ON-GROUND GALE-FORCE WINDS - INSPECTION/CHECK

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to do an inspection on the aircraft if on-ground gale-force winds occur.

   B. The procedures in this section are given in the sequence below. The tasks identified with (♦) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	*DESCRIPTION*	*EFFECTIVITY*
05-50-26-200-802-A	ON-GROUND GALE-FORCE WINDS	ALL

TASK 05-50-26-200-802-A
EFFECTIVITY: ALL

2. ON-GROUND GALE-FORCE WINDS

A. General

(1) This task gives the procedures to do an inspection on the aircraft after on-ground gale-force winds occur.

(2) The results of these procedures will show if other, more accurate inspection is necessary.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-01/100	-
AMM TASK 27-10-00-700-801-A/500	AILERON ADJUSTMENT AND CHECK
AMM TASK 27-20-00-700-801-A/500	ADJUSTMENT OF THE RUDDER NEUTRAL POSITION AND DEFLECTIONS OF RUDDER I AND RUDDER II
AMM TASK 27-30-00-700-801-A/500	ELEVATOR CALIBRATION WITH CONTROL-COLUMN POSITION TRANSDUCERS
AMM TASK 27-31-01-700-801-A/500	TENSION OF THE ELEVATOR CONTROL CABLES - FUNCTIONAL CHECK
AMM TASK 27-31-05-200-801-A/600	SERVO TAB FAIL-SAFE ACTUATION LINK - DETAILED VISUAL INSPECTION
AMM TASK 27-31-05-200-802-A/600	SPRING TAB ATTACHMENT LINK - DETAILED VISUAL INSPECTION
AMM TASK 27-40-00-700-801-A/500	HORIZONTAL STABILIZER BACKLASH - FUNCTIONAL CHECK
AMM TASK 27-50-00-700-801-A/500	INBOARD AND OUTBOARD FLAPS - DEFLECTIONS
AMM TASK 27-63-01-700-801-A/500	SPOILER SYSTEM - OPERATIONAL CHECK
AMM TASK 27-70-00-700-801-A/500	GUST LOCK SYSTEM - ADJUSTMENT
AMM TASK 27-70-00-700-802-A/500	GUST LOCK MECHANISM - OPERATIONAL CHECK
AMM TASK 27-71-00-700-801-A/500	ELECTROMECHANICAL GUST LOCK - OPERATIONAL CHECK
AMM TASK 55-36-00-000-801-A/400	TAIL BOOM - REMOVAL
AMM TASK 55-36-00-400-801-A/400	TAIL BOOM - INSTALLATION
ITEM GSE 070	PROTRACTOR - DIGITAL
S.B.145-27-0050	-

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
GSE 070	Protractor, Digital	To measure the elevator deflection	
Standard	Ladder	To get access to the inspection area	

(Continued)

ITEM	DESCRIPTION	PURPOSE	QTY
Standard	Flashlight	To make the inspection of the area easier	
Standard	Mirror	To make the inspection of the area easier	
Standard	Magnifying Glass	To improve the accuracy of the inspection	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Outside the aircraft

I. Preparation (Figure 601)

SUBTASK 841-003-A

(1) Make sure that the aircraft is safe for maintenance.

(2) Do not do other tasks on the elevator system.

(3) Install the rig pin on the elevator rear sector (Figure 601).

(4) Remove upper and rear fairings 321 of the vertical stabilizer (AMM TASK 55-36-00-000-801-A/400).

(5) NOTE: The procedure in step (5) is applicable to aircraft that have mechanical gust lock.

Open access panel 123BL (AMM MPP 06-41-01/100).

J. Inspection On Aircraft After On-Ground Gale-Force Winds (Figure 602) (Figure 603) (Figure 604) (Figure 605) (Figure 606)

SUBTASK 212-003-A

EFFECTIVITY: AIRCRAFT WITH MECHANICAL GUST LOCK SYSTEM

CAUTION: EMBRAER RECOMMENDS: IF THE WIND VELOCITIES ARE 65 KT OR MORE, THE AIRCRAFT MUST STAY IN THE HANGAR.

(1) This inspection is applicable when the aircraft is on ground and:

(a) The elevator is not locked and the aircraft is blown with any wind velocity values, except for flight controls checks;

(b) The elevator is locked but the wind velocities are more than 65 kt.

WARNING: MAKE SURE THAT THERE ARE NO PERSONS OR OBJECTS IN THE ELEVATOR TRAVEL AREA.

(2)

(2) NOTE:
- This inspection is to make sure that the gust loads did not cause damage to parts of the elevator system.
- Do an inspection on the RH and LH sides of the elevator system.

(a) To examine the elevator system primary stop conditions, measure the surface deflection as follows:

1. Install the ITEM GSE 070 on the left elevator and set it to zero (Figure 602).
2. Remove the rig pin from the elevator rear sector (Figure 601).
3. Move the control column to the aircraft nose-down position until:
   • On aircraft PRE-MOD S.B.145-27-0050, the digital protractor shows 16.5 degrees ± 1.0 degree.
   • On aircraft POST-MOD S.B.145-27-0050, the digital protractor shows 14.0 degrees ± 1.0 degree.
4. Move the control column to the aircraft nose-up position until the digital protractor shows 27.0 degrees ± 1.0 degree.

