If necessary, do this troubleshooting procedure: Thrust Lever Switch Problem Fault Isolation, 32-42 TASK 813.
 - (c) If operation of thrust lever switches S2 or S3 in the autothrottle switch packs M1766 and M1767 is intermittent, replace the Autothrottle Switchpack Assembly. These are the tasks:
 - Autothrottle Switchpack Assembly Removal, AMM TASK 76-11-07-020-802-F00
 - Autothrottle Switchpack Assembly Installation, AMM TASK 76-11-07-400-802-F00

F. Fault Isolation Procedure

- 1) Do this check of the solenoid pressure switch on the autobrake pressure control module, V122:
 - (a) Disconnect the electrical connector D2572 from the solenoid pressure switch.
 - (b) If the AUTOBRAKE DISARM light goes off, then do these steps:
 - 1) Replace the solenoid pressure switch on the autobrake pressure control module, V122. These are the tasks:
 - Autobrake Pressure Control Module Line Replaceable Units Removal, AMM TASK 32-42-81-000-802

AKS ALL



- Autobrake Pressure Control Module Line Replaceable Units Installation, AMM TASK 32-42-81-400-802
- 2) Re-connect the connector D2572 to the solenoid pressure switch.
- 3) If the AUTOBRAKE DISARM light remains off, then you corrected the fault.
- (c) If the AUTOBRAKE DISARM light stays on, then continue.
- (2) Do these checks of the wiring:
 - (a) Remove the center instrument panel, P2-2.
 - (b) Disconnect connector D331 from the center instrument panel, P2-2.
 - (c) Make sure you do not have continuity from pin 29 and pin 24 of connector D331 on the P2-2 panel.
 - (d) If there is continuity between pin 29 and pin 24 of connector D331, then do these steps:
 - 1) Replace the autobrake disarm relay, R1.
 - 2) Re-connect connector D331.
 - 3) Install the center instrument panel, P2-2.
 - 4) If the AUTOBRAKE DISARM light goes off, then you corrected the fault.
 - (e) Make sure pins 29 and 31 on connector D331 go to ground.
 - (f) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D331.
 - 3) Install the center instrument panel, P2-2.
 - 4) If the AUTOBRAKE DISARM light goes off, then you corrected the fault.
 - (g) If you do not find a problem with the wiring, then continue.
 - (h) Remove the antiskid/autobrake control unit (AACU), M162. To remove it, do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.
 - (i) Do a wiring check between these pins of connector D1040A on the AACU and connector D331 on the P2-2 panel.

D1040A	1									D331
pin D7										pin 24

- (j) If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - 2) Re-connect connector D331 to the center instrument panel, P2-2.
 - 3) Install the center instrument panel, P2-2.
 - 4) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - 5) If the AUTOBRAKE DISARM light goes off, then you corrected the fault.
- (k) If you do not find a problem with the wiring, then do these steps and continue.
 - 1) Re-connect connector D331 to the center instrument panel, P2-2.
 - 2) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.

AKS ALL 32-42 TASK 828



- (3) Do this check of the wiring between the AUTOBRAKE DISARM light and terminal block TB1303:
 - (a) Remove the center instrument panel, P2-2.
 - (b) Disconnect connector D339 from the center instrument panel, P2-2.
 - (c) Do a wiring check between these pins on connector D339 at the P2-2 panel and terminal block TB1303 at STA E001-3 on the E1-3 shelf:

D339	TB1303
pin 9	 term YB3

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D339.
 - 3) If the AUTOBRAKE DISARM light goes off, then you corrected the fault.
 - 4) Install the center instrument panel, P2-2.
- (e) If you do not find a problem with the wiring, then continue.
- (f) Re-connect connector D339 to the center instrument panel, P2-2.
- (g) Install the center instrument panel, P2-2.
- (h) Disconnect the electrical connector D2572 from the solenoid pressure switch on the autobrake pressure control module, V122.
- (i) Do a wiring check between these pins on connector D2572 at the solenoid pressure switch and terminal block TB1303 at STA E001-3 on the E1-3 shelf:

D2572										TB1303
pin 1										term YB3

- (j) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector D2572 to the solenoid pressure switch.
 - 3) If the AUTOBRAKE DISARM light goes off, then you corrected the fault.
- (k) If you do not find a problem with the wiring, then continue.
 - 1) Re-connect the connector D2572 to the solenoid pressure switch.
- (4) Do this check of the AUTOBRAKE DISARM light, L1:
 - (a) Push and release the AUTOBRAKE DISARM light to use the press-to-test switch in the light.
 - (b) If the AUTOBRAKE DISARM light goes off, then do these steps:
 - 1) Replace the AUTOBRAKE DISARM light assembly, L1, do this task: Indicator Light Light Assembly Replacement, AMM TASK 33-18-00-960-802.
 - Push and release the AUTOBRAKE DISARM light to use the press-to-test switch in the light.
 - 3) If the AUTOBRAKE DISARM light comes on and then goes off, then you corrected the fault.
 - (c) If the AUTOBRAKE DISARM light remains on, then continue.
- (5) Replace the antiskid/autobrake control unit, M162. These are the tasks:

AKS ALL



- Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
- Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
- (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
- (b) If the AUTOBRAKE DISARM light goes off, then you corrected the fault.

------ END OF TASK ------

829. ANTISKID INOP Light is ON - Fault Isolation

A. Description

- (1) The ANTISKID INOP Light comes ON when these conditions occur:
 - (a) The Antiskid/Autobrake Control Unit (AACU) is not powered or not installed.
 - (b) Detection of an Antiskid System problem by the AACU
 - (c) The Alternate Brake Hydraulic System is pressurized (as determined by the Pressure Switch on the Alternate Brake Selector Valve) and a Antiskid System problem is detected (except for a normal valve or Parking Brake Disagree problem).

B. Possible Causes

- (1) ANTISKID INOP Light, L2
- (2) Wiring
- (3) Outboard Antiskid Sense Relay, R626
- (4) Inboard Antiskid Sense Relay, R628
- (5) Alternate Antiskid Sense Relay, R627
- (6) Pressure Switch on the Alternate Brake Selector Valve, S811
- (7) Antiskid/Autobrake Control Unit (AACU), M162
- (8) Parking Brake Shutoff Valve

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	Number	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
Ε	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) SSM 32-41-11
- (2) WDM 32-41-11

E. Initial Evaluation

- 1) Do the Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (a) If maintenance messages show, refer to the table at the end of the BITE Task to find the applicable Fault Isolation Manual (FIM) Tasks for the maintenance messages that show.
 - (b) If maintenance messages do not show, then do the Fault Isolation Procedure below.

AKS ALL

32-42 TASKS 828-829



F. Fault Isolation Procedure

- (1) Do this check of the ANTISKID INOP Light, L2:
 - (a) Push and release the ANTISKID INOP Light to use the Press-to-Test Switch in the light.
 - (b) If the ANTISKID INOP Light goes OFF, then do the steps that follow:
 - Replace the ANTISKID INOP Light Assembly, L2. This is the task: Indicator Light -Light Assembly Replacement, AMM TASK 33-18-00-960-802.
 - 2) Push and release the ANTISKID INOP Light to use the Press-to-Test Switch in the light.
 - a) If the ANTISKID INOP Light comes ON and then goes OFF, then you corrected the problem.
 - b) If the ANTISKID INOP Light is still ON, continue.
 - c) If the ANTISKID INOP Light is still ON, then continue.
- (2) Do this check of the Pressure Switch on the Alternate Brake Selector Valve, S811.
 - (a) Disconnect the electrical connector D2870 from the Pressure Switch.
 - (b) If the ANTISKID INOP Light goes OFF, then do the steps that follow:
 - 1) Replace the Pressure Switch on the Alternate Brake Selector Valve, S811. These are the tasks:
 - Alternate Brake Selector Valve Removal, AMM TASK 32-41-93-000-801
 - Alternate Brake Selector Valve Installation, AMM TASK 32-41-93-420-801
 - Reconnect the connector D2870 to the Pressure Switch.
 - a) If the ANTISKID INOP Light goes OFF, then you corrected the problem.
 - b) If the ANTISKID INOP Light is still ON, continue.
- (3) Do this check of the wiring between the ANTISKID INOP Light and the Antiskid Sense Relays (WDM 32-41-11):
 - (a) Remove the Center Instrument Panel, P2-2.
 - (b) Disconnect connector D339 from the Center Instrument Panel, P2-2.
 - (c) Disconnect connector D11402 from the Outboard Antiskid Sense Relay, R626, in the J24 junction box at STA 259.
 - (d) Disconnect connector D11406 from the Inboard Antiskid Sense Relay, R628, in the J22 junction box at STA 259.
 - (e) Disconnect connector D11404 from the Alternate Antiskid Sense Relay, R627, in the J22 junction box at STA 259.
 - (f) Do a wiring check as follows:

ANTISKID INOP	OUTB A/S
LT	SENSE RLY
D339	D11402
pin 8	pin 5

	INBD A/S
TERM BLOCK	SENSE RLY
TB32	D11406
pin YA1	pin 5

EFFECTIVITY AKS ALL



ALT A/S SENSE

 TERM BLOCK
 RLY

 TB32
 D11404

 pin YA1
 pin 3

- (g) If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - 2) Re-connect connector D339 to the P2-2 Panel.
 - 3) Re-connect connector D11402 to Relay, R626.
 - 4) Re-connect connector D11406 to Relay, R628.
 - 5) Re-connect connector D11404 to Relay, R627.
 - 6) Install the Center Instrument Panel, P2-2.
 - a) If the ANTISKID INOP Light goes OFF, then you corrected the problem.
 - b) If the ANTISKID INOP Light is still ON, continue.
- (h) If you do not find a problem with the wiring, then continue.
- (4) Replace the Antiskid/Autobrake Control Unit, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) If the ANTISKID INOP Light goes OFF, then you corrected the problem.
 - (b) If the ANTISKID INOP Light is still ON, continue.
- (5) Do a visual inspection of the Parking Brake Shutoff Valve.
 - (a) If you find signs of corrosion and/or contamination on the valve body, connector or output shaft, replace the valve. These are the tasks:
 - Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - (b) If the ANTISKID INOP Light goes OFF, then you corrected the problem.

----- END OF TASK -----

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details

830. PARKING BRAKE Warning Light (External Power Receptacle Panel) Does Not Operate - Fault Isolation

A. Description

EFFECTIVITY '

AKS ALL

(1) The PARKING BRAKE light, on the external power receptacle panel, comes on whenever the parking brake lever is set.

B. Possible Causes

- (1) PARKING BRAKE light, L1002
- (2) Parking brake switch, S100
- (3) Parking brake valve, V11
- (4) Wiring problem

32-42 TASKS 829-830

Page 259 D633A103-AKS Jun 15/2016



C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

		Number	·
В	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

- (1) (SSM 32-44-11)
- (2) (WDM 32-44-11)

E. Initial Evaluation

- (1) Fully push the brake pedals and set the parking brake.
- (2) If the PARKING BRAKE light comes on, then there was an intermittent fault.
- (3) If the PARKING BRAKE light does not come on, then do the Fault Isolation Procedure below.
- (4) Release the parking brake.

F. Fault Isolation Procedure

- (1) Replace the PARKING BRAKE light, L1002.
 - (a) Fully push the brake pedals and set the parking brake.
 - (b) If the PARKING BRAKE light comes on, then you corrected the fault.
 - (c) Release the parking brake.
 - (d) If the PARKING BRAKE light does not come on, then continue.
- (2) Do this voltage check at the parking brake valve, V11:
 - (a) Disconnect the connector D928 from the parking brake valve, V11.
 - (b) Do a check for 28v DC from pin 3 of connector D928 to structure ground.
 - (c) Fully push the brake pedals and set the parking brake.
 - (d) Do a check for 28v DC from pin 2 of connector D928 to structure ground.
 - (e) Release the parking brake.
 - (f) If there is 28v DC at pin 3 of connector D928, but there is not 28v DC at pin 2 of connector D928 after you set the parking brake, then do these steps:
 - 1) Do a wiring check between these pins on switch, S100, in the P8 stand and connector D928 at the parking brake valve V11:

S100											D928
1N0											pin 2

- 2) If you find a problem with the wiring, then do these steps:
 - a) Re-connect connector D928.
 - b) Repair the wiring.
 - c) Fully push the brake pedals and set the parking brake.
 - d) If the PARKING BRAKE light comes on, then you corrected the fault.
 - e) Release the parking brake.
- 3) If you do not find a problem with the wiring, then do these steps:
 - a) Re-connect connector D928.



- b) Adjust the parking brake switch, S100, do this task: Parking Brake System Adjustment, AMM TASK 32-44-00-820-801.
- c) Fully push the brake pedals and set the parking brake.
- d) If the PARKING BRAKE light comes on, then you corrected the fault.
- e) Release the parking brake.
- f) If the PARKING BRAKE light does not come on, then continue.
- g) Replace the parking brake switch, S100. These are the tasks:
 - Parking Brake Latch Switch Removal, AMM TASK 32-44-11-000-804
 - Parking Brake Latch Switch Installation, AMM TASK 32-44-11-400-804
- h) Fully push the brake pedals and set the parking brake.
- i) If the PARKING BRAKE light comes on, then you corrected the fault.
- j) Release the parking brake.
- (g) If there is not 28v DC at either pin of connector D928 that you checked, then do these steps:
 - 1) Do a check for 28v DC from the load terminal of this circuit breaker, C1346, to structure ground:
 - a) This is the circuit breaker:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	16	C01346	LANDING GEAR PARKING BRAKE

- b) If there is not 28v DC at the load terminal of the circuit breaker, C1346, then do these steps:
- c) Replace the circuit breaker, C1346.
- d) Fully push the brake pedals and set the parking brake.
- e) If the PARKING BRAKE light comes on, then you corrected the fault.
- f) Release the parking brake.
- g) If there is 28v DC at the load terminal of the circuit breaker, C1346, then continue.
- Do a check for 28v DC from connection 1C of the parking brake switch, S100, to structure ground.
- 3) If there is 28v DC at connection 1C of the parking brake switch, S100, then do these steps:
 - a) Replace the parking brake switch, S100. These are the tasks:
 - Parking Brake Latch Switch Removal, AMM TASK 32-44-11-000-804
 - Parking Brake Latch Switch Installation, AMM TASK 32-44-11-400-804
 - b) Fully push the brake pedals and set the parking brake.
 - c) If the PARKING BRAKE light comes on, then you corrected the fault.
 - d) Release the parking brake.
- 4) If there is not 28v DC at connection 1C of the parking brake switch, S100, then do these steps:

AKS ALL 32-42 TASK 830



- a) Repair the wiring between pin 1C of the parking brake switch, S100 to the load terminal of circuit breaker C1346.
- b) Fully push the brake pedals and set the parking brake.
- c) If the PARKING BRAKE light comes on, then you corrected the fault.
- d) Release the parking brake.
- (h) If there is 28v DC at pin 3 of connector D928, and there is also 28v DC at pin 2 of connector D928 after you set the parking brake, then continue.
- (3) Do a ground check of the parking brake valve, V11:
 - (a) Disconnect connector D928 from the parking brake valve, V11.
 - (b) Do a continuity check from pin 1 of connector D928 to structure ground.
 - (c) Do a continuity check from pin 9 of connector D928 to structure ground.
 - (d) If there is no continuity at pin 1 or pin 9 of connector D928, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D928.
 - 3) Fully push the brake pedals and set the parking brake.
 - 4) If the PARKING BRAKE light comes on, then you corrected the fault.
 - a) Release the parking brake.
 - (e) If there is continuity at pin 1 and pin 9 of connector D928, then continue.
- (4) Replace the parking brake valve, V11. These are the tasks:
 - Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - (a) Fully push the brake pedals and set the parking brake.
 - (b) If the PARKING BRAKE light comes on, then you corrected the fault.
 - (c) Release the parking brake.

——— END OF TASK ———

831. ANTISKID INOP Light is OFF - Fault Isolation

A. Description

- (1) The ANTISKID INOP light comes on when these conditions occur:
 - (a) When the antiskid/autobrake control unit is not powered or not installed.
 - (b) Detection of an antiskid system fault by the antiskid/autobrake control unit.
 - (c) When the alternate brake hydraulic system is pressurized (as determined by the pressure switch on the alternate brake selector valve) and any antiskid system fault is detected (except a normal valve or parking brake disagree fault).

B. Possible Causes

- (1) Wiring problem
- (2) ANTISKID INOP light, L2
- (3) Outboard antiskid sense relay, R626
- (4) Inboard antiskid sense relay, R628
- (5) Alternate antiskid sense relay, R627

32-42 TASKS 830-831

EFFECTIVITY
AKS ALL

Page 262 Jun 15/2016



- (6) Pressure switch on the alternate brake selector valve, S811.
- (7) Antiskid/autobrake control unit (AACU), M162

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD

D. Related Data

- (1) (SSM 32-41-11)
- (2) (WDM 32-41-11)

E. Initial Evaluation

- (1) Do this check of the ANTISKID INOP light:
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If a maintenance message shows, then go to the fault isolation task for that maintenance message.
 - (c) If a maintenance message does not show, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the ANTISKID INOP light, L2:
 - (a) Push and release the ANTISKID INOP light to use the press-to-test switch in the light.
 - (b) If the ANTISKID INOP light goes off, then do the steps that follow:
 - 1) Replace the ANTISKID INOP light assembly, L2, do this task: Indicator Light Light Assembly Replacement, AMM TASK 33-18-00-960-802.
 - 2) Push and release the ANTISKID INOP light to use the press-to-test switch in the light.
 - 3) If the ANTISKID INOP light comes on and then goes off, then you corrected the fault.
 - (c) If the ANTISKID INOP light remains on, then continue.
- (2) Do this check of the pressure switch on the alternate brake selector valve, S811.
 - (a) Disconnect the electrical connector D2870 from the pressure switch.
 - (b) If the ANTISKID INOP light goes off, then do the steps that follow:
 - Replace the pressure switch on the alternate brake seletor valve, S811. These are the tasks:
 - Alternate Brake Selector Valve Removal, AMM TASK 32-41-93-000-801
 - Alternate Brake Selector Valve Installation, AMM TASK 32-41-93-420-801
 - 2) Reconnect the connector D2870 to the pressure switch.
 - 3) If the ANTISKID INOP light remains off, then you corrected the fault.
 - (c) If the AUTOBRAKE DISARM light remains on, then continue.

32-42 TASK 831

AKS ALL

EFFECTIVITY '



- (3) Do this check of the wiring between the ANTISKID INOP light and the antiskid sense relays:
 - (a) Remove the center instrument panel, P2-2.
 - (b) Disconnect connector D339 from the center instrument panel, P2-2.
 - (c) Disconnect connector D11402 from the outboard antiskid sense relay, R626, in the J24 junction box at STA 259.
 - (d) Do a wiring check between this pin on connector D339 at the P2-2 panel and the pin on connector D11402 for the outboard sense relay, R626:

D339	D11402
pin 8	 pin 5

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D339 to the P2-2 panel.
 - 3) Re-connect connector D11402 to the relay.
 - 4) If the ANTISKID INOP light goes off, then you corrected the fault.
 - 5) Install the center instrument panel, P2-2.
- (f) If you do not find a problem with the wiring, then continue.
- (g) Re-connect connector D11402 to the relay.
- (h) Disconnect connector D11406 from the inboard antiskid sense relay, R628, in the J22 junction box at STA 259.
- (i) Do a wiring check between this pin on connector D339 at the P2-2 panel and the pin on connector D11406 for the inboard sense relay, R628:

D339	D11406
pin 8	 pin 5

- (j) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D339 to the P2-2 panel.
 - 3) Re-connect connector D11406 to the relay.
 - 4) If the ANTISKID INOP light goes off, then you corrected the fault.
 - 5) Install the center instrument panel, P2-2.
- (k) If you do not find a problem with the wiring, then continue.
- (I) Re-connect connector D11406 to the relay.
- (m) Disconnect connector D11404 from the alternate antiskid sense relay, R627, in the J22 junction box at STA 259.
- (n) Do a wiring check between this pin on connector D339 at the P2-2 panel and the pin on connector D11404 for the alternate sense relay, R627:

D339	D11402
pin 8	 pin 3

- (o) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.

AKS ALL



- 2) Re-connect connector D339 to the P2-2 panel.
- 3) Re-connect connector D11404 to the relay.
- 4) If the ANTISKID INOP light goes off, then you corrected the fault.
- 5) Install the center instrument panel, P2-2.
- (p) If you do not find a problem with the wiring, then continue.
- (q) Re-connect connector D11404 to the relay.
- (r) Re-connect connector D339 to the center instrument panel, P2-2.
- (s) Install the center instrument panel, P2-2.
- (4) Replace the Antiskid/Autobrake control unit, M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - (b) If the ANTISKID INOP light goes off, then you corrected the fault.



832. AUTOBRAKES GRAB UPON LANDING - FAULT ISOLATION

- A. Description
 - (1) SDS 32-42-00
- B. Possible Causes
 - (1) Autobrake pressure control module
- C. Related Data
 - (1) (SSM 32-42-00)
- D. Fault Isolation Procedure
 - (1) Replace the autobrake pressure control module valve V122. These are the tasks:
 - Autobrake Pressure Control Module Removal, AMM TASK 32-42-81-000-801
 - Autobrake Pressure Control Module Installation, AMM TASK 32-42-81-400-801
 - (a) If the autobrakes operate correctly on subsequent flights, then you corrected the fault.
 - Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.

——— END OF TASK ———

833. AUTOBRAKE Disarms During Landing - Fault Isolation

A. Description

- (1) The autobrake disarm and the AUTOBRAKE DISARM light will come on when one or more of these conditions occur:
 - (a) The selector switch is in position OFF or to an invalid switch position
 - (b) The speedbrake is armed and the speedbrake lever is in the DOWN position
 - (c) One of the two brake pedal pressure switches (S762 or S763) shows pressure more than 750 psi (5171 kPa).

AKS ALL

32-42 TASKS 831-833



- (d) One or more thrust lever switch shows an advanced condition.
 - NOTE: This disarm condition is prevented for the first three seconds after one of the two air/ground systems first show ground.
- (e) A fault in the antiskid system
- (f) A fault in the autobrake system
- (g) ADIRU input not valid

B. Possible Causes

- (1) Autothrottle Switch Pack, M1766 (left) or M1767 (right)
- (2) Autobrake Valve Module, V122
- (3) Brake Pedal Pressure Switch, S762 or S763
- (4) Speed Brake Arming Switch, S276
- (5) Antiskid/Autobrake Control Unit (AACU), M162
- (6) Wiring Problem
- (7) Autobrake Shuttle Valve (excessive internal leakage)

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Α	16	C01345	LANDING GEAR AUTOBRAKE BITE CONT 2
Α	18	C00583	LANDING GEAR AUTOBRAKE BITE CONT 1
E	16	C00196	LANDING GEAR ANTISKID INBD
E	18	C00195	LANDING GEAR ANTISKID OUTBD
F	11	C00317	INDICATOR MASTER DIM SECT 5

D. Related Data

- (1) (SSM 32-42-11)
- (2) (WDM 32-42-11)

E. Initial Evaluation

- (1) Do this check of the AUTOBRAKE DISARM light:
 - (a) Make sure that the autobrake selector switch is in the OFF position.
 - If the AUTOBRAKE DISARM light is on and stays on when the autobrake selector switch is in the OFF position, then do the troubleshooting task for the AUTOBRAKE DISARM light.
 - a) Do this task: AUTOBRAKE DISARM Light is ON Fault Isolation, 32-42 TASK 828.
 - (b) If the AUTOBRAKE DISARM light is on and goes off when the autobrake selector switch is moved to the OFF position, then do the troubleshooting task for the Antiskid/Autobrake Control Unit (AACU) BITE.
 - 1) Do this task: Antiskid/Autobrake Control Unit (AACU) BITE Procedure, 32-42 TASK 801.
 - 2) If a maintenance message shows, then go to the fault isolation task for that maintenance message.

AKS ALL



3) If there are no maintenance messages, then continue with this task.

F. Fault Isolation Procedure

- (1) Make sure that each of the thrust levers operate correctly. For each of the autothrottle switchpacks M1766 (left) and M1767 (right), do these steps:
 - (a) Disconnect the connectors D11130 (left) and D11134 (right) for the autothrottle switchpacks M1766 (left) and M1767 (right).
 - NOTE: Autothrottle switchpacks can have intermittent operation.
 - (b) Put identical digital/analog multimeter, COM-1793 on each of the thrust lever switches, S2 and S3 simultaneously.
 - NOTE: Analog multimeters are suggested.
 - (c) Make sure that the two thrust lever switches, S2 and S3 operate correctly.
 - 1) Advance the throttle lever.
 - 2) Keep the lever advanced for 10-30 minutes.
 - 3) Pull the throttle lever back and monitor the two multimeters at the same time.
 - 4) Make sure that the two switches move to the retarded position at the same time.
 - 5) Do step (c) three or more total times to make sure that the two thrust lever switches, S2 and S3 operate the same each time.
 - (d) If the two thrust lever switches, S2 and S3 do not operate the same each time that the throttle lever position is changed, then replace the related switchpack.
 - 1) These are the tasks:
 - Autothrottle Switchpack Assembly Removal, AMM TASK 76-11-07-020-802-F00
 - Autothrottle Switchpack Assembly Installation, AMM TASK 76-11-07-400-802-F00
 - (e) Do these steps again for the opposite thrust lever.
 - (f) Do the Repair Confirmation at the end of this task.
- Replace brake pedal pressure switches, S762 and S763.
 - (a) Do the Repair Confirmation at the end of this task.
- (3) Make sure that the speed brake arming switch, S276 operates correctly. Do this task: Speed Brake Lever Signal to the Antiskid/Autobrake Control Unit Problem - Fault Isolation, 32-42 TASK 827.
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Replace the autobrake module, V122. These are the tasks:
 - Autobrake Pressure Control Module Valve Removal, AMM TASK 32-42-81-000-801
 - Autobrake Pressure Control Module Installation, AMM TASK 32-42-81-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (5) Replace Antiskid/autobrake Control Unit (AACU), M162. These are the tasks:
 - Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801
 - Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (6) Do this check of the wiring.
 - (a) Remove the antiskid/autobrake control unit (AACU), M162. Do this task: Antiskid/Autobrake Control Unit Removal, AMM TASK 32-42-21-000-801.

AKS ALL



- (b) Check the wiring between the AACU, M162 and the Speed Brake Arming Switch, S276. Do these steps:
 - 1) Disconnect the connector D10199 from the speed brake arming switch, S276.
 - 2) Do a wiring check between these pins of connector D1040A and D1040B at E1-3 shelf and connector D10199 at the speed brake arming switch, S276:

SWITCH EQUIPMENT NUMBER S276

SWITCH	AACU
CONNECTOR	CONNECTOR
D10199	D1040A
pin 8	pin B7
D10199	D1040B
pin 2	pin C11

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector D10199.
 - c) Re-install the AACU, M162. Do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 4) If you do not find a problem with the wiring, then continue.
 - a) Re-connect the connector D10199.
- (c) Check the wiring between the Antiskid/autobrake Control Unit (AACU), M162 and each of the Brake Pedal Pressure Switches, S762 or S763. For the applicable brake pedal pressure switch, do these steps:
 - 1) Find the connector and the pair of pins for the applicable brake pedal switch:

LEFT SWITCH EQUIPMENT NUMBER S762

SWITCH	AACU
CONNECTOR	CONNECTOR
D2564	D1040B
pin 2	pin B8
pin 3	pin A9

RIGHT SWITCH EQUIPMENT NUMBER S763

SWITCH	AACU
CONNECTOR	CONNECTOR
D2566	D1040A
pin 2	pin A10
pin 3	pin B10

- 2) Disconnect the connector from the applicable brake pedal pressure switch.
- 3) Do a wiring check between the pins of the connector at the E1-3 shelf and the connector at the applicable brake pedal pressure switch.
- 4) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.

