AILERON PRIMARY MECHANICAL CONTROL - INSPECTION/CHECK

EFFECTIVITY: ALL

1. General

   A. This section gives the procedures to do an inspection on the Aileron Primary Mechanical Control from the Control Wheel to the Aileron PCAs.

   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*
27-11-00-200-801-A ♦	AILERON PRIMARY MECHANICAL CONTROL FROM CONTROL WHEEL TO AILERON PCAS CHECKING CABLES PULLEYS NRUS QUADRANTS DISCONNECT SYSTEM AND MECHANICAL LINKS - DETAILED VISUAL INSPECTION	ALL

TASK 27-11-00-200-801-A
EFFECTIVITY: ALL

2. AILERON PRIMARY MECHANICAL CONTROL FROM CONTROL WHEEL TO AILERON PCAS CHECKING CABLES PULLEYS NRUS QUADRANTS DISCONNECT SYSTEM AND MECHANICAL LINKS - DETAILED VISUAL INSPECTION

A. General

(1) This task gives the procedures to do an inspection on the Aileron Primary Mechanical Control from the Control Wheel to the Aileron PCAs.

(2) Figure 601 shows the location of the aileron control cables.

(3) Figure 602 shows the aileron torque tube.

(4) Figure 603 shows the aileron disconnect system.

(5) Figure 604 shows the fuselage sectors, PCAs, NRUs, and Control Cables of the Aileron Control System.

B. References

REFERENCE	*DESIGNATION*
AMM MPP 06-41-01/100	-
AMM MPP 06-41-02/100	-
AMM MPP 06-44-00/100	- COMPONENT LOCATION
AMM MPP 20-10-08/400	- REMOVAL/INSTALLATION
AMM MPP 27-10-00/400	- REMOVAL/INSTALLATION
AMM TASK 20-20-01-200-801-A/600	CONTROL CABLES - INSPECTION
AMM TASK 25-21-01-000-801-A/400	-
AMM TASK 25-21-01-400-801-A/400	-
AMM TASK 27-11-01-000-801-A/400	CONTROL CABLES - REMOVAL
AMM TASK 28-41-00-200-801-A/600	-
AMM TASK 57-41-00-000-801-A/400	LEADING EDGE I - REMOVAL
AMM TASK 57-41-00-400-801-A/400	LEADING EDGE I - INSTALLATION
AMM TASK 57-42-00-000-801-A/400	LEADING EDGE II - REMOVAL
AMM TASK 57-42-00-400-801-A/400	LEADING EDGE II - INSTALLATION
AMM TASK 57-43-00-000-801-A/400	LEADING EDGE III - REMOVAL
AMM TASK 57-43-00-400-801-A/400	LEADING EDGE III - INSTALLATION
AMM TASK 57-56-03-000-801-A/400	AILERON UPPER SHROUD - REMOVAL
AMM TASK 57-56-03-400-801-A/400	AILERON UPPER SHROUD - INSTALLATION
AMM TASK 57-56-04-000-801-A/400	AILERON LOWER SHROUD - REMOVAL
AMM TASK 57-56-04-400-801-A/400	AILERON LOWER SHROUD - INSTALLATION

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
123	123BL	Area under cockpit floor
221	221EF	Cockpit floor - LH side
221	221GF	Cockpit floor - LH side
222	222FF	Cockpit floor - RH side
231	231BF	Passenger floor - LH side
231	231FF	Passenger floor - LH side
231	231GF	Passenger floor - LH side
241	241BF	Passenger floor - LH side
241	241DF	Passenger floor - LH side
251	251BF	Passenger floor - LH side
251	251DF	Passenger floor - LH side
252	252AF	Passenger floor - RH side
551	551CB	Left wing
651	651CB	Right wing

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially available	Dry Cloth	To do the inspection of the control cables	AR
Commercially available	Brush	To apply the corrosion preventive to the cables	1

F. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-C-16173 Class 1, Grade 3	Esgard PL-3	AR

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	Fuselage and wing

I. Preparation

SUBTASK 841-002-A

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

(2) Make sure that the hydraulic system is not pressurized.

