Commercial
Airplanes

737
Service Bulletin

ALERT

Number: **737-27A1306**
Original Issue: September 10, 2015
ATA System: 2741 3151 7611

SUBJECT: FLIGHT CONTROLS - Horizontal Stabilizers - Stabilizer Trim Control System for 737-700 Airplanes with Blended Winglets - Change

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Summary

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THIS BULLETIN IS SENT TO THE OPERATORS OF RECORD OF THE AIRPLANES SHOWN IN PARAGRAPH 1.A., EFFECTIVITY. IF AN AIRPLANE HAS BEEN LEASED OR SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OPERATOR. IF APPLICABLE SPARES HAVE BEEN SOLD, SEND THIS SERVICE BULLETIN TO THE NEW OWNER.

CONCURRENT REQUIREMENTS

Refer to Paragraph 1.B., Concurrent Requirements.

BACKGROUND

Accomplishment of this service bulletin will make sure the greenband limits for the trim control result in safe limits for take-off with a stabilizer mis-trim when an airplane with blended winglets has a lighter take-off weight with the load in an aft position, a flap detent position of 10, 15 or 25, and a high take-off thrust. If this service bulletin is not done, the trim control limits will allow a mis-trimmed take-off during which airspeed cannot be controlled, which can result in unsafe flight conditions.

The trim control system was recently analyzed for nose-up mis-trim occurrences during take-off for airplanes with blended winglets and was found to not be in accordance with the certification rules in specific conditions. The greenband limits for trim control were moved in the nose-up direction for 737-700 airplanes with blended winglets during development to be in accordance with certification criteria for nose-down mis-trim conditions. The recent analysis found that at higher flap detent positions, with lighter take-off weights and a high take-off thrust, the trim control greenband limits are incorrect, which could cause the take-off stabilizer trim position to be set outside safe limits for take-off. The incorporation of this service bulletin will make sure that the nose-up pitch trim will be set within safe limits for take-off.

For 737-700 aircraft with blended winglets certified by Boeing type certificate, this service bulletin, together with Aviation Partners Boeing Service Bulletin AP737-27-002, gives instructions to replace the control stand stabilizer trim lightplates in the flight compartment with one that has smaller greenband limits and to change the location of the nose-up take-off warning limit switches. This service bulletin also gives instructions to install new Flight Management Computer (FMC) Model/Engine Database (MEDB) software, which includes revised take-off settings due to the smaller greenband limits.

Boeing Service Related Problem (SRP) 737NG-SRP-27-0252 is related to this service bulletin.

Boeing Fleet Team Digest (FTD) 737NG FTD 27-14005 is related to this service bulletin.

This table is provided to operators for planning purposes only. Refer to the applicable sections for more information.

Planning Data	Affected	Reference
Spares Affected	No	Paragraph 1.A.2., Spares Affected
AD Related	Yes	Paragraph 1.E., Compliance and Paragraph 1.F., Approval
Weight and Balance Change	No	Paragraph 1.H., Weight and Balance Changes
Electrical Load Changed	No	Paragraph 1.I., Electrical Load Data
Publications Affected	Yes	Paragraph 1.K., Publications Affected
Airplane Flight Operations Affected (Flight Crew Operations Manual and/or FAA Approved Airplane Flight Manual)	Yes	Paragraph 1.K., Publications Affected
Kits/Parts Required	Yes	Paragraph 2.C.1., Kits/Parts
Operator Supplied Parts/Material	Yes	Paragraph 2.C.2., Parts and Materials Supplied by the Operator
Special Tooling Required	Yes	Paragraph 2.F., Special Tooling Necessary to do this Service Bulletin

ACTION (PRR 38275-196S)

Change the location of the stabilizer take-off warning limit switches, replace the control stand stabilizer trim lightplates in the flight compartment and install new FMC MEDB software.

EFFECTIVITY

737-700/700C Airplane(s). Refer to Paragraph 1.A.1., Airplanes, for the list of affected airplane(s).

COMPLIANCE

The Federal Aviation Administration (FAA) will possibly release an Airworthiness Directive related to this service bulletin. The Airworthiness Directive will make the compliance tasks and times given in this service bulletin mandatory.

Boeing recommends that the change given in this service bulletin be done within 72 months after the original issue date of this service bulletin.

