AIRCRAFT GROUNDING - MAINTENANCE PRACTICES

EFFECTIVITY: ALL

1. General

A. This section gives the procedures to statically ground the aircraft. This is necessary to prevent sparks which can occur from:

- Lightning and Static discharges.
- Static charges caused by high fuel flows during refuelling operations.

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*
20-40-02-910-801-A	STATIC GROUNDING - STANDARD PRACTICES	ALL

TASK 20-40-02-910-801-A
EFFECTIVITY: ALL

2. STATIC GROUNDING - STANDARD PRACTICES

A. General

(1) On aircraft with three grounding points, they are installed as follows: two of them are on the bottom of each wing leading edge (Figure 201), and one is aft of the nose landing gear (Figure 202).

(2) On aircraft with four grounding points, they are installed as follows: two of them are on the bottom of each wing leading edge (Figure 201), one is aft of the nose landing gear and one is on the right main landing gear (Figure 202).

(3) If the aircraft is with its wing leading edge and landing gear removed, the operator can use the titanium support (Figure 203) or landing gear ground support (Figure 204) as an alternative to ground the aircraft.

(4) Bonding is the process used to connect two or more conductive objects with a conductor to make sure that there is the same electrical potential between them.

(5) Grounding is the process of connecting two or more conductive objects with a conductor to the ground.

(6) Static Grounding is mandatory in the following situations:

(a) Maintenance of the aircraft with power tools, lights or any other equipment connected to a power source.

(b) Maintenance or servicing operations outside the aircraft, during electrical storms.

(7) For fuel servicing, electrical bonding between the aircraft and the refueling equipment is necessary to prevent sparks generated because of differential potential between them. Static Ground is recommended.

(8) For oxygen servicing, there are two options to prevent sparks caused by static charges:

(a) Static grounding of the aircraft and oxygen servicing equipment is necessary, or;

(b) Electrical bonding between the aircraft and the oxygen servicing equipment is necessary. Static Ground is recommended.

B. References

REFERENCE	*DESIGNATION*
AMM TASK 10-10-01-500-801-A/200	AIRCRAFT NORMAL PARKING

C. Zones and Accesses

ZONE	*PANEL/DOOR*	*LOCATION*
512		Left Center Wing Leading Edge
612		Right Center Wing Leading Edge
711		Nose Landing Gear

(Continued)

ZONE	PANEL/DOOR	LOCATION
722		Right Main Landing Gear

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
Commercially available	Static Grounding Cable	To ground the aircraft	

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	On the aircraft structure

I. Preparation

SUBTASK 841-002-A

WARNING: DURING ATMOSPHERIC ELECTRICAL DISTURBANCES, DO NOT WEAR HEADSET, TOUCH EQUIPMENT ELECTRICALLY CONNECTED TO THE AIRCRAFT OR HOLD A GROUND CONNECTION. A LIGHTNING STRIKE CAN CAUSE SEVERE INJURY TO PERSONS.

(1) Make sure that the aircraft is parked adjacent to an approved grounding point (AMM TASK 10-10-01-500-801-A/200).

NOTE:
- For static grounding with the use of the wing-leading edge points, use a flexible grounding cable (specification MIL-W-83420) with a plug (specification MIL-C-83413/4).
- For static grounding with the use of the nose landing gear point or right main-landing gear point, use a flexible grounding cable (specification MIL-W-83420) with a grounding clamp (specification MIL-C-83413/7).
- To ground the refueling nozzle or the oxygen charger adapter, use a 3/32”-diameter steel cable (specification MIL-W-83420) with plug (specification MIL-C-83413/4) and an alligator clip.

(2) Examine the static ground cable for damage and to make sure that the end-fittings are correctly attached.

J. Procedure (Figure 201) (Figure 202) (Figure 203) (Figure 204)

SUBTASK 940-002-A

WARNING: ALWAYS ATTACH THE GROUNDING CABLE TO THE GROUND CONNECTION FIRST. NEVER ATTACH THE CABLE TO THE AIRPLANE AND THEN TO THE GROUND CONNECTION.