(3) Remove the passenger seats as necessary to remove floor panel 252AF to get access to the aileron control cables aft of the aileron intermediate sector (AMM TASK 25-21-01-000-801-A/400).

(4) Remove control rigging door 123BL (AMM MPP 06-41-01/100) and floor panels 221EF, 221GF, 222FF, 231BF, 231FF, 231GF, 241BF, 241DF, 251BF, 251DF, and 252AF (AMM MPP 06-41-02/100).

(5) Remove wing leading edge 1 (AMM TASK 57-41-00-000-801-A/400), wing leading edge 2 (AMM TASK 57-42-00-000-801-A/400), and wing leading edge 3 (AMM TASK 57-43-00-000-801-A/400).

(6) Remove the aileron upper shroud (AMM TASK 57-56-03-000-801-A/400) and aileron lower shroud (AMM TASK 57-56-04-000-801-A/400).

(7) Remove access doors 551CB and 651CB (AMM MPP 06-44-00/100).

J. Inspect (Detailed inspection) Aileron Primary Mechanical Control from Control Wheel to Aileron PCAs, Checking Cables, Pulleys, NRUs, Quadrants, Disconnect System, and Mechanical Links

SUBTASK 220-002-A

(1) Do an inspection of the aileron control cables from the control Wheel to the Aileron PCA as written below. Refer to Figure 601.

CAUTION: BE CAREFUL WITH YOUR HANDS WHILE THE CABLES ARE MOVED.

(a) Do an inspection on the aileron control cables from the control wheel to the aileron torque tube (Figure 602).

- Examine the control cables for friction against the structure and mobile parts.
- Pass a dry cloth along the control cables. Make sure that there are no broken wires on the cables.
  If the cloth catches on the cables and snags are found, remove the cable (AMM TASK 27-11-01-000-801-A/400) and do (AMM TASK 20-20-01-200-801-A/600).

NOTE: Move the cable to full travel in the two directions to examine the cable.

CAUTION: BE CAREFUL WITH YOUR HANDS WHILE THE CABLES ARE MOVED.

(b) Do an inspection on the aileron control cables from the aileron torque tube to the aileron intermediate sector (fuselage sector). Refer to Figure 602 and Figure 604.

- Examine the control cables for friction against the structure and mobile parts.
- Pass a dry cloth along the control cables. Make sure that there are no broken wires on the cables.
  If the cloth catches on the cables and snags are found, remove the cable (AMM TASK 27-11-01-000-801-A/400) and do (AMM TASK 20-20-01-200-801-A/600).

- Specially examine the points where the cables change direction (quadrants and pulleys).

NOTE: Move the cable to full travel in the two directions to examine the cable around pulleys.

(c) Do an inspection on the aileron control cables from the fuselage sectors to the left and right wing sectors. Refer to Sheet 1, Figure 604.

CAUTION: BE CAREFUL WITH YOUR HANDS WHILE THE CABLES ARE MOVED.

(d) Examine the cables for external wear and corrosion.

- If one single wire of any strand shows wear that reduces its cross section by more than 40 percent, the cable must be replaced (AMM TASK 27-11-01-000-801-A/400) (AMM TASK 20-20-01-200-801-A/600).
- If signs of corrosion is found, remove the cable (AMM TASK 27-11-01-000-801-A/400) and examine the cable for internal corrosion (AMM TASK 20-20-01-200-801-A/600).

NOTE: Move the cable to full travel in the two directions to examine the cable, pressure seals, and grommets. Refer to DET. D and DET. E, Figure 604.

(e) Do an inspection on the linkage of the control cables to the PCA quadrant for loose and missing parts. Do this step at the left and right wings.

(2) Do an inspection on the pressure seals and check if they are worn. If necessary, replace them as follows.