INDUSTRY SUPPORT INFORMATION

Boeing warranty remedies are available for airplanes in warranty as of March 20, 2014. Please refer to Paragraph 2.B., Industry Support Information. The warranty remedies will expire eight years from the original issue date of this service bulletin.

MANPOWER

Refer to Paragraph 1.G., Manpower.

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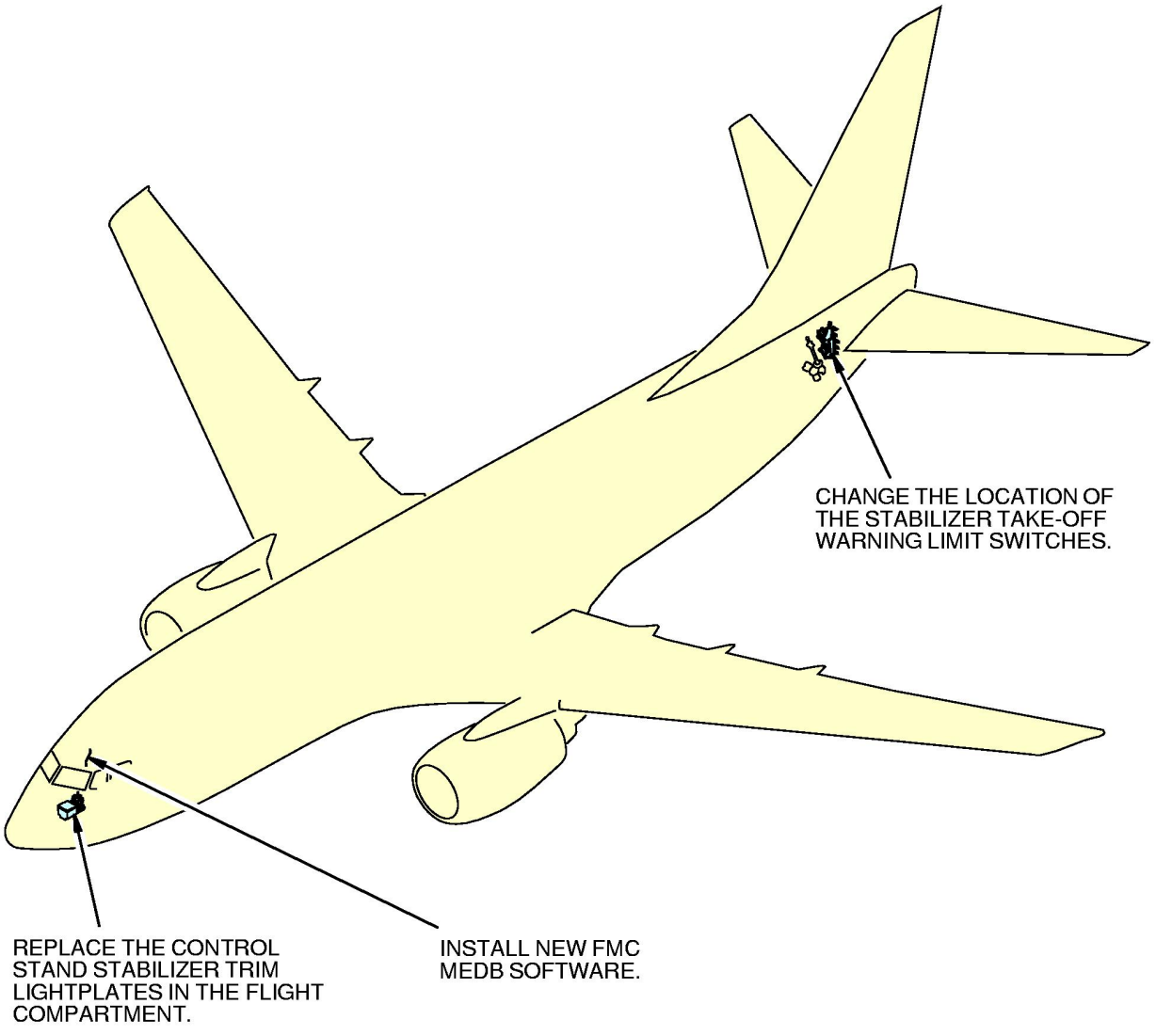
MATERIAL INFORMATION

Operator Supplied Parts/Materials.

Refer to Paragraph 2.A., Material - Price and Availability.