CAUTION: WHEN YOU USE AN AC-FED EXTERNAL POWER SOURCE, CONNECT A GROUND CABLE BETWEEN THE POWER SOURCE AND A SUITABLE GROUNDING POINT AND DO THE SAME BETWEEN THE AIRCRAFT AND A SUITABLE GROUNDING POINT.

(1) Use one of the options that follow to ground the aircraft:

(a) Connect the static grounding cable to a grounding point in the hangar and the plug to the grounding point on the bottom of the left wing leading edge (Figure 201).

(b) Connect the static grounding cable to a grounding point in the hangar and the plug to the grounding point on the right wing leading edge (Figure 201).

(c) Connect the static grounding cable to a grounding point in the hangar and attach the grounding clamp to the static grounding point of the nose landing gear (Figure 202).

(d) (For aircraft with right main landing gear grounding point) Connect the static grounding cable to a grounding point in the hangar and attach the grounding clamp to the static grounding point of the right main landing gear (Figure 202).

WARNING: ALWAYS ATTACH THE GROUNDING CABLE TO THE GROUND CONNECTION FIRST. NEVER ATTACH THE CABLE TO THE AIRPLANE AND THEN TO THE GROUND CONNECTION.

CAUTION: WHEN YOU USE AN AC-FED EXTERNAL POWER SOURCE, CONNECT A GROUND CABLE BETWEEN THE POWER SOURCE AND A SUITABLE GROUNDING POINT AND DO THE SAME BETWEEN THE AIRCRAFT AND A SUITABLE GROUNDING POINT.

(2) If the ground points from Figure 201 and Figure 202 are not available to ground the aircraft, do one of the the alternative procedures described below to ground the aircraft:

(a) To ground aircraft using the titanium support in the wing leading edge, do as follows (Figure 203):

1 Connect the static grounding cable to a grounding point in the hangar and attach the grounding clamp to the titanium support (1) in the wing leading edge.

(b) To ground aircraft using the ground support of the landing gears, do as follows (Figure 204):

1 Make sure that the bonding jumper (2) was removed from the ground support (1).

2 Connect a ground wire (4) in the ground support (1).

NOTE: Use a grounding wire with maximum AWG#6.

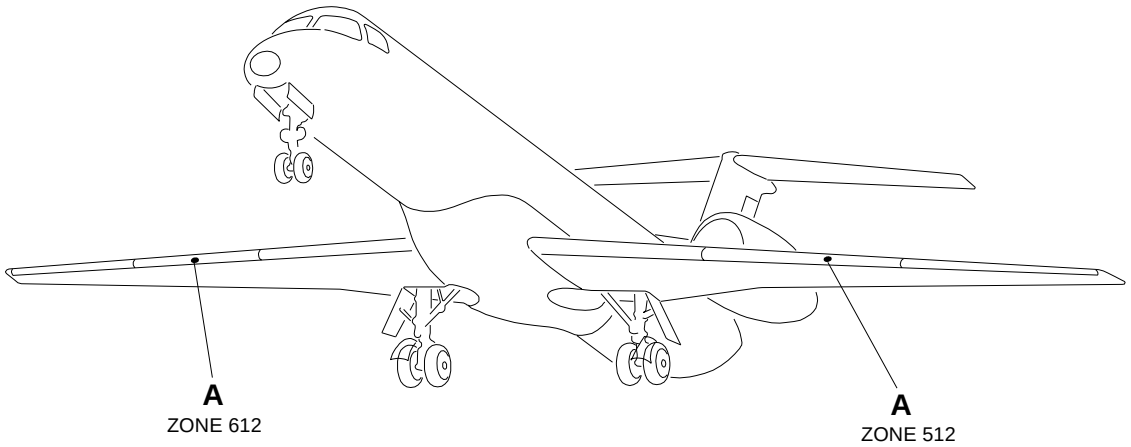
CAUTION: MAKE SURE THAT YOU INSTALLED A TIE-DOWN STRAP TO SUPPORT THE GROUNDING CABLE WEIGHT. IF YOU DO NOT OBEY THIS PRECAUTION, DAMAGE TO THE GROUND SUPPORT CAN OCCUR.