(b) Do a visual inspection on the elevator primary backstops (Figure 603).

(c) Do a visual inspection on the spring tab backstops (Figure 604).

(d) Do a visual inspection on the elevator surfaces near the hinge points and spring tab fairings.

(e) Do a detailed visual inspection on the servo tab fail-safe actuation link (AMM TASK 27-31-05-200-801-A/600).

(f) Do a detailed visual inspection on the spring tab attachment link (AMM TASK 27-31-05-200-802-A/600).

(g) Do a visual detailed inspection on these components (Figure 605):

1. The bellcrank that connects the rod and the elevator torque tube (1).
2. The bellcrank that connects the rod and the quadrant to the torque tube assembly, in the aft fuselage (2).
3. The rod that connects the two bellcranks (3).
4. The quadrant support (4).
5. The limiter tube (5).
6. The stop plate (6).

(h) Do a visual inspection on the gust lock mechanism. Make sure that no damage occurred on these components (Figure 606):

1. The connecting rod 1 (1) and its attachment points.
2. The connecting rod 2 (2) and its attachment points.

3. The tension spring (3).
4. The gust lock lever (4).
5. The gust lock torque tube (5).
6. The gust lock torque tube supports (6).
7. The elevator torque tube (7).

(i) Do a tension functional check of the elevator control cables (AMM TASK 27-31-01-700-801-A/500).

(j) Do an adjustment on the gust lock system (AMM TASK 27-70-00-700-801-A/500).

(k) Do an operational check on the gust lock system (AMM TASK 27-70-00-700-802-A/500).

(3) Do the tasks that follow to do the check of the aircraft condition:

- AMM TASK 27-10-00-700-801-A/500;
- AMM TASK 27-20-00-700-801-A/500;
- AMM TASK 27-30-00-700-801-A/500;
- AMM TASK 27-40-00-700-801-A/500;
- AMM TASK 27-50-00-700-801-A/500;
- AMM TASK 27-63-01-700-801-A/500;

(4) Rudder

(a) Do the inspection tasks that follow:

- Rudder I Actuator Support fittings on the Vertical-Stabilizer Rear Spar – Internal – DET (NDI 55-30-00-220-816-A00);
- Rudder I Hinge fitting struts on the Vertical Stabilizer Rear Spar Internal – DET (NDI 55-30-00-220-841-A00).

(b) Do the detailed inspection on the components to that follow to do the check of the rudder condition:

- Rudder I skin – External – DET task;
- Rudder I Hinges and Actuators fittings – Internal – DET task;
- Rudder II Hinge fitting struts on the Forward Rear Spar Internal– Internal – DET task;
- Rudder II skin – External – DET task;
- Rudder II Control Rods – External – DET task.

(5) Aileron

(a) Do the inspection tasks that follow:

- Aileron Hinge fitting struts on the Wing Spar Internal (NDI 57-28-00-210-812-A00);
- Aileron Hinges and PCA rods fittings (NDI 57-61-00-210-801-A00).

(b) Do the inspection of the following components for condition:

- Aileron I skin – External – GVI task.

(6) Spoiler

(a) Do the detailed inspection of these components to do the check of the spoiler condition:

- Spoiler Hinge fitting struts on the wing Spar - Internal – DET task;
- Spoiler Hinges and actuator fitting – Internal - DET task;
- Spoiler skin – External – GVI task.

(7) Elevator

(a) Do the inspection of the components that follow for condition:

- Elevator-Actuator Support fittings on the Horizontal-Stabilizer Rear Spar – Internal – DET task;
- Elevator Hinge fitting struts on the Horizontal Stabilizer Rear Spar - Internal – DET task;
- Elevator Hinges and Actuators fittings – DET Internal;
- Elevator skin – External – GVI task.

(8) Flap

(a) Do the inspection of the components that follow for condition:

- Flap skin and its attachments – External – GVI task;
- Flap track fairings – External – GVI task;
- The pylon aft movable-fairings and their attachments – External – GVI task.

(9) Nose Landing Gear

(a) Examine the NLG, its attachment fittings on the structure and all the components installed on the NLG for:

- Distortion;
- Leakage;
- Defective attachmen;t
- Other damage;

NOTE: Carefully examine the hydraulic and electrical connections and the mooring fitting.

(10) Main Landing Gear

(a) Examine the MLG, its attachment fittings on structure, the side stay, pintle fittings and all the components installed on the MLG for:

- Distortion;
- Leakage;
- Defective attachment;
- Other damage.

K. Inspection On Aircraft After On-Ground Gale-Force Winds (Figure 602) (Figure 603) (Figure 604) (Figure 605) (Figure 607)

SUBTASK 212-004-A

EFFECTIVITY: AIRCRAFT WITH ELECTROMECHANICAL GUST LOCK SYSTEM

CAUTION: EMBRAER RECOMMENDS: IF THE WIND VELOCITIES ARE 65 KT OR MORE, THE AIRCRAFT MUST STAY IN THE HANGAR.

(1) This inspection is applicable when the aircraft is on ground and:

(a) The elevator is not locked and the aircraft is blown with any wind velocity values, except for flight controls checks;

(b) The elevator is locked but the wind velocities are more than 65 kt.