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1. PLANNING INFORMATION

A. Effectivity

1. Airplanes

Refer to Service Bulletin Index D6-19567 Part 3 for Airplane Variable Number, Line Number, and Serial Number data.

This service bulletin is applicable to 737-700/700C Airplanes with blended winglets, line numbers 3128 - 5279, in 1 Group. The Variable Numbers and Group Information for the applicable airplanes is given below. An equivalent change is on subsequent production airplanes. Refer to PRR 38275-196S for data about this change.

GROUP	CONFIGURATION	DESCRIPTION
1	-	737-700/700C airplanes delivered with blended winglets certified by Boeing type certificate.

Airplane Models:

737-700, 737-700C

Variable Number	Group
YG104	1
YG125 - YG143	1
YG510 - YG514	1

2. Spares Affected

None.

B. Concurrent Requirements

The service bulletin listed below must be done at the same time as this service bulletin:

Company	Service Bulletin	Description
Aviation Partners Boeing	AP737-27-002, Original Issue	Change the location of the stabilizer take-off warning limit switches and replace the control stand stabilizer trim lightplates. Also install new Flight Management Computer (FMC) Model/Engine Database (MEDB) software.

C. Reason

Accomplishment of this service bulletin will make sure the greenband limits for the trim control result in safe limits for take-off with a stabilizer mis-trim when an airplane with blended winglets has a lighter take-off weight with the load in an aft position, a flap detent position of 10, 15 or 25, and a high take-off thrust. If this service bulletin is not done, the trim control limits will allow a mis-trimmed take-off during which airspeed cannot be controlled, which can result in unsafe flight conditions.

The trim control system was recently analyzed for nose-up mis-trim occurrences during take-off for airplanes with blended winglets and was found to not be in accordance with the certification rules in specific conditions. The greenband limits for trim control were moved in the nose-up direction for 737-700 airplanes with blended winglets during development to be in accordance with certification criteria for nose-down mis-trim conditions. The recent analysis found that at higher flap detent positions, with lighter take-off weights and a high take-off thrust, the trim control greenband limits are incorrect, which could cause the take-off stabilizer trim position to be set outside safe limits for take-off. The incorporation of this service bulletin will make sure that the nose-up pitch trim will be set within safe limits for take-off.

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Boeing Service Related Problem (SRP) 737NG-SRP-27-0252 is related to this service bulletin.

Boeing Fleet Team Digest (FTD) 737NG FTD 27-14005 is related to this service bulletin.

This table is provided to operators for planning purposes only. Refer to the applicable sections for more information.

D. Description

Change the location of the stabilizer take-off warning limit switches, replace the control stand stabilizer trim lightplates in the flight compartment and install new FMC MEDB software.

The work in this service bulletin is done in the maintenance zone(s) given below.

Affected Maintenance Zones	
Model	**Zone**
737-700, 737-700C	211, 212, 311, 312

E. Compliance

The Federal Aviation Administration (FAA) will possibly release an Airworthiness Directive related to this service bulletin. The Airworthiness Directive will make the compliance tasks and times given in this service bulletin mandatory.

Boeing recommends that the change given in this service bulletin be done within 72 months after the original issue date of this service bulletin.

F. Approval

This service bulletin was examined by the Federal Aviation Administration (FAA). The changes specified in this service bulletin comply with the applicable regulations and are FAA approved, as well as European Aviation Safety Agency (EASA)/Joint Aviation Authorities (JAA) approved for all EASA/JAA approved airplanes listed in the service bulletin effectivity. This service bulletin and its approval were based on the airplane in its original Boeing delivery configuration or as modified by other approved Boeing changes.

If an airplane has a non-Boeing modification or repair that affects a component or system also affected by this service bulletin, the operator is responsible for obtaining appropriate regulatory agency approval before incorporating this service bulletin.

G. Manpower

The table below shows an estimate of the task hours necessary to do this change for each airplane. This estimate is for direct labor only, done by an experienced crew. Adjust the estimate with operator task hour data if necessary. The estimate does not include lost time. These are some examples of lost time:

- Time to adjust to the workplace
- Time to schedule the work
- Time to inspect the work
- Time to cure the materials
- Time to make the parts
- Time to find the tools.

Task	Number of Persons	Task Hours	Elapsed Hours
FIGURE 1	1	0.25	0.25

Task	Number of Persons	Task Hours	Elapsed Hours
TOTAL FOR EACH AIRPLANE		0.25	0.25

This estimate does not include the task hour data given in the service bulletin(s) in Paragraph 1.B., Concurrent Requirements. Refer to Aviation Partners Boeing Service Bulletin AP737-27-002.