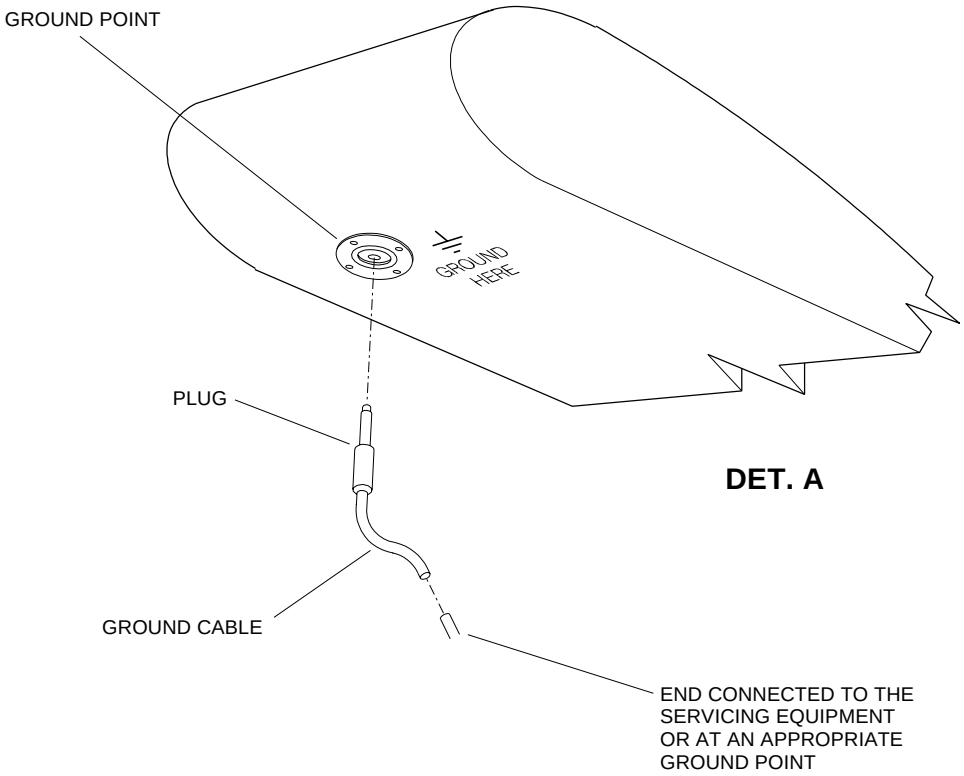
3 Install a tie-down strap (3) in the ground wire (4) to support the wire weight.

4 Connect the static grounding cable to a grounding point in the hangar and attach the grounding clamp to the ground wire (4).