(a) Remove the bolts (2) and washers (2). Refer to DET. E, Figure 604

(b) Release the plate and move it forward.

(c) Put a new pressure seal between the plate and gasket.

(d) Finger-tighten the bolts (2) with their washers (2).

(e) Move the control yoke left or right to align the pressure seal with the cable.

(f) Tighten the bolts (2) until they touch the structure surface and turn the bolt (2) by a 1/4 turn more.

NOTE: Make sure that the pressure seal is aligned with the cable and there is no friction between the control cable and the plate to prevent jamming and wear.

(g) Check if the cable moves freely and smoothly after the installation of the new pressure seal

(3) Do an inspection of the aileron torque tube and fuselage sectors for loose and missing parts.

(4) Do an inspection of:

- Mechanical linkage of the disconnect cable and the disconnect quadrant. Refer to Figure 603.

- Mechanical linkage of the disconnect cable and the disconnect device. Refer to Figure 603.
- Mechanical linkage of the NRU with the aileron PCA and NRU with the wing structure.
- Mechanical linkage of the PCA with the aileron.
- Aileron hinge attachment points. If signs of corrosion were found, remove the aileron surface according to the AMM MPP 27-10-00/400 and replace the aileron bearing, refer to AMM MPP 20-10-08/400.

(5) Do an inspection all along the disconnect cable for interferences with adjacent structures and signs of chafing.

(6) Do an inspection of the electrical connector of the aileron disconnect system.

(7) Make sure that all the cable guards are installed in good conditions.

(8) Do an inspection of the pulleys to make sure that there are no signs of:

- Too high cable tension.
- Misalignment.
- Cables not aligned.

(9) Make sure that the bushing is on its correct position. Refer to DET. B, Figure 604.

NOTE: If it is not, contact the EMBRAER Technical Support Department on an occurrence of bushing migration.

(10) (ON AIRCRAFT WITH AILERON−CONTROL CARBON−STEEL CABLES) Apply a thin layer of Esgard PL-3, with a brush, along the control cables.

K. Follow-on

SUBTASK 842-002-A

(1) Do an inspection of the fuel quantity indication harness (AMM TASK 28-41-00-200-801-A/600).

NOTE: The inspection of fuel quantity indication harness is a part of Critical Design Configuration Control Limitations (CDCCL) in the Airworthiness Limitations (Section 6) of the Maintenance Review Board Report (MRB).

(2) Install control rigging door 123BL (AMM MPP 06-41-01/100) and floor panels 221EF, 221GF, 222FF, 231BF, 231FF, 231GF, 241BF, 241DF, 251BF, 251DF, and 252AF (AMM MPP 06-41-02/100).

(3) Install the passenger seats (AMM TASK 25-21-01-400-801-A/400).

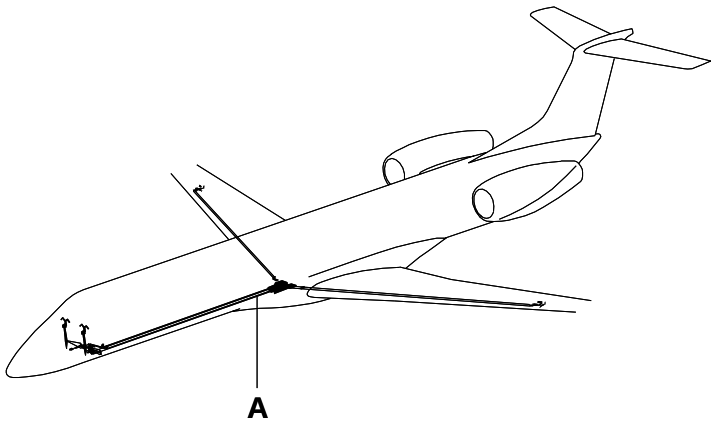
(4) Install wing leading edge 1 (AMM TASK 57-41-00-400-801-A/400), wing leading edge 2 (AMM TASK 57-42-00-400-801-A/400), and wing leading edge 3 (AMM TASK 57-43-00-400-801-A/400).