WARNING: MAKE SURE THAT THERE ARE NO PERSONS OR OBJECTS IN THE ELEVATOR TRAVEL AREA.

(2)

(2) NOTE:
- This inspection is to make sure that the gust loads did not cause damage to parts of the elevator system.
- Do an inspection on the RH and LH sides of the elevator system.

(a) To examine the elevator system primary stop conditions, measure the surface deflection as follows:

1. Install the ITEM GSE 070 on the left elevator and set it to zero (Figure 602).
2. Remove the rig pin from the elevator rear sector (Figure 601).
3. Move the control column to the aircraft nose-down position until:
   • On aircraft PRE-MOD S.B.145-27-0050, the digital protractor shows 16.5 degrees ± 1.0 degree.
   • On aircraft POST-MOD S.B.145-27-0050, the digital protractor shows 14.0 degrees ± 1.0 degree.
4. Move the control column to the aircraft nose-up position until the digital protractor shows 27.0 degrees ± 1.0 degree.

(b) Do a visual inspection on the elevator primary backstops (Figure 603).

(c) Do a visual inspection on the spring tab backstops (Figure 604).

(d) Do a visual inspection on the elevator surfaces near the hinge points and spring tab fairings.

(e) Do a visual detailed inspection on (Figure 605):

1. The bellcrank that connects the rod and the elevator torque tube (1).
2. The bellcrank that connects the rod and the quadrant to the torque tube assembly, in the aft fuselage (2).
3. The rod that connects the two bellcranks (3).
4. The quadrant support (4).
5. The limiter tube (5).
6. The stop plate (6).

(f) Do a visual inspection on the gust lock mechanism. Make sure that no damage occurred to these components (Figure 607):

1. Locking pin.
2. Locking pin hole.
3. Carbon torque box.
4. Flanged support and its attachment points.
5. Locking pin support and its attachment points.

(g) If gust lock lever is not in the locked position, do these steps:

1. Do a tension functional check of the elevator control cables (AMM TASK 27-31-01-700-801-A/500).
2. Do an operational check on the gust lock system (AMM TASK 27-71-00-700-801-A/500).