EFFECTIVITY: ALL

Grounding Points at Wing Leading Edge - Location
Figure 201





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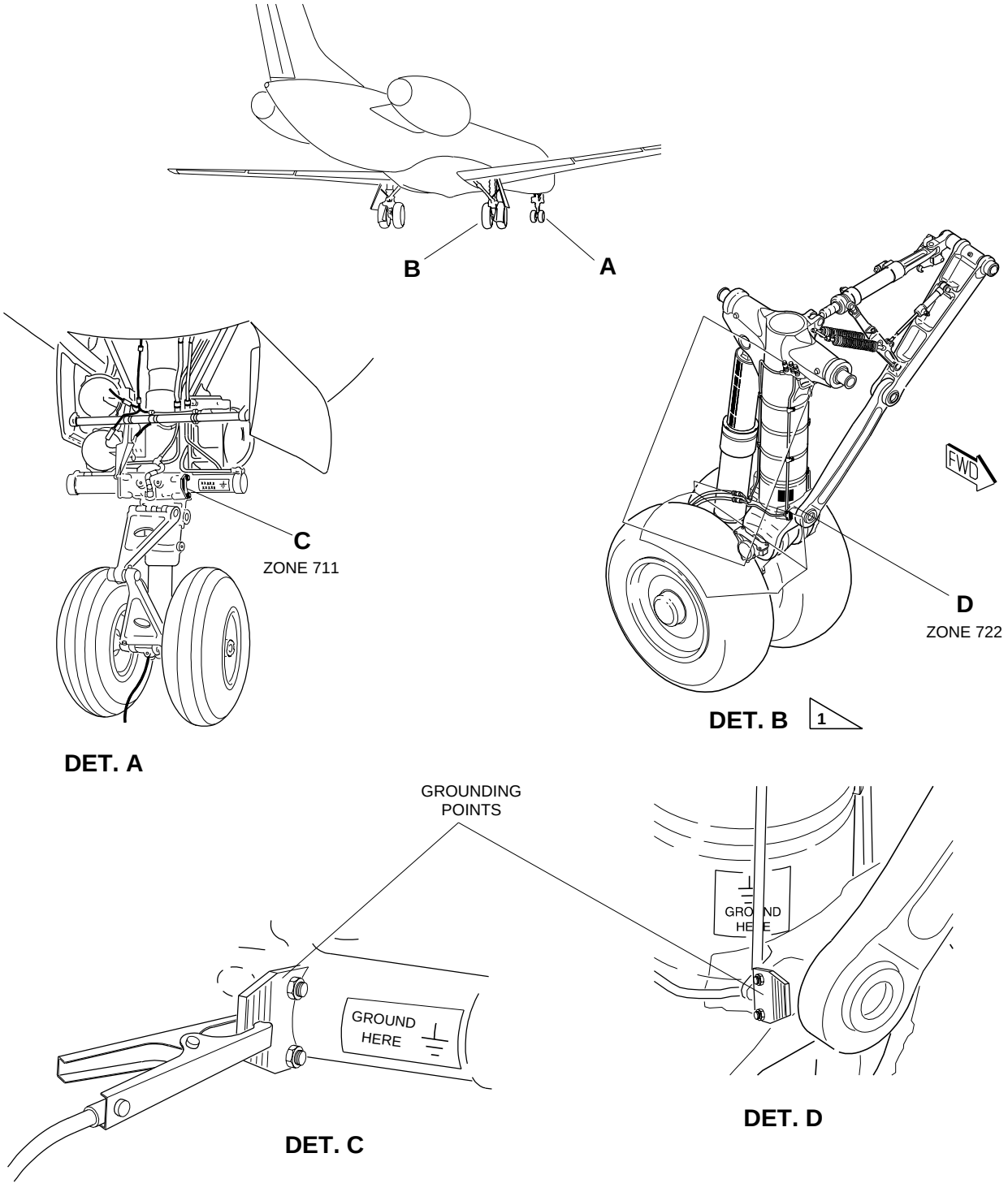
EFFECTIVITY: ALL

Grounding Point at Nose Landing Gear and RH Main Landing Gear - Location
Figure 202