AKS ALL



- b) Re-connect the connector to the applicable brake pedal pressure switch.
- c) Re-install the AACU, M162. Do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- d) Do the Repair Confirmation at the end of this task.
- 5) If you do not find a problem with the wiring, then continue.
 - a) Re-connect the connector to the applicable brake pedal pressure switch.
- (d) Check the wiring between the Antiskid/autobrake Control Unit (AACU), M162 and each of the Autothrottle Switch Packs, M1766 (left) or M1767 (right). For the applicable autothrottle switch pack, do these steps:
 - 1) Find the connector and the four pins for the applicable switch pack:

RIGHT SWITCH PACK EQUIPMENT NUMBER M1767

SWITCH PACK CONNECTOR D11134 pin 2	AACU CONNECTOR D1040A pin A7
D11134 pin 3 pin 5 pin 6	pin B9

LEFT SWITCH PACK EQUIPMENT NUMBER M1766

CONNECTOR	CONNECTOR
D11130	D1040A
pin 2	pin A7
D11130	D1040B
pin 3	pin A4
pin 5	pin B9

pin 6 pin A7

- 2) Disconnect the connector from the applicable switch pack.
- Do a wiring check between the pins of the connector at the E1–3 shelf and the connector at the applicable switch pack.

AACII

- 4) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.

SWITCH DACK

- b) Re-install the AACU, M162. Do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- Do the Repair Confirmation at the end of this task.
- 5) If you do not find a problem with the wiring, then continue.
 - a) Re-connect the connector to the applicable switch pack.

AKS ALL 32-42 TASK 833



- (e) Check the wiring between the Antiskid/autobrake Control Unit (AACU), M162 and the Landing Gear Lever Switch, S4. Do these steps:
 - 1) Disconnect the connector D333 from the P2-2 panel.
 - Do a wiring check between these pins of connector D1040B at E1-3 shelf and the connector D333 at the autobrake selector switch, S4.

LEVER SWITCH EQUIPMENT NUMBER S4

SWITCH CONNECTOR	AACU CONNECTOR
D333	D1040B
pin 32	pin D7
pin 33	pin D8
pin 34	pin D9
pin 35	pin D10
pin 36	pin D12
pin 37	pin C10

- 3) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector D333.
 - c) Re-install the AACU, M162. Do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 4) If you do not find a problem with the wiring, then continue.
 - a) Re-connect the connector D333.
- (f) Check the wiring between the Antiskid/autobrake Control Unit (AACU), M162 and the Autobrake Valve Module, V122. Do these steps:
 - Do a continuity check between the pins of connector D1040A and D1040B at the AACU, and the pins of connectors D2570, D2574 and D2576 at the Autobrake Valve Module, V122.

VALVE MODULE EQUIPMENT NUMBER V122

VALVE MODULE CONNECTOR D2570 pin 2	CONNECTOR D1040A pin B8
D2574 pin 1	
D2576 pin 2	D1040B pin A10
D2576	D1040A

pin 3 pin C7

EFFECTIVITY AKS ALL



- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connectors.
 - c) Re-install the AACU, M162. Do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
 - d) Do the Repair Confirmation at the end of this task.
- 3) If you do not find a problem with the wiring, then continue.
 - a) Re-connect the connectors.
 - b) Re-install the AACU, M162. To install it, do this task: Antiskid/Autobrake Control Unit Installation, AMM TASK 32-42-21-400-801.
- (7) Replace the autobrake shuttle valves. These are the tasks:
 - Autobrake Shuttle Valve Removal, AMM TASK 32-42-71-000-801
 - Autobrake Shuttle Valve Installation, AMM TASK 32-42-71-400-801

G. Repair Confirmation

- (1) Do this check of the AUTOBRAKE DISARM.
 - (a) Make sure that the autobrake selector switch is in the OFF position.
 - (b) If the AUTOBRAKE DISARM light is off when the autobrake selector switch is in the OFF position, then you corrected the fault.
 - (c) If the AUTOBRAKE DISARM light is on when the autobrake selector switch is in the OFF position, then continue with the troubleshooting.

—— END OF TASK ——

32-42 TASK 833

EFFECTIVITY '



801. Parking Brake Pressure Drops Faster Than Permitted with the Parking Brake Set - Fault Isolation

A. Initial Evaluation

- (1) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801.
 - (a) If the parking brake accumulator pressure drops faster than permitted, then do the Fault Isolation Procedure below.

B. Fault Isolation Procedure

- (1) Did you wait for a minimum of 10 minutes after you turned on the pumps to start the parking brake hold check?
 - (a) If you waited less than 10 minutes, then allow 10 minutes for the accumulator temperature to stabilize.
 - (b) If you waited for more than 10 minutes, then continue.
- (2) Do this task: Check of the Brake Accumulator Precharge Pressure, AMM TASK 12-15-11-610-801.
 - (a) If the brake accumulator precharge pressure is low, then, do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - (b) Check for nitrogen gas leakage on the gas pressure tube connections to the brake accumulator, do this task: Brake Pressure Indication Low/Zero - Fault Isolation, 32-44 TASK 805.
 - (c) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801.
 - 1) If the accumulator pressure drops within the limit, then you corrected the fault.
 - 2) If the accumulator pressure drops faster than permitted, then continue.
- (3) Do the check of the freeplay for the rig pins and cable tension.
 - (a) If the freeplay is not satisfactory, then do this task: Hydraulic Brake System Adjustment, AMM TASK 32-41-00-820-801.
 - NOTE: Low cable tension will allow the accumulator pressure to drop more rapidly.
 - (b) If the freeplay is satisfactory, then continue.
- (4) Do the check of the gap between the parking brake pawl and the bushing.
 - (a) Do the check of the gap between the pawl lip and the bushing when the pedals against the stop position.
 - If the gap between the pawl lip and the bushing is more than 0.1 in. (2.5 mm), then adjust the pawls of the parking brake, do this task: Parking Brake System Adjustment, AMM TASK 32-44-00-820-801
 - (b) Do the check of the gap between the aft edge of the pawls and the bushing when the bellcrank turned slightly.
 - If the gap between the aft edge of the pawls and bushing is more than 0.2 in.
 (5.1 mm), then adjust the pawl stop, do this task: Parking Brake System Adjustment, AMM TASK 32-44-00-820-801.
 - (c) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801.
 - 1) If the accumulator pressure drops within the limit, then you corrected the fault.
 - 2) If the accumulator pressure drops faster than permitted, then continue.
- (5) Perform the Brake Accumulator Bleed Down test with the Parking Brake NOT set. If the Bleed Down rate is high, one of the two check valves or the Accumulator Pressure Relief Valve may be leaking.

AKS ALL

32-44 TASK 801



- (a) For the B hydraulic system, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (b) Push the Captains or First Officer's left and right brake pedals to the stops several times until the brakes no longer actuate. This will release the hydraulic pressure at the accumulator.
- (c) Replace the check valves.
- (d) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake NOT set.
 - 1) If the brake accumulator brake pressure drops within the limit, then you corrected the fault.
 - 2) If the brake accumulator brake pressure drops faster than permitted, then continue.
- (6) Replace the Accumulator Pressure Relief Valve, these are the tasks:
 - (a) Brake Accumulator Pressure Relief Valve Removal, AMM TASK 32-41-71-000-801
 - (b) Brake Accumulator Pressure Relief Valve Installation, AMM TASK 32-41-71-420-801
 - (c) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake NOT set.
 - If the brake accumulator brake pressure drops within the limit, then you corrected the fault.
 - 2) If the brake accumulator brake pressure drops faster than permitted, then continue.
- (7) Make sure that the parking brake shutoff valve is at the "closed" position (position 2) with the parking brake is set:
 - (a) Make sure the parking brake light in the flight compartment is on.
 - 1) If the parking brake shutoff valve is not closed, then replace the parking brake shutoff valve, these are the tasks:
 - Parking Brake Shutoff Valve Removal, AMM TASK 32-44-21-000-801
 - Parking Brake Shutoff Valve Installation, AMM TASK 32-44-21-400-801
 - (b) If the parking brake light in the flight compartment is off, then do a check on the parking brake switch actuator, do this task: Parking Brake System Adjustment, AMM TASK 32-44-00-820-801
 - 1) If you do not find a problem with the adjustment of the parking brake switch actuator, then these are the tasks:
 - Parking Brake Latch Switch Removal, AMM TASK 32-44-11-000-804
 - Parking Brake Latch Switch Installation, AMM TASK 32-44-11-400-804
 - (c) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Released
 - 1) If the brake accumulator pressure drops within the limit, then you corrected the fault.
 - 2) If the brake accumulator pressure drops faster than permitted, then continue.
- (8) Check for internal leakage of the Parking Brake Shutoff Valve, Normal system Brake Metering Valve (either of two valves), Auto Brake Shuttle Valve (either of two valves), Normal/Alternate System Brake Shuttle Valve (any of four valves).

EFFECTIVITY 32-44 TASK 801

AKS ALL



(a)	Do the parking brake system bleed down test with suspect valves return line blocked. For
	the auto brake shuttle valves, block the line to the autobrake control module. For the
	Normal/Alternate Brake Shuttle Valves, Block the line to the Alternate Antiskid Control
	Valve.

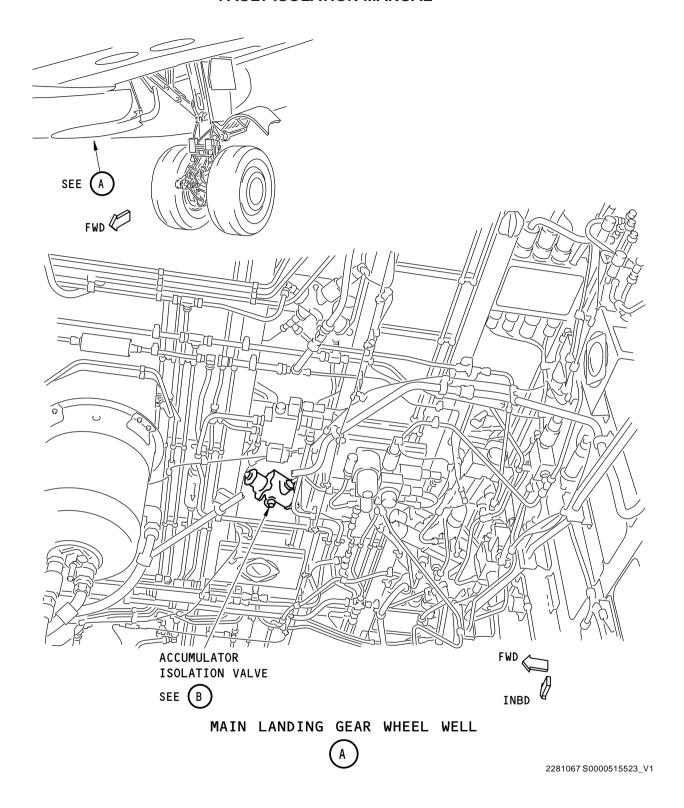
----- END OF TASK -----

AKS ALL

32-44 TASK 801

Page 203 Oct 15/2013





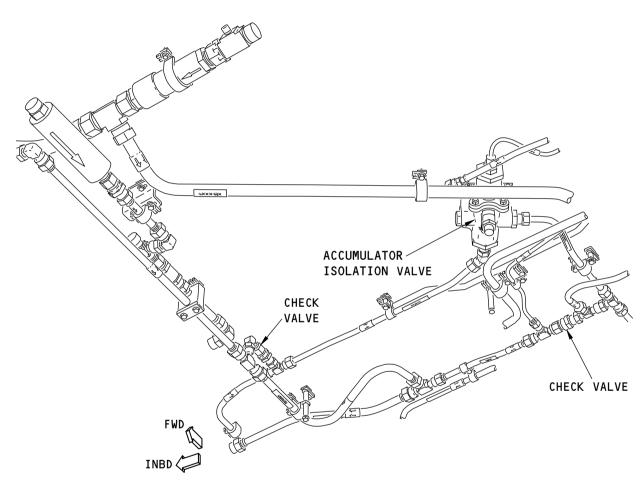
Check Valve Locations Figure 201/32-44-00-990-802 (Sheet 1 of 2)

AKS ALL Page 204
D633A103-AKS

0 1 15/2013

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details





ACCUMULATOR ISOLATION VALVE

L40253 S0006743783_V3

Check Valve Locations Figure 201/32-44-00-990-802 (Sheet 2 of 2)

AKS ALL

32-44 TASK 801

Page 205 Oct 15/2013



802. Parking Brake Pessure Drops Faster Than Permitted with the Parking Brake Released- Fault Isolation

A. Initial Evaluation

- (1) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801.
 - (a) If the parking brake accumulator pressure drops faster than permitted, then do the Fault Isolation Procedure below.

B. Fault Isolation Procedure

- (1) Did you wait for a minimum of 10 minutes after you turned on the pumps to start the parking brake hold check?
 - (a) If you waited less than 10 minutes, then allow 10 minutes for the accumulator temperature to stabilize.
 - (b) If you waited for more than 10 minutes, then continue.
- (2) Do this task: Check of the Brake Accumulator Precharge Pressure, AMM TASK 12-15-11-610-801.
 - (a) If the brake accumulator precharge pressure is low, then, do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - (b) Check for nitrogen gas leakage on the gas presure tube connections to the brake accumulator, do this task: Brake Pressure Indication Low/Zero - Fault Isolation, 32-44 TASK 805.
 - (c) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801.
 - 1) If the accumulator pressure drops within the limit, then you corrected the fault.
 - 2) If the accumulator pressure drops faster than permitted, then continue.
- (3) Replace the Check Valves
 - (a) For the B hydraulic system, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (b) Push the Captins or First Officer's left and right brake pedals to the stops several times until the brakes no longer actuate. This will release the hydraulic pressure at the accumulator.
 - (c) Replace the check valves.
 - (d) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Released
 - If the brake accumulator brake pressure drops within the limit, then you corrected the problem.
 - 2) If the brake accumulator brake pressure drops faster than permitted, then continue.
- (4) Replace the Accumulator Pressure Relief Valve, these are the tasks:
 - (a) Brake Accumulator Pressure Relief Valve Removal, AMM TASK 32-41-71-000-801
 - (b) Brake Accumulator Pressure Relief Valve Installation, AMM TASK 32-41-71-420-801
 - (c) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Released
 - 1) If the brake accumulator brake pressure drops within the limit, then you corrected the problem.
 - 2) If the brake accumulator brake pressure drops faster than permitted, then continue.

AKS ALL

32-44 TASK 802



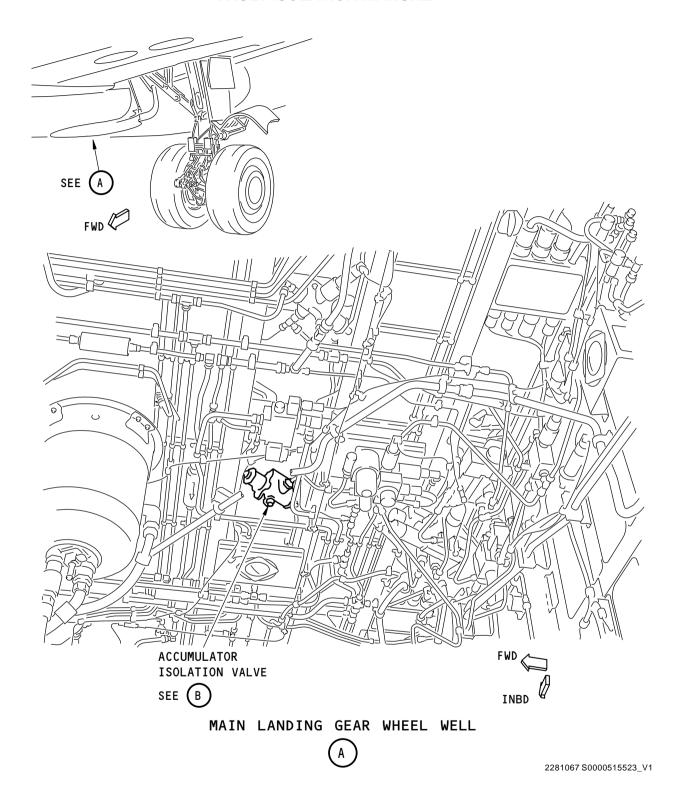
- (5) Do the check for internal leakage of any one of the brake metering valves.
 - (a) Plug A and B system pressure inputs to the suspect brake metering valve.
 - (b) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Released
 - 1) If the brake accumulator pressure drops within the limit, then replace the brake metering valve, these are the tasks:
 - Brake Metering Valve Removal, AMM TASK 32-41-31-000-801
 - Brake Metering Valve Installation, AMM TASK 32-41-31-400-801
 - (c) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Released
 - 1) If the brake accumulator brake pressure drops within the limit, then you corrected the problem.
 - 2) If the brake accumulator brake pressure drops faster than permitted, then continue.
- (6) Do the check for internal leakage of the autobrake module.
 - (a) Plug B system pressure input to the autobrake module.
 - (b) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801 with the Parking Brake Released
 - If the brake accumulator brake pressure drops within the limit, then replace the autobrake module, these are the tasks:
 - Autobrake Pressure Control Module Valve Removal, AMM TASK 32-42-81-000-801
 - Autobrake Pressure Control Module Installation, AMM TASK 32-42-81-400-801
 - (c) Do this task: Parking Brake Hold Check, AMM TASK 32-44-00-790-801

----- END OF TASK -----

32-44 TASK 802

EFFECTIVITY '





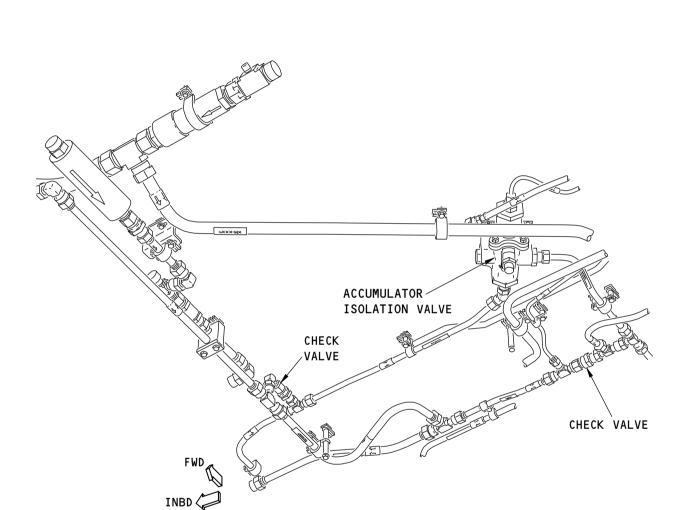
Check Valve Locations Figure 202/32-44-00-990-803 (Sheet 1 of 2)

AKS ALL Page 208
D633A103-AKS

Oct 15/2013

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details





ACCUMULATOR ISOLATION VALVE

L40253 S0006743783_V3

Check Valve Locations Figure 202/32-44-00-990-803 (Sheet 2 of 2)

AKS ALL

32-44 TASK 802

Page 209 Oct 15/2013



803. Parking Brake Light Remains Extinguished when the Parking Brake is Set - Fault Isolation

A. Description

(1) The parking brake light remains extinguished when the parking brake is set.

B. Possible Causes

- (1) The lamp for the parking brake light is faulty.
- (2) The parking brake valve motor/valve unit is faulty.
- (3) There are wiring problems.

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

(1) (WDM 32-44-11)

E. Fault Isolation Procedure

- (1) If the lamp for the parking brake light is faulty, replace the lamp.
 - (a) If the parking brake light is still off, then continue.
- (2) Examine the position of the manual override lever for the parking brake valve (located in the right wheel well).
 - (a) If the lever is in the "POS2" (Valve Closed) position, disconnect the electrical connector D928 at the parking brake valve. Make sure there is continuity between pins 9 and 10 on the parking brake valve.
 - 1) If there is NOT continuity, replace the parking brake valve.
 - 2) If there is continuity, examine and repair the circuit from pin 10 of the valve connector D928 to the Parking Brake Light and/or examine and repair the circuit from pin 9 and the ground at the valve connector D928 (WDM 32-44-11).
 - (b) If the lever is in the "POS1" (Valve Opened) position, disconnect the electrical connector D928 at the parking brake valve.
 - 1) If 28V DC is present at the pin 2 of the valve connector D928 (WDM 32-44-11), and there is continuity between pin 1 of the valve connector D928 and ground, replace the Parking Brake Motor/Valve unit.
 - 2) If 28V DC is NOT present at the pin 2 of the D928 valve connector,
 - Confirm the correct adjustment of the parking brake system, Parking Brake System Adjustment, AMM Task 32-44-00-820-801.
 - Examine and repair the circuit from the pin 2 of the valve connector D928 to the circuit breaker C01346 (WDM 32-44-11).
 - If there is not continuity between pin 1 of the valve connector D928 and ground, examine and repair the circuit from pin 1 of the valve connector D928 and structure ground (WDM 32-44-11).

F. Repair Confirmation

(1) If the parking brake light is on when the parking brake is set, then you corrected the fault.

(1) It the parking bre	and light is on when the parking brake is set,	andir you don't	soled the ladit.
	——— END OF TASK ———		
AKS ALL		32-44	TASK 803
	D633A103-AKS		Page 210 Oct 15/2013

BOEING PROPRIETARY - Copyright © Unpublished Work - See title page for details



804. Parking Brake Light Remains Illuminated when the Parking Brake is Released - Fault Isolation

A. Description

(1) The parking brake light remains illuminated when the parking brake is released.

B. Possible Causes

- (1) The Parking Brake Motor/Valve unit is faulty.
- (2) There are wiring problems.

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	Number	<u>Name</u>
В	16	C01346	LANDING GEAR PARKING BRAKE

D. Related Data

(1) (WDM 32-44-11)

E. Fault Isolation Procedure

- (1) Examine the position of the manual override lever for the parking brake valve located in the right wheel well.
 - (a) If the valve lever is in the "POS1" (Valve Opened) position, disconnect the electrical connector D928 at the parking brake valve.
 - 1) If the parking brake light extinguishes, replace the Parking Brake Motor/Valve unit.
 - 2) If the parking brake light remains on, examine and repair the circuit between pin 10 of the valve connector D928, the parking brake light, and the Parking Brake Close Sense Relay R613 (WDM 32-44-11).
 - (b) If the valve lever is in the "POS2" (Valve Closed) position, disconnect the electrical connector D928 at the parking brake valve.
 - If 28V DC is present at pin 3 of the D928 valve connector (WDM 32-44-11) and there is continuity between pin 1 of the valve connector D928 and ground, replace the Parking Brake Motor/Valve unit.
 - 2) If 28V DC is NOT present at pin 3 of the D928 valve connector, do the following:
 - Confirm the correct adjustment of the parking brake system, Parking Brake System Adjustment, AMM Task 32-44-00-820-801.
 - Examine and repair the circuit from pin 3 of the valve connector D928 to the circuit breaker C01346 (WDM 32-44-11).
 - 3) If there is not continuity between pin 1 of the valve connector D928 and ground, examine and repair the circuit from pin 1 of the valve connector D928 and structure ground (WDM 32-44-11).

F. Repair Confirmation

(1) If the parking brake light is off when the parking brake is released, then you corrected the fault.

ENID	∩ E	TASK	
	UГ	IASN	

805. Brake Pressure Indication Low/Zero - Fault Isolation

A. Description

(1) SDS 32-41-00

AKS ALL

32-44 TASKS 804-805



B. Possible Causes

- (1) Nitrogen gas leak at a tube connection
- (2) Brake accumulator pressure transducer, T185
- (3) Brake accumulator

C. Related Data

(1) (SSM 32-40-00)

D. Fault Isolation Procedure

(1) Do the task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801

NOTE: Do this task first to ensure that the accumulator is properly serviced with the piston fully against its internal stop prior to checking for nitrigen gas leakage.

- (2) Do a check for nitrogen gas leakage at these locations:
 - (a) The gas pressure tube connection to the brake accumulator.
 - (b) The gas pressure tube connections to the manifold assembly.
 - (c) The gas pressure tube connections to the brake accumulator pressure gage.
 - (d) The brake accumulator charging valve.
 - (e) The brake accumulator pressure gage dial face and gage body.
 - (f) If there is nitrogen gas leakage, then do these steps:
 - 1) Repair the leak.
 - 2) Do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - 3) If the brake pressure indication does not show low/zero on subsequent flights, then you corrected the fault.
 - (g) If there is no nitrogen gas leakage, then continue.
- (3) Replace the brake accumulator pressure transducer, T185. These are the tasks:
 - Brake Accumulator Pressure Transmitter Removal, AMM TASK 32-41-53-000-801
 - Brake Accumulator Pressure Transmitter Installation, AMM TASK 32-41-53-400-801
 - (a) Do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - (b) If the brake pressure indication does not show low/zero on subsequent flights, then you corrected the fault.
 - (c) If the brake pressure indication shows low/zero on subsequent flights, then continue.
- (4) Replace the brake accumulator. These are the tasks:
 - Hydraulic Brake Accumulator Removal, AMM TASK 32-41-51-000-801
 - Hydraulic Brake Accumulator Installation, AMM TASK 32-41-51-420-801
 - (a) Do this task: Hydraulic Brake Accumulator Servicing, AMM TASK 12-15-11-420-801.
 - (b) If the brake pressure indication does not show low/zero on subsequent flights, then you corrected the fault.

806. Brake Pressure Indication Problem - Fault Isolation

A. Description

(1) SDS 32-41-00

AKS ALL

32-44 TASKS 805-806



B. Possible Causes

- (1) Brake accumulator pressure gage
- (2) Brake accumulator pressure transducer, T185

C. Related Data

(1) SSM 32-40-00

D. Fault Isolation Procedure

- (1) Replace the brake accumulator pressure gage.
 - (a) If the brake pressure indication operates correctly, then you corrected the fault.
 - (b) If the brake pressure indication does not operate correctly, then continue.
- (2) Replace the brake accumulator pressure transducer, T185. These are the tasks:
 - Brake Accumulator Pressure Transmitter Removal, AMM TASK 32-41-53-000-801
 - Brake Accumulator Pressure Transmitter Installation, AMM TASK 32-41-53-400-801
 - (a) If the brake pressure indication operates correctly, then you corrected the fault.



807. Parking Brake Lever Problem - Fault Isolation

A. Description

(1) SDS 32-44-00

B. Possible Causes

- (1) Parking brake system adjustment
- (2) Parking brake lever
- (3) Parking brake latch mechanism

C. Related Data

(1) SSM 32-44-11

D. Fault Isolation Procedure

- 1) Do this task: Parking Brake System Adjustment, AMM TASK 32-44-00-820-801.
 - (a) If the parking brake lever operates, then you corrected the fault.
 - (b) If the parking brake lever does not operate, then continue.
- (2) Replace the parking brake lever. These are the tasks:
 - Parking Brake Lever Removal, AMM TASK 32-44-11-000-801
 - Parking Brake Lever Installation, AMM TASK 32-44-11-400-801
 - (a) If the parking brake lever operates, then you corrected the fault.
 - (b) If the parking brake lever does not operate, then continue.
- (3) Replace the parking brake latch mechanism. These are the tasks:
 - Parking Brake Latch Removal, AMM TASK 32-44-11-000-803
 - Parking Brake Latch Installation, AMM TASK 32-44-11-400-803
 - (a) If the parking brake lever operates, then you corrected the fault.