H. Weight and Balance Changes

None.

I. Electrical Load Data

Not changed.

J. References

1. Existing Data:

   a. Engineering Change Memo PRR 38275-196S

   b. Boeing Service Related Problem (SRP) 737NG-SRP-27-0252

   c. Service Bulletin Index D6-19567

   d. 737-600/700/800/900 Aircraft Maintenance Manual (AMM) 76-11-03

   e. 737NG Fleet Team Digest (FTD) 27-14005

   f. Aviation Partners Boeing Service Bulletin AP737-27-002

      NOTE: The supplier was told to send copies of this service bulletin to each operator.

2. Data Supplied with this Service Bulletin:

   None.

3. Installation Drawings Used in the Preparation of this Service Bulletin:

   Refer to Aviation Partners Boeing Service Bulletin AP737-27-002.

K. Publications Affected

1. Publications:

Publication	Chapter-Section
737 FAA Approved Airplane Flight Manual	Appendix 31
737-600/700/800/900 Aircraft Maintenance Manual	27-41, 31-51

Publication	Chapter-Section
737-600/700/800/900 Illustrated Parts Catalog	76-11
Component Maintenance Manual	25-11
737 Flight Crew Operations Manual	9.10, 9.20
737 Weight and Balance Manual	1-06

2. Damage Tolerance Based Structural Inspections:

   Boeing has evaluated the repairs and/or changes in this service bulletin for effects on Fatigue Critical Structure (FCS) and for changes to Damage Tolerance Inspections (DTI) required in the Maintenance Program. This service bulletin does not affect FCS, therefore DTIs are not necessary.

L. Interchangeability and Intermixability of Parts

Refer to Aviation Partners Boeing Service Bulletin AP737-27-002.

M. Software Accomplishment Summary

Refer to Aviation Partners Boeing Service Bulletin AP737-27-002.

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2. MATERIAL INFORMATION

A. Material - Price and Availability

The operator can supply the parts and materials shown in Paragraph 2.C., Parts Necessary for Each Airplane.

B. Industry Support Information

Boeing warranty remedies are available for 737-700/700C airplanes in warranty as of March 20, 2014. For task hour and material reimbursement for airplanes in warranty as of that date, send a warranty claim to Boeing Fleet Support Contracts - Warranty. The warranty remedies will expire eight years from the original issue date of this service bulletin.

C. Parts Necessary for Each Airplane

1. Kits/Parts

   Refer to Aviation Partners Boeing Service Bulletin AP737-27-002.

2. Parts and Materials Supplied by the Operator

   Refer to Aviation Partners Boeing Service Bulletin AP737-27-002.

3. Parts Modified and Reidentified

   None.

4. Parts Removed and Not Replaced

   None.

D. Parts Necessary to Change Spares

None.

E. Special Tooling - Price and Availability

Refer to Aviation Partners Boeing Service Bulletin AP737-27-002.

F. Special Tooling Necessary to do this Service Bulletin

Refer to Aviation Partners Boeing Service Bulletin AP737-27-002.

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3. ACCOMPLISHMENT INSTRUCTIONS

A. GENERAL INFORMATION

CAUTION: KEEP THE WORK AREA, WIRES AND ELECTRICAL BUNDLES CLEAN OF METAL PARTICLES OR CONTAMINATION WHEN YOU USE TOOLS. UNWANTED MATERIAL, METAL PARTICLES OR CONTAMINATION CAUGHT IN WIRE BUNDLES CAN CAUSE DAMAGE TO THE BUNDLES. DAMAGED WIRE BUNDLES CAN CAUSE SPARKS OR OTHER ELECTRICAL DAMAGE.

NOTE: 1. Manual titles are referred to by acronyms. Refer to Paragraph 1.J., References, for definition of the acronyms.