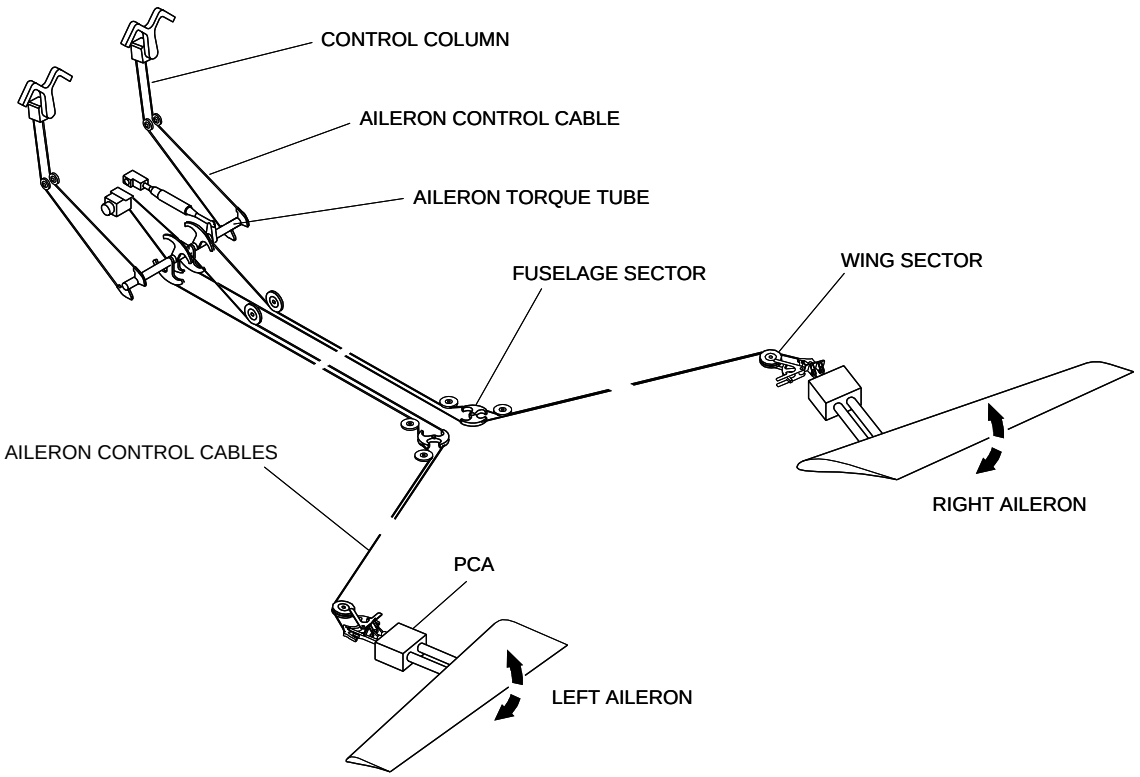
(5) Install the aileron upper shroud (AMM TASK 57-56-03-400-801-A/400) and aileron lower shroud (AMM TASK 57-56-04-400-801-A/400).

(6) Install access door 551CB and 651CB (AMM MPP 06-44-00/100).