L. Follow-on

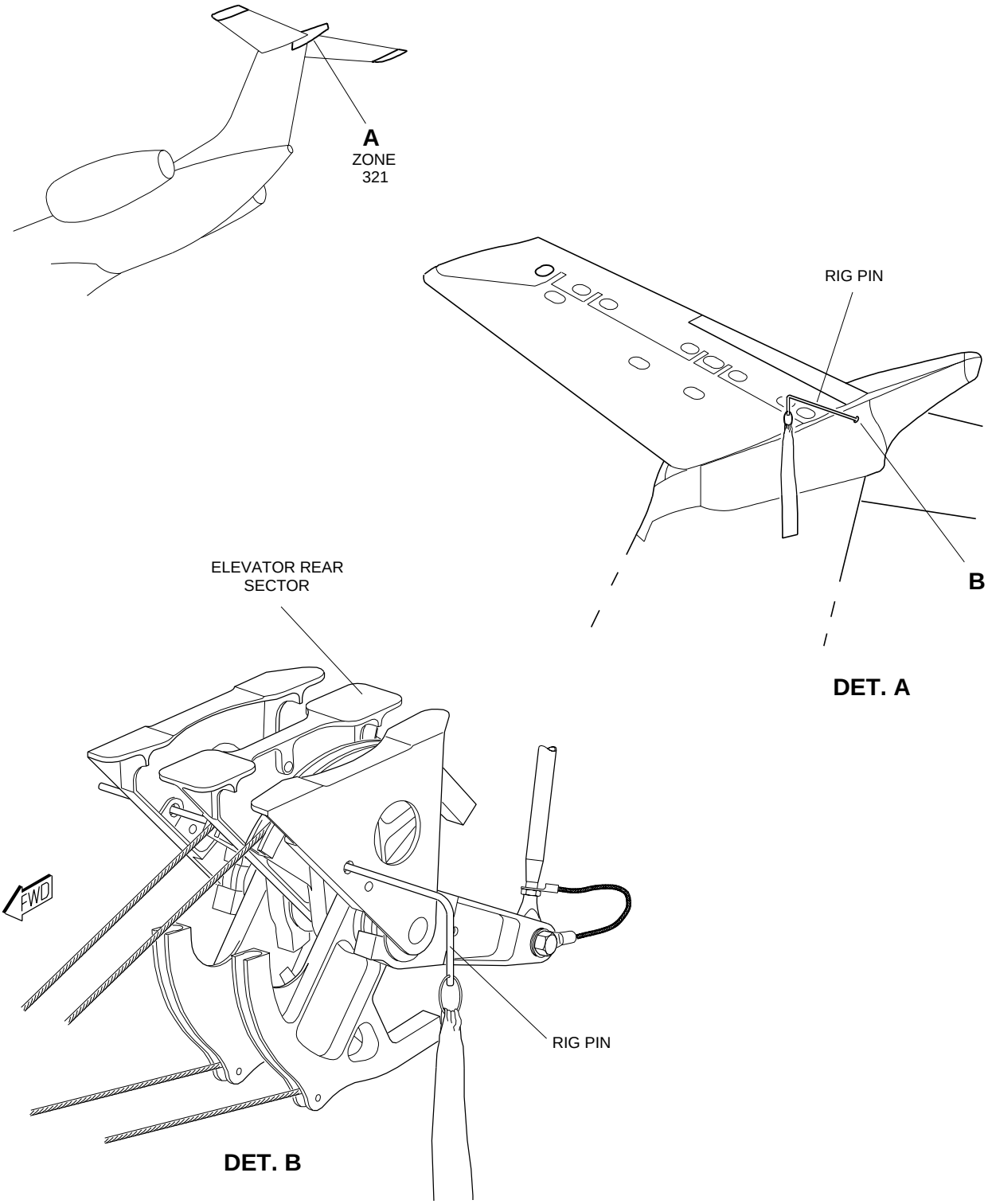
SUBTASK 842-003-A

(1) NOTE: The procedure in step (1) is applicable to aircraft that have mechanical gust lock.

Close the access panel 123BL (AMM MPP 06-41-01/100).

(2) Install the upper and rear fairings 321 of the vertical stabilizer (AMM TASK 55-36-00-400-801-A/400).