END	OE:	TASK	
	OF	IASK	

AKS ALL

32-44 TASKS 806-807



801. Nose Wheel Makes a Loud Noise in the Wheel Well - Fault Isolation

A. Description

- (1) There are two nose wheel spin brakes in the nose gear wheel well. The nose wheel spin brakes use friction with the nose tires to stop nose wheel rotation after the nose gear is retracted.
- (2) The wheel spin brake assemblies attach to the upper forward nose wheel well ceiling.
- (3) When you move the rudder pedals full travel on the ground, the nose wheels turn a maximum of 7 degrees in the left or right direction. Steering inputs from the rudder pedals go to the metering valve through a cable loop.
- (4) The rudder pedal steering mechanism does these functions:
 - (a) Combines the steering inputs from the rudder pedals and the steering wheel
 - (b) Prevents rudder pedal inputs when the airplane is in the air
 - (c) Provides centering forces.
- (5) A rudder pedal steering rotary actuator is attached to the rudder pedal steering mechanism with a cable loop. When the airplane is in the air the rotary actuator moves a cam in the mechanism. This will not let the rudder pedal inputs move the control cables for the nose wheel steering.
- (6) (SDS SUBJECT 32-45-00)
- (7) (SDS SUBJECT 32-51-00)

B. Possible Causes

- (1) Damaged or worn nose tires
- (2) Damaged or worn nose wheel spin brakes
- (3) Rudder pedal steering rotary actuator, M1177, and/or cable loop
- (4) The R596 relay
- (5) Steering metering valve
- (6) Incorrect nose gear shock strut servicing.

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	Number	<u>Name</u>
С	15	C01355	LANDING GEAR AIR/GND SYS 2
С	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

D. Related Data

- (1) (SSM 32-51-11)
- (2) (WDM 32-51-11)

E. Fault Isolation Procedure

- (1) Do these steps to prepare for the fault isolation:
 - (a) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
 - (b) Make sure the control lever for the landing gear is in the OFF position.

AKS ALL



WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (c) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Examine the nose tires for wear or damage. Do these tasks: AMM PAGEBLOCK 32-45-00/601
- (3) Examine the nose wheel spin brake assemblies in the nose gear wheel well. To do this, do this task: Nose Wheel Spin Brake Lining Inspection, AMM TASK 32-45-31-700-801 Look for wear on the spin brake pads or damaged spring supports.
 - (a) If the spin brake pad is worn or the spring supports are damaged, then do these steps:
 - 1) Replace the nose wheel spin brakes. These are the tasks:
 - Nose Wheel Spin Brake Lining Removal, AMM TASK 32-45-31-000-801
 - Nose Wheel Spin Brake Lining Installation, AMM TASK 32-45-31-400-801
 - 2) If the fault does not occur on the subsequent flight, then you corrected the fault.
 - (b) If the spin brake pad is not worn or the spring supports are not damaged, then continue.
- (4) Examine the nose gear wheel well, nose gear doors, and and the nose gear for obvious signs of damage or contact by nose tires.
 - (a) If there is damage in the wheel well or on the nose gear, then repair the damage and service the nose gear shock strut. To service the nose gear shock strut, do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802.
 - (b) If the fault does not occur on the subsequent flight, then you corrected the fault.
 - (c) If there is no damage in the wheel well or on the nose gear, then continue.
- (5) Do this check of the rudder pedal steering rotary actuator, M1177:
 - NOTE: The rotary actuator is below the flight deck floor. You get access to the actuator through the access panel on the left side bulkhead of the nose gear wheel well.
 - (a) Put the airplane in the air mode. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
 - (b) Do a check to see if the rotary actuator moved to the air position.
 - <u>NOTE</u>: The rotary actuator is in the air position when the index marks on the actuator pulley and the housing are aligned.
 - (c) If the rotary actuator did not move to the air position, then do these steps:
 - 1) Replace the steering rotary actuator, M1177. These are the tasks:
 - Rudder Pedal Steering Rotary Actuator Removal, AMM TASK 32-51-81-000-801
 - Rudder Pedal Steering Rotary Actuator Installation, AMM TASK 32-51-81-400-801
 - Put the airplane back to the air. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
 - 3) If the rotary actuator did not move to the air position, then replace the air/ground relay, R596.
 - 4) If the rotary actuator did move to the air position, then continue.

AKS ALL 3



- 5) Put the airplane back to the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
- 6) Do the Repair Confirmation at the end of this task.
- (d) If the rotary actuator did move to the air position, then continue.
 - Put the airplane back to the ground mode. Do this task: Return the Airplane to the Ground Mode. AMM TASK 32-09-00-860-802
- (6) Do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802.
- (7) If you suspect that the noise is coming from the steering metering valve, do the following:
 - (a) Station an observer near the steering metering valve
 - (b) Turn on hydraulic system A Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801
 - (c) Move the steering tiller rapidly to the full left and then the full right position.
 - 1) Listen for unusual loud noises while the nose gear tires are turning
 - a) Loud noises from the steering metering valve can occur during this test. This is not unusual and is acceptable for continued service.
 - 2) Return steering tiller to the center position.
 - a) While holding the steering tiller firmly in the center position, push the rudder pedals fully to the left and right positions.
 - 3) Listen for loud noises coming from the steering metering valve.
 - 4) If there were no noises, then the fault was intermittent.
 - 5) If the noise is heard, remove the steering valve cover.
 - a) Repeat the test, and observe if the steering summing mechanism or the tire are moving when the test is performed.
 - <1> There should be no motion in the summing mechanism or the tires if the tiller is held firmly in the center position.
 - <2> If there is some motion, then the tiller is moving some amount during the test.
 - <3> Repeat the test again, ensuring that the tiller does not move during the test.
 - b) If there is noise coming from the steering metering valve and summing mechanism and the tires do not turn (or try to turn), replace the steering metering valve.

	END	OF	TASK	
--	------------	----	-------------	--

802. Nose Wheel Shock Strut Bottoms During Taxi - Fault Isolation

- A. Description
 - (1) (SDS SUBJECT 32-51-00)
- B. Possible Causes
 - (1) Incorrect nose gear shock strut servicing
 - (2) Nose gear shock strut seals

AKS ALL

32-51 TASKS 801-802



C. Fault Isolation Procedure

(1) Do this step to prepare for fault isolation:

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Do this check of the shock strut for the nose landing gear for the correct servicing:
 - (a) Examine the nose gear shock strut for the correct servicing. Do this task: Nose Landing Gear Shock Strut Fluid Check, AMM TASK 12-15-41-610-801.
 - (b) If it is necessary, service the nose gear shock strut. To service the strut, do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802.
 - 1) If the fault does not occur on the subsequent taxi, then you corrected the fault.
 - (c) If the nose gear shock is correctly serviced, then continue.
- (3) Do this check to see if there is leakage of the shock strut seals:
 - (a) Examine the shock strut to see if there is leakage at the seals. Do this task: Nose Landing Gear Shock Strut Seal Leakage Check, AMM TASK 32-21-11-200-801.
 - (b) If it is necessary, replace the seals on the nose gear. Do this task: Replace the Active Seals and Spare Seals, AMM TASK 32-21-11-960-802.
 - 1) If the fault does not occur on the subsequent taxi, then you corrected the fault.



803. Nose Wheel Vibrates at Gear Retraction - Fault Isolation

A. Description

(1) (SDS SUBJECT 32-51-00)

B. Possible Causes

- Incorrect inflation or servicing of the nose wheel tires
- (2) Flat spots, worn areas, out-of-balance, or damage on the nose tires
- (3) Damaged nose wheels
- (4) Loose axle nuts on left and/or right nose wheels
- (5) Nose wheel bearings loose or damaged
- (6) Nose gear steering cylinder attachment loose
- (7) Nose wheel snubber pads worn, damaged or need adjusting
- (8) Incorrect nose gear shock strut servicing
- (9) Excessive freeplay on the nose gear torsion links
- (10) Excessive freeplay in the nose gear steering collar and/or steering actuator trunnion bushings

C. Related Data

- (1) (SSM 32-51-11)
- (2) (WDM 32-51-11)

32-51 TASKS 802-803

Page 204 Feb 15/2013

EFFECTIVITY



D. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:
 - (a) Make sure that the control lever for the landing gear is in the DN position.
 - (b) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

WARNING: MAKE SURE THE TOWING LEVER LOCK PIN IS INSTALLED ON THE NOSE LANDING GEAR. WITHOUT THE TOWING LEVER LOCK PIN INSTALLED, INADVERTENT MOVEMENT OF THE NOSE LANDING GEAR COULD RESULT IN INJURIES TO PERSONS.

- (c) Make sure that the nose and main landing gear have downlock pins installed. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) Make sure that the nose wheel tires are inflated to the correct pressure. Do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801.
 - (a) If the pressure for the nose wheel tires is not correct, then do these steps:
 - Do the servicing of the nose wheel tires. To service the tires, do this task: Add Nitrogen or Air to the Tire, AMM TASK 12-15-51-610-802.
 - (b) If the pressure for the nose wheel tires is correct, then continue.
- (3) Examine the nose wheel tires for flat spots, worn areas, or damage:
 - (a) If there are flat spots, worn areas, or damage on the tires, then do these steps:
 - 1) Replace the applicable nose wheel tires that are damaged. These are the tasks:
 - Nose Landing Gear Wheel and Tire Assembly Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801
 - (b) If the nose wheel tires are not worn or damaged, then continue.
- (4) Examine the nose wheels for structural damage, do this task: Wheels Fast Check (Wheel Installed on the Airplane), AMM TASK 32-45-00-700-801.
 - (a) If there is structural damage to the nose wheels, then do this step:
 - 1) Replace the nose wheel tires that are damaged. These are the tasks:
 - Nose Landing Gear Wheel and Tire Assembly Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801
 - (b) If the nose wheels do not have structural damage, then continue.
- (5) If the nose wheel tires passed the previous inspections, then do the following:
 - (a) Examine the previous five flight legs for NLG vibration discrepancies.
 - (b) If no previous discrepancies exist, then you corrected the fault.

AKS ALL 32-51 TASK 803



- (c) If previous discrepancies exist and the NLG tires have not been replaced for this problem, replace the two NLG tires. These are the tasks:
 - Nose Landing Gear Wheel and Tire Assembly Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801
- (d) If previous discrepancies exist and NLG tires have already been replaced for this problem, then continue.
- (6) Do this check of the axle nut on the two nose wheels:
 - (a) Make sure the torque for the axle nut on the two nose wheels is correct, do this task: Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801.
 - (b) If the torque on the axle nut for the two nose wheels is not correct, then do this step:
 - 1) Tighten the axle nuts to the correct torque, do this task: Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801.
 - (c) If the torque on the axle nuts is correct, then continue.
- (7) Do this check of the wheel bearings on the two nose wheels:
 - (a) Examine the wheel bearings on the two nose wheels for damage, do this task: Nose Landing Gear Wheel and Tire Assembly Removal, AMM TASK 32-45-21-000-801.
 - (b) If it is necessary, replace the wheel bearings. Do this task: Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801.
 - (c) If the wheel bearings do not need to be replaced, then continue.
- (8) Do a check of the nose wheel snubber pads for wear and damage, do these tasks: AMM PAGEBLOCK 32-45-31/201.
- (9) Do this check of the shock strut for the nose landing gear for the correct servicing:
 - (a) Examine the nose gear shock strut for the correct servicing. To do this, do this task: Nose Landing Gear Shock Strut Fluid Check, AMM TASK 12-15-41-610-801.
 - (b) If it is necessary, service the nose gear shock strut. To do this, do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802.
 - (c) If the nose gear shock is correctly serviced, then continue.
- (10) Do a check for torsional freeplay of the torsion links on the nose gear. To do this, do this task: Nose Landing Gear Inspection, AMM TASK 32-21-00-200-801.
 - (a) If there is too much torsional freeplay, then do these steps to replace the parts that are out of limits:
 - Replace the upper torsion link. These are the tasks:
 - Nose Landing Gear Upper Torsion Link Removal, AMM TASK 32-21-31-000-801
 - Nose Landing Gear Upper Torsion Link Installation, AMM TASK 32-21-31-400-801
 - 2) Replace the lower torsion link. These are the tasks:
 - Nose Landing Gear Lower Torsion Link Removal, AMM TASK 32-21-31-000-802
 - Nose Landing Gear Lower Torsion Link Installation, AMM TASK 32-21-31-400-802
 - 3) Replace the steering collar. These are the tasks:
 - Steering Collar Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-000-801
 - Steering Collar Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-400-801

AKS ALL



- 4) Replace the nose gear steering cylinder and attachments, as necessary. These are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
- (b) If the torsional freeplay is correct, then continue.
- (11) Do a check for excessive freeplay in the Nose Gear Steering Actuator and the Nose Gear Steering Collar. These are the tasks:
 - Nose Gear Steering Actuator Trunnion and Trunnion Bushing Dimensional Inspection, AMM TASK 32-51-51-200-802
 - Steering Collar Inspection, AMM TASK 32-51-61-220-801
 - (a) If there is freeplay or wear greater than the allowable limits, then do these steps to replace the parts that are out of limits:
 - Replace the upper and lower nose gear steering actuator trunnion bushings. These are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
 - 2) Replace the steering collar. These are the tasks: .
 - Steering Collar Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-000-801
 - Steering Collar Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-400-801
 - (b) If there is not excessive freeplay in the Nose Gear Steering Actuator and the Nose Gear Steering Collar, then continue.
- (12) If the fault does not occur on the subsequent flight, then you corrected the fault.

----- END OF TASK -----

804. Nose Wheel Vibrates at Taxi, Takeoff, or Landing - Fault Isolation

- A. Description
 - (1) (SDS SUBJECT 32-51-00)
- B. Possible Causes
 - Incorrect inflation or servicing of the nose wheel tires
 - (2) Flat spots, worn areas, out-of-balance or damage on the nose wheel tires
 - (3) Damaged nose wheels
 - (4) Loose axle nuts on nose wheels
 - (5) Loose or damaged nose wheel bearings
 - (6) Nose gear steering cylinder attachment loose
 - (7) Incorrect nose gear shock strut servicing
 - (8) Excessive freeplay on the nose gear torsion links
 - (9) Excessive freeplay in the nose gear steering collar and/or steering actuator trunnion bushings.
 - (10) Worn trunnion pins or bushings.

AKS ALL

32-51 TASKS 803-804



C. Related Data

- (1) (SSM 32-51-11)
- (2) (WDM 32-51-11)

D. Fault Isolation Procedure

(1) Do these steps to prepare for fault isolation:

WARNING: OBEY THE PROCEDURE FOR THE INSTALLATION OF THE DOWNLOCK PINS. IF YOU MOVE THE CONTROL LEVER FOR THE LANDING GEAR TO THE UP POSITION, THE LANDING GEAR CAN RETRACT. THIS CAN CAUSE INJURIES TO PERSONNEL. AND DAMAGE TO EQUIPMENT.

- (a) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (b) Make sure the control lever for the landing gear is in the OFF position.
- (c) For hydraulic system A, do this task: Hydraulic System A or B Power Removal, AMM TASK 29-11-00-860-805.
- (2) Make sure the nose wheel tires are inflated to the correct pressure, do this task: Landing Gear Tire Pressure Check and Tire Servicing, AMM TASK 12-15-51-780-801
 - (a) If the pressure for the nose wheel tires is not correct, then do these steps:
 - 1) Do the servicing of the nose wheel tires. To service the tires, do this task: Add Nitrogen or Air to the Tire, AMM TASK 12-15-51-610-802.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the pressure for the nose wheel tires is correct, then continue.
- (3) Examine the nose wheel tires for flat spots, worn areas, or damage:
 - (a) If there are flat spots, worn areas, or damage on the tires, then do these steps:
 - 1) Replace the nose wheel tires that are damaged. These are the tasks:
 - Nose Landing Gear Wheel and Tire Assembly Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the nose wheel tires are not worn or damaged, then continue.
- (4) Examine the nose wheels for structural damage, such as cracks:
 - (a) If there is structural damage to the nose wheels, then do these steps:
 - Replace the nose wheel tires that are damaged. These are the tasks:
 - Nose Landing Gear Wheel and Tire Assembly Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801
 -) Do the Repair Confirmation at the end of this task.
 - (b) If the nose wheels do not have structural damage, then continue.
- (5) If the nose wheel tires passed the previous inspections, then do the following:
 - (a) Examine the previous five flight legs for NLG vibration discrepancies.

AKS ALL 32



- (b) If no previous discrepancies exist, then you corrected the fault.
- (c) If previous discrepancies exist and the NLG tires have not been replaced for this problem, replace the two NLG tires. These are the tasks:
 - Nose Landing Gear Wheel and Tire Assembly Removal, AMM TASK 32-45-21-000-801
 - Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801
- (d) If previous discrepancies exist and NLG tires have already been replaced for this problem, then continue.
- (6) Do this check of the axle nut on the two nose wheels:
 - (a) Make sure the torque for the axle nut on the two nose wheels is correct, do this task:

 Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801.
 - (b) If the torque on the axle nut for the two nose wheels is not correct, then do this step:
 - 1) Tighten the axle nuts to the correct torque, do this task: Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801.
 - (c) If the torque on the axle nuts is correct, then continue.
- (7) Do this check of the wheel bearings on the two nose wheels:
 - (a) Examine the wheel bearings on the two nose wheels for damage, do this task: Nose Landing Gear Wheel and Tire Assembly Removal, AMM TASK 32-45-21-000-801.
 - (b) If it is necessary, replace the wheel bearings. Do this task: Nose Landing Gear Wheel and Tire Assembly Installation, AMM TASK 32-45-21-400-801.
 - (c) If the wheel bearings do not need to be replaced, then continue.
- (8) Do this check of the shock strut for the nose landing gear for the correct servicing:
 - (a) Examine the nose gear shock strut for the correct servicing. Do this task: Nose Landing Gear Shock Strut Fluid Check, AMM TASK 12-15-41-610-801.
 - (b) If it is necessary, service the nose gear shock strut. Do this task: Nose Landing Gear Shock Strut Servicing, Airplane on the Ground, AMM TASK 12-15-41-610-802.
 - 1) Do the Repair Confirmation at the end of this task.
 - (c) If the nose gear shock is correctly serviced, then continue.
- (9) Examine the steering actuator attachments and steering collar bushings for looseness.

NOTE: Replace worn parts as needed.

- (a) If there is too much torsional freeplay, then do these tasks:
 - Do a check for excessive freeplay in the Nose Gear Steering Actuator and the Nose Gear Steering Collar. These are the tasks:
 - Nose Gear Steering Actuator Trunnion and Trunnion Bushing Dimensional Inspection, AMM TASK 32-51-51-200-802
 - Steering Collar Inspection, AMM TASK 32-51-61-220-801
 - a) If there is freeplay or wear greater than the allowable limits, then do these steps to replace the parts that are out of limits:
 - <1> Replace the upper and lower nose gear steering actuator trunnion bushings or the steering actuators. Do these tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801

AKS ALL



- Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
- <2> Replace the steering collar. Do these tasks:
 - Steering Collar Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-000-801
 - Steering Collar Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-61-400-801
 - <a> If there is not excessive freeplay in the Nose Gear Steering Actuator and the Nose Gear Steering Collar, then continue.
- 2) Examine the torsion links for wear, do this task: Nose Landing Gear Torsion Links Inspection, AMM TASK 32-21-31-200-801
 - a) If there is freeplay or wear greater than the allowable limits, then do these steps to replace the parts that are out of limits:
 - AMM PAGEBLOCK 32-21-31/401
 - b) If there is not excessive freeplay in the Nose Gear Torsion Links, then continue.
- 3) Check nose gear trunnion pins and bushings for excessive wear.
 - Remove the Nose Landing Gear, do this task:
 AMM PAGEBLOCK 32-21-00/401
- 4) Do the Repair Confirmation at the end of this task.

E. Repair Confirmation

- (1) Put the control lever for the landing gear to the DN position.
- (2) If the fault does not occur again on the subsequent flight, then you corrected the fault.



805. Rudder Pedal Steering Does Not Operate - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) The rudder pedal steering does not operate. The tiller steering operates correctly.
- (2) Steering inputs are from the steering tiller or the rudder pedals. When you move the steering tiller full travel the nose wheels turn a maximum of 78 degrees in the left or right direction. When you move the rudder pedals on the ground, the nose wheels turn a maximum of 7 degrees in the left or right direction. Steering inputs from the rudder pedals go to the metering valve through a cable loop.
- (3) The rudder pedal steering mechanism does these functions:
 - (a) Combines the steering inputs from the rudder pedals and the steering wheel
 - (b) Prevents rudder pedal inputs when the airplane is in the air
 - (c) Provides centering forces.
- (4) A rudder pedal steering rotary actuator is attached to the rudder pedal steering mechanism with a cable loop. When the airplane is in the air the rotary actuator moves a cam in the mechanism. This will not let the rudder pedal inputs move the control cables for the nose wheel steering.
- (5) (SDS SUBJECT 32-51-00)

AKS ALL

32-51 TASKS 804-805



B. Possible Causes

- (1) NWSA, NWSB, NWSA/B cable loop adjustment (cable tension is too high)
- (2) NGPP (Nose Gear Piston Position) cable loop adjustment (cable tension is too high or too low)
- (3) Rudder pedal steering rotary actuator, M1177
- (4) R596 relay
- (5) Rudder pedal steering interconnect mechanism
- (6) Excessive friction in cable control system
- (7) Rudder interconnect mechanism spring is weak

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C01355	LANDING GEAR AIR/GND SYS 2
С	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

D. Related Data

- (1) (SSM 32-50-00)
- (2) (WDM 32-51-11)

E. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:
 - (a) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) Lift the nose of the airplane with jacks. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (d) Install greased plates under the nose wheels.
- (e) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
- (f) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (2) Examine the cable loop for NWSA, NWSB, NWSA/B for correct rigging and tension. Do this task: AMM PAGEBLOCK 32-51-00/501
- (3) Do this check of the cable loop for the NGPP (Nose Gear Piston Position) rudder pedal steering:

NOTE: Open the forward access panel on the left wall of the nose wheel well to get access to the NWSA and NWSB cable loop and the rotary actuator.

(a) Move the towing lever to the TOW position and install the towing lever lockpin.

AKS ALL



- (b) Make sure the nose wheels are in the center position.
- (c) Use a spring scale to measure the load that is necessary to move the NGPP (Nose Gear Piston Position) cables 0.50 +/- 0.05 inch at the turnbuckles.
- (d) If the force that you measure is not 16 22 pounds, then do these steps:

NOTE: It is not necessary to allow for temperature because the NGPP cables are very short.

- 1) Do the adjustment of the interconnect mechanism, do this task: Rudder Pedal Interconnect Mechanism Adjustment, AMM TASK 32-51-00-820-801
- 2) Do the Repair Confirmation at the end of this task.
- (e) If the force that you measure is 16 22 pounds, then continue.
- (4) Do this check of the rudder pedal steering rotary actuator, M1177:

NOTE: The rotary actuator is below the flight deck floor. You get access to the actuator through the access panel on the left side bulkhead of the nose gear wheel well.

- (a) Put the airplane in the air mode. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
- (b) Do a check to see if the rotary actuator moved to the air position.

<u>NOTE</u>: The rotary actuator is in the air position when the index marks on the actuator pulley and the housing are aligned.

- (c) If the rotary actuator did not move to the air position, then do these steps:
 - 1) Replace the steering rotary actuator, M1177. These are the tasks:
 - Rudder Pedal Steering Rotary Actuator Removal, AMM TASK 32-51-81-000-801
 - Rudder Pedal Steering Rotary Actuator Installation, AMM TASK 32-51-81-400-801
 - 2) Put the airplane back to the air mode. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
 - 3) If the rotary actuator did not move to the air position, then replace the air/ground relay, R596.
 - 4) If the rotary actuator did move to the air position, then continue.
 - 5) Put the airplane back to the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
 - 6) Do the Repair Confirmation at the end of this task.
- (d) If the rotary actuator did move to the air position, then continue.
 - 1) Put the airplane back to the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
- (5) Replace the interconnect spring.

EFFECTIVITY

AKS ALL

- Interconnect Spring Removal, AMM TASK 32-51-21-000-803
- Interconnect Spring Installation, AMM TASK 32-51-21-400-802
- (a) Do the Repair Confirmation at the end of this task.
- (6) Replace the rudder pedal steering mechanism. These are the tasks:
 - Rudder Pedal Steering Mechanism Removal, AMM TASK 32-51-21-000-801
 - Rudder Pedal Steering Mechanism Installation, AMM TASK 32-51-21-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (7) Do this check for excessive friction in cable control system:



- (a) Check for excessive friction in the pulleys and bearings.
- (b) Check for pulleys contacting brackets, steering valve cover, local structure, attach hardware.
- (c) Check for proper routing of cables
- (d) Check summing mechanism for binding and looseness or contact with local structure or corrosion.
- (e) Check tiller for over tightened handle attach nut.
- (f) Check cable alignment.
- (g) Check for frayed cables.
- (h) Check for cable dragging on cable guards and local structure.
- (i) Check the tiller steering cables for high tension, do this task: Nose Wheel Steering System Adjustment Check, AMM TASK 32-51-00-820-805.
 - 1) If necessary, adjust to the low end of tolerance, do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.
- (j) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

- (1) Do this check of the rudder pedal steering:
 - (a) Steer the nose wheels to the left and right with the rudder pedals.
 - (b) Make sure the nose wheels turn to the left and right.
 - (c) If the nose wheels turn to the left and right, then you corrected the fault.
- (2) Lift the nose of the airplane with jacks. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (3) Remove the greased plates from under the nose wheels.
- (4) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.



806. Tiller Steering Does Not Operate - Fault Isolation

A. Description

- (1) Steering inputs are from the steering tiller or the rudder pedals. When you move the steering tiller full travel the nose wheels turn a maximum of 78 degrees in the left or right direction. Steering inputs from the tiller and rudder pedals go to the metering valve through a cable loop.
- (2) The nose wheel steering (NWS) system uses the hydraulic pressure for landing gear extension to turn the nose wheels.
- (3) The steering inputs go through the control cables NWSA (Nose Wheel Steering Control Cable A) and NWSB (Nose Wheel Steering Control Cable B) to the steering metering valve on the nose gear. The cables move the summing mechanism to provide in input to the metering valve. This input sends hydraulic pressure through the swivel valves to the steering actuators.
- (4) The two steering actuators get hydraulic pressure on the extend side, the retract side, or both sides. This moves the nose wheels, through the torsion links, up to 78 degrees to the left or right.