EFFECTIVITY: ALL

Aileron Control Cables - Location
Figure 601





DET. A

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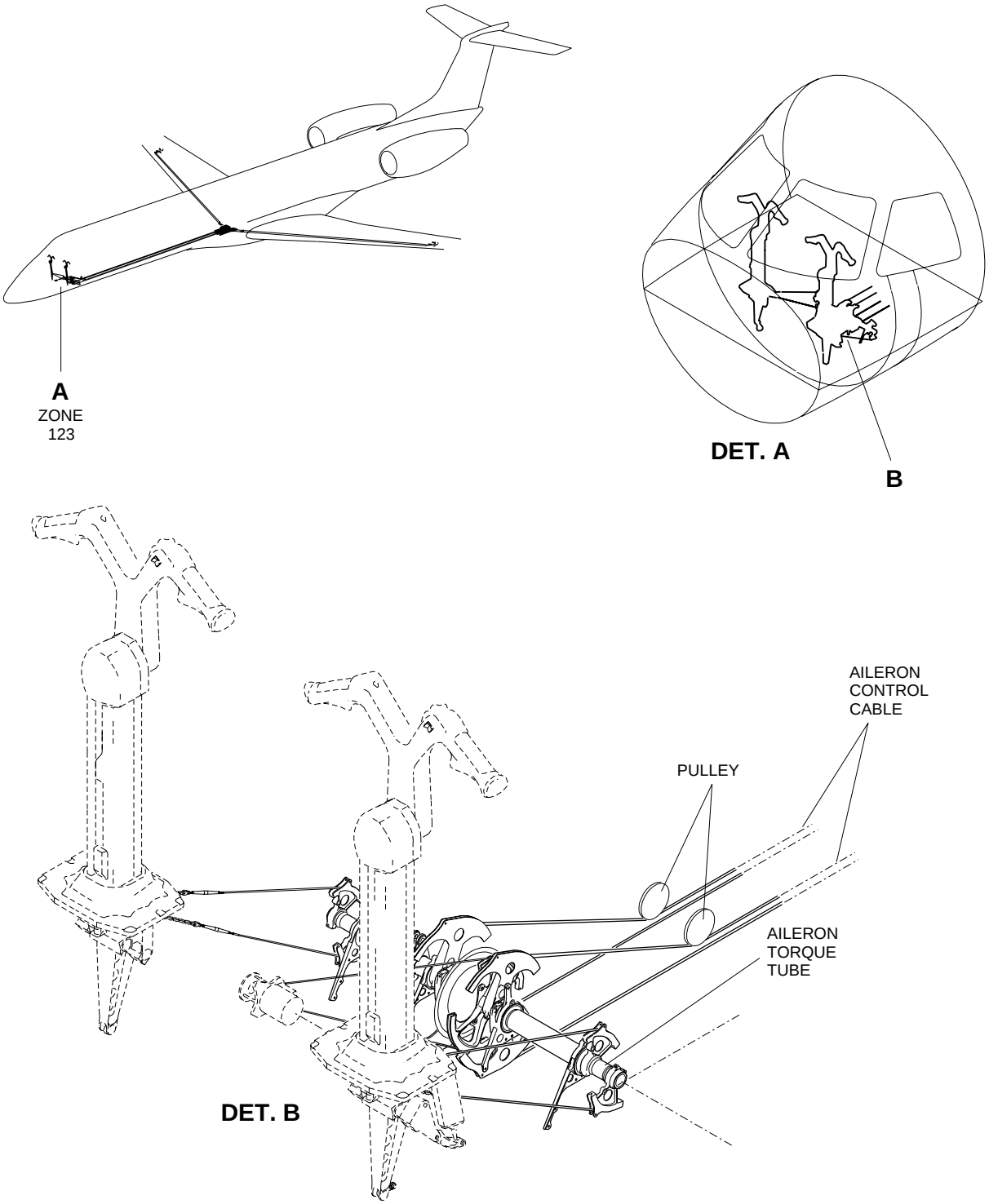
EFFECTIVITY: ALL