EFFECTIVITY: ALL
Rig Pins - Location
Figure 601

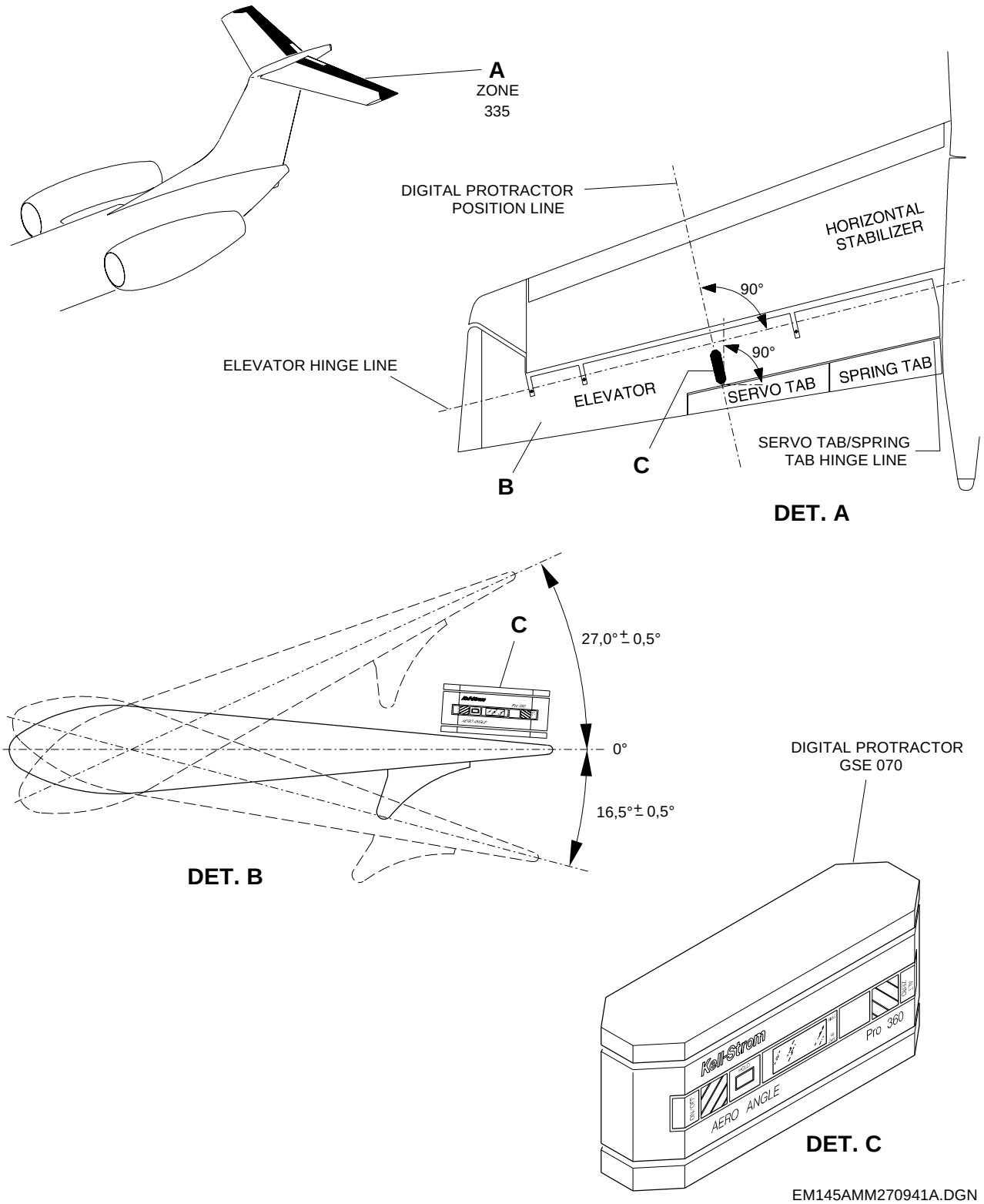


145AMM270424.MCE A

EFFECTIVITY: ALL

Protractor - Location

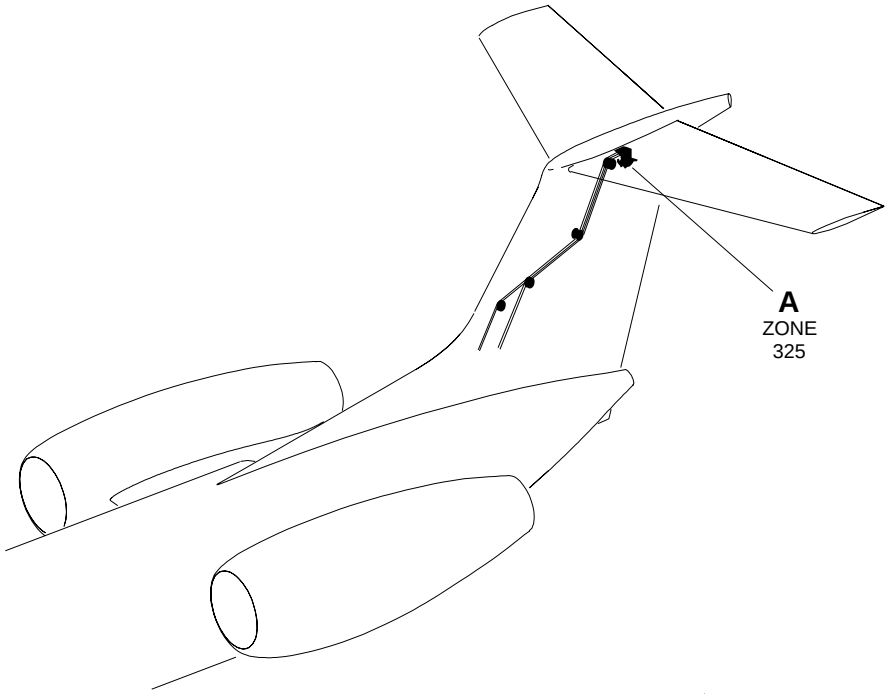
Figure 602

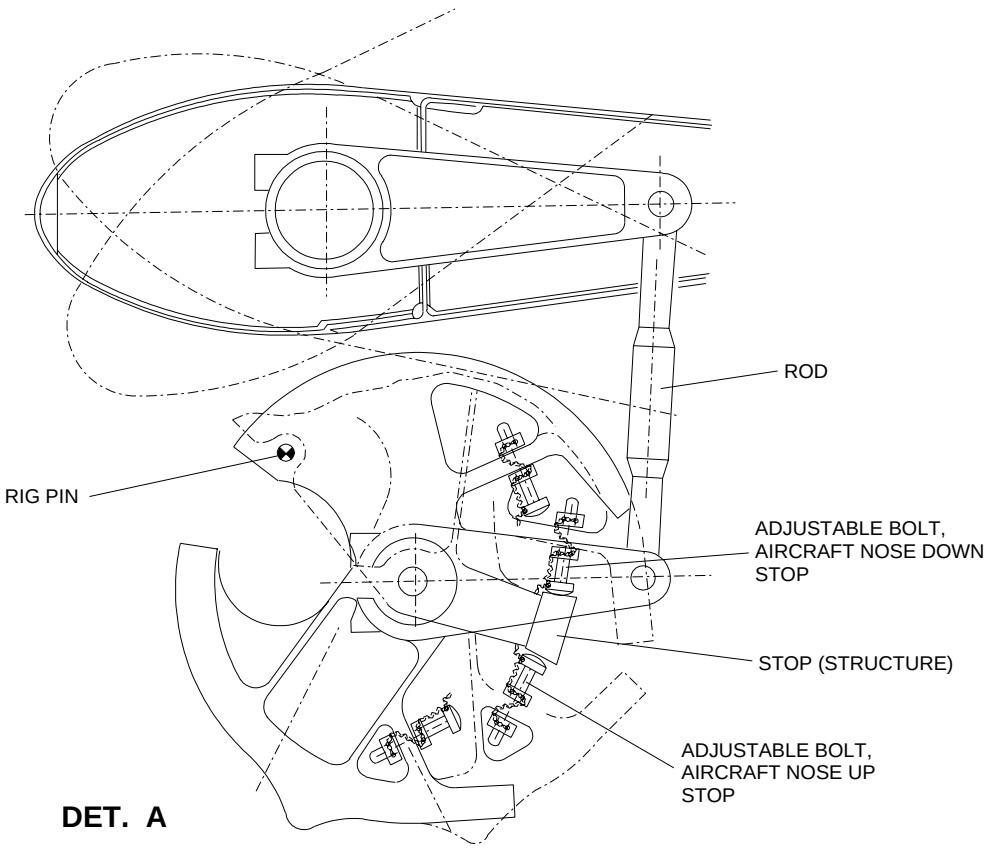