1 FOR AIRCRAFT WITH STATIC GROUNDING ON THE RIGHT MAIN LANDING GEAR

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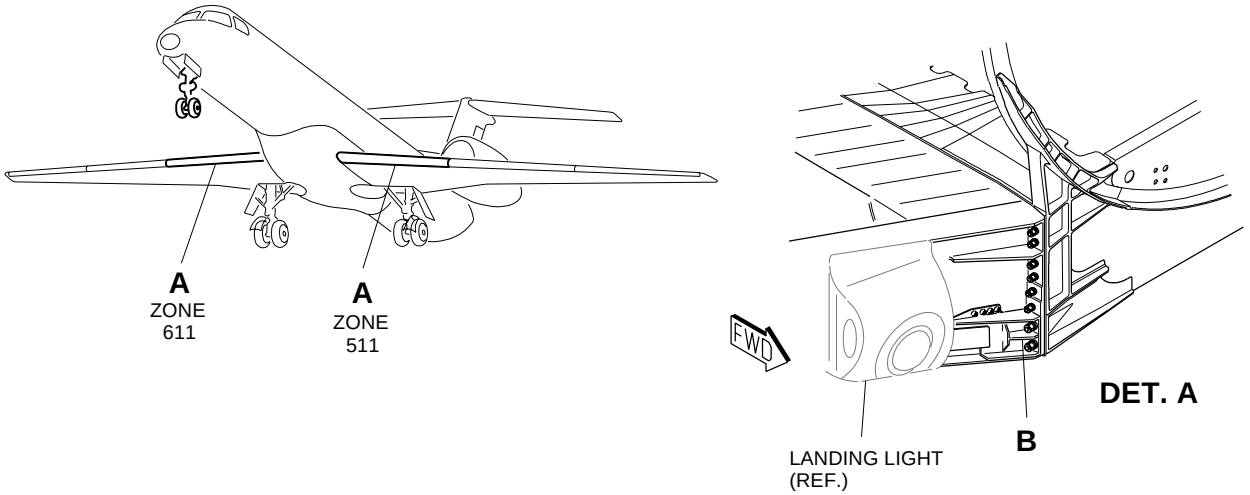
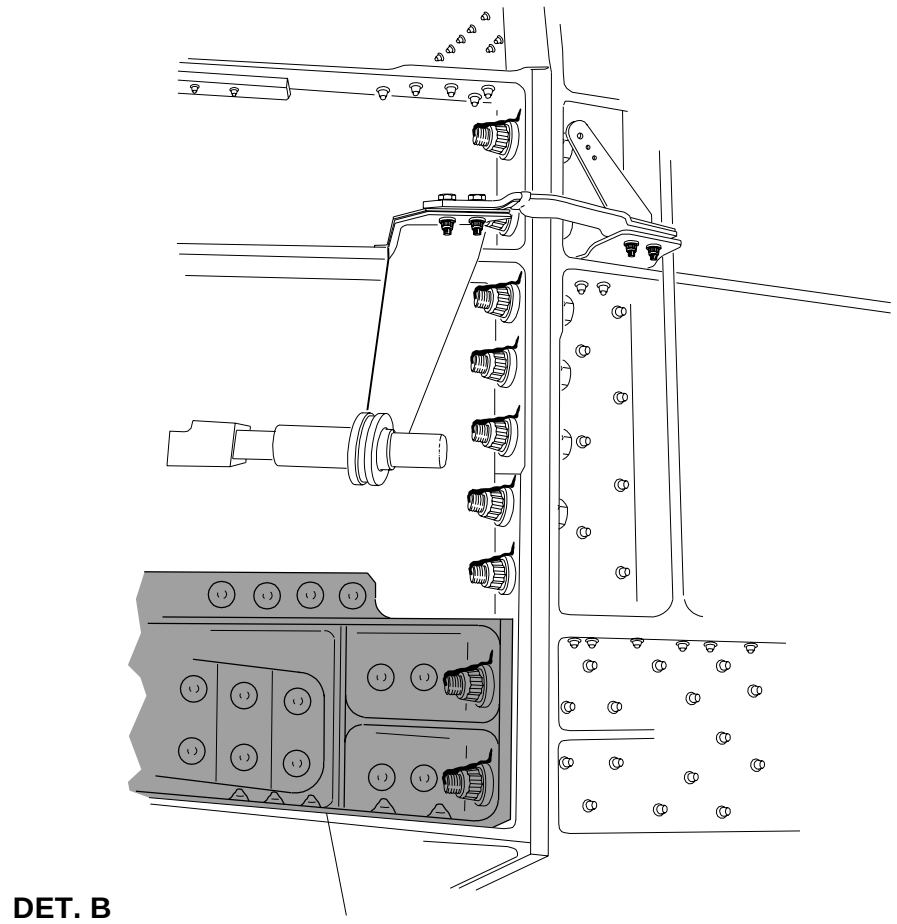
EFFECTIVITY: ALL