Aileron Torque Tube - Location
Figure 602



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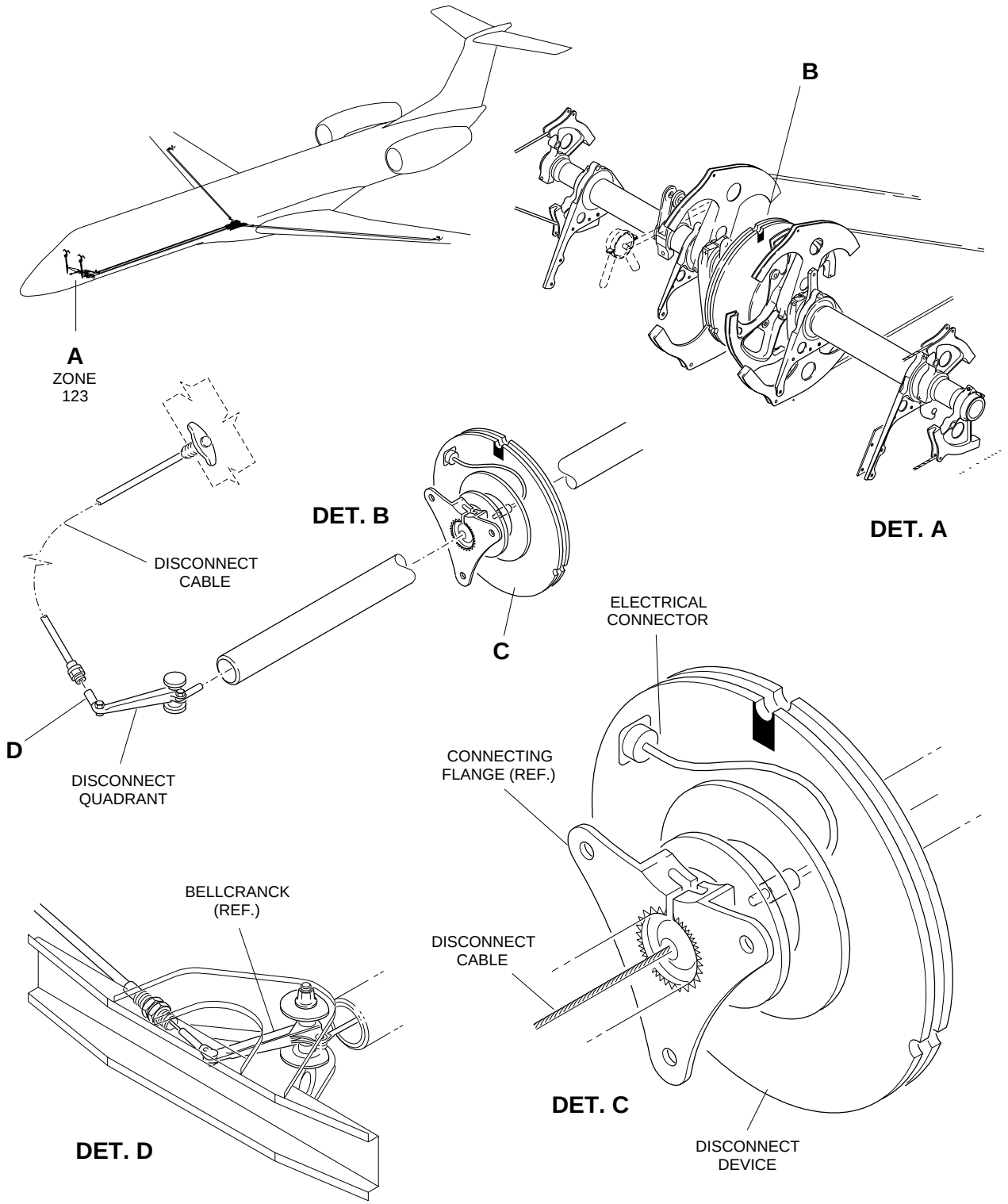
EFFECTIVITY: ALL