EM145AMM270941A.DGN

EFFECTIVITY: ALL

Primary Backstops - Location
Figure 603



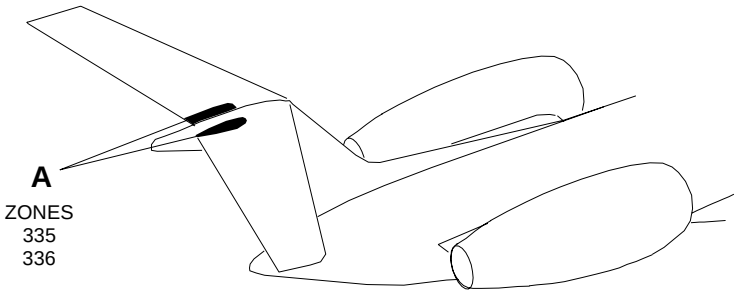


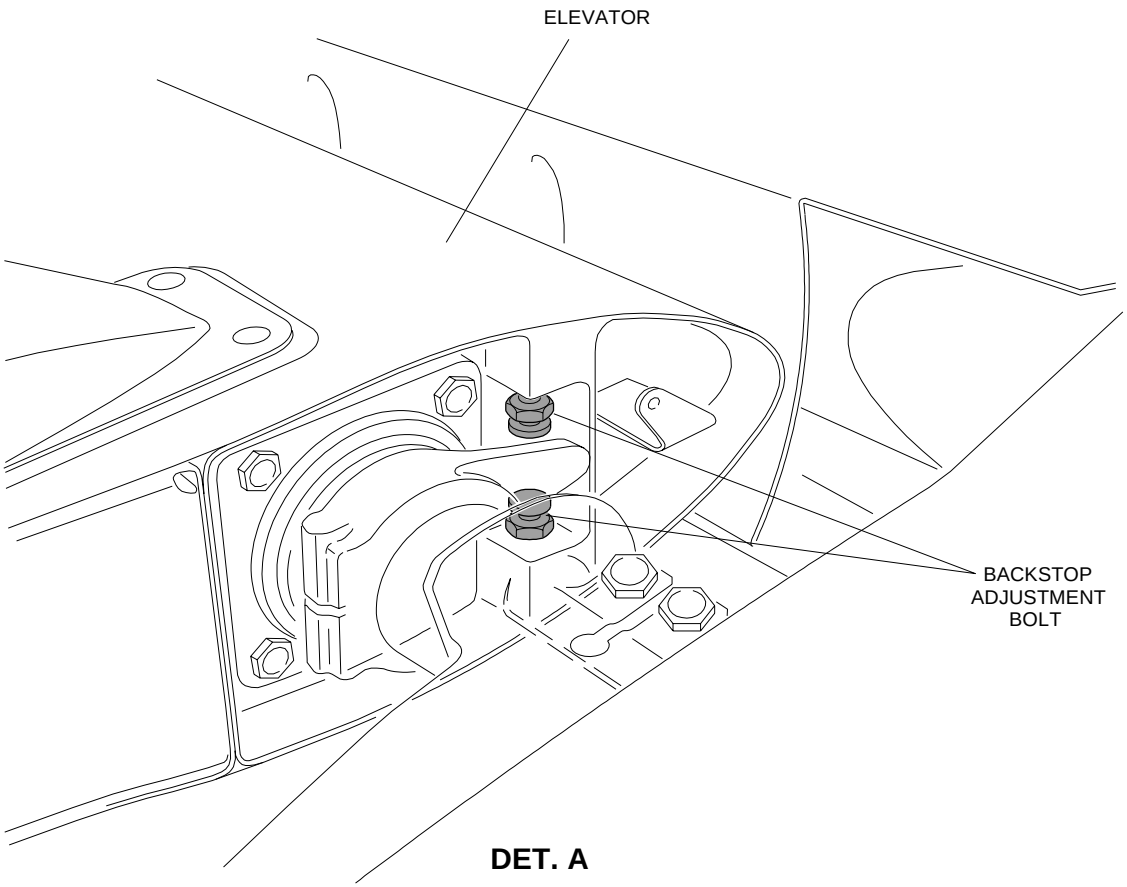
DET. A

145AMM27245.MCE B

EFFECTIVITY: ALL