Alternative Grounding Points at Wing Leading Edge - Location
Figure 203





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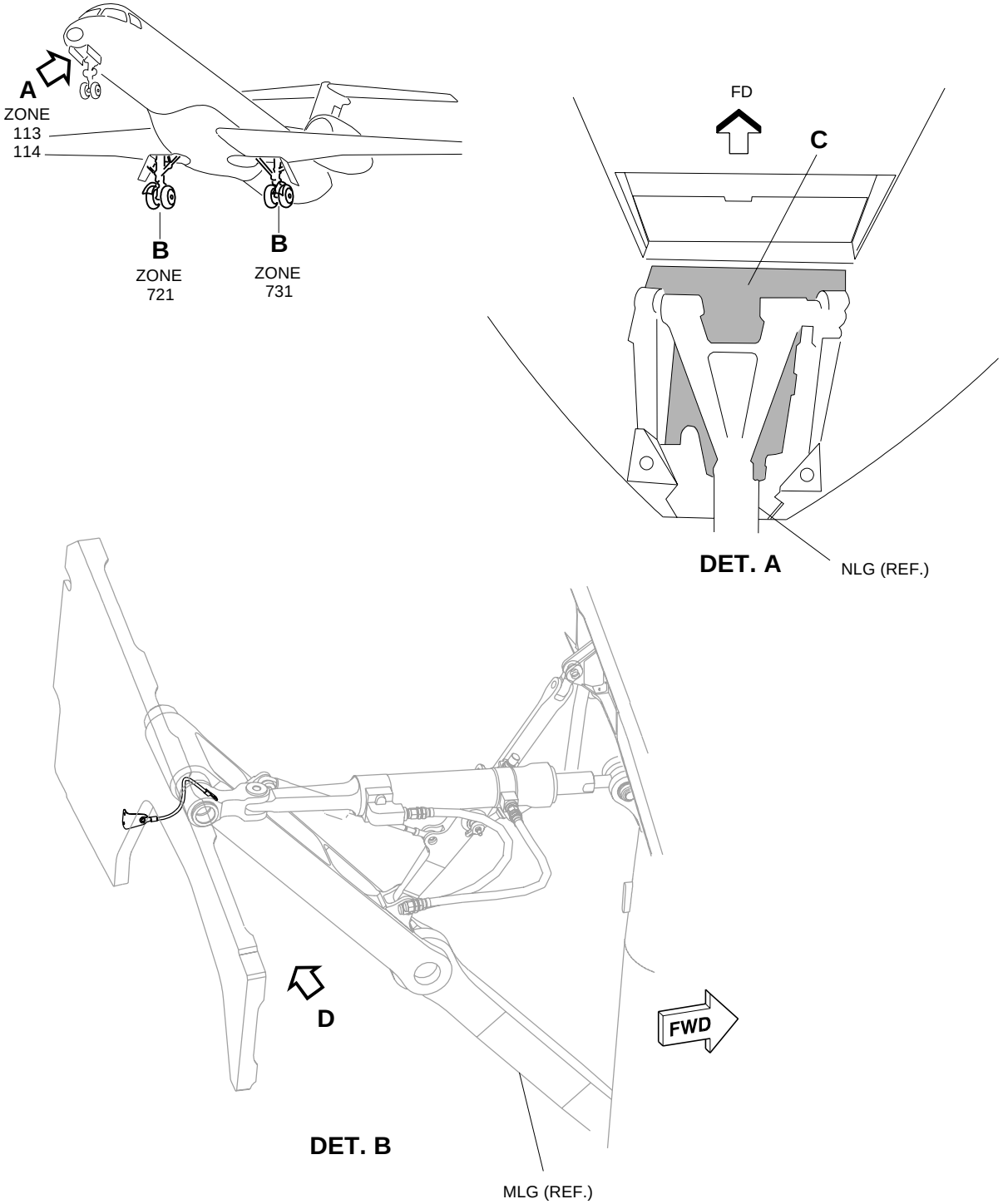
EFFECTIVITY: ALL

Alternative Grounding Points at Nose Landing Gear and Main Landing Gear - Location
Figure 204 - Sheet 1



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EFFECTIVITY: ALL

Alternative Grounding Points at Nose Landing Gear and Main Landing Gear - Location
Figure 204 - Sheet 2