Aileron Disconnect Device - Location
Figure 603



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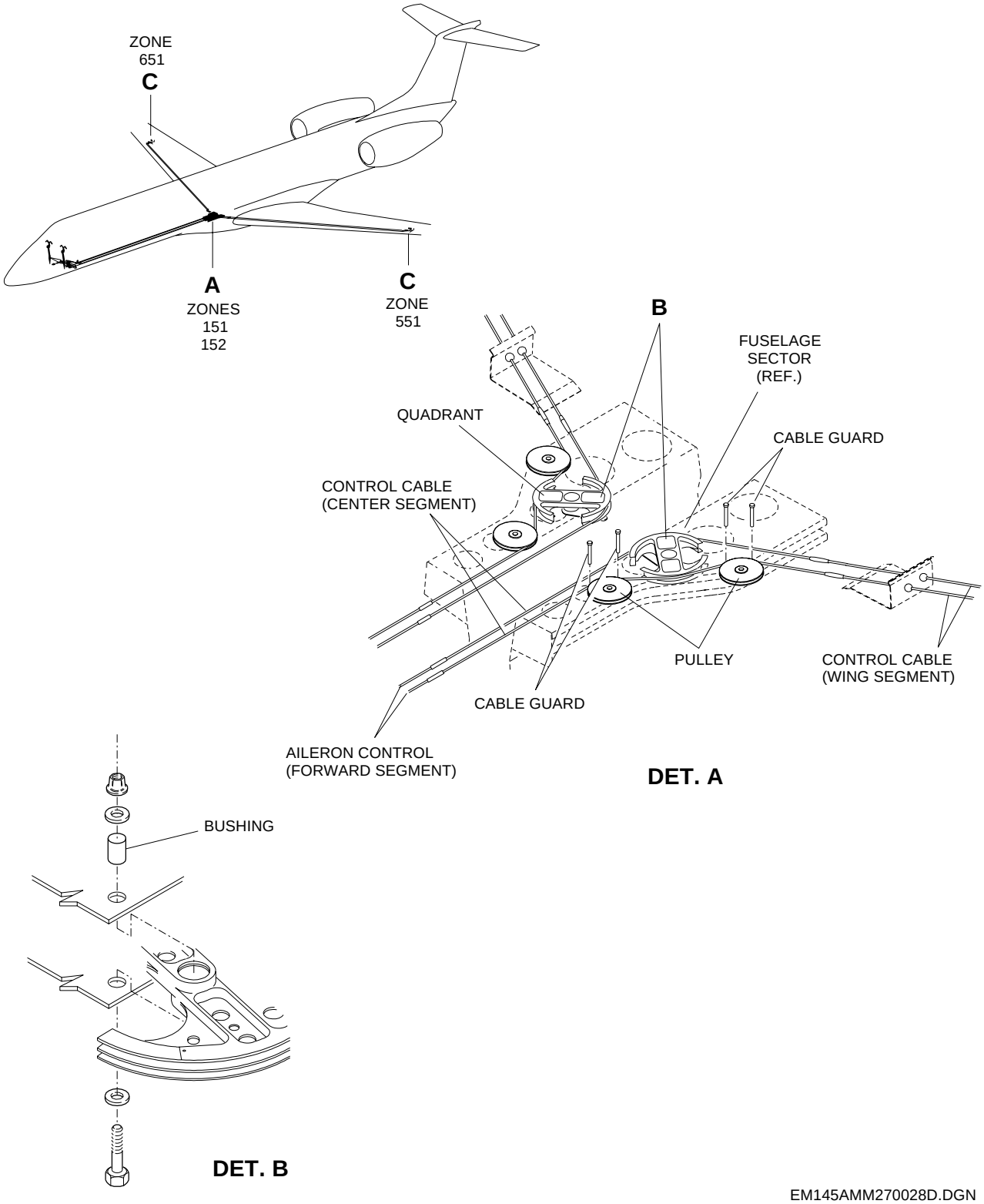
EFFECTIVITY: ALL

Fuselage Sectors, PCAs, NRUs, and Control Cables of the Aileron Control System - Location
Figure 604 - Sheet 1