Spring Tab Backstop - Location
Figure 604



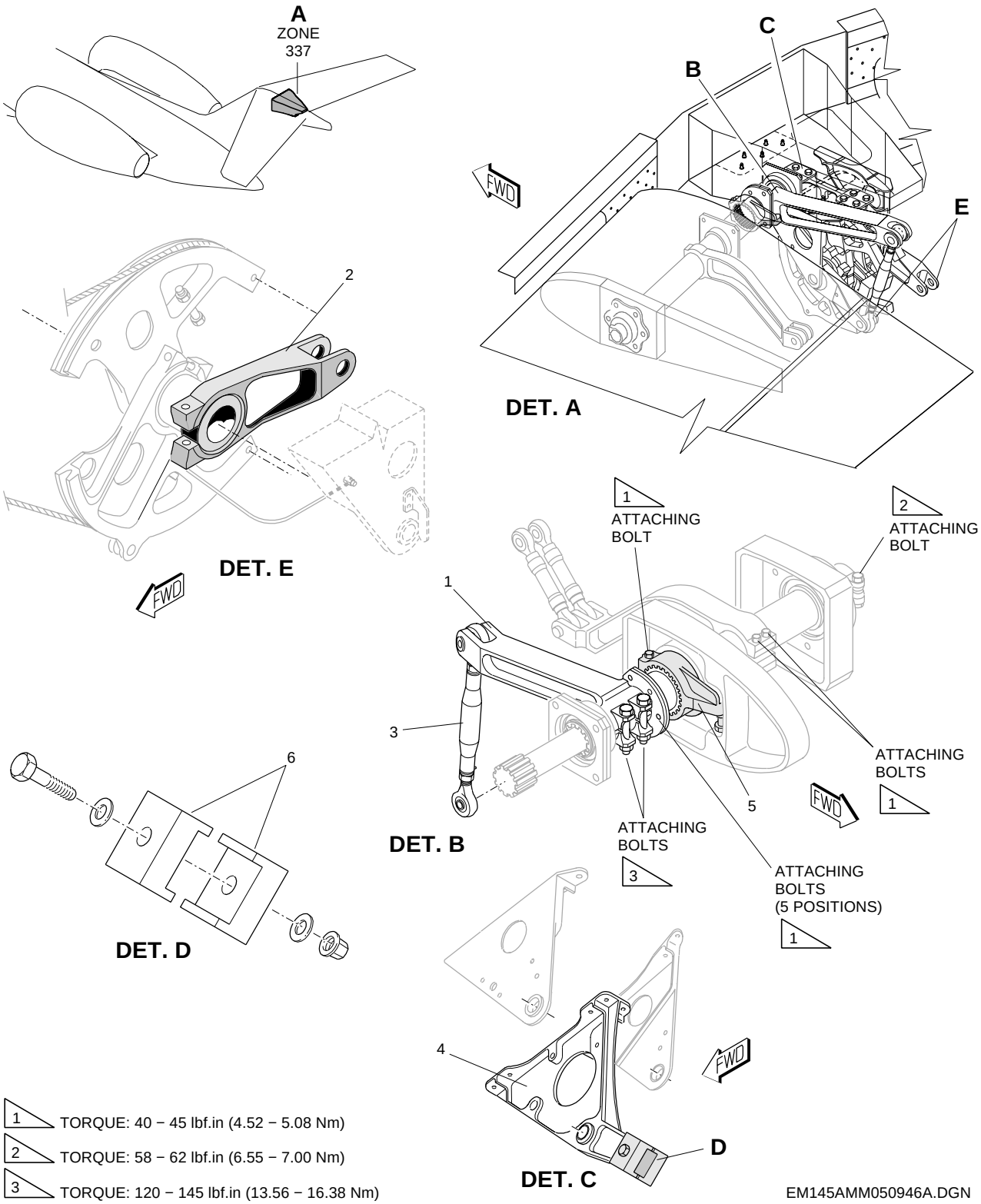


DET. A

EM145AMM270949A.DGN

EFFECTIVITY: ALL

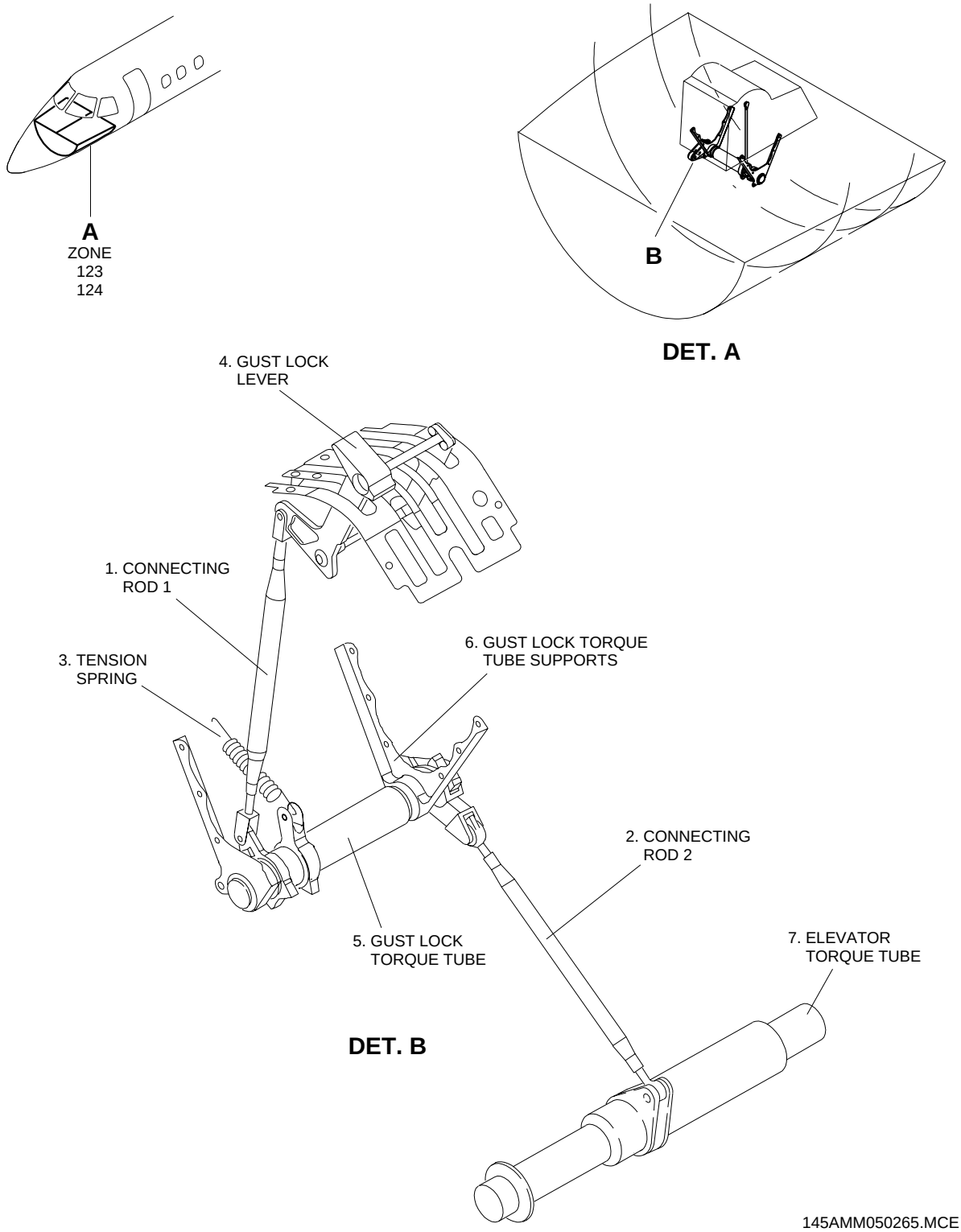
Elevator System Rear Mechanism - Components
Figure 605