AKS ALL

32-51 TASKS 805-806



- (5) When the nose wheels get to the commanded position, the summing mechanism moves the metering valve back to neutral. This stops hydraulic pressure to the steering actuators and stops movement of the nose wheels.
- (6) (SDS SUBJECT 32-51-00)

B. Possible Causes

- (1) Ice or Foreign Object Debris (FOD) on the steering cables or summing mechanism.
- (2) NWS cable loop damage or adjustment
- (3) Summing mechanism
- (4) Steering metering valve
- (5) Nose Landing Gear Down or Up fuse
- (6) Steering actuators
- (7) Sticking or binding in Steering Collar
- (8) Jammed Steering Actuator attach hardware

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C01355	LANDING GEAR AIR/GND SYS 2
С	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

D. Related Data

- (1) (SSM 32-50-00)
- (2) (WDM 32-51-11)

E. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:
 - (a) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) Lift the nose of the airplane with jacks. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (d) Install greased plates under the nose wheels.
- (e) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
- (f) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (2) Examine the steering valve for sticky tow lever. Do this task: AMM PAGEBLOCK 32-51-11/201

AKS ALL



- (3) Do this check of the cable loop for the NWS (Nose Wheel Steering):
 - NOTE: Open the forward access panel on the left wall of the nose wheel well to get access to the NWS cable loop.
 - (a) Move the towing lever to the TOW position and install the towing lever lockpin.
 - (b) Examine the cable loop between the tiller quadrant and the steering metering valve to see if it is broken or disconnected.
 - (c) If the NWS cable loop is broken, frayed or disconnected, then do these steps:
 - 1) Connect or replace the cable and do the adjustment, do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.
 - 2) Do the Repair Confirmation at the end of this task.
 - (d) If the NWS cable loop is not broken or disconnected, then continue.
- (4) Do this check of the cable loop for the NWS nose wheel steering:
 - (a) Look for a blockage in the NWS cable loop between the tiller and the steering metering valve.
 - 1) Ice
 - 2) Foreign objects
 - 3) Jams
 - (b) If there is a blockage in the NWS cable loop, then do these steps:
 - 1) Remove the blockage from the cable loop and do the adjustment. Do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If there is not a blockage in the NWS cable loop, then continue.
- (5) Do this check to make sure the summing mechanism can move freely:
 - (a) Move the towing lever to the TOW position and install the towing lever lockpin.
 - (b) Remove the summing mechanism cover and disconnect the link assembly for the summing mechanism from the steering metering valve. Do this task: Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801.
 - (c) Use the tiller to move the summing mechanism to the left and right.
 - (d) If the summing mechanism moves freely with light tension in the centering spring, continue.
 - (e) If the summing mechanism does not move freely when you use the tiller, then do these steps:
 - Repair or replace the pulleys in the NWS cable loop and do the adjustment for the NWS cables, do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802
 - 2) Do the Repair Confirmation at the end of this task.
- (6) Check the tiller handle nut for proper torque (Nose Landing Gear Tiller Assembly Installation, AMM TASK 32-51-41-400-801).
 - (a) Do the Repair Confirmation at the end of this task.
- (7) Do this check for hydraulic leaks at the steering metering valve or the steering actuators:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Move the tiller fully to the left and the right several times.

AKS ALL 32-51 TASK 806



- (c) Examine the steering metering valve and steering actuators to see if there are hydraulic leaks.
 - Look and listen for leaks and feel for heat in the steering metering valve and steering actuators.
- (d) If there are hydraulic leaks on the steering metering valve, then do these steps:
 - 1) Repair the leaks or replace the steering metering valve. To replace the valve, these are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (e) If there are hydraulic leaks on the steering actuators, then do these steps:
 - Repair the leaks or replace the nose gear steering actuator(s). To replace the actuator(s), these are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (f) If there are no hydraulic leaks on the steering metering valve or the steering actuators, then continue.
- (8) Do a check of the steering collar for binding, jams, loose or missing attach hardware, broken bearings, metal transfer between bearings and collar main bore.
- (9) D a check for binding in the steering sleeve and steering plate
- (10) Do a check of the steering actuator(s) for seized or gauled or sticky trunnion bearings
- (11) Replace the steering metering valve, these are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (12) Replace the steering actuators. Do this task: AMM PAGEBLOCK 32-51-51/401
- (13) Replace the nose gear extend fuse or nose gear retract fuse per AMM PAGEBLOCK 32-33-71/401

F. Repair Confirmation

EFFECTIVITY

AKS ALL

- (1) Use the steering tiller to do this check of the nose wheel steering:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Steer the nose wheels to the full travel to the left and right with the tiller.
 - (c) If the nose wheels turn 78 degrees to the left and right, then you corrected the fault.
- (2) Lift the nose of the airplane with jacks, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (3) Remove the greased plates from under the nose wheels.



(4) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.

——— END OF TASK ———

807. Tiller Steering Response is Sluggish - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) The tiller steering operates, but it is sluggish.
- (2) Steering inputs are from the steering tiller or the rudder pedals. When you move the steering tiller full travel the nose wheels turn a maximum of 78 degrees in the left or right direction. Steering inputs from the tiller and rudder pedals go to the metering valve through a cable loop.
- (3) The nose wheel steering system uses the hydraulic pressure for landing gear extension to turn the nose wheels.
- (4) The steering inputs go through the control cables NWSA and NWSB to the steering metering valve on the nose gear. The cables move the summing mechanism to provide in input to the metering valve. This input sends hydraulic pressure through the swivel valves to the steering actuators.
- (5) The two steering actuators get hydraulic pressure on the extend side, the retract side, or both sides. This moves the nose wheels, through the torsion links, up to 78 degrees to the left or right.
- (6) When the nose wheels get to the commanded position, the summing mechanism moves the metering valve back to neutral. This stops hydraulic pressure to the steering actuators and stops movement of the nose wheels.
- (7) (SDS SUBJECT 32-51-00)

B. Possible Causes

- (1) Leakage inside the steering metering valve or the steering actuators or sticky tow lever.
- (2) Low hydraulic pressure.
- (3) Stuck nose landing gear steering system check valves.
- (4) Ice or Foreign Object Debris (FOD) on the steering cables or summing mechanism.
- (5) Sticking or binding steering collar.
- (6) Excessive friction in the cable control system.
- (7) A restriction in the hydraulic lines from the selector valve.
- (8) Seized or gauled steering actuator trunnions.
- (9) Nose Landing Gear Down or Up fuse.
- (10) Binding Steering Tiller.
- (11) Rigging of the landing gear selector valve

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C01355	LANDING GEAR AIR/GND SYS 2
С	16	C01356	LANDING GEAR AIR/GND SYS 1

EFFECTIVITY

AKS ALL

32-51 TASKS 806-807



(Continued)

F/O Electrical System Panel, P6-3

Row Col Number Name

D 17 C01027 LANDING GEAR NOSE GEAR STEER

D. Related Data

- (1) (SSM 32-50-00)
- (2) (WDM 32-51-11)

E. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:
 - (a) Make sure the control lever for the landing gear is in the DN position.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (b) Make sure the downlock pins are installed in the nose and main landing gear. To install the downlock pins, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (c) Lift the nose of the airplane with jacks. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (d) Install greased plates under the nose wheels.
- (e) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
- (f) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
- (2) Check the NWS control cables for ice or foreign object debris
- (3) Make sure there is normal pressure for hydraulic system A.
 - (a) If the hydraulic pressure for system A is low, then do these steps:
 - 1) Do this task: System A Hydraulic Pressure Below 2800 psi Problem Fault Isolation, 29-10 TASK 810.
 - 2) Do the Repair Confirmation at the end of this task.
 - (b) If the hydraulic pressure for system A is normal, then continue.
- (4) Examine the tow lever to make sure it is not sticking. Do this task:AMM PAGEBLOCK 32-51-11/201
- (5) Do this check for hydraulic leaks at the steering metering valve or the steering actuators:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Move the tiller fully to the left and right several times.
 - (c) Examine the steering metering valve and steering actuators to see if there are hydraulic leaks.
 - 1) Look and listen for leaks and feel for heat in the steering metering valve and steering actuators.
 - (d) If there are hydraulic leaks on the steering metering valve, then do these steps:

AKS ALL



- Repair the leaks or replace the steering metering valve. To replace the valve, these are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
- 2) Do the Repair Confirmation at the end of this task.
- (e) If there are hydraulic leaks on the steering actuators, then do these steps:
 - Repair the leaks or replace the nose gear steering actuator(s). To replace the actuator(s), these are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (f) If there are no hydraulic leaks on the steering metering valve or the steering actuators, then continue.
- (6) Do this check for excessive friction in cable control system:
 - (a) Check for excessive friction in the pulleys and bearings.
 - (b) Check for pulleys contacting brackets, steering valve cover, local structure, attach hardware.
 - (c) Check for proper routing of cables
 - (d) Check summing mechanism for binding and looseness or contact with local structure or corrosion.
 - (e) Check tiller for over tightened handle attach nut.
 - (f) Check cable alignment.
 - (g) Check for frayed cables.
 - (h) Check for cable dragging on cable guards and local structure.
 - (i) Check the tiller steering cables for high tension, do this task: Nose Wheel Steering System Adjustment Check, AMM TASK 32-51-00-820-805.
 - 1) If necessary, adjust to the low end of tolerance, do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.
- (7) Check the tiller handle nut for proper torque (Nose Landing Gear Tiller Assembly Installation, AMM TASK 32-51-41-400-801).
 - (a) Do the Repair Confirmation at the end of this task.
- (8) Replace the steering system check valves.
- (9) Check steering collar for binding, jams, loose or missing attach hardware, broken bearings, metal transfer between bearings and collar main bore.
 - (a) Do the Repair Confirmation at the end of this task.
 - (b) If the steering collar is free to move, then continue.
- (10) Check for binding in steering sleeve and steering plate.
- (11) Check steering actuator for seized or galled or sticky trunnion bearings
- (12) Replace the nose gear extend or nose gear retract per AMM PAGEBLOCK 32-33-71/401
- (13) Make sure there are no restrictions in the hydraulic lines from the landing gear selector valve.

AKS ALL



- (a) If there is a restriction in the hydraulic lines from the selector valve to the metering valve, then do these steps:
 - Flush or change the hydraulic lines.
 - 2) Do the Repair Confirmation at the end of this task.

F. Repair Confirmation

- (1) Use the steering tiller to do this check of the nose wheel steering:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Steer the nose wheels to the full travel to the left and right with the tiller.
 - (c) If the nose wheels turn 78 degrees to the left and right, then you corrected the fault.
- (2) Lift the nose of the airplane with jacks. Do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (3) Remove the greased plates from under the nose wheels.
- (4) Lower the nose of the airplane and remove the jacks, do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.



808. Tiller Steering Steers Left or Right Direction Only - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) The tiller steering steers in the right or left direction only.
- (2) Steering inputs are from the steering tiller or the rudder pedals. When you move the steering tiller full travel the nose wheels turn a maximum of 78 degrees in the left or right direction. Steering inputs from the tiller and rudder pedals go to the metering valve through a cable loop.
- (3) The nose wheel steering system uses the hydraulic pressure for landing gear extension to turn the nose wheels.
- (4) The steering inputs go through the control cables NWSA and NWSB to the steering metering valve on the nose gear. The cables move the summing mechanism to provide in input to the metering valve. This input sends hydraulic pressure through the swivel valves to the steering actuators.
- (5) The two steering actuators get hydraulic pressure on the extend side, the retract side, or both sides. This moves the nose wheels, through the torsion links, up to 78 degrees to the left or right.
- (6) When the nose wheels get to the commanded position, the summing mechanism moves the metering valve back to neutral. This stops hydraulic pressure to the steering actuators and stops movement of the nose wheels.
- (7) SDS 32-51-00, p001

B. Possible Causes

- Ice or Foreign Object Debris (FOD) on the steering cables or summing mechanism
- (2) Summing mechanism
- (3) Steering metering valve
- (4) Cable tension too high
- (5) Excessive friction in the control system
- (6) Sticking or binding in Steering Collar

32-51 TASKS 807-808

AKS ALL

EFFECTIVITY



- (7) Jammed Steering Actuator attach hardware
- (8) Seized or galled steering actuator trunnion
- (9) Steering Actuator internal leakage
- (10) Tiller binding

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C01355	LANDING GEAR AIR/GND SYS 2
С	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

D. Related Data

AKS ALL

- (1) (WDM 32-51-11)
- (2) (SSM 32-50-00)

E. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:
 - (a) Make sure the control lever for the landing gear is in the DN position.
 - (b) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (c) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (d) Lift the nose of the airplane with jacks, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (e) Install greased plates under the nose wheels.
- (f) Lower the nose of the airplane and remove the jacks, do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
- (2) Use the steering tiller to do this check of the nose wheel steering:
 - (a) Steer the nose wheels to the full travel to the left and right with the tiller.
 - (b) If the nose wheel steers in the right or left direction only, then continue.
 - (c) If the nose wheel steers to the full travel to both the left and right, then there was an intermittent fault.
 - Do the Repair Confirmation at the end of this task.
- (3) Check steering control cable loop for ice or foreign object debris.
- (4) Do this check to make sure the summing mechanism is free to move in both directions:
 - (a) Remove the screws and washers that hold the summing mechanism cover to the summing mechanism bracket.
 - (b) Remove the summing mechanism cover.



- (c) Examine the summing mechanism and make sure it is free to move in both directions.
- (d) If the summing mechanism not free to move in both directions, then do these steps:
 - Repair or replace the summing mechanism. To replace the summing mechanism, these are the tasks:
 - Summing Mechanism Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-52-020-801
 - Summing Mechanism Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-52-420-801
 - 2) Do the Repair Confirmation at the end of this task.
- (e) If the summing mechanism is free to move in both directions, then continue.
- (5) Do this check for hydraulic leaks at the steering metering valve or the steering actuators:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Move the tiller fully to the left and right several times
 - (c) Examine the steering metering valve and steering actuators to see if there are hydraulic leaks.
 - 1) Look and listen for leaks and feel for heat in the steering metering valve and steering actuators.
- (6)) If there are hydraulic leaks on the steering metering valve, then do these steps:
 - (a) Repair the leaks or replace the steering metering valve. To replace the valve, these are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
 - (b) Do the Repair Confirmation at the end of this task.
 - (c) If there are hydraulic leaks on the steering actuators, then do these steps:
 - 1) Repair the leaks or replace the nose gear steering actuator(s). To replace the actuator(s), these are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
 - (d) Do the Repair Confirmation at the end of this task.
 - (e) If there are no hydraulic leaks on the steering metering valve or the steering actuators, then continue.
- (7) Do this check for excessive friction in cable control system:
 - (a) Check for excessive friction in the pulleys and bearings.
 - (b) Check for pulleys contacting brackets, steering valve cover, local structure, attach hardware.
 - (c) Check for proper routing of cables
 - (d) Check summing mechanism for binding and looseness or contact with local structure or corrosion.
 - (e) Check tiller for over tightened handle attach nut.
 - (f) Check cable alignment.

AKS ALL

EFFECTIVITY 32-51 TASK 808



- (g) Check for frayed cables.
- (h) Check for cable dragging on cable guards and local structure.
- (i) Check the tiller steering cables for high tension, do this task: Nose Wheel Steering System Adjustment Check, AMM TASK 32-51-00-820-805.
 - 1) If necessary, adjust to the low end of tolerance, do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.
- (i) Do the Repair Confirmation at the end of this task.
- (8) Check steering collar for binding, jams, loose or missing attach hardware, broken bearings, metal transfer between bearings and collar main bore.
- (9) Check for binding in steering sleeve and steering plate.
- (10) Check steering actuator for seized or galled or sticky trunnion bearings

F. Repair Confirmation

- (1) Use the steering tiller to do this check of the nose wheel steering:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Steer the nose wheels to the full travel to the left and right with the tiller.
 - (c) If the nose wheels turn 78 degrees to the left and right, then you corrected the fault.
- (2) Lift the nose of the airplane with jacks, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (3) Remove the greased plates from under the nose wheels.
- (4) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.



810. Airplane Steering Steers Left or Right Direction During Taxi, Takeoff, or Landing - Fault Isolation

A. Description

- (1) This task is for this observed fault:
 - (a) The Airplane steers to the left or right direction during taxi, takeoff, or landing.
- (2) Steering inputs are from the steering tiller or the rudder pedals. When you move the steering tiller full travel the nose wheels turn a maximum of 78 degrees in the left or right direction. Steering inputs from the tiller and rudder pedals go to the metering valve through a cable loop.
- (3) The nose wheel steering system uses the hydraulic pressure for landing gear extension to turn the nose wheels.
- (4) The steering inputs go through the control cables NWSA and NWSB to the steering metering valve on the nose gear. The cables move the summing mechanism to provide in input to the metering valve. This input sends hydraulic pressure through the swivel valves to the steering actuators.
- (5) The two steering actuators get hydraulic pressure on the extend side, the retract side, or both sides. This moves the nose wheels, through the torsion links, up to 78 degrees to the left or right.
- (6) When the nose wheels get to the commanded position, the summing mechanism moves the metering valve back to neutral. This stops hydraulic pressure to the steering actuators and stops movement of the nose wheels.
- (7) SDS 32-51-00, p001.

AKS ALL

32-51 TASKS 808-810



B. Possible Causes

- (1) Summing mechanism.
- (2) Steering metering valve.
- (3) Cable tension too high.
- (4) Excessive friction in the control system.
- (5) Sticking or binding in Steering Collar.
- (6) Jammed Steering Actuator attach hardware.
- (7) Seized or galled steering actuator trunnion.
- (8) Steering Actuator internal leakage.
- (9) System Rigging Out-of-Adjustment.
- (10) Rotary Actuator faulty.

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C01355	LANDING GEAR AIR/GND SYS 2
С	16	C01356	LANDING GEAR AIR/GND SYS 1
D	17	C01027	LANDING GEAR NOSE GEAR STEER

D. Related Data

- (1) (WDM 32-51-11).
- (2) (SSM 32-50-00).

E. Fault Isolation Procedure

- (1) Do these steps to prepare for fault isolation:
 - (a) Make sure the control lever for the landing gear is in the DN position.
 - (b) For hydraulic system A, do this task: Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (c) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (d) Lift the nose of the airplane with jacks, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (e) Install greased plates under the nose wheels.
- (f) Lower the nose of the airplane and remove the jacks, do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.
- (2) Use the steering tiller to do this check of the nose wheel steering:
 - (a) Steer the nose wheels to the full travel to the left and right with the tiller.
 - (b) If the nose wheel steers in the right or left direction only, then continue.
 - (c) If nose wheel does not return to center, then continue.

32-51 TASK 810

AKS ALL

EFFECTIVITY



- (d) If the nose wheel steers to the full travel to both the left and right, then there was an intermittent fault.
 - 1) Do the Repair Confirmation at the end of this task.
- (3) Do this check to make sure the summing mechanism is free to move in both directions:
 - (a) Remove the screws and washers that hold the summing mechanism cover to the summing mechanism bracket.
 - (b) Remove the summing mechanism cover.
 - (c) Examine the summing mechanism and make sure it is free to move in both directions.
 - (d) If the summing mechanism not free to move in both directions, then do these steps:
 - 1) Repair or replace the summing mechanism. To replace the summing mechanism, these are the tasks:
 - Summing Mechanism Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-52-020-801
 - Summing Mechanism Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-52-420-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (e) If the summing mechanism is free to move in both directions, then continue.
- (4) Do this check for excessive friction in cable control system:
 - (a) Check for excessive friction in the pulleys and bearings.
 - (b) Check for pulleys contacting brackets, steering valve cover, local structure, attach hardware.
 - (c) Check for proper routing of cables.
 - (d) Check summing mechanism for binding and looseness or contact with local structure or corrosion.
 - (e) Check tiller for over tightened handle attach nut.
 - (f) Check cable alignment.
 - (g) Check for frayed cables.
 - (h) Check for cable dragging on cable guards and local structure.
 - (i) Check the tiller steering cables for high tension, do this task: Nose Wheel Steering System Adjustment Check, AMM TASK 32-51-00-820-805.
 - If necessary, adjust to the low end of tolerance, do this task: Nose Wheel Steering System Adjustment, AMM TASK 32-51-00-820-802.
 - (i) Do the Repair Confirmation at the end of this task.
- (5) Check the nose wheel steering control system adjustment per AMM PAGEBLOCK 32-51-00/501.
- (6) Examine the steering valve for sticky tow lever. Do this task: AMM PAGEBLOCK 32-51-11/201.
- (7) Do this check for hydraulic leaks at the steering metering valve or the steering actuators:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Move the tiller fully to the left and right several times.
 - (c) Examine the steering metering valve and steering actuators to see if there are hydraulic leaks.

AKS ALL



- Look and listen for leaks and feel for heat in the steering metering valve and steering actuators.
 - Repair the leaks or replace the steering metering valve. To replace the valve, these are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
- 2) Do the Repair Confirmation at the end of this task.
- (d) If there are hydraulic leaks on the steering actuators, then do these steps:
 - 1) Repair the leaks or replace the nose gear steering actuator(s). To replace the actuator(s), these are the tasks:
 - Nose Gear Steering Actuator Removal, AMM TASK 32-51-51-000-801
 - Nose Gear Steering Actuator Installation, AMM TASK 32-51-51-400-801
 - Do the Repair Confirmation at the end of this task.
- (e) If there are no hydraulic leaks on the steering metering valve or the steering actuators, then continue.
- (8) Replace the steering metering valve, these are the tasks:
 - Steering Metering Valve Removal (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-000-801
 - Steering Metering Valve Installation (Without Using Cable Clamp Assembly), AMM TASK 32-51-11-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (9) Check steering actuator for seized or gauled or sticky trunnion bearings.
- (10) Check steering collar for binding, jams, loose or missing attach hardware, broken bearings, metal transfer between bearings and collar main bore and proper assembly.
- (11) Check for binding in steering sleeve and steering plate.
- (12) Do this check of the rudder pedal steering rotary actuator, M1177, and/or cable loop:
 - NOTE: The rotary actuator is below the flight deck floor. You get access to the actuator through the access panel on the left side bulkhead of the nose gear wheel well.
 - (a) Make sure the nose gear is centered and Hydraulic system A is off.
 - (b) Put the airplane in the air mode. Do this task: Put the Airplane in the Air Mode, AMM TASK 32-09-00-860-801.
 - (c) Pressurize Hydraulic System A Hydraulic System A or B Pressurization, AMM TASK 29-11-00-860-801.
 - (d) Return the airplane to the ground mode. Do this task: Return the Airplane to the Ground Mode, AMM TASK 32-09-00-860-802.
 - (e) Check for movement of NLG and steering tiller.
 - (f) If tiller or gear moves, repeat the test and check the angular movement of the rotary actuator.
 - 1) If the rotary actuator moves more than 107 degrees +/- 5 degrees from the aligned marks in the Air position, replace rotary actuator.
 - (g) Repeat steps (a) through (f) several times to make sure rotary actuator operates properly.

AKS ALL



F. Repair Confirmation

- (1) Use the steering tiller to do this check of the nose wheel steering:
 - (a) Remove the towing lever lockpin and let the towing lever move to the OFF position.
 - (b) Steer the nose wheels to the full travel to the left and right with the tiller.
 - (c) If the nose wheels turn 78 degrees to the left and right, then you corrected the fault.
- (2) Lift the nose of the airplane with jacks, do this task: Lift the Airplane Nose with the Nose Jack at Jack Point D, AMM TASK 07-11-21-580-801.
- (3) Remove the greased plates from under the nose wheels.
- (4) Lower the nose of the airplane and remove the jacks. Do this task: Lower the Airplane Nose Off of the Jack, AMM TASK 07-11-21-580-802.



32-51 TASK 810

AKS ALL

· EFFECTIVITY ·



801. Main Landing Gear Down-And-Locked Sensor Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-61001 LEFT DWN LKD A

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 32-61101 LEFT DWN LKD A

AKS ALL

(c) 32-61005 RIGHT DWN LKD A

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 32-61105 RIGHT DWN LKD A

AKS ALL

(e) 32-61007 LEFT DWN LKD B

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

(f) 32-61107 LEFT DWN LKD B

AKS ALL

(g) 32-61011 RIGHT DWN LKD B

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(h) 32-61111 RIGHT DWN LKD B

AKS ALL

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (2) These maintenance messages show that a main landing gear down lock sensor disagrees with the other main landing gear locked sensors.
 - (a) Maintenance message number 32-61001 will be set if the left down and locked A sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and left down and locked B sensor indicates up.
 - (b) Maintenance message 32-61101 will be set if the left down and locked A sensor indicates up with the other main gear sensors indicating that both main gear are down and locked.
 - (c) Maintenance message number 32-61005 will be set if the right down and locked A sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and right down and locked B sensor indicates up.
 - (d) Maintenance message 32-61105 will be set if the right down and locked A sensor indicates up with the other main gear sensors indicating that both main gear are down and locked.
 - (e) Maintenance message number 32-61007 will be set if the left down and locked B sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and left down and locked A sensor indicates up.
 - (f) Maintenance message 32-61107 will be set if the left down and locked B sensor indicates up with the other main gear sensors indicating that both main gear are down and locked.
 - (g) Maintenance message number 32-61011 will be set if the right down and locked B sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and right down and locked A sensor indicates up.

AKS ALL



AKS ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

(h) Maintenance message 32-61111 will be set if the right down and locked B sensor indicates up with the other main gear sensors indicating that both main gear are down and locked.

AKS ALL

B. Possible Causes

- (1) Left main landing gear down and locked sensor, S0071 or S0302
- (2) Right main landing gear down and locked sensor, S0073 or S0301
- (3) Wiring problem
- (4) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) Component Location (Figure 302)
- (2) (SSM 32-61-11)
- (3) (SSM 32-61-12)
- (4) (WDM 32-64-11)
- (5) (WDM 32-64-12)

E. Initial Evaluation

- (1) Look for any obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find any damage, then do the Fault Isolation Procedure below.
 - (b) If there is no obvious damage, then continue.
- (2) Do these steps to show the status of the applicable landing gear position sensor:
 - (a) Push the ON/OFF switch to turn the PSEU BITE on.
 - (b) Push the down switch until OTHER FUNCTNS? shows.
 - (c) Push the YES switch to select OTHER FUNCTNS?.
 - (d) Push the down switch until I/O MONITOR? shows.
 - (e) Push the YES switch to select I/O MONITOR.
 - (f) Push the down switch until SENSORS? shows.
 - (g) Push the YES switch to select SENSORS.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (h) Push the down arrow switch until the sensor number shows.
 - 1) For maintenance message number 32-61001 and 32-61101, show sensor S0071
 - 2) For maintenance message number 32-61005 and 32-61105, show sensor S0073
 - 3) For maintenance message number 32-61007 and 32-61107, show sensor S0302

AKS ALL



AKS ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

4) For maintenance message number 32-61011 and 32-61111, show sensor S0301

AKS ALL

- (i) Push the YES switch to show the sensor status.
- (j) If the sensor status is TGT NEAR, then do this test of the other sensor states:
 - 1) Put a de-actuator on the face of the sensor face.
 - NOTE: The de-actuator is part of this tool set: proximity sensor test set, SPL-1690.
 - 2) If the display shows TGT FAR, then there was an intermittent fault.
 - NOTE: The following tests can be performed to find possible causes of intermittent faults.
 - Measure the clearance between the sensor and target to determine if the sensor clearance is incorrect. Do this task: Main Landing Gear Down-and-Locked Sensor Clearance Measurement, AMM TASK 32-61-31-220-801.
 - b) Do a check of the bonding resistance between the sensor ground and the airplane structure (Standard Wiring Practices Manual).
 - c) Make sure that the resistance is less than 0.001 ohm.
 - 3) If the display shows TGT NEAR, then do the Fault Isolation Procedure below.
- (k) If the sensor status is TGT FAR or FAILSAFE, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you found any obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
 - (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
 - (c) If the Repair Confirmation is not satisfactory, then continue.
- (2) If the sensor status is TGT NEAR, with a de-actuator installed, then do these steps:
 - (a) Perform a resistance check of the sensor and wires, these are the steps:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- 1) For maintenance message number 32-61001, 32-61001, 32-61005 or 32-61105, disconnect connector D10982 from the PSEU.
- 2) For maintenance message number 32-61007, 32-61107, 32-61011, or 32-61111, disconnect connector D10984 from the PSEU.