2. Obey all of the warnings and cautions given in the specified manual sections.

3. Unless shown differently, these dimensions and tolerances are used:

- Linear dimensions are in inches
- Tolerance on linear dimensions, other than rivet and bolt edge margins, is plus or minus 0.03 inch
- Tolerance on rivet and bolt edge margin is plus or minus 0.05 inch
- Angular tolerance is plus or minus 2 degrees
- Hole dimensions for standard solid rivets and fasteners are in Structural Repair Manual (SRM) Chapter 51
- Torque Values:
  - Values for structural fasteners are given in 737-700/700CONV Structural Repair Manual, Chapter 51.
  - Values for airframe maintenance tasks are included in Chapter 20 of 737-600/700/800/900 Aircraft Maintenance Manual (AMM).
  - Values for electrical maintenance tasks are included in Chapter 20 of Standard Wiring Practices Manual (SWPM).
  - Non-standard torque values for maintenance tasks are included in the applicable installation step.

4. These work instructions refer to procedures included in other Boeing documents. When the words "refer to" are used and the operator has an accepted alternative procedure, the accepted alternative procedure can be used. When the words "in accordance with" are included in the instruction, the procedure in the Boeing document must be used.

5. If it is necessary to remove more parts for access, you can remove those parts. If you can get access without removing identified parts, it is not necessary to remove all of the identified parts. Jacking and shoring limitations must be observed.

6. The compliance times for the actions in Paragraph 3.B., WORK INSTRUCTIONS are in Paragraph 1.E., Compliance.

7. Some steps in the Work Instructions are identified as Required for Compliance (RC). If this service bulletin is mandated by an Airworthiness Directive (AD), then the steps identified as RC and steps indented under an RC step must be done to comply with the AD. Alternative procedures for steps not identified with RC can be used if the RC steps and indented steps can still be done as specified, and the airplane can be put back in a serviceable condition. An Alternative Method of Compliance (AMOC) is not necessary for deviations to steps that are not identified as RC.

B. WORK INSTRUCTIONS

1. RC - Do the change in accordance with the instructions for Group 2 airplanes in Aviation Partners Boeing Service Bulletin AP737-27-002, but do not use steps 7 and 8 of PART 3 to remove the control stand stabilizer trim lightplates. Use FIGURE 1 of this service bulletin to remove the control stand stabilizer trim lightplates.

   NOTE: Although this step is identified as RC, only some steps of the Work Instructions in Aviation Partners Boeing Service Bulletin AP737-27-002 are identified as RC. Only the steps identified as RC in the Work Instructions of Aviation Partners Boeing Service Bulletin AP737-27-002 are Required for Compliance.

2. Put the airplane back to a serviceable condition.

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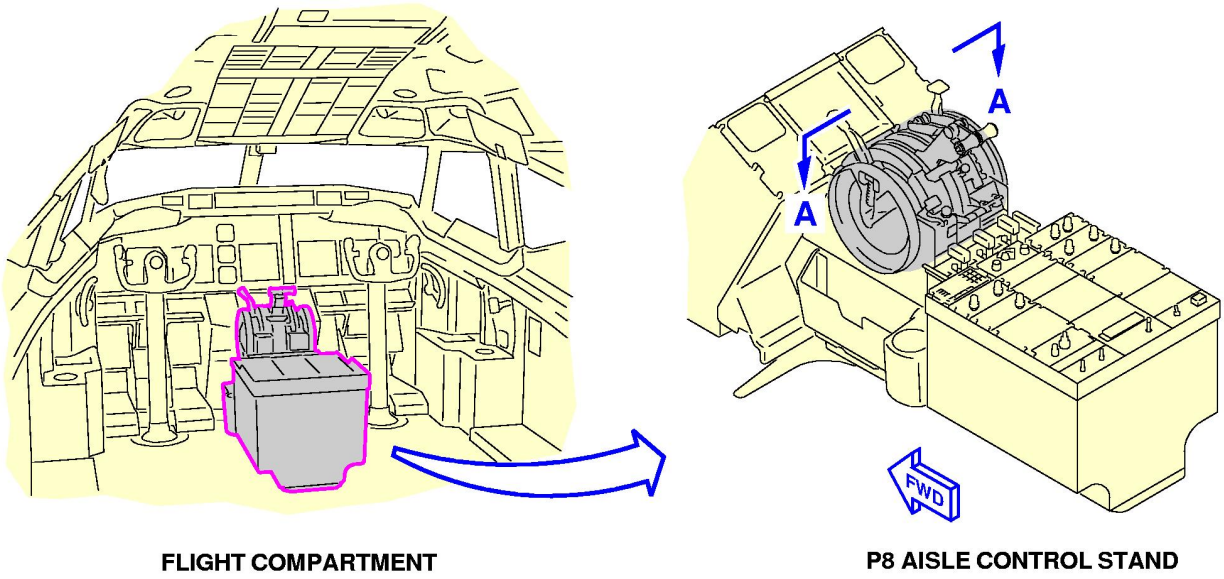