EFFECTIVITY: AIRCRAFT WITH MECHANICAL GUST LOCK SYSTEM

Mechanical Gust Lock - Components

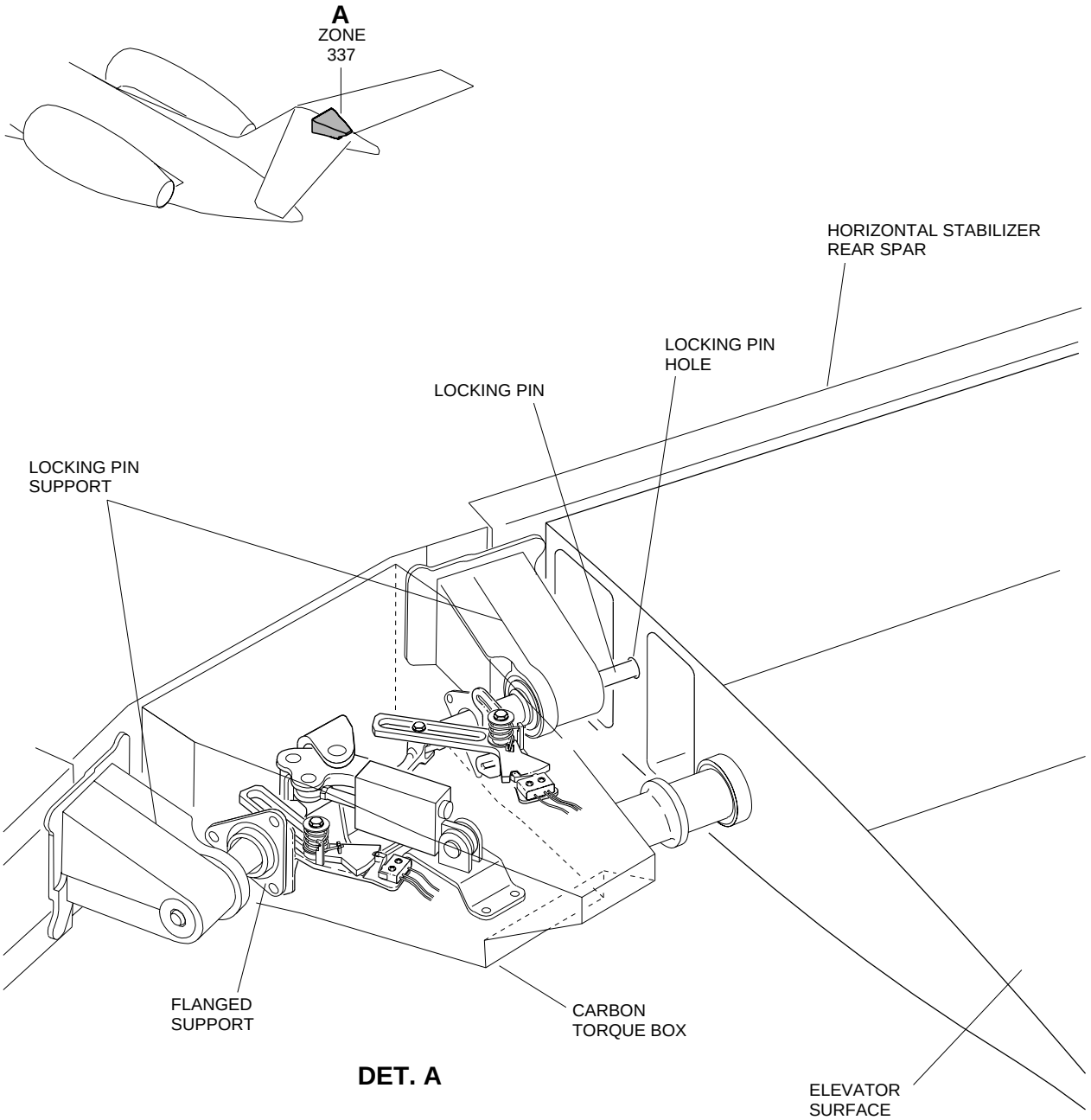
Figure 606



EFFECTIVITY: AIRCRAFT WITH ELECTROMECHANICAL GUST LOCK SYSTEM

Electromechanical Gust Lock - Components

Figure 607



145AMM050498.MCE A