AKS ALL

- 3) Do these steps to measure the resistance between the pins of the PSEU connector (D10982 or D10984) for the blue terminal and the structure ground (yellow) (Table 201)
 - Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the blue (white/blue) and yellow (white/yellow) sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.

AKS ALL



- d) Push the L/C/R meter DATA HOLD button once.
- e) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
 - NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.
- f) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
- g) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as R1. R1 should be 344.5 to 351.5 ohms.
 - NOTE: The line and interface resistance can be considered and can add up to 2 ohms.
- h) The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 Ohms.
 - NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)
- Do these steps to measure the resistance between the pins of the PSEU connector (D10982 or D10984) for the red terminal and the structure ground (yellow) (Table 201)
 - Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the red (white/red) and yellow (white/yellow) sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.
 - d) Push the L/C/R meter DATA HOLD button once.
 - e) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
 - NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.
 - f) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.

AKS ALL 32-61 TASK 801



g) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as L1. L1 should be 27 to 33 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

 The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 ohms.

NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

- 5) Re-connect connector D10982 or D10984 to the PSEU.
- 6) If the resistance values are out of tolerance then cut the wires at the sensor splices and recheck the resistance of the sensors.
- 7) These are the connections on the sensor and the PSEU to check the resistances at:

Table 201 MLG DOWN-AND-LOCKED SENSOR RESISTANCES

SENSOR	SENSOR LEAD	PSEU CONNECTOR
S0071	YELLOW	 GROUND
		D10982
	BLUE	 pin 55
		D10982
	RED	 pin 33
S0073	YELLOW	 GROUND
		D10982
	BLUE	 pin 12
		D10982
	RED	 pin 11
S0301	YELLOW	 GROUND
		D10984
	BLUE	 pin 12
		D10984
	RED	 pin 11
S0302	YELLOW	 GROUND

EFFECTIVITY '

32-61 TASK 801

Page 205 Feb 15/2016



Table 201 MLG DOWN-AND-LOCKED SENSOR RESISTANCES (Continued)

D10984
BLUE ----- pin 55
D10984
RED ----- pin 33

- (b) If the resistances values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (Standard Wiring Practices Manual).
 - 1) Make sure that the resistance is less than 0.001 ohm.
 - 2) If the resistance is greater than 0.001 ohm, then inspect and repair the ground between the sensor connection and structure ground.
 - 3) If you do not find a problem with the sensor ground, then continue.
- (c) If the resistance values are out of tolerance and there are no problems with the sensor ground then replace the sensor. These are the tasks:
 - Main Landing Gear Down-and-Locked Sensor Removal, AMM TASK 32-61-31-020-801
 - Main Landing Gear Down-and-Locked Sensor Installation, AMM TASK 32-61-31-400-801
 - 1) Do the Repair Confirmation at the end of this task.
- (d) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground then you have determined that the wiring is faulty. Do the wiring check below.
- (3) If the sensor status is TGT FAR without a de-actuator installed, then do these steps:
 - (a) Measure the clearance between the sensor and target. To measure the clearance, do this task: Main Landing Gear Down-and-Locked Sensor Clearance Measurement, AMM TASK 32-61-31-220-801.
 - (b) If the sensor clearance is not correct, then do these steps:
 - Adjust the sensor clearance. To adjust the clearance, do this task: Main Landing Gear Down-and-Locked Sensor Clearance Adjustment, AMM TASK 32-61-31-400-802.
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If the sensor clearance is correct, then do these steps:
 - 1) Replace the sensor. These are the tasks:
 - Main Landing Gear Down-and-Locked Sensor Removal, AMM TASK 32-61-31-020-801
 - Main Landing Gear Down-and-Locked Sensor Installation, AMM TASK 32-61-31-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (4) If the sensor status is FAILSAFE, then do these steps:
 - (a) Disconnect the sensor leads from the airplane wiring.
 - (b) Temporarily install the leads from a replacement sensor to the airplane wiring.
 - (c) Make sure the sensor is away from all metal objects.
 - (d) Do the steps to show the sensor status again.



- (e) If the sensor status is TGT FAR, then the installed sensor has a fault. Do these steps:
 - 1) Replace the sensor. These are the tasks:
 - Main Landing Gear Down-and-Locked Sensor Removal, AMM TASK 32-61-31-020-801
 - Main Landing Gear Down-and-Locked Sensor Installation, AMM TASK 32-61-31-400-801
 - Do the Repair Confirmation at the end of this task.
- (f) If the sensor status is FAILSAFE, then do these steps and continue:
 - 1) Remove the replacement sensor leads from the junction box connector.
 - 2) Re-install the leads from the installed sensor.
- (5) Do this check of the wiring:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message number 32-61001, 32-61101, 32-61005 or 32-61105, disconnect connector D10982 from the PSEU.
- (b) For maintenance message number 32-61007, 32-61107, 32-61011, or 32-61111, disconnect connector D10984 from the PSEU.

AKS ALL

- (c) Do a wiring check between these connections on the sensor and the PSEU: (Table 201)
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D10982 or D10984 to the PSEU.
 - 3) Do the Repair Confirmation at the end of this task.
- (e) If you do not find a problem with the wiring, then do a check of the bonding resistance between the sensor ground and the airplane structure (Standard Wiring Practices Manual).
 - 1) Make sure that the resistance is less than 0.001 ohm.
 - 2) If the resistance is greater than 0.001 ohm, then inspect and repair the ground between the sensor connection and structure ground.
 - 3) If you do not find a problem with the sensor ground, then continue.
- (6) Do these steps to replace the PSEU:
 - (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.

G. Repair Confirmation

- (1) Do this test of the applicable sensor:
 - (a) Put a de-actuator on the face of the sensor.
 - (b) Remove the de-actuator from the face of the sensor.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.

AKS ALL



(d) If you do not find the maintenance message, then you corrected the fault.

	END	OF	TASK	
--	------------	-----------	-------------	--

802. Main Landing Gear Uplock Sensor Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-61002 LEFT UP LKD A

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 32-61102 LEFT UP LKD A

AKS ALL

(c) 32-61006 RIGHT UP LKD A

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 32-61106 RIGHT UP LKD A

AKS ALL

(e) 32-61008 LEFT UP LKD B

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(f) 32-61108 LEFT UP LKD B

AKS ALL

(g) 32-61012 RIGHT UP LKD B

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

- (h) 32-61112 RIGHT UP LKD B
- (2) These maintenance messages show that a Main Landing Gear Up and Locked Sensor disagrees with the other Main Landing Gear Locked Sensors.
 - (a) Maintenance Message 32-61002 is set when the Left Up and Locked A Sensor indicates UP and the other Main Gear Sensors indicate that both Main Gears are DOWN and LOCKED.
 - (b) Maintenance Message 32-61102 is set when the Left Up and Locked A Sensor indicates DOWN and the other Main Gear Sensors indicate that both Main Gears are UP and LOCKED.
 - (c) Maintenance Message 32-61006 is set when the Right Up and Locked A Sensor indicates UP and the other Main Gear Sensors indicate that both Main Gears are DOWN and LOCKED.
 - (d) Maintenance Message 32-61106 is set when the Right Up and Locked A Sensor indicates DOWN and the other Main Gear Sensors indicate that both Main Gears are UP and LOCKED.
 - (e) Maintenance Message 32-61008 is set when the Left Up and Locked B Sensor indicates UP and the other Main Gear Sensors indicate that both Main Gears are DOWN and LOCKED.
 - (f) Maintenance Message 32-61108 is set when the Left Up and Locked B Sensor indicates DOWN and the other Main Gear Sensors indicate that both Main Gears are UP and LOCKED.

EFFECTIVITY AKS ALL

32-61 TASKS 801-802

Page 208 Feb 15/2016



AKS ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

- (g) Maintenance Message 32-61012 is set when the Right Up and Locked B Sensor indicates UP and the other Main Gear Sensors indicate that both Main Gears are DOWN and LOCKED.
- (h) Maintenance Message 32-61112 is set when the Right Up and Locked B Sensor indicates DOWN and the other Main Gear Sensors indicate that both Main Gears are UP and LOCKED.

AKS ALL

B. Possible Causes

- (1) Left Main Landing Gear Up and Locked Sensor, S0072 (S1016)
- (2) Right Main Landing Gear Up and Locked Sensor, S0074 (S1017)
- (3) Wiring
- (4) Proximity Switch Electronics Unit (PSEU), M2061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) Component Location (Figure 303)
- (2) SSM 32-61-11
- (3) SSM 32-61-12
- (4) WDM 32-64-11
- (5) WDM 32-64-12

E. Initial Evaluation

- (1) Look for obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find damage, then do the Fault Isolation Procedure below.
 - (b) If there is no obvious damage, then continue.
- (2) Do these steps to show the status of the applicable Landing Gear Position Sensor:
 - (a) Push the ON/OFF Switch to turn the PSEU BITE ON.
 - (b) Push the DOWN Switch until OTHER FUNCTNS? shows.
 - (c) Push the YES Switch to select OTHER FUNCTNS?.
 - (d) Push the DOWN Switch until I/O MONITOR? shows.
 - (e) Push the YES Switch to select I/O MONITOR.
 - (f) Push the DOWN Switch until SENSORS? shows.
 - (g) Push the YES Switch to select SENSORS.

AKS ALL 32-61 TASK 802



AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (h) Push the DOWN Arrow Switch until the sensor number shows.
 - 1) For Maintenance Message 32-61002 or 3261102, show sensor S0072
 - 2) For Maintenance Message 32-61006 or 32-61106, show sensor S0074
 - 3) For Maintenance Message 32-61008 or 32-61108, show sensor S1016
 - 4) For Maintenance Message 32-61012 or 32-61112, show sensor S1017

AKS ALL

- (i) Push the YES Switch to show the sensor status.
- (j) If the sensor status is TGT NEAR, then do this test of the other sensor states:
 - 1) Put a de-actuator on the sensor face.
 - NOTE: The de-actuator is part of this tool set: proximity sensor test set, SPL-1690.
 - 2) If the display shows TGT FAR, then there was an intermittent problem.
 - NOTE: You can measure the clearance between the sensor and target. To determine if the sensor clearance is incorrect, do this task: (AMM TASK 32-61-21-400-802).
 - 3) If the display shows TGT NEAR, then do the Fault Isolation Procedure below.
- (k) If the sensor status is TGT FAR or FAILSAFE, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you find obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
 - (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
- (2) If the sensor status is TGT NEAR, with a de-actuator installed, then do these steps:
 - (a) Do a Resistance check of the sensor and wires. These are the steps (WDM 32-64-11, WDM 32-64-12):

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- 1) For Maintenance Message 32-61002, 32-61102, 32-61006 or 32-61106, disconnect connector D10982 from the PSEU.
- 2) For Maintenance Message 32-61008, 32-61108, 32-61012 or 32-61112, disconnect connector D10984 from the PSEU.

AKS ALL

AKS ALL

- 3) Do these steps to measure the resistance between the pins of the PSEU connector (D10982 or D10984) for the blue terminal and the structure ground (yellow) (Table 202)
 - a) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the blue (white/blue) and yellow (white/yellow) sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.
 - d) Push the L/C/R meter DATA HOLD button once.

EFFECTIVITY 32-61 TASK 802



e) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.

NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.

- f) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
- g) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as R1. R1 should be 344.5 to 351.5 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

h) The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 Ohms.

NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

- 4) Do these steps to measure the resistance between the pins of the PSEU connector (D10982 or D10984) for the red terminal and the structure ground (yellow) (Table 202)
 - Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the red (white/red) and yellow (white/yellow) sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.
 - d) Push the L/C/R meter DATA HOLD button once.
 - e) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.

NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.

- f) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
- g) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as L1. L1 should be 27 to 33 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

AKS ALL



h) The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 ohms.

NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

- 5) Re-connect connector D10982 or D10984 to the PSEU.
- 6) If the Resistance values are not in the limits, then cut the wires at the sensor splices and measure the Resistance of the sensors again.
- 7) These are the connections on the sensor and the PSEU to measure the Resistance at:

Table 202 MLG UPLOCK SENSOR RESISTANCES

SENSOR	SENSOR LEAD	PSEU CONNECTOR
S0072	YELLOW	 GROUND
		D10982
	BLUE	 pin 57
		D10982
	RED	 pin 58
S0074	YELLOW	 GROUND
		D10982
	BLUE	 pin 46
		D10982
	RED	pin 45
S1016	YELLOW	 GROUND
		D10984
	BLUE	 pin 15
		D10984
	RED	 pin 5
S1017	YELLOW	 GROUND
		D10984
	BLUE	 pin 46

AKS ALL



Table 202 MLG UPLOCK SENSOR RESISTANCES (Continued)

D10984

RED ----- pin 45

- (b) If the Resistance values for the sensors are not in the limits, then do a check of the Bonding Resistance between the sensor ground and the airplane structure (Standard Wiring Practices Manual).
 - Make sure that the Resistance is less than 0.001 ohm.
 - 2) If the Resistance is more than 0.001 ohm, then examine and repair the ground between the sensor connection and structure ground.
 - 3) If you do not find a problem with the sensor ground, then continue.
- (c) If the Resistance values are not in the limits and there are no problems with the sensor ground, then replace the sensor. These are the tasks:
 - Main Landing Gear Down-and-Locked Sensor Removal, AMM TASK 32-61-31-020-801
 - Main Landing Gear Down-and-Locked Sensor Installation, AMM TASK 32-61-31-400-801
 - 1) Do the Repair Confirmation at the end of this task.
- (d) If the Resistance values for the sensor are in the limits and there are no problems with the sensor ground, then you have determined that the wiring is defective. Do the wiring check below.
- (3) If the sensor status is TGT FAR without a de-actuator installed, then do these steps:
 - (a) Do the Main Landing Gear Uplock Sensor Clearance Measurement (Airplane on Jacks), AMM TASK 32-61-21-400-802.
 - (b) If the sensor clearance is not correct, then do these steps:
 - 1) Adjust the sensor clearance. This is the task: Main Landing Gear Uplock Sensor Clearance Adjustment, AMM TASK 32-61-21-820-801.
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If the sensor clearance is correct, then do these steps:
 - 1) Replace the sensor. These are the tasks:
 - Main Landing Gear Uplock Sensor Removal, AMM TASK 32-61-21-020-801
 - Main Landing Gear Uplock Sensor Installation, AMM TASK 32-61-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (4) If the sensor status is FAILSAFE, then do these steps:
 - (a) Disconnect the sensor leads from the airplane wiring.
 - (b) Temporarily install the leads from a replacement sensor to the airplane wiring.
 - (c) Make sure that the sensor is away from all metal objects.
 - (d) Do the steps to show the sensor status again.
 - (e) If the sensor status is TGT FAR, then the installed sensor has a problem. Do these steps:
 - 1) Replace the sensor. These are the tasks:
 - Main Landing Gear Uplock Sensor Removal, AMM TASK 32-61-21-020-801
 - Main Landing Gear Uplock Sensor Installation, AMM TASK 32-61-21-400-801
 - 2) Do the Repair Confirmation at the end of this task.



- (f) If the sensor status is FAILSAFE, then do these steps and continue:
 - 1) Remove the replacement sensor leads from the airplane wiring.
 - 2) Re-install the leads from the installed sensor.
- (5) Do this check of the wiring:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For Maintenance Message 32-61002, 32-61102, 32-61006 or 32-61106, disconnect connector D10982 from the PSEU.
- (b) For Maintenance Message 32-61008, 32-61108, 32-61012 or 32-61112, disconnect connector D10984 from the PSEU.

AKS ALL

- (c) Do a wiring check between these connections on the sensor and the PSEU: (Table 202)
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D10982 or D10984 to the PSEU.
 - 3) Do the Repair Confirmation at the end of this task.
- (e) If you do not find a problem with the wiring, then continue.
- (6) Replace the PSEU. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the applicable sensor:
 - (a) Put a de-actuator on the face of the sensor.
 - (b) Remove the de-actuator from the face of the sensor.
 - b) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If the maintenance message does not show on the EXISTING FAULTS Display, then you corrected the problem.
 - 2) If the maintenance message shows on the EXISTING FAULTS Display, continue the Fault Isolation Procedure at the subsequent step.



803. Nose Landing Gear Down Sensor Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-61004 NOSE DN A FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 32-61104 NOSE DN A FAULT

AKS ALL

(c) 32-61009 NOSE DN B FAULT

AKS ALL

32-61 TASKS 802-803



AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 32-61109 NOSE DN B FAULT

AKS ALL

(e) 32-61013 NOSE DN DISAGREE

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

- (2) These maintenance messages show that a nose landing gear down position sensor disagrees with the main landing gear locked sensors.
 - (a) Maintenance message 32-61004 will be set if the nose down A position sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and nose down B sensor indicates up.
 - (b) Maintenance message 32-61104 will be set if the nose down A position sensor indicates up with the other main gear sensors indicating that both main gear are down and locked and lever down, lever up and nose down B sensor indicates down.
 - (c) Maintenance message 32-61009 will be set if the nose down B position sensor indicates down with the other main gear sensors indicating that both main gear are up and locked and nose down A sensor indicates up.
 - (d) Maintenance message 32-61109 will be set if the nose down A position sensor indicates up with the other main gear sensors indicating that both main gear are down and locked and lever down, lever up and nose down A sensor indicates down.
 - (e) Maintenance message 32-61013 will be set if the nose down A position sensor disagrees with the nose down B sensor.

AKS ALL

B. Possible Causes

- (1) Nose landing gear down position sensor, S0845 or S0853
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSFU ALTN

D. Related Data

- (1) Component Location (Figure 304)
- (2) (SSM 32-61-11)
- (3) (SSM 32-61-12)
- (4) (WDM 32-64-11)
- (5) (WDM 32-64-12)

E. Initial Evaluation

- (1) Look for any obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find any damage, then do the Fault Isolation Procedure below.

AKS ALL



- (b) If there is no obvious damage, then continue.
- (2) Show the status of the applicable landing gear position sensor.
 - (a) Push the ON/OFF switch to turn on the PSEU BITE.
 - (b) Push the down switch until OTHER FUNCTNS? shows.
 - (c) Push the YES switch to select OTHER FUNCTNS?.
 - (d) Push the down switch until I/O MONITOR? shows.
 - (e) Push the YES switch to select I/O MONITOR.
 - (f) Push the down switch until SENSORS? shows.
 - (g) Push the YES switch to select SENSORS.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (h) Push the down switch until the sensor number shows.
 - For maintenance message number 32-61004, 32-61104 or 32-61013, show sensor \$0845
 - For maintenance message number 32-61009, 32-61109 or 32-61013, show sensor \$0853

AKS ALL

- (i) Push the YES switch to show the sensor status.
- (j) If the sensor status is TGT NEAR, then do this test of the other sensor states:
 - 1) Put a de-actuator on the face of the sensor face.
 - NOTE: The de-actuator is part of this tool set: proximity sensor test set, SPL-1690.
 - 2) If the display shows TGT FAR, then there was an intermittent fault.
 - NOTE: You may measure the clearance between the sensor and target. This can help you determine if the sensor clearance is incorrect. To do this, you can do this task: (AMM TASK 32-61-51-220-801).
 - 3) If the display shows TGT NEAR, then do the Fault Isolation Procedure below.
- (k) If the sensor status is TGT FAR or FAILSAFE, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you found any obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
 - (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
 - (c) If the Repair Confirmation is not satisfactory, then continue.
- (2) If the sensor status is TGT NEAR, with a de-actuator installed, then do these steps:
 - (a) Perform a resistance check of the sensor and wires, these are the steps:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- 1) For maintenance message number 32-61004, 32-61104 or 32-61013, disconnect connector D10982 from the PSEU.
- 2) For maintenance message number 32-61009, 32-61109 or 32-61013, disconnect connector D10984 from the PSEU.

AKS ALL

AKS ALL



- 3) Do these steps to measure the resistance between the pins of the PSEU connector (D10982 or D10984) for the blue terminal and the structure ground (yellow) (Table 203)
 - a) Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the blue (white/blue) and yellow (white/yellow) sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.
 - d) Push the L/C/R meter DATA HOLD button once.
 - e) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
 - NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.
 - f) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
 - g) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as R1. R1 should be 344.5 to 351.5 ohms.
 - NOTE: The line and interface resistance can be considered and can add up to 2 ohms.
 - h) The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 Ohms.
 - NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)
- Do these steps to measure the resistance between the pins of the PSEU connector (D10982 or D10984) for the red terminal and the structure ground (yellow) (Table 203)
 - Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the red (white/red) and yellow (white/yellow) sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - c) Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.
 - d) Push the L/C/R meter DATA HOLD button once.

AKS ALL 32-61 TASK 803



e) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.

NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.

- f) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
- g) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as L1. L1 should be 27 to 33 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

h) The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 ohms.

NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

- 5) Re-connect connector D10982 or D10984 to the PSEU.
- 6) If the resistance values are out of tolerance then cut the wires at the sensor splices and recheck the resistance of the sensors.
- 7) These are the connections on the sensor and the PSEU to check the resistances at:

Table 203 NLG DOWN SENSOR RESISTANCES

SENSOR	SENSOR LEAD	PSEU CONNECTOR
S0845	YELLOW	 GROUND
		D10982
	BLUE	 pin 19
		D10982
	RED	 pin 20
S0853	YELLOW	 GROUND
		D10984
	BLUE	 pin 19
		D10984
	RED	 pin 20

AKS ALL



- (b) If the resistances values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (Standard Wiring Practices Manual).
 - 1) Make sure that the resistance is less than 0.001 ohm.
 - 2) If the resistance is greater than 0.001 ohm, then inspect and repair the ground between the sensor connection and structure ground.
 - 3) If you do not find a problem with the sensor ground, then continue.
- (c) If the resistance values are out of tolerance and there are no problems with the sensor ground then replace the sensor. These are the tasks:
 - Nose Landing Gear Down Position Sensor Removal, AMM TASK 32-61-51-020-801
 - Nose Landing Gear Down Position Sensor Installation, AMM TASK 32-61-51-400-802
 - 1) Do the Repair Confirmation at the end of this task.
- (d) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground then you have determined that the wiring is faulty. Do the wiring check below.
- (3) If the sensor status is TGT FAR without a de-actuator installed on the sensor, then do these steps:
 - (a) Measure the clearance between the sensor and target. To measure the clearance, do this task: Nose Landing Gear Down Position Sensor Clearance Measurement, AMM TASK 32-61-51-220-801.
 - (b) If the sensor clearance is not correct, then do these steps:
 - 1) Adjust the sensor clearance. To adjust the clearance, do this task: Nose Landing Gear Down Position Sensor Clearance Adjustment, AMM TASK 32-61-51-400-801.
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If the sensor clearance is correct, then do these steps:
 - 1) Replace the sensor. These are the tasks:
 - Nose Landing Gear Down Position Sensor Removal, AMM TASK 32-61-51-020-801
 - Nose Landing Gear Down Position Sensor Installation, AMM TASK 32-61-51-400-802
 - 2) Do the Repair Confirmation at the end of this task.
- (4) If the sensor status is FAILSAFE, then do these steps:
 - (a) Disconnect the sensor leads from the airplane wiring.
 - (b) Temporarily install the leads from a replacement sensor to the airplane wiring.
 - (c) Make sure the sensor is away from all metal objects.
 - (d) Do the steps to show the sensor status again.
 - (e) If the sensor status is TGT FAR, then the installed sensor has a fault. Do these steps:
 - Replace the sensor. These are the tasks:
 - Nose Landing Gear Down Position Sensor Removal, AMM TASK 32-61-51-020-801
 - Nose Landing Gear Down Position Sensor Installation, AMM TASK 32-61-51-400-802
 - Do the Repair Confirmation at the end of this task.



- (f) If the sensor status is FAILSAFE, then do these steps and continue:
 - 1) Remove the replacement sensor leads from the junction box connector.
 - Re-install the leads from the current air/ground sensor.
- (5) Do this check of the wiring:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message number 32-61004, 32-61104 or 32-61013, disconnect connector D10982 from the PSEU.
- (b) For maintenance message number 32-61009, 32-61109 or 32-61013, disconnect connector D10984 from the PSEU.

AKS ALL

- (c) Do a wiring check between these connections on the sensor and the PSEU: (Table 203)
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect connector D10982 or D10984 to the PSEU.
 - 3) Do the Repair Confirmation at the end of this task.
- (e) If you do not find a problem with the wiring, then continue.
- (6) Do these steps to replace the PSEU:
 - (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.

G. Repair Confirmation

- (1) Do this test of the applicable sensor:
 - (a) Put a de-actuator on the face of the sensor.
 - (b) Remove the de-actuator from the face of the sensor.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (d) If you do not find the maintenance message, then you corrected the fault.



804. Nose Landing Gear Lock Sensor Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-61003 NOSE LKD A FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 32-61103 NOSE LKD A FAULT

AKS ALL

(c) 32-61010 NOSE LKD B FAULT

AKS ALL 32-61 TASI

32-61 TASKS 803-804



AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 32-61110 NOSE LKD B FAULT

AKS ALL

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (2) These maintenance messages show that a nose landing gear lock sensor disagrees with the main landing gear locked sensors.
 - (a) Maintenance message number 32-61003 will be set if the nose gear lock A sensor indicates locked while both main gear are neither down and locked nor up and locked and lever down and lever up indicates down.
 - (b) Maintenance message number 32-61103 will be set if the nose gear lock A sensor indicates not locked while both main gear are down and locked and lever down, lever up and nose locked B sensor indicates down and locked.
 - (c) Maintenance message number 32-61010 will be set if the nose gear lock B sensor indicates locked while both main gear are neither down and locked nor up and locked and lever down and lever up indicates down.
 - (d) Maintenance message number 32-61110 will be set if the nose gear lock B sensor indicates not locked while both main gear are down and locked and lever down, lever up and nose locked A sensor indicates down and locked.

AKS ALL

B. Possible Causes

- (1) Nose landing gear lock sensor, S0846 or S0854
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

<u>Row</u>	Col	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) Component Location (Figure 305)
- (2) (SSM 32-61-11)
- (3) (SSM 32-61-12)
- (4) (WDM 32-64-11)
- (5) (WDM 32-64-12)

E. Initial Evaluation

- (1) Look for any obvious damage to the applicable sensor, target, and adjacent structure.
 - (a) If you find any damage, then do the Fault Isolation Procedure below.
 - (b) If there is no obvious damage, then continue.
- (2) Show the status of the applicable landing gear position sensor.
 - (a) Push the ON/OFF switch to turn on the PSEU BITE.

AKS ALL



- (b) Push the down switch until OTHER FUNCTNS? shows.
- (c) Push the YES switch to select OTHER FUNCTNS?.
- (d) Push the down switch until I/O MONITOR? shows.
- (e) Push the YES switch to select I/O MONITOR.
- (f) Push the down switch until SENSORS? shows.
- (g) Push the YES switch to select SENSORS.