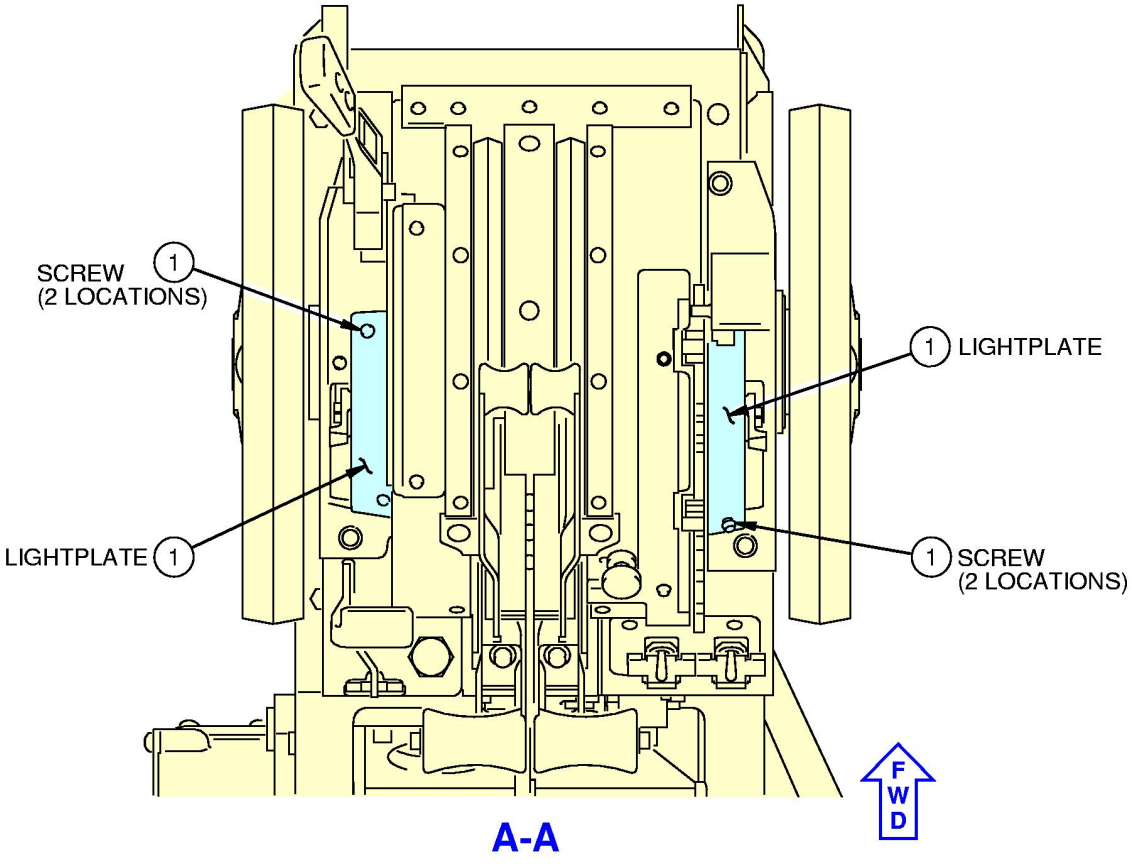

FIGURE 1: FLIGHT COMPARTMENT CONTROL STAND - STABILIZER TRIM LIGHTPLATES - REMOVAL (SHEET 1 OF 2)

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The step numbers shown below agree with the numbers shown in the circle symbols in the figure. The QTY numbers shown below are the number of parts necessary for airplane.

Step	Task	Name	Identification	Qty	More Data
1	Remove / Keep	SCREW	PS4C9DL01BK	4	(a)
	Remove	LIGHTPLATE	800-010310-1	1	This is on the Captain's (left) side. (a)
	Remove	LIGHTPLATE	800-010311-1	1	This is on the First Officer's (right) side. (a)
(a) Refer to 737-600/700/800/900 AMM 76-11-03 as an accepted procedure.					

FIGURE 1: FLIGHT COMPARTMENT CONTROL STAND - STABILIZER TRIM LIGHTPLATES - REMOVAL (SHEET 2 OF 2)