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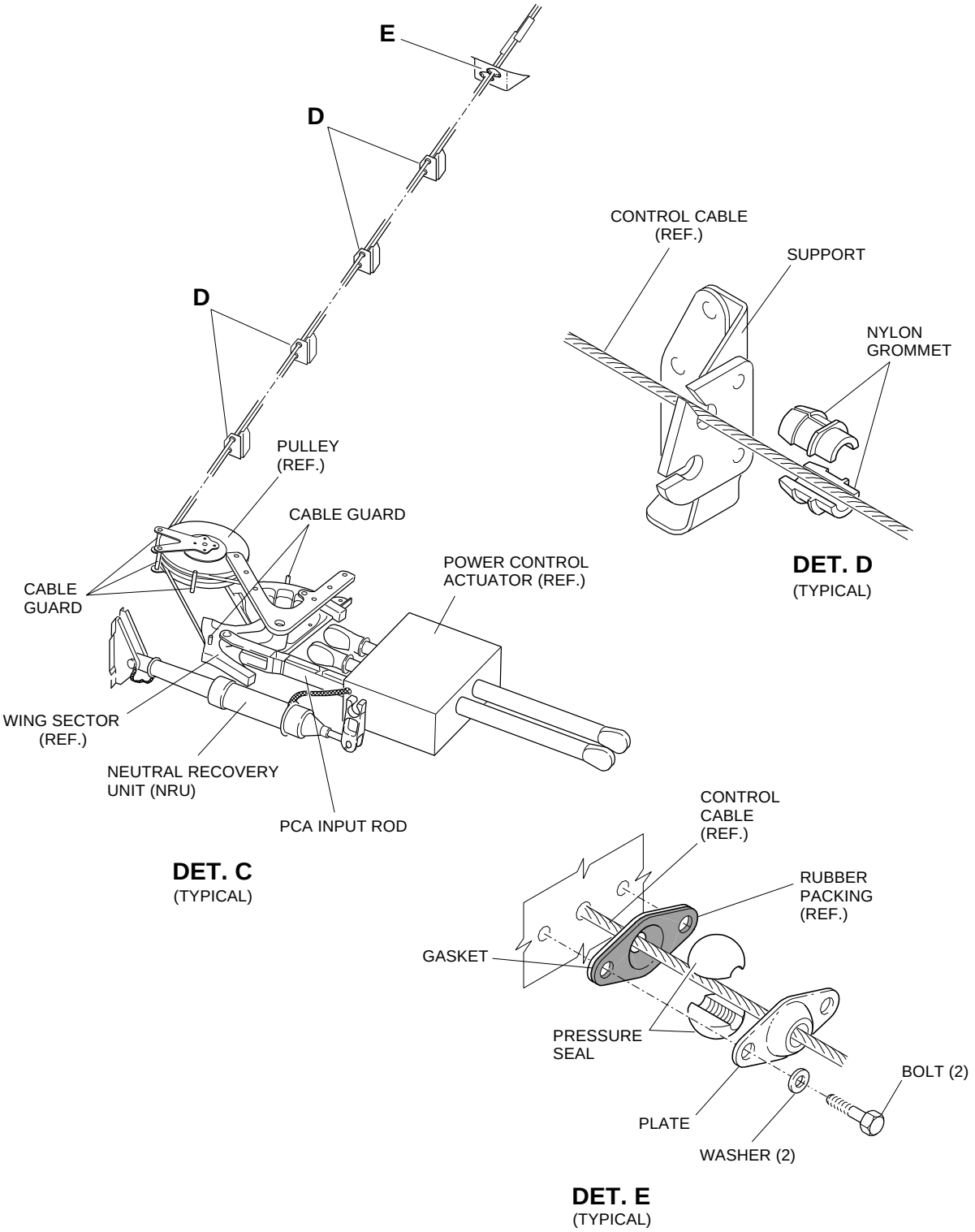
EFFECTIVITY: ALL

Fuselage Sectors, PCAs, NRUs, and Control Cables of the Aileron Control System - Location
Figure 604 - Sheet 2



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