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

- (h) Push the down switch until the sensor number shows.
 - 1) For maintenance message number 32-61003 and 32-61103, show sensor S0846
 - 2) For maintenance message number 32-61010 and 32-61110, show sensor S0854

AKS ALL

- (i) Push the YES switch to show the sensor status.
- (j) If the sensor status is TGT NEAR, then do this test of the other sensor states:
 - 1) Put a de-actuator on the face of the sensor face.
 - NOTE: The de-actuator is part of this tool set: proximity sensor test set, SPL-1690.
 - 2) If the display shows TGT FAR, then there was an intermittent fault.
 - NOTE: You may measure the clearance between the sensor and target. This can help you determine if the sensor clearance is incorrect. To do this, you can do this task: (AMM TASK 32-61-41-220-801).
 - 3) If the display shows TGT NEAR, then do the Fault Isolation Procedure below.
- (k) If the sensor status is TGT FAR or FAILSAFE, then do the Fault Isolation Procedure below

F. Fault Isolation Procedure

- (1) If you found any obvious damage to the applicable sensor, target, and adjacent structure, then do these steps:
 - (a) Repair the damage.
 - (b) Do the Repair Confirmation at the end of this task.
 - (c) If the Repair Confirmation is not satisfactory, then continue.
- (2) If the sensor status is TGT NEAR, with a de-actuator installed, then do these steps:
 - (a) Perform a resistance check of the sensor and wires, these are the steps:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- 1) For maintenance message number 32-61003 and 32-61103, disconnect connector D10982 from the PSEU.
- For maintenance message number 32-61010 and 32-61110, disconnect connector D10984 from the PSEU.

AKS ALL

- Do these steps to measure the resistance between the pins of the PSEU connector (D10982 or D10984) for the blue terminal and the structure ground (yellow) (Table 204)
 - Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the blue (white/blue) and yellow (white/yellow) sensor leads.

AKS ALL



- b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
- c) Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.
- d) Push the L/C/R meter DATA HOLD button once.
- e) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
 - NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.
- f) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.
- g) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as R1. R1 should be 344.5 to 351.5 ohms.
 - NOTE: The line and interface resistance can be considered and can add up to 2 ohms.
- h) The permitted resistance reading for in-service sensors exposed to varying conditions is 338 to 361 Ohms.
 - NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)
- 4) Do these steps to measure the resistance between the pins of the PSEU connector (D10982 or D10984) for the red terminal and the structure ground (yellow) (Table 204)
 - Connect the LCR meter (Inductance, Capacitance, Resistance), COM-1741 to the red (white/red) and yellow (white/yellow) sensor leads.
 - b) Push the L/C/R mode switch to set the LCR meter (Inductance, Capacitance, Resistance), COM-1741 in R (resistance mode).
 - Push the 1 kHz/120 Hz button to select the 120 Hz excitation frequency.
 - d) Push the L/C/R meter DATA HOLD button once.
 - e) Push and hold the D/Q button on the LCR meter (Inductance, Capacitance, Resistance), COM-1741 until the meter changes to the series mode.
 - NOTE: "Ser" appears in the upper right corner of the display to indicate that the meter is in the series mode.
 - f) Read the resistance value on the LCR meter (Inductance, Capacitance, Resistance), COM-1741.

AKS ALL



g) The nominal resistance reading at normal room temperature (CMM DC resistance, bench test condition) referred to as L1. L1 should be 27 to 33 ohms.

NOTE: The line and interface resistance can be considered and can add up to 2 ohms.

 The permitted resistance reading for in-service sensors exposed to varying conditions is 24 to 38 ohms.

NOTE: On- wing resistance readings deviating from the shown limits should consider the increased/ lower resistance associated with a higher/lower temperature of the proximity sensor at the time of the measurement before a determination is made on the condition of the proximity sensor. Temperatures can deviate significantly from normal room temperature, which is always the case with airplanes with systems ON, or on airplanes that just have arrived from a flight, or when the airplane have been sitting out in the hot or cold weather. You need to know that the resistance values may be off and the proximity sensor could still be in good condition. The cooper metal has a temperature coefficient of resistance which is approximately 0.40 ohm/degC. The deviation of the coil circuit (generally the yellow-red circuit) can be calculated at the rate of 0.40 ohm/degC from standard temperature (25degC)

- 5) Re-connect connector D10982 or D10984 to the PSEU.
- 6) If the resistance values are out of tolerance then cut the wires at the sensor splices and recheck the resistance of the sensors.
- 7) These are the connections on the sensor and the PSEU to check the resistances at:

Table 204 NLG LOCK SENSOR RESISTANCES

SENSOR	SENSOR LEAD		PSEU CONNECTOR
S0846	YELLOW	 GROUND	
		D10982	
	BLUE	 pin 2	
		D10982	
	RED	 pin 9	
S0854	YELLOW	 GROUND	
		D10984	
	BLUE	 pin 2	
		D10984	
	RED	 pin 9	

- (b) If the resistances values for the sensors are out of tolerance, then do a check of the bonding resistance between the sensor ground and the airplane structure (SWPM 20-20-00).
 - 1) Make sure that the resistance is less than 0.001 ohm.
 - 2) If the resistance is greater than 0.001 ohm, then inspect and repair the ground between the sensor connection and structure ground.
 - 3) If you do not find a problem with the sensor ground, then continue.

AKS ALL



- (c) If the resistance values are out of tolerance and there are no problems with the sensor ground then replace the sensor. These are the tasks:
 - Nose Landing Gear Lock Sensor Removal, AMM TASK 32-61-41-020-801
 - Nose Landing Gear Lock Sensor Installation, AMM TASK 32-61-41-400-801
 - 1) Do the Repair Confirmation at the end of this task.
- (d) If the resistance values for the sensor are in tolerance and there are no problems with the sensor ground then you have determined that the wiring is faulty. Do the wiring check below.
- (3) If the sensor status is TGT FAR without a de-actuator installed on the sensor, then do these steps:
 - (a) Measure the clearance between the sensor and target. To measure the clearance, do this task: Nose Landing Gear Lock Sensor Clearance Measurement, AMM TASK 32-61-41-220-801.
 - (b) If the sensor clearance is not correct, then do these steps:
 - Adjust the sensor clearance. To adjust the clearance, do this task: Nose Landing Gear Lock Sensor Clearance Adjustment, AMM TASK 32-61-41-400-802.
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If the sensor clearance is correct, then do these steps:
 - 1) Replace the sensor. These are the tasks:
 - Nose Landing Gear Lock Sensor Removal, AMM TASK 32-61-41-020-801
 - Nose Landing Gear Lock Sensor Installation, AMM TASK 32-61-41-400-801
 - 2) Do the Repair Confirmation at the end of this task.
- (4) If the sensor status is TGT FAR without a de-actuator installed, then do these steps:
 - (a) Measure the clearance between the sensor and target. To measure the clearance, do this task: Nose Landing Gear Lock Sensor Clearance Measurement, AMM TASK 32-61-41-220-801.
 - (b) If the sensor clearance is not correct, then do these steps:
 - Adjust the sensor clearance. To adjust the clearance, do this task: Nose Landing Gear Lock Sensor Clearance Adjustment, AMM TASK 32-61-41-400-802.
 - 2) Do the Repair Confirmation at the end of this task.
 - (c) If the sensor clearance is correct, then do these steps:
 - 1) Replace the sensor. These are the tasks:
 - Nose Landing Gear Lock Sensor Removal, AMM TASK 32-61-41-020-801
 - Nose Landing Gear Lock Sensor Installation, AMM TASK 32-61-41-400-801
 - Do the Repair Confirmation at the end of this task.
- (5) If the sensor status is FAILSAFE, then do these steps:
 - (a) Disconnect the sensor leads from the airplane wiring.
 - (b) Temporarily install the leads from a replacement sensor to the airplane wiring.
 - (c) Make sure the sensor is away from all metal objects.
 - (d) Do the steps to show the sensor status again.
 - (e) If the sensor status is TGT FAR, then the installed sensor has a fault. Do these steps:
 - 1) Replace the sensor. These are the tasks:



- Nose Landing Gear Lock Sensor Removal, AMM TASK 32-61-41-020-801
- Nose Landing Gear Lock Sensor Installation, AMM TASK 32-61-41-400-801
- 2) Do the Repair Confirmation at the end of this task.
- (f) If the sensor status is FAILSAFE, then do these steps and continue:
 - 1) Remove the replacement sensor leads from the junction box connector.
 - 2) Re-install the leads from the current air/ground sensor.
- (6) Do this check of the wiring:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message number 32-61003 and 32-61103, disconnect connector D10982 from the PSEU.
- (b) For maintenance message number 32-61010 and 32-61110, disconnect connector D10984 from the PSEU.

AKS ALL

- (c) Do a wiring check between these connections on the sensor and the PSEU: (Table 204)
- (d) If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - 2) Re-connect connector D10982 or D10984 to the PSEU.
 - 3) Do the Repair Confirmation at the end of this task.
- (e) If you do not find a problem with the wiring, then continue.
- (7) Do these steps to replace the PSEU:
 - (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.

G. Repair Confirmation

- (1) Do this test of the applicable sensor:
 - (a) Put a de-actuator on the face of the sensor.
 - (b) Remove the de-actuator from the face of the sensor.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE display. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (d) If you do not find the maintenance message, then you corrected the fault.

——— FND OF TASK ———		 -	
		CK _	

805. Altitude Less Than 200 (Left) Fault - Fault Isolation

A. Description

AKS ALL

32-61 TASKS 804-805



AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (1) This task is for these maintenance messages:
 - (a) 32-62005 ALT L LT 200 FLT
 - (b) 32-62105 ALT L LT 200 FLT
 - (c) 32-62205 ALT L LT 200 FLT

AKS ALL

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

(2) These maintenance messages show when one of these conditions occur:

AKS ALL; AIRPLANES WITH PSEU -6

(a) Maintenance message 32-62005 will be set if the left signal on the flight control computer shows that the airplane altitude is more than 200 feet with the airplane landing or on the ground.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) Maintenance message 32-62105 will be set if the left signal on the flight control computer shows that the airplane altitude is less than 200 feet with the airplane in the air for more than two minutes.
- (c) Maintenance message 32-62205 will be set during the LRU replacement test if the left signal on the flight control computer shows that the airplane altitude is more than 200 feet and the right signal on the flight control computer shows that the airplane altitude is less than 200 feet.

AKS ALL

B. Possible Causes

- (1) Wiring problem
- (2) Flight control computer (FCC) A, M1875
- (3) Radio Altimeter Transmitter/Receiver, M1735 (1) or M1736 (2)
- (4) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	17	C00129	LANDING GEAR LATCH & PRESS WARN

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

E. Initial Evaluation

- (1) Do a test to determine if there are FCC faults. Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.
 - (a) If this fault exists: FCC-A (J1A-G03), then the do the Fault Isolation Procedure below.
 - (b) If there is a radio altimeter output problem or other FCC problem, then do the fault isolation referenced in the BITE procedure.
 - (c) If there are no FCC faults, then continue.

AKS ALL



- (2) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the fault isolation procedure below.

F. Fault Isolation Procedure

- (1) Do this test of the PSEU and wiring:
 - (a) Remove the flight control computer A. To remove the computer, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
 - (b) Examine the connectors and sockets for damage and unwanted material.
 - (c) Show the input status for connector D10982 pin 43 on the PSEU BITE display.
 - NOTE: If you need instructions on how to show the input status, see this task: (32-09 TASK 821).
 - (d) If the status of pin 43 is GND, then do this test of the PSEU:
 - 1) Remove the connector D10982 from the PSEU.
 - 2) Examine the connector and socket for damage and unwanted material.
 - 3) Show the input status for connector D10982 pin 43 again.
 - 4) If the status of the pin is GND, then do these steps:
 - a) Replace the PSEU. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation Below.
 - 5) If the status of the pin is NO GND, then do these steps:
 - a) Repair the wiring between the PSEU and FCC.
 - b) Do the Repair Confirmation Below.
 - (e) If the status of pin 43 is NO GND, then continue.
 - (f) Ground pin G3 on the FCC connector D10135A with a jumper wire.
 - (g) If the status of pin 43 is NO GND, then do this test of the PSEU:
 - 1) Remove the connector D10982 from the PSEU.
 - 2) Examine the connector and socket for damage and unwanted material.
 - 3) Ground pin 43 on the PSEU connector D10982 with a jumper wire.
 - 4) Show the input status for connector D10982 pin 43 again.
 - 5) If the status of the pin is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation Below.
 - 6) If the status of the pin is GND, then do these steps:

AKS ALL 32-61 TASK 805



- Repair the wiring between the PSEU and FCC.
- b) Do the Repair Confirmation Below.
- (h) If the status of pin 43 is GND, then continue.
- (2) Do this test of the FCC:
 - (a) Do an exchange test of the FCC. To do this, do this task: FCC Exchange Check, 22-11 TASK 820.
 - (b) Do the Initial Evaluation again.
 - (c) If the fault is now active for FCC-B, then do these steps:
 - 1) Install a new flight control computer. To install the computer, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - 2) Do the Repair Confirmation below.
 - (d) If the fault is still active for FCC-A, then do these steps:
 - 1) Examine the FCC connector D10135A pin G3 and socket for damage or a pushed back pin.
 - 2) Repair any damage that you find
 - (e) If the fault is no longer active, then you had an intermittent fault.

G. Repair Confirmation

- (1) Do this test to see if the fault is still active:
 - (a) If it is necessary, re-connect the connector on the PSEU.
 - (b) If it is necessary, re-install the FCC. To install the FCC, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - (c) Simulate an altitude greater than 200 feet. Do this task: Radio Altitude Simulation Test, AMM TASK 34-33-00-700-801.
 - (d) Return the airplane altitude to it's usual condition.
 - (e) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.
 - 2) If you find the maintenance message, then continue the fault isolation procedure.



806. Altitude Less Than 200 (Right) Fault - Fault Isolation

A. Description

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

- (1) This task is for these maintenance messages:
 - (a) 32-62006 ALT R LT 200 FLT
 - (b) 32-62106 ALT R LT 200 FLT
 - (c) 32-62206 ALT R LT 200 FLT

AKS ALL

EFFECTIVITY 32-61 TASKS 805-806



AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(2) These maintenance messages show when one of these conditions occur:

AKS ALL; AIRPLANES WITH PSEU -6

(a) Maintenance message 32-62006 will be set if the right signal on the flight control computer shows that the airplane altitude is more than 200 feet with the airplane landing or on the ground.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) Maintenance message 32-62106 will be set if the right signal on the flight control computer shows that the airplane altitude is less than 200 feet with the airplane in the air for more than two minutes.
- (c) Maintenance message 32-62206 will be set during the LRU replacement test if the right signal on the flight control computer shows that the airplane altitude is more than 200 feet and the left signal on the flight control computer shows that the airplane altitude is less than 200 feet.

AKS ALL

B. Possible Causes

- (1) Wiring problem
- (2) Flight control computer (FCC) B, M1876
- (3) Radio Altimeter Transmitter/Receiver, M1735 (1) or M1736 (2)
- (4) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	17	C00129	LANDING GEAR LATCH & PRESS WARN

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

E. Initial Evaluation

- (1) Do a test to determine if there are FCC faults. Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.
 - (a) If this fault exists: FCC-B (J1A-G03), then do the Fault Isolation Procedure below.
 - (b) If there is a radio altimeter output problem or other FCC problem, then do the fault isolation referenced in the BITE procedure.
 - (c) If there are no FCC faults, then continue.
- (2) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

AKS ALL 32-61 TASK 806



F. Fault Isolation Procedure

- (1) Do this test of the PSEU and wiring:
 - (a) Remove the flight control computer (FCC) B. To remove the computer, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
 - (b) Examine the connectors and sockets for damage and unwanted material.
 - (c) Show the input status for connector D10984 pin 43 on the PSEU BITE display.
 - NOTE: If you need instructions on how to show the input status, see this task: (32-09 TASK 821).
 - (d) If the status of pin 43 is GND, then do this test of the PSEU:
 - 1) Remove the connector D10984 from the PSEU.
 - 2) Examine the connector and socket for damage and unwanted material.
 - 3) Show the input status for connector D10984 pin 43 again.
 - 4) If the status of the pin is GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation Below.
 - 5) If the status of the pin is NO GND, then do these steps:
 - a) Repair the wiring between the PSEU and FCC.
 - b) Do the Repair Confirmation Below.
 - (e) If the status of pin 43 is NO GND, then continue.
 - (f) Ground pin G3 on the FCC connector D10137A with a jumper wire.
 - (g) If the status of pin 43 is NO GND, then do this test of the PSEU:
 - 1) Remove the connector D10984 from the PSEU.
 - 2) Examine the connector and socket for damage and unwanted material.
 - 3) Ground pin 43 on the PSEU connector D10984 with a jumper wire.
 - 4) Show the input status for connector D10984 pin 43 again.
 - 5) If the status of the pin is NO GND, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Do the Repair Confirmation Below.
 - 6) If the status of the pin is GND, then do these steps:
 - a) Repair the wiring between the PSEU and FCC.
 - b) Do the Repair Confirmation Below.
 - (h) If the status of pin 43 is GND, then continue.
- (2) Do this test of the FCC:

AKS ALL



- (a) Do an exchange test of the FCC. Do this task: FCC Exchange Check, 22-11 TASK 820.
- (b) Do the Initial Evaluation again.
- (c) If the fault is now active for FCC-A, then do these steps:
 - 1) Install a new flight control computer. To install the computer, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - 2) Do the Repair Confirmation below.
- (d) If the fault is still active for FCC-B, then do these steps:
 - 1) Examine the FCC connector D10137A pin G3 and socket for damage or a pushed back pin.
 - 2) Repair any damage that you find
- (e) If the fault is no longer active, then you had an intermittent fault.

G. Repair Confirmation

- (1) Do this test to see if the fault is still active:
 - (a) If it is necessary, re-connect the connector on the PSEU.
 - (b) If it is necessary, re-install the FCC. To install the FCC, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - (c) Simulate an altitude greater than 200 feet. Do this task: Radio Altitude Simulation Test, AMM TASK 34-33-00-700-801.
 - (d) Return the airplane altitude to its usual condition.
 - (e) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.
 - 2) If you find the maintenance message, then continue the fault isolation procedure.



809. Landing Gear Lever Position Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-62007 LEVER DN FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 32-62107 LEVER DN FAULT

AKS ALL

(c) 32-62008 LEVER UP FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 32-62108 LEVER UP FAULT

AKS ALL

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (2) These maintenance messages show a fault with the landing gear lever position sensors.
 - (a) Maintenance message number 32-62007 will be set if the lever down sensor indicate that the lever is neither down nor up and the main landing gear is down and locked.

AKS ALL

32-61 TASKS 806-809



AKS ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

- (b) Maintenance message number 32-62107 will be set and latch in the PSEU if the lever down sensor shows that the lever is down and gear is up and locked.
- (c) Maintenance message number 32-62008 will be set if the lever up sensor indicates that the lever is neither down nor up and the main landing gear is down and locked.
- (d) Maintenance message number 32-62108 will be set and latch in the PSEU if the lever up sensor shows that the lever is up and the gear is down and locked.

AKS ALL

B. Possible Causes

- (1) Landing gear control lever, M1952
- (2) Wiring problem
- (3) Proximity Switch Electronics Unit (PSEU), M02061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI

D. Related Data

- (1) (SSM 32-30-00)
- (2) SSM 32-61-11
- (3) (WDM 32-64-11)

E. Initial Evaluation

- (1) Do this test with the landing gear control lever switch in the down position:
 - (a) Put the landing gear control lever in the DOWN position.
 - (b) Show the input status for these landing gear control lever switch inputs on the PSEU BITE display:

NOTE: If you need instructions on how to show the input status, see this task: (32-09 TASK 821).

- 1) D10982 pin 1
- 2) D10982 pin 6
- (c) If the status of pin 1 is NO GND, then do the Fault Isolation Procedure below.
- (d) If the status of pin 6 is GND, then do the Fault Isolation Procedure below.
- (e) If the status of pin 1 is GND and the status of pin 6 is NO GND, then continue.
- (2) Do this test with the landing gear control lever switch in the UP position:

WARNING: MAKE SURE THE DOWNLOCK PINS ARE INSTALLED ON ALL THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR COULD RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

(a) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.

AKS ALL



- (b) Put the landing gear control lever in the UP position.
- (c) Show the input status for these landing gear control lever switch inputs on the PSEU display:
 - 1) D10982 pin 1
 - 2) D10982 pin 6
- (d) If the status of pin 1 is GND, then do the Fault Isolation Procedure below.
- (e) If the status of pin 6 is NO GND, then do the Fault Isolation Procedure below.
- (f) If the status of pin 1 is NO GND and the status of pin 6 is GND, then there was an intermittent fault.

F. Fault Isolation Procedure

WARNING: MAKE SURE THAT THE DOWNLOCK PINS ARE INSTALLED IN ALL OF THE LANDING GEAR. WITHOUT THE DOWNLOCK PINS, THE LANDING GEAR CAN RETRACT AND CAUSE INJURIES TO PERSONS AND DAMAGE TO EQUIPMENT.

- (1) Make sure the downlock pins are installed in the nose and main landing gear, do this task: Landing Gear Downlock Pins Installation, AMM TASK 32-00-01-480-801.
- (2) If the initial evaluation failed with the lever in the DOWN position, then do this test:
 - (a) Disconnect connector D11990 from the landing gear control lever module.
 - (b) Examine the connector and socket for damage and unwanted material.
 - (c) Move the Landing Gear Control Lever to the DOWN position.
 - (d) Use a multimeter, STD-1231 to measure for continuity between pins 1 and 2 on the landing gear control lever module.
 - 1) If continuity is not found, then do these steps.
 - a) Replace the landing gear control lever. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - b) Do the Repair Confirmation at the end of this task.
 - <1> If the repair confirmation is not satisfactory, then continue.
 - If there is continuity, then continue.
- 3) If the initial evaluation failed with the lever in the UP position, then do this test:
 - (a) Remove the connector D11990 from the landing gear control lever module.
 - (b) Examine the connector and socket for damage and unwanted material.
 - (c) Move the Landing Gear Control Lever to the UP or OFF position.
 - (d) Use a multimeter, STD-1231 to measure for continuity between pins 1 and 3 on the landing gear control lever module.
 - 1) If continuity is not found, then do these steps.
 - a) Replace the landing gear control lever. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801

AKS ALL



- b) Do the Repair Confirmation at the end of this task.
 - <1> If the repair confirmation is not satisfactory, then continue.
- 2) If there is continuity, then continue.
- (4) Do this check of the wiring:
 - (a) Use a multimeter, STD-1231 to measure for continuity between pin 1 on the connector D11990 and structure ground.
 - (b) If the continuity is not found, then do these steps:
 - 1) Repair the wiring between the connector and structure ground.
 - 2) Re-connect connector D11990 to the landing gear control lever module.
 - 3) Do the Repair Confirmation at the end of this task.
 - (c) If there is continuity, then continue.
- (5) Do this test of the PSEU:
 - (a) Disconnect connector D10982 from the PSEU.
 - (b) Examine the connector and socket for damage and unwanted material.
 - (c) Show the input status for these landing gear control lever switch inputs on the PSEU display:
 - 1) D10982 pin 1
 - 2) D10982 pin 6
 - (d) If the status of either pin is GND, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the post installation test in the PSEU installation procedure.
 - 3) If the test operates correctly, then you corrected the fault.
 - (e) If the status of both pins is NO GND, then continue.
 - (f) Ground pins 1 and 6 on the PSEU with jumpers connected to structure ground.
 - (g) Show the input status for these landing gear control lever switch inputs on the PSEU display:
 - 1) D10982 pin 1
 - 2) D10982 pin 6
 - (h) If the status of either pin is NO GND, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the post installation test in the PSEU installation procedure.
 - 3) If the test operates correctly, then you corrected the fault.
 - (i) If the status of both pins is GND, then continue.

AKS ALL 32-61 TASK 809



- (6) Repair the wiring between the PSEU and landing gear control lever module.
 - (a) Re-connect the connectors on the PSEU and landing gear control lever module.
 - (b) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the PSEU:
 - (a) Put the landing gear control lever in the UP position.
 - (b) Put the landing gear control lever in the DOWN position.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.



810. Landing Gear Position Light Fault (System 1) - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-66001 L GRN LT 1 FAULT
 - (b) 32-66002 NOSE GRN LT 1 FLT
 - (c) 32-66003 R GRN LT 1 FLT
 - (d) 32-66004 L RED LT 1 FLT
 - (e) 32-66005 NOSE RED LT 1 FLT
 - (f) 32-66006 R RED LT 1 FLT
- (2) These maintenance messages show a fault with the landing gear indicator lights on the landing gear module. Each light has a corresponding fault message.

B. Possible Causes

- (1) Landing gear module, P2-3
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
Ε	12	C00314	INDICATOR MASTER DIM SECT 2
F	11	C00317	INDICATOR MASTER DIM SECT 5

D. Related Data

- (1) (SSM 32-61-11)
- (2) (SSM 33-18-24)
- (3) (WDM 32-64-11)
- (4) (WDM 33-18-24)

32-61 TASKS 809-810

EFFECTIVITY AKS ALL

Page 236 Jun 15/2016



E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the switch light:
 - (a) For maintenance message 32-66001, push the left gear green light on the landing gear module.
 - (b) For maintenance message 32-66002, push the nose gear green light on the landing gear module.
 - (c) For maintenance message 32-66003, push the right gear green light on the landing gear module.
 - (d) For maintenance message 32-66004, push the left gear red light on the landing gear module.
 - (e) For maintenance message 32-66005, push the nose gear red light on the landing gear module.
 - (f) For maintenance message 32-66006, push the right gear red light on the landing gear module.
- (2) If the light does not come on, then do these steps:
 - (a) Replace the indicator light.
 - (b) Push the indicator again.
 - (c) If the light comes on, then you corrected the fault.
 - (d) If the light does not come on, then do these steps:
 - 1) Remove the connector D11732 from the landing gear module. Do the applicable steps in (AMM TASK 32-31-11-020-801) to remove the connector.
 - 2) For maintenance messages 32-66001, 32-66002, and 32-66003, measure the voltage between pin 21 on the connector and ground.
 - 3) For maintenance messages 32-66004, 32-66005, and 32-66006, measure the voltage between pin 26 on the connector and ground.
 - 4) If you measure 16 or 28 VDC at the pin then do these steps:
 - a) Replace the landing gear module. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - b) Push the master dim and test switch.
 - c) If the light comes on, then you corrected the fault.
 - 5) If you do not measure 16 or 28 VDC at the pin, then do a wiring check between these pins on connector D11732 and the applicable circuit breaker:

AKS ALL 32-61 TASK 810



Table 205

MAINTENANCE MESSAGE	CIRCUIT BREAKER	P2-3 CONNECTOR
32-66001	C317	
32-66002	P6-3 F11	D11732
32-66003	term 1	 pin 21
32-66004	C314	
32-66005	P6-3 E12	D11732
32-66006	term 1	 pin 26

- 6) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector on the landing gear module.
 - c) Push the master dim and test switch.
 - d) If the light comes on, then you corrected the fault.
- (3) If the light comes on, then do these steps:
 - (a) Remove the connector D10982 from the PSEU.
 - (b) Measure the voltage between structure ground and the applicable pin:

Table 206

MAINTENANCE MESSAGE	PSEU D10982
32-66001	pin 34
32-66002	pin 36
32-66003	pin 26
32-66004	pin 59
32-66005	pin 8
32-66006	pin 25

- (c) If you measure 16 or 28 VDC at the pin, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the post installation test in the PSEU installation procedure.
 - 3) If the test operates correctly, then you corrected the fault.
- (d) If you do not measure 16 or 28 VDC at the pin, then continue.
- (4) Do this wiring test between the PSEU and landing gear module:
 - (a) Remove the connector D11732 from the landing gear module. Do the applicable steps in (AMM TASK 32-31-11-020-801) to remove the connector.
 - (b) Do a check of the wiring between these pins:

AKS ALL

EFFECTIVITY —



Table 207

MAINTENANCE MESSAGE	PSEU CONNECTOR D10982	P2-3 CONNECTOR D11732
32-66001	pin 34	 pin 23
32-66002	pin 36	 pin 9
32-66003	pin 26	 pin 22
32-66004	pin 59	 pin 19
32-66005	pin 8	 pin 30
32-66006	pin 25	 pin 31

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the landing gear module.
 - 3) Re-connect the connector on the PSEU.
 - Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 5) If you do not find the maintenance message, then you corrected the fault.



