



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

EQUIPMENT/FURNISHINGS - CLEANING/PAINTING

EFFECTIVITY: ALL

1. General

CAUTION: OBEY SAFETY PRECAUTIONS DURING THE CLEANING OPERATIONS:

- MAKE SURE THAT THE CLEANING OPERATIONS ON ADJACENT SURFACES DO NOT CAUSE THE SURFACES ALREADY CLEANED TO BECOME DIRTY AGAIN.
- REMOVE THE STAINS IMMEDIATELY. THERE ARE STAINS THAT YOU CANNOT REMOVE AFTER SOME TIME.
- DO NOT USE FLAMMABLE SOLVENTS ON THE AIRCRAFT.
- DO NOT APPLY SPRAY SOLVENT.
- KEEP THE SOLVENTS IN CLOSED CONTAINERS.
- DO NOT USE METAL ACCESSORIES (STEEL WOOD, STEEL WIRE BRUSH, ETC.) TO CLEAN THE AIRCRAFT.
- DO NOT USE CHLORINATED AND FLUOROCARBON SOLVENTS ON ACRYLIC, POLYCARBONATE, AND POLYSULFONE PLASTICS OR IN AREAS PAINTED WITH WATER-BASE PAINTS. THESE SOLVENTS CAN CAUSE SUCH A DAMAGE TO THESE MATERIALS THAT YOU CANNOT REPAIR.
- DO NOT PERMIT THE ETHYL-ALCOHOL SOLUTION TO TOUCH THE POLYCARBONATE PARTS.
- DO NOT CLEAN DECALS WITH ORGANIC SOLVENTS (METHYL-ETHYL-KETONE, ALCOHOL, CHLORINATED SOLVENTS, FLUORINATED SOLVENTS, ETC.). THE MATERIAL IS NOT RESISTANT TO ORGANIC SOLVENTS.
- DO NOT APPLY SPRAY CLEANERS TO ACOUSTIC INSULATION OR PERFORATED SURFACES. USE A CLOTH MOIST WITH THE APPLICABLE CLEANER.
- DO NOT USE SOAP, LAUNDRY DETERGENT, AUTOMATIC DISHWASHER DETERGENT, OR STRONG HOUSEHOLD CLEANERS TO CLEAN THE SURFACES.

- A. This section gives the procedure to clean of the aircraft interior.
- 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 |
|--------------------|----------------------------------|-------------|
| 25-00-00-100-801-A | EQUIPMENT/FURNISHINGS - CLEANING | ALL |



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MAINTENANCE MANUAL

TASK 25-00-00-100-801-A

EFFECTIVITY