811. Landing Gear Position Green Light Fault (System 2) - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-66011 L GRN LT 2 FAULT
 - (b) 32-66012 NOSE GRN LT 2 FLT
 - (c) 32-66013 R GRN LT 2 FLT
- (2) These maintenance messages show a problem with the Landing Gear Position Lights on the P5 Overhead Panel. Each Light is associated with a maintenance message.

B. Possible Causes

- (1) Indicator Light
- (2) Switch Light
- (3) Proximity Switch Electronics Unit (PSEU), M2061
- (4) Wiring

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	Col	<u>Number</u>	<u>Name</u>
F	13	C01179	INDICATOR MASTER DIM SECT 7

D. Related Data

- EFFECTIVITY -

- (1) SSM 32-61-12
- (2) SSM 33-18-42
- (3) WDM 32-64-12

32-61 TASKS 810-811

AKS ALL

Page 239 Jun 15/2016



(4) WDM 33-18-42

E. Initial Evaluation

- (1) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show on the EXISTING FAULTS Display, then there was an intermittent problem.
 - (b) If the maintenance message shows on the EXISTING FAULTS Display, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the Switch Light:
 - (a) For maintenance message 32-66011, push the Left Gear Green Light on the P5 Overhead Panel.
 - (b) For maintenance message 32-66012, push the Nose Gear Green Light on the P5 Overhead Panel.
 - (c) For maintenance message 32-66013, push the Right Gear Green Light on the P5 Overhead Panel.
- (2) If the Light does not come ON, then do these steps:
 - (a) Replace the Indicator Light.
 - (b) Push the indicator again.
 - (c) If the Light comes ON, then you corrected the problem.
 - (d) If the Light does not come ON, then do these steps:
 - 1) Measure the voltage at pin 1 on the Light Switch Socket (WDM 33-18-42).
 - 2) If you measure 16 or 28V DC at the pin, then do these steps:
 - a) Replace the Switch Light.
 - b) Push the Switch Light.
 - c) If the Light comes ON, then you corrected the problem.
 - 3) If you do not measure 16 or 28 VDC at the pin, then do a wiring check between these pins:

Table 208

MAINTENANCE MESSAGE	CIRCUIT BREAKER	SWITCH LIGHT
	C1179	
	P6-3 F13	L482
32-66011	term 1	 pin 1
	C1179	
	P6-3 F13	L1001
32-66012	term 1	 pin 1
	C1179	
	P6-3 F13	L481
32-66013	term 1	 pin 1

4) If you find a problem with the wiring, then do these steps:

AKS ALL



- a) Repair the wiring.
- b) Push the Switch Light.
- c) If the Light comes ON, then you corrected the problem.
- (3) If the Light comes ON, then do these steps:
 - (a) Remove the connector, D10984, from the PSEU (WDM 32-64-12).
 - (b) Measure the voltage between structure ground and the applicable pin:

Table 209

MAINTENANCE MESSAGE	PSEU D10984
32-66011	pin 32
32-66012	pin 7
32-66013	pin 26

- (c) If you measure 16 or 28V DC at the pin, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - If the maintenance message does not show on the EXISTING FAULTS Display, then you corrected the problem.
- (d) If you do not measure 16 or 28V DC at the pin, then continue.
- (4) Do a wiring check between the PSEU and Switch Light as follows:

Table 210

MAINTENANCE MESSAGE	PSEU CONNECTOR D10984		SWITCH LIGHT
			L482
32-66011	pin 32		pin 2
			L1001
32-66012	pin 7		pin 2
			L481
32-66013	pin 26		pin 2

- (a) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.

EFFECTIVITY

AKS ALL

32-61 TASK 811

Page 241 Jun 15/2016



 If the maintenance message does not show on the EXISTING FAULTS Display, then you corrected the problem.

——— END OF TASK ———

812. Landing Gear Position Red Light Fault (System 2) - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-66014 L RED LT 2 FLT
 - (b) 32-66015 NOSE RED LT 2 FLT
 - (c) 32-66016 R RED LT 2 FLT
- (2) These maintenance messages show a problem with the Landing Gear Position Fault Lights on the P5 Overhead Panel. Each Light is associated with a maintenance message.

B. Possible Causes

- (1) Indicator Light
- (2) Landing Gear Module, P2-3
- (3) Wiring
- (4) Proximity Switch Electronics Unit (PSEU), M2061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
F	11	C00317	INDICATOR MASTER DIM SECT 5

D. Related Data

- (1) SSM 32-61-12
- (2) SSM 33-18-42
- (3) WDM 32-64-12
- (4) WDM 33-18-42

E. Initial Evaluation

- (1) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show on the EXISTING FAULTS Display, then there was an intermittent problem.
 - (b) If the maintenance message shows on the EXISTING FAULTS Display, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check of the Switch Light:
 - (a) For maintenance message 32-66014, push the Left Gear Red Light on the Landing Gear Module.
 - (b) For maintenance message 32-66015, push the Nose Gear Red Light on the Landing Gear Module.
 - (c) For maintenance message 32-66016, push the Right Gear Red Light on the Landing Gear Module.

- EFFECTIVITY

AKS ALL

32-61 TASKS 811-812

Page 242 Jun 15/2016



- (2) If the Light does not come ON, then do these steps:
 - (a) Replace the Indicator Light.
 - (b) Push the indicator again.
 - (c) If the Light comes ON, then you corrected the problem.
 - (d) If the Light does not come ON, then do these steps:
 - 1) Remove the connector, D11732, from the Landing Gear Module (WDM 33-18-42) (AMM TASK 32-31-11-020-801).
 - 2) Measure the voltage between pin 26 on the connector and ground.
 - 3) If you measure 16 or 28V DC at the pin, then do these steps:
 - a) Replace the Landing Gear Module. These are the tasks:
 - Landing Gear Control Lever Module Removal, AMM TASK 32-31-11-020-801
 - Landing Gear Control Lever Module Installation, AMM TASK 32-31-11-400-801
 - b) Push the Master Dim and Test Switch.
 - c) If the Light comes ON, then you corrected the problem.
 - 4) If you do not measure 16 or 28V DC at the pin, then do a wiring check between these pins:

Table 211

MAINTENANCE MESSAGE	CIRCUIT BREAKER	P2-3 CONNECTOR
32-66014	C314	
32-66015	P6-3 E12	D11732
32-66016	term 1	 pin 26

- 5) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector on the Landing Gear Module.
 - c) Push the Master Dim and Test Switch.
 - d) If the Light comes ON, then you corrected the problem.
- (3) If the Light comes ON, then do these steps:
 - (a) Remove the connector, D10984, from the PSEU (WDM 32-64-12).
 - (b) Measure the voltage between structure ground and the applicable pin:

Table 212

MAINTENANCE MESSAGE	PSEU D10984
32-66014	pin 16
32-66015	pin 8
32-66016	pin 25

(c) If you measure 16 or 28V DC at the pin, then do these steps:

AKS ALL



- 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
- 2) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - a) If the maintenance message does not show on the EXISTING FAULTS Display, then you corrected the problem.
- (d) If you do not measure 16 or 28V DC at the pin, then continue.
- (4) Do a wiring check between the PSEU and Landing Gear Module:
 - (a) Remove the connector, D11732, from the Landing Gear Module (AMM TASK 32-31-11-020-801).
 - (b) Do a check of the wiring between these pins:

Table 213

MAINTENANCE MESSAGE	NTENANCE MESSAGE PSEU CONNECTOR D10984		P2-3 CONNECTOR D11732
32-66014	pin 16		pin 4
32-66015	pin 8		pin 13
32-66016	pin 25		pin 25

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the Landing Gear Module.
 - 3) Re-connect the connector on the PSEU.
 - 4) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - If the maintenance message does not show on the EXISTING FAULTS Display, then you corrected the problem.

——— END OF TASK ———

813. Nose Steering Relay Fault - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 32-06016 NGS RLY FLT
- (2) This maintenance message shows a fault with an air/ground relay output.

B. Possible Causes

- (1) Wiring problem
- (2) System 2 air/ground relay, R596
- (3) Proximity switch electronics unit (PSEU), M02061

EFFECTIVITY —

AKS ALL

32-61 TASKS 812-813

Page 244 Jun 15/2016



C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	15	C01355	LANDING GEAR AIR/GND SYS 2

D. Related Data

- (1) (SSM 32-31-12)
- (2) (WDM 32-31-12)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do these steps to replace the system 2 air/ground relay:
 - (a) Replace the relay.
 - (b) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (c) If you do not find the maintenance message, then you corrected the fault.
 - (d) If you find the maintenance message, then continue.
- (2) Do this check for power to the relay:
 - (a) Remove the relay R596 from the J20 panel.
 - (b) Examine the connectors and sockets for damage and unwanted material.
 - (c) Measure the voltage between pin X1 on the relay socket and structure ground.
 - (d) If you do not measure 28 VDC at the pin, then do these steps:
 - 1) Do a wiring check between these pins of the circuit breaker C314 and connector D11026 for the relay R596:

C314 P6-3 E12	D11026
term 1	pin X1

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-install the relay.
 - c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - d) If you do not find the maintenance message, then you corrected the fault.
- (e) If you measure 28 VDC at the pin, then continue.
- (3) Do this wiring check between the relay and PSEU:
 - (a) Remove the connector D11140 from the PSEU.

AKS ALL 32-61 TASK 813



(b) Do a check for continuity between these pins of the connector D11026 for the relay R596 and connector D11140 for the PSEU:

D11026	D11140
pin X2	 pin 24

- (c) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 4) If you do not find the maintenance message, then you corrected the fault.
- (d) If you do not find a problem with the wiring, then continue.
- (4) Do these steps to replace the PSEU:
 - (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.



815. Flap Landing Warning Switch Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-62009 LDG FLAP A FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(b) 32-62109 LDG FLAP A FAULT

AKS ALL

(c) 32-62010 LDG FLAP B FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

(d) 32-62110 LDG FLAP B FAULT

AKS ALL

(e) 32-62014 LDG FLAP DISAGREE

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (2) These maintenance messages show a disagreement between the flap landing warning switch and air/ground mode. One of these conditions exist:
 - (a) For maintenance message 32-62009 the flap landing warning switch indicates that landing flaps A is not in a landing configuration when the airplane is landing.
 - (b) For maintenance message 32-62109 the flap landing warning switch indicates that landing flaps A is in a landing configuration when the airplane is in the air for more than two minutes and is not landing.

EFFECTIVITY AKS ALL

32-61 TASKS 813-815

Page 246 Jun 15/2016



AKS ALL; AIRPLANES WITH PSEU -5 OR -6 (Continued)

- (c) For maintenance message 32-62010 the flap landing warning switch indicates that landing flaps B is not in a landing configuration when the airplane is landing.
- (d) For maintenance message 32-62110 the flap landing warning switch indicates that landing flaps B is in a landing configuration when the airplane is in the air for more than two minutes and is not landing.
- (e) For maintenance message 32-62014 these inputs to the PSEU: LANDING FLAPS A and LANDING FLAPS B do not agree.

AKS ALL

B. Possible Causes

- (1) Flap landing warning switch, S138
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

E. Initial Evaluation

- (1) Do this test of the flap position switch in the UP position:
 - (a) Put the flaps in the FLAP UP position. Do this task: Leading Edge Flaps and Slats Retraction, AMM TASK 27-81-00-860-804.
 - (b) Show the input status for these flap position inputs on the PSEU display:

NOTE: If you need instructions on how to show the input status, review task: (32-09 TASK 821).

- 1) D10984 pin 48
- 2) D10984 pin 49
- (c) If the status of either pin is GND, then do the Fault Isolation Procedure Flaps Up below.
- (d) If the status of both pins is NO GND, then continue.
- (2) Do this test of the flap position switch in the DOWN position:
 - (a) Put the flaps in the fully down FLAP DOWN position. To do this, do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.
 - (b) Show the input status for these flap position inputs on the PSEU display:
 - 1) D10984 pin 48
 - 2) D10984 pin 49
 - (c) If the status of either pin is NO GND, then do the Fault Isolation Procedure Flaps Down below.

AKS ALL



(d) If the status of both pins is GND, then you had an intermittent fault.

NOTE: The switch S138 is adjusted to actuate (provide ground) at between 10 and 15 units Flaps Down.

1) Return the flaps to their usual condition.

F. Fault Isolation Procedure - Flaps Up (Switch S138 is in Open Position)

- (1) Do this test of the flap landing warning switch:
 - (a) Disconnect the D46040P connector.
 - (b) Examine the connector and pins for damage.
 - (c) Show the input status for these flap position inputs on the PSEU display:

NOTE: If you need instructions on how to show the input status, review task: (Proximity Switch Electronics Unit (PSEU) Input Monitoring Procedure, 32-09 TASK 821).

- 1) D10984 pin 48
- 2) D10984 pin 49
- (d) If status of both pins are NO GND, replace S138 Flap Landing Gear Switch.
- (e) If PSEU returns GND for either input, then continue.
- (2) Do this test of the PSEU:
 - (a) Disconnect connector D10984 from the PSEU.
 - (b) Examine the connector and pins for damage.
 - (c) Show the input status for the flap position inputs on the PSEU display:
 - 1) D10984 pin 48
 - 2) D10984 pin 49
 - (d) If the status of either pin is GND, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Re-connect the connector to the flap landing warning switch.
 - 3) Do the post installation test in the PSEU installation procedure.
 - 4) If the test operates correctly, then you corrected the fault.

G. Fault Isolation Procedure - Flaps Down (Switch S138 is in Closed Position)

- (1) Do this test of the flap landing warning switch:
 - (a) Disconnect the D46040P connector from the switch.
 - (b) Examine the connector and pins for damage.
 - (c) Attach D46040P connector pins 8 and 10 to structure ground.
 - (d) Show the input status for these flap position inputs on the PSEU display:

NOTE: If you need instructions on how to show the input status, see this task: (Proximity Switch Electronics Unit (PSEU) Input Monitoring Procedure, 32-09 TASK 821).

- 1) D10984 pin 48
- 2) D10984 pin 49

AKS ALL



- (e) If the PSEU returns GND, then do these steps:
 - 1) Replace the flap landing warning switch. These are the tasks:
 - Flap Landing Warning Switch Removal, AMM TASK 31-51-01-000-801
 - Flap Landing Warning Switch Installation, AMM TASK 31-51-01-400-801
 - 2) Do the Repair Confirmation at the end of this task.
 - (f) If the PSEU returns NO GND for either input, then continue.
- (2) Do this test of the PSEU:
 - (a) Disconnect connector D10984 from the PSEU.
 - (b) Examine the connector and pins for damage.
 - (c) Ground D10984 pins 48 and 49 on the PSEU with jumpers attached to structure ground.
 - (d) Show the input status for the flap position inputs on the PSEU display:
 - 1) D10984 pin 48
 - 2) D10984 pin 49
 - (e) If the status of either pin is NO GND, then do these steps:
 - 1) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - 2) Re-connect the connector to the flap landing warning switch.
 - 3) Do the post installation test in the PSEU installation procedure.
 - If the test operates correctly, then you corrected the fault.
 - (f) If the status of both pins is NO GND, then do these steps:
 - 1) Repair the wiring between the PSEU and flap landing warning switch.
 - Re-connect connector D10984 to the PSEU.
 - 3) Re-connect the connector to the flap landing warning switch.
 - 4) Do the Repair Confirmation at the end of this task.

H. Repair Confirmation

AKS ALL

- (1) Do this test of the flap position switch:
 - (a) Put the flaps in the fully down FLAP DOWN position. Do this task: Leading Edge Flaps and Slats Extension, AMM TASK 27-81-00-860-803.
 - (b) Put the flaps in the FLAP UP position. Do this task: Leading Edge Flaps and Slats Retraction, AMM TASK 27-81-00-860-804.
 - (c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.

	OF TA	CV	



816. Landing Warning Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-66018 LDG WARN FAULT
- (2) This maintenance message shows a problem with the aural warning module.

B. Possible Causes

- (1) Aural warning module, M315
- (2) Wiring problem
- (3) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	Number	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this check for power to the aural warning module:
 - (a) Remove the connector D940 from the aural warning module.
 - (b) Measure the voltage at pin 5 of the connector.
 - (c) If you do not measure 28 VDC at the pin, then do these steps:
 - Do a check for continuity between these pins of the circuit breaker C451 and connector D940 of the aural warning module:

C451 P	6 D18	D940
term 1		pin 5

- 2) If you find a problem with the wiring, then do these steps:
 - a) Repair the wiring.
 - b) Re-connect the connector on the aural warning module.
 - c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - d) If you do not find the maintenance message, then you corrected the fault.
- (d) If you measure 28 VDC at the pin, then continue.

AKS ALL



- (2) Replace the aural warning module, M315.
 - (a) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (b) If you do not find the maintenance message, then you corrected the fault.
 - (c) If you find the maintenance message, then continue.
- (3) Do this wiring check for the aural warning module:
 - (a) Remove the connector D940 from the aural warning module.
 - (b) Remove the connector D10984 from the PSEU.
 - (c) Do a check for continuity between these pins of connector D940 and D10984:

D940	D10984
pin 2	 pin 53

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-connect the connector on the aural warning module.
 - 4) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 5) If you do not find the maintenance message, then you corrected the fault.
- e) If you do not find a problem with the wiring, then continue.
- (4) Do these steps to replace the PSEU:
 - (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.



818. PSEU Dispatch Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 32-66007 DISPATCH 1 FAULT
 - (b) 32-66010 NO DISP 1 FAULT
 - (c) 32-66017 DISPATCH 2 FAULT
 - (d) 32-66020 NO DISP 2 FAULT
- (2) These maintenance messages indicate a problem with the Flight Recorder and Mach Airspeed Warning Module.
 - (a) For maintenance message 32-66007, the PSEU does not sense the expected load on the DISPATCH FAULT A output.
 - (b) For maintenance message 32-66010, the PSEU does not sense the expected load on the NO DISPATCH FAULT A output.

AKS ALL

32-61 TASKS 816-818



- (c) For maintenance message 32-66017, the PSEU does not sense the expected load on the DISPATCH FAULT B output.
- (d) For maintenance message 32-66020, the PSEU does not sense the expected load on the NO DISPATCH FAULT B output.

B. Possible Causes

- (1) Flight Recorder and Mach Airspeed Warning Module, P5-19
- (2) Wiring
- (3) Resistor, R744
- (4) Auxiliary Dim and Test Module, M1456
- (5) Proximity Sensor Electronics Unit (PSEU), M02061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4
Е	14	C00316	INDICATOR MASTER DIM SECT 4
F	14	C01180	INDICATOR MASTER DIM SECT 8

D. Related Data

- (1) SSM 32-61-21
- (2) SSM 31-52-75
- (3) SSM 33-18-42
- (4) WDM 32-64-21
- (5) WDM 31-52-75
- (6) WDM 33-18-42

E. Initial Evaluation

(1) Cycle this circuit breaker to reset the P5-19 Logic:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
С	14	C01278	MASTER CAUTION ANNUNCIATOR CONT 4

- (2) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show in the EXISTING FAULTS, then there was an intermittent problem.
 - (b) If the maintenance message shows in the EXISTING FAULTS, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Replace the Flight Recorder and Mach Airspeed Warning Module, P5-19.
 - (a) Do the Repair Confirmation at the end of this task.
- (2) Do this wiring check between the P5-19 Module and the PSEU:
 - (a) Remove the connector D483 from the P5-19 Module.
 - (b) For maintenance message 32-66007, remove the connector D11138 from the PSEU.

AKS ALL



- (c) For maintenance message 32-66010, remove the connector D10982 from the PSEU.
- (d) For maintenance message 32-66017, remove the connector D10988 from the PSEU.
- (e) For maintenance message 32-66020, remove the connector D11140 from the PSEU.
- (f) Examine the connector and socket for damage and unwanted material.
- (g) Do a check for continuity between these pins:

Table 214

FAULT	P5-19 MODULE D483	PSEU
		D11138
32-66007	pin 39	 pin 23
		D10982
32-66010	pin 35	 pin 14
		D10988
32-66017	pin 39	 pin 8
		D11140
32-66020	pin 35	 pin 19

(h) For maintenance messages 32-66010 and 32-66020, do a check for continuity between these pins on the PSEU and PSEU Fault Light:

Table 215

FAULT	PSEU FAULT LIGHT	PSEU
		D10982
32-66010	pin 2	 pin 14
		D11140
32-66020	pin 2	 pin 19

- (i) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connectors on the PSEU.
 - 3) Re-connect the connector on the P5-19 Module.
 - 4) Do the Repair Confirmation at the end of this task.
- (j) If you do not find a problem with the wiring, then continue.
- (k) Reconnect the connectors on the PSEU.
- (I) Reconnect the connector on the P5-19 Module.
- (3) For maintenance messages 32-66007 or 32-66017 do this check of the Resistor R744 and associated wiring (WDM 32-64-21):
 - (a) Measure the Resistance between the two terminals on the Resistor Module.
 - (b) If the Resistance is not between 40 and 60 K-ohms, then do these steps:
 - 1) Replace the Resistor.

EFFECTIVITY —

AKS ALL



- 2) Do the Repair Confirmation at the end of this task.
- (c) If the Resistance is between 40 and 60 K-ohms, then continue.
- (d) Remove the connector D483 from the P5-19 Module.
- (e) Do a check for continuity between these pins:

Table 216

RESISTOR MODULE	P5 MODULE
	P5-19 D483
pin A29	 pin 39
	L1331
pin B29	 pin 1

- (f) If you find a problem with the wiring, then do these steps:
 - Repair the wiring.
 - 2) Re-connect the connector on the P5-19 Module.
 - 3) Do the Repair Confirmation at the end of this task..
- (g) If you do not find a problem with the wiring, then continue.
- (h) Re-connect the connector on the P5-19 Module.
- (4) Replace the Auxiliary Dim and Test Module, M1456. This is the task: Annunciator And Dimming Module Module Replacement, AMM TASK 33-18-00-960-805.
 - (a) Do the Repair Confirmation at the end of this task..
- (5) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show in the EXISTING FAULTS, then you corrected the problem.
 - (b) If the maintenance message still shows in the EXISTING FAULTS, then continue the Fault Isolation Procedure at the subsequent step.



822. Landing Warning Inhibit Fault - Fault Isolation

A. Description

EFFECTIVITY

AKS ALL

- (1) This task is for this maintenance message:
 - (a) 32-62011 LDG WARN INHB FLT
- (2) This maintenance message shows a problem with the horn reset switch.

B. Possible Causes

- (1) Horn reset switch, S77
- (2) Wiring problem

32-61 TASKS 818-822

D633A103-AKS

Page 254 Jun 15/2016



(3) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	18	C00451	LANDING GEAR AURAL WARN

D. Related Data

- (1) (SSM 32-61-21)
- (2) (WDM 32-64-21)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.

NOTE: This fault can be caused if the horn reset switch is pushed for greater than 5 seconds. The fault will reset 5 seconds after the switch is released but the PSEU light will remain lit until the PSEU light is reset.

(b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do these steps to replace the horn reset switch:
 - (a) Replace the horn reset switch, S77.
 - (b) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (c) If you do not find the maintenance message, then you corrected the fault.
 - (d) If you find the maintenance message, then continue.
- (2) Do this wiring check for the horn reset switch:
 - (a) Remove the horn reset switch.
 - (b) Remove the connector D10984 from the PSEU.
 - (c) Do a check for continuity between these pins:

HORN RESET	PSEU	
SWITCH	D10984	
pin 3	pin 52	
pin 4	ground	

- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-install the horn reset switch.
 - 4) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 5) If you do not find the maintenance message, then you corrected the fault.
- (e) If you do not find a problem with the wiring, then continue.

32-61 TASK 822

EFFECTIVITY '



- (f) Re-install the horn reset switch.
- (3) Do these steps to replace the PSEU:
 - (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.



823. Altitude Less Than 800 Feet Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 27-62003 ALT L LT 800 FLT

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

- (b) 27-62103 ALT L LT 800 FLT
- (c) 27-62203 ALT L LT 800 FLT

AKS ALL

(d) 27-62004 ALT R LT 800 FLT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (e) 27-62104 ALT R LT 800 FLT
- (f) 27-62204 ALT R LT 800 FLT

AKS ALL

- (g) 27-65001 ALT L LT 800
- (h) 27-65002 ALT R LT 800

AKS ALL: AIRPLANES WITH PSEU -5 OR -6

(2) These maintenance messages show a disagreement between the altitude and air/ground mode.

AKS ALL; AIRPLANES WITH PSEU -6

(a) Maintenance message 27-62003 will be set when the left signal on the flight control computer shows the airplane altitude is more than 800 feet and the airplane is landing or on the ground.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) Maintenance message 27-62103 will be set when the airplane has landed and the left signal on the flight control computer did not indicate altitude is more than 800 ft while the airplane was in the air and it has been at least 2 minutes between takeoff and landing.
- (c) Maintenance message 27-62203 will be set LRU replacement when the left signal on the flight control computer shows that the airplane altitude is more than 800 feet and the right signal on the flight control computer shows that the airplane altitude is less than 800 feet.

32-61 TASKS 822-823

EFFECTIVITY
AKS ALL

Page 256 Jun 15/2016



AKS ALL; AIRPLANES WITH PSEU -6

(d) Maintenance message 27-62004 will be set when the right signal on the flight control computer shows the airplane altitude is more than 800 feet and the airplane is landing or on the ground.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (e) Maintenance message 27-62104 will be set when the airplane has landed and the right signal on the flight control computer did not indicate altitude is more than 800 ft while the airplane was in the air and it has been at least 2 minutes between takeoff and landing.
- (f) Maintenance message 27-62204 will be set LRU replacement when the right signal on the flight control computer shows that the airplane altitude is more than 800 feet and the left signal on the flight control computer shows that the airplane altitude is less than 800 feet.
- (g) Maintenance message 27-65001 will set when the left signal from the flight control computer to the PSEU has either failed open or closed during the current flight leg or during speedbrake test.
- (h) Maintenance message 27-65002 will set when the right signal from the flight control computer to the PSEU has either failed open or closed during the current flight leg or during speedbrake test.

AKS ALL

B. Possible Causes

- (1) Wiring problem
- (2) FCC, M1875 (A) or M1876 (B)
- (3) Radio Altimeter Transmitter/Receiver, M1735 (1) or M1736 (2)
- (4) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

(1) This is the primary circuit breaker related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 27-62-21)
- (2) (WDM 27-62-21)

E. Initial Evaluation

- (1) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this test of the FCC:
 - (a) Do the EXISTING FAULTS test on the FCC BITE. Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.

AKS ALL



AKS ALL; AIRPLANES WITH PSEU -5 OR -6

NOTE: For maintenance message 27-62003, 27-62103, 27-62203 or 27-65001, do the test on the FCC A. For maintenance message 27-62004, 27-62104, 27-62204 or 27-65002, do the test on the FCC B.

AKS ALL

- (b) If you find maintenance messages, then do these steps:
 - 1) Do the FIM procedures referenced by the messages.
 - Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 3) If you do not find the maintenance message, then you corrected the fault.
- (c) If you do not find maintenance messages, then continue.
- (2) Do this wiring check between the PSEU and FCC:

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (a) For maintenance message 27-62003, 27-62103, 27-62203 or 27-65001, remove the FCC A.
- (b) For maintenance message 27-62004, 27-62104, 27-62204 or 27-65002, remove the FCC B.

AKS ALL

EFFECTIVITY

AKS ALL

- (c) To remove the FCC, do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
- (d) Remove the connector D10986 from the PSEU.
- (e) Examine the connectors and sockets for damage and unwanted material.
- (f) If you removed the FCC A, do a check for continuity between these pins:

FCC A	PSEU
D10135A	D10982
pin C1	pin 17

(g) If you removed the FCC B, do a check for continuity between these pins:

FCC B	PSEU	
D10137	Α	D10984
pin C1		pin 17

- (h) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-install the FCC. To install the FCC, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - 4) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 5) If you do not find the maintenance message, then you corrected the fault.
- (i) If you did not find a problem with the wiring, then continue.



- (j) Re-install the FCC. To install the FCC, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
- (3) Do these steps to replace the PSEU:
 - (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - (c) If the test operates correctly, then you corrected the fault.



824. Ground Spoiler Pressure Fault - Fault Isolation

A. Description

- (1) This task is for these maintenance messages:
 - (a) 31-52008 GS PRESS A FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) 31-52108 GS PRESS A FAULT
- (c) 31-52208 GS PRESS A FAULT

AKS ALL

(d) 31-52009 GS PRESS B FAULT

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (e) 31-52109 GS PRESS B FAULT
- (f) 31-52209 GS PRESS B FAULT

AKS ALL

- (g) 31-53001 GS PRESS A GT 750
- (h) 31-53002 GS PRESS B GT 750
- (i) 31-55001 GS PRESS A
- (j) 31-55002 GS PRESS B

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (2) These maintenance messages show a problem with the ground spoiler pressurization.
 - (a) Maintenance messages 31-52008 and 31-52009 show that the ground spoiler is pressurized in the air.
 - (b) Maintenance messages 31-52108 and 31-52109 show that the ground spoiler is not pressurized when commanded during landing.
 - (c) Maintenance messages 31-52208 and 31-52209 show that ground spoiler pressure A and B disagree during LRU replacement test.
 - (d) Maintenance messages 31-53001 and 31-53002 are not faults. These are the cause of the last takeoff warning.
 - (e) Maintenance messages 31-55001 and 31-55002 show the input from the pressure switch did not change state since the last takeoff.

AKS ALL

EFFECTIVITY = AKS ALL

32-61 TASKS 823-824



B. Possible Causes

- (1) Fractured Ground Spoiler Interlock Valve Cable
- (2) Ground spoiler up pressure switch, S1049
- (3) Wiring problem
- (4) Proximity switch electronics unit (PSEU), M02061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

- (1) BITE Diagram (Figure 301)
- (2) (SSM 27-62-21)
- (3) (SSM 31-53-11)
- (4) (WDM 27-62-21)
- (5) (WDM 31-53-11)

E. Initial Evaluation

- (1) Do this test of the ground spoiler up pressure switch:
 - a) Do this test with the ground spoilers in the down position:
 - 1) Show the input status for these pressure switch outputs on the PSEU display:

NOTE: If you need instructions on how to show the input status, see this task: (32-09 TASK 821).

- a) D10986 pin 14
- b) D10986 pin 29
- 2) Make sure that the status of pin 14 is NO GND.
- 3) Make sure that the status of pin 29 is GND.
- 4) If the status of the pins are not correct, then do the Fault Isolation Procedure below.
- 5) If the status of the pins are correct, then continue.
- (b) Do this test with the ground spoilers in the up position:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.
- Make sure the airplane is on its landing gear or compress the right main gear strut a minimum of 5 inches.

NOTE: This will open the ground spoiler interlock valve.

AKS ALL



- 3) Slowly move the speed brake lever to the UP position.
- 4) Make sure the ground spoilers extend.
- 5) Show the input status for these pressure switch outputs on the PSEU display:
 - a) D10986 pin 14
 - b) D10986 pin 29
- 6) Make sure pin 14 is GND.
- 7) Make sure pin 29 is NO GND.
- 8) Do this task: Remove Pressure from the Speed Brake Hydraulic Systems A and B, AMM TASK 27-62-00-800-802.
- 9) If the status of the pins are correct, then there was an intermittent fault.
- 10) If the status of the pins are not correct, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you find a problem with the Ground Spoiler Interock Valve Cable, then do these steps:
 - (a) Replace the Ground Spoiler Interock Valve Cable, these are the tasks:
 - AMM TASK 27-62-51-000-801
 - AMM TASK 27-62-51-400-801
 - (b) Do the Repair Confirmation at the end of this task.
- (2) Do this test of the pressure switch:
 - (a) Disconnect the connector from the pressure switch.
 - (b) Examine the connector and socket for damage and unwanted material.
 - (c) Do this test of pin 1 on the connector:
 - 1) Show the input status for connector D10986 pin 14 on the PSEU display.
 - 2) Make sure that the input status is NO GND.
 - 3) Ground pin 1 with a jumper wire.
 - 4) Make sure that the input status is GND.
 - 5) If the test does not operate correctly, then do the test of the PSEU below.
 - 6) If the test operates correctly, then continue.
 - (d) Do this test of pin 3 on the connector:
 - 1) Show the input status for connector D10986 pin 29 on the PSEU display.
 - 2) Make sure that the input status is NO GND.
 - 3) Ground pin 3 with a jumper wire.
 - 4) Make sure that the input status is GND.
 - 5) If the test operates correctly, then do these steps:
 - a) Replace the switch, S1049.
 - b) Do the Repair Confirmation at the end of this task.
 - 6) If the test does not operate correctly, then continue.
- (3) Do this test of the PSEU:
 - (a) Remove the connector D10986 from the PSEU.
 - (b) Examine the connector and socket for damage and unwanted material.

AKS ALL



- (c) Do this test of pin 14 on the connector:
 - 1) Show the input status for connector D10986 pin 14 on the PSEU display.
 - 2) Make sure that the input status is NO GND.
 - 3) Ground pin 14 with a jumper wire.
 - 4) Make sure that the input status is GND.
 - 5) If the test does not operate correctly, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Re-connect the connector to the pressure switch.
 - c) Do the Repair Confirmation steps below.
 - 6) If the test operates correctly, then continue.
- (d) Do this test of pin 29 on the connector:
 - 1) Show the input status for connector D10986 pin 29 on the PSEU display.
 - 2) Make sure that the input status is NO GND.
 - 3) Ground pin 29 with a jumper wire.
 - 4) Make sure that the input status is GND.
 - 5) If the test does not operate correctly, then do these steps:
 - a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - b) Re-connect the connector to the pressure switch.
 - c) Do the Repair Confirmation steps below.
 - If the test operates correctly, then continue.
- (4) Do this check of the wiring between the PSEU and pressure switch:
 - (a) Do a check of the wiring between these pins:

PRESSURE SWITCH S1049	PSEU
D11730	D10986
pin 1	pin 14
pin 2	ground
pin 3	pin 29

- (b) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-connect the connector on the pressure switch.

AKS ALL



4) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do this test of the ground spoiler up pressure switch:
 - (a) If it is necessary, re-connect the connectors on the PSEU and ground spoiler up pressure switch.
 - (b) Operate the ground spoilers:

WARNING: MAKE SURE THAT PERSONS AND EQUIPMENT ARE CLEAR OF ALL CONTROL SURFACES BEFORE YOU SUPPLY HYDRAULIC POWER. AILERONS, RUDDERS, ELEVATORS, FLAPS, SLATS, SPOILERS, LANDING GEAR, AND THRUST REVERSERS CAN MOVE QUICKLY WHEN YOU SUPPLY HYDRAULIC POWER. THIS CAN CAUSE INJURY TO PERSONS AND DAMAGE TO EQUIPMENT.

- 1) Do this task: Speed Brake Hydraulic Systems A and B Pressurization, AMM TASK 27-62-00-800-801.
- Make sure the airplane is on its landing gear or compress the right main gear strut a minimum of 5 inches.

NOTE: This will open the ground spoiler interlock valve.

- 3) Slowly move the speed brake lever to the UP position.
- 4) Make sure the ground spoilers extend.
- 5) Slowly move the speed brake lever to the DOWN position.
- 6) Make sure the ground spoilers come down.
- 7) Do this task: Remove Pressure from the Speed Brake Hydraulic Systems A and B, AMM TASK 27-62-00-800-802.
- (c) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.



825. Ground Spoiler Interlock Valve Closed Sensor Problem - Fault Isolation

A. Description

- (1) This task is for this maintenance message:
 - (a) 31-51001 GSBV CL FAULT
 - 1) Message 31-51001 is set when the Ground Spoiler Interlock Valve CLOSED Sensor indicates that the valve is not closed and the airplane is in the air.

AKS ALL; AIRPLANES WITH PSEU -5 OR -6

- (b) 31-51101 GSBV CL FAULT
 - 1) Message 31-51101 is set when the Ground Spoiler Interlock Valve CLOSED Sensor indicates that the valve is closed and the airplane is on the ground.

AKS ALL

(2) This maintenance message indicates a problem with the Ground Spoiler Interlock Valve CLOSED Sensor.

AKS ALL

32-61 TASKS 824-825



B. Possible Causes

- (1) Fractured Ground Spoiler Interlock Valve Cable
- (2) Defective/Out of Adjustment Ground Spoiler Interlock Valve CLOSED Sensor, S1050
- (3) Wiring
- (4) Proximity Switch Electronics Unit (PSEU), M2061
- (5) Ground Spoiler Interlock Valve Out of Adjustment

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
D	1	C01399	PSEU PRI
D	2	C01400	PSEU ALTN

D. Related Data

AKS ALL

(1) WDM 31-53-11

E. Initial Evaluation

- (1) Do a check of the effective gap of the Ground Spoiler Interlock Valve CLOSED Proximity Sensor. This is the task: Ground Spoiler Interlock Valve Proximity Sensor Functional Test, AMM TASK 27-62-61-400-806.
 - (a) If the maintenance message does not show, then there was an intermittent problem.
 - (b) If the maintenance message shows, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) If you find a problem with the Ground Spoiler Interlock Valve Cable, then do these steps:
 - (a) Replace the Ground Spoiler Interlock Valve Cable, these are the tasks:
 - Ground Spoiler Interlock Valve Cable Removal, AMM TASK 27-62-51-000-801
 - Ground Spoiler Interlock Valve Cable Installation, AMM TASK 27-62-51-400-801
 - (b) Do the Repair Confirmation at the end of this task.
- (2) Verify that the Ground Spoiler Interlock Valve CLOSED Sensor Target fully contacts the Ground Spoiler Interlock Valve Close Sensor, S1050.
 - (a) If the Target does not fully contact the Proximity Sensor then do the adjustment procedure in this task: Ground Spoiler Interlock Valve Proximity Sensor Installation, AMM TASK 27-62-61-400-803.
 - (b) Do the Repair Confirmation at the end of this task.
- (3) Replace the Ground Spoiler Interlock Valve CLOSED Sensor, S1050. These are the tasks:
 - Ground Spoiler Interlock Valve Proximity Sensor Removal, AMM TASK 27-62-61-000-802
 - Ground Spoiler Interlock Valve Proximity Sensor Installation, AMM TASK 27-62-61-400-803
 - (a) Do the Repair Confirmation at the end of this task.
- (4) Do this wiring check between the PSEU and the Interlock Valve CLOSED Sensor (WDM 31-53-11):
 - (a) Remove the connector from the Pressure Switch.
 - (b) Remove the connector D11142 from the PSEU.

EFFECTIVITY 32-61 TASK 825



- (c) Examine the connectors and sockets for damage and unwanted material.
- (d) Do a check for continuity between these pins:

_)11142
pin 1 p	in 20
pin 2	in 8
S1050 pin 4	ıround

- (e) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Re-connect the connector on the PSEU.
 - 3) Re-connect the connector on the Valve CLOSED Sensor.
 - 4) Do the Repair Confirmation at the end of this task.
- (f) If you did not find a problem with the wiring, then continue.
- (g) Re-connect the connector on the Valve CLOSED Sensor.
- (5) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (a) Do the Repair Confirmation at the end of this task.
- (6) Do the Ground Spoiler Interlock Valve Adjustment, AMM TASK 27-62-00-820-803.
 - (a) Do the Repair Confirmation at the end of this task.

G. Repair Confirmation

- (1) Do the Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If the maintenance message does not show in the EXISTING FAULTS, then you corrected the problem.
 - (b) If the maintenance message shows in the EXISTING FAULTS, then continue the Fault Isolation Procedure at the subsequent step.



AKS ALL; AIRPLANES WITH PSEU -6

826. Altitude Less Than 200 Feet and Less Than 800 Feet Fault

A. Description

- (1) This task is for this maintenance messages:
 - (a) 32-62777 L/R ALT FAIL
- (2) This maintenance messages shows a disagreement between the altitude and air/ground mode.
 - (a) Maintenance message 32-62777 will be set if all of these occur:
 - The left signal on the flight control computer shows that the airplane altitude is more than 200 feet.

AKS ALL

32-61 TASKS 825-826



- The right signal on the flight control computer shows that the airplane altitude is more than 200 feet.
- The left signal on the flight control computer shows that the airplane altitude is more than 800 feet.
- The right signal on the flight control computer shows that the airplane altitude is more than 800 feet.
- The airplane is landing or on the ground.

B. Possible Causes

- (1) Wiring problem
- (2) Flight Control Computer (FCC) A, M1875 and Flight Control Computer (FCC) B, M1876
- (3) Radio Altimeter Transmitters/Receivers, M1735 (1) and M1736 (2)
- (4) Proximity Switch Electronics unit (PSEU), M02061

C. Circuit Breakers

(1) These are the primary circuit breakers related to the fault:

F/O Electrical System Panel, P6-3

Row	<u>Col</u>	<u>Number</u>	<u>Name</u>
В	17	C00129	LANDING GEAR LATCH & PRESS WARN
D	2	C01400	PSEU ALTN

D. Related Data

- (1) (SSM 27-62-21)
- (2) (SSM 32-61-21)
- (3) (WDM 27-62-21)
- (4) (WDM 32-64-21)

E. Initial Evaluation

AKS ALL

- Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - (a) If you do not find the maintenance message, then there was an intermittent fault.
 - (b) If you find the maintenance message, then do the Fault Isolation Procedure below.

F. Fault Isolation Procedure

- (1) Do this test of the FCC:
 - (a) Do the EXISTING FAULTS test on the FCC BITE. Do this task: Digital Flight Control System (DFCS) BITE Procedure, 22-11 TASK 801.
 - (b) If you find maintenance messages, then do these steps:
 - 1) Do the FIM procedures referenced by the messages.
 - 2) Do the Repair Confirmation below.
- (2) Do this wiring check between the PSEU and FCC:
 - (a) Remove the two flight control computers, A and B.
 - 1) For each FCC do this task: Flight Control Computer Removal, AMM TASK 22-11-33-000-801.
 - (b) Remove the connector D10982 from the PSEU.



AKS ALL; AIRPLANES WITH PSEU -6 (Continued)

- (c) Examine the connectors and sockets for damage and unwanted material.
 - NOTE: Examination of the connectors and sockets should include pins D10135A, D10982, D10137A, D10984 and D10982.
- (d) If you find a problem with the wiring, then do these steps:
 - 1) Repair the wiring.
 - 2) Do the Repair Confirmation below.
- (3) Do these steps to replace the PSEU:
 - (a) Replace the PSEU, M2061. These are the tasks:
 - Proximity Switch Electronics Unit (PSEU) Removal, AMM TASK 32-09-10-000-801
 - Proximity Switch Electronics Unit (PSEU) Installation, AMM TASK 32-09-10-400-801
 - (b) Do the post installation test in the PSEU installation procedure.
 - 1) If the test operates correctly, then you corrected the fault.
 - If the test shows the maintenance message, then do the Repair Confirmation below.
 - 3) Repeat the post installation test of the PSEU. Do this task: Proximity Switch Electronics Unit (PSEU) Operational Test, AMM TASK 32-09-10-710-801.

G. Repair Confirmation

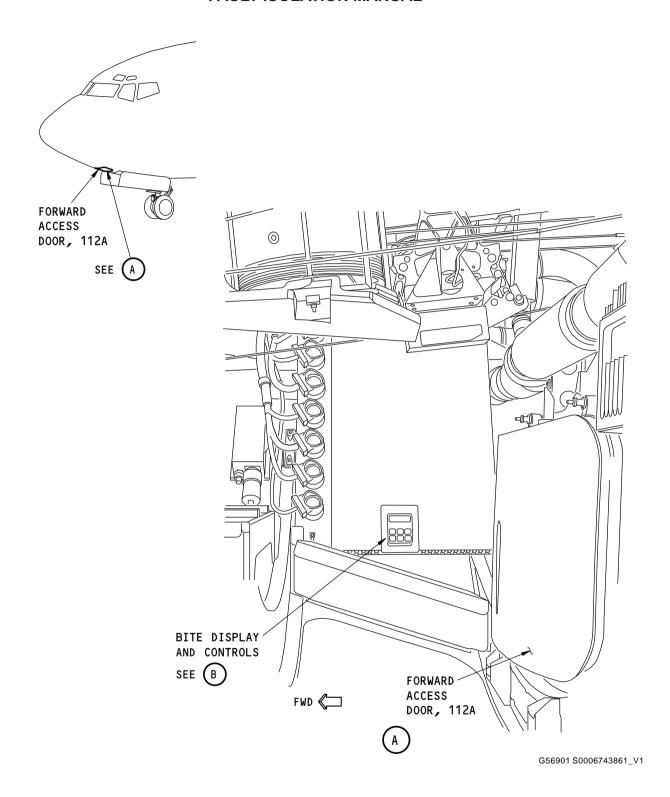
EFFECTIVITY

AKS ALL

- (1) Do this test to see if the fault is still active:
 - (a) If necessary, re-connect the connector D10982 from the PSEU.
 - (b) If necessary, re-install each of the flight control computers, A and B. For each FCC, do this task: Flight Control Computer Installation, AMM TASK 22-11-33-400-801.
 - (c) Simulate and altitude of more than 800 feet. Do this task: Radio Altitude Simulation Test, AMM TASK 34-33-00-700-801.
 - (d) Return the airplane altitude to its usual condition.
 - (e) Do the EXISTING FAULTS test on the PSEU BITE. Do this task: Proximity Switch Electronics Unit (PSEU) BITE Procedure, 32-09 TASK 801.
 - 1) If you do not find the maintenance message, then you corrected the fault.
 - 2) If you find the maintenance message, then go back to the fault isolation procedure.

----- END OF TASK -----





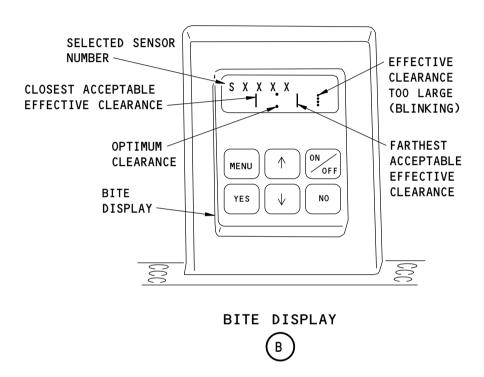
Proximity Switch Electronics Unit (PSEU) Component Location Figure 301/32-61-00-990-801 (Sheet 1 of 2)

AKS ALL

32-61 TASK SUPPORT

Page 301 Feb 15/2013





G56903 S0006743862_V1

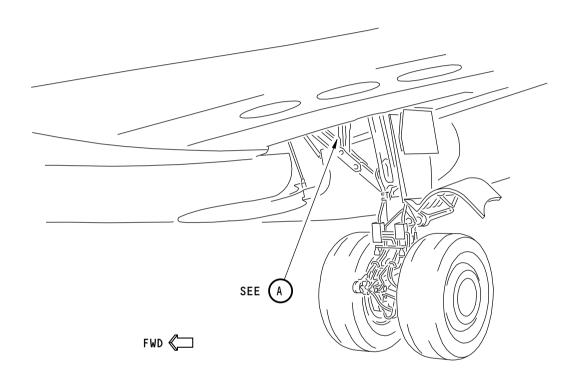
Proximity Switch Electronics Unit (PSEU) Component Location Figure 301/32-61-00-990-801 (Sheet 2 of 2)

AKS ALL

32-61 TASK SUPPORT

Page 302 Feb 15/2013





G56910 S0006743863_V1

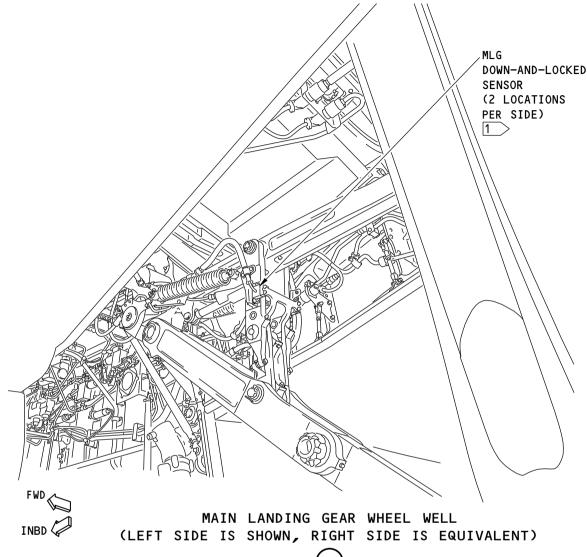
Main Landing Gear Down-and-Locked Sensor Component Location Figure 302/32-61-00-990-802 (Sheet 1 of 2)

AKS ALL

32-61 TASK SUPPORT

Page 303 Feb 15/2013





A

1	SYSTEM NO.	SENSOR NO.	MLG	LOCATION
	1	s0071	L	FWD
	1	s0073	R	FWD
	2	s0301	R	AFT
	2	s0302	L	AFT

G56923 S0006743864_V1

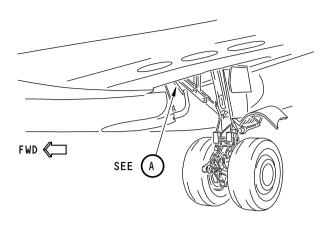
Main Landing Gear Down-and-Locked Sensor Component Location Figure 302/32-61-00-990-802 (Sheet 2 of 2)

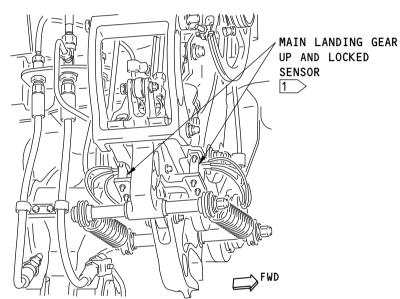
AKS ALL

32-61 TASK SUPPORT

Page 304 Feb 15/2013







LEFT MAIN LANDING GEAR UPLOCK (RIGHT MAIN LANDING GEAR UPLOCK IS EQUIVALENT)

1	SYSTEM NO.	SENSOR NO.	MLG	LOCATION
	1	s72	L	FWD
	2	s1016	L	AFT
	1	S74	R	FWD
	2	s1017	R	AFT

G56931 S0006743865_V1

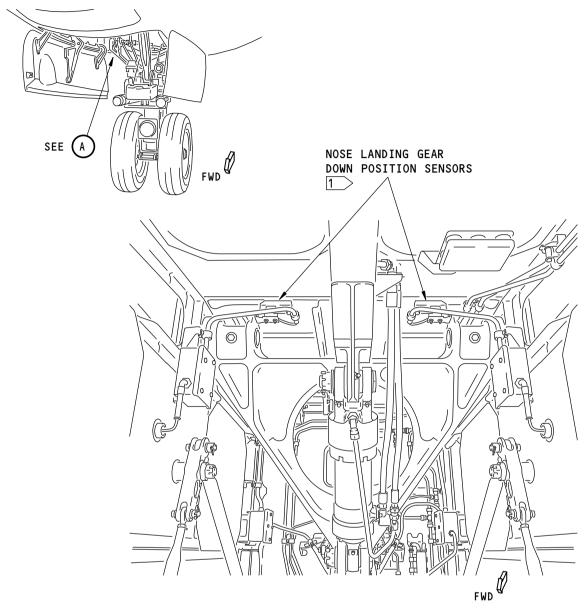
Main Landing Gear Up-and-Locked Sensor Component Location Figure 303/32-61-00-990-803

AKS ALL

32-61 TASK SUPPORT

Page 305 Feb 15/2013





NOSE LANDING GEAR WHEEL WELL

1	SYSTEM NO.	SENSOR NO.	LOCATION
	1	\$845	L
	2	\$853	R

A

G58096 S0006743866_V1

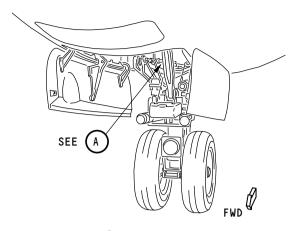
Nose Landing Gear Down Position Sensor Component Location Figure 304/32-61-00-990-804

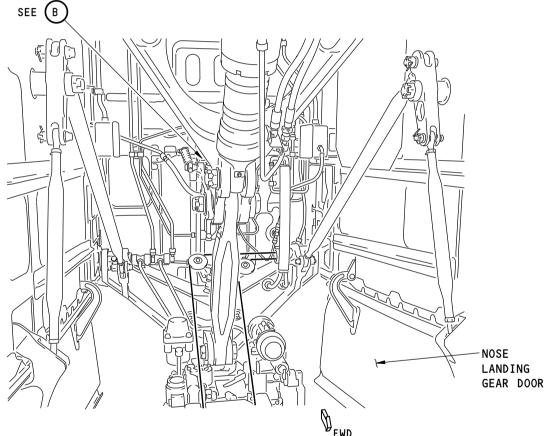
AKS ALL

32-61 TASK SUPPORT

Page 306 Feb 15/2013







NOSE LANDING GEAR WHEEL WELL



G58097 S0006743867_V1

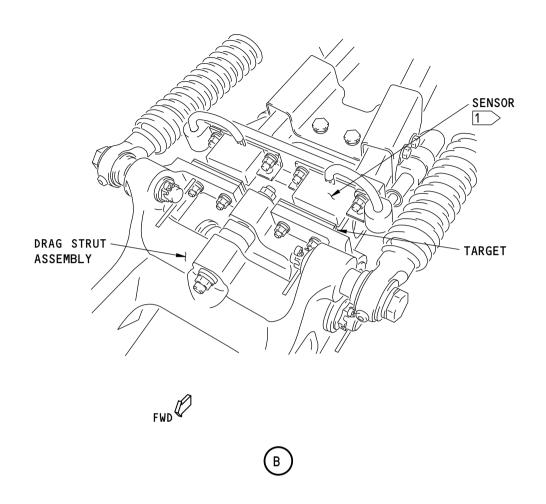
Nose Landing Gear Lock Sensor Component Location Figure 305/32-61-00-990-805 (Sheet 1 of 2)

AKS ALL

32-61 TASK SUPPORT

Page 307 Feb 15/2013





1	SYSTEM NO.	SENSOR NO.	LOCATION
	1	S846	L
	2	\$854	R

G58098 S0006743868_V1

Nose Landing Gear Lock Sensor Component Location Figure 305/32-61-00-990-805 (Sheet 2 of 2)

AKS ALL

32-61 TASK SUPPORT

Page 308 Feb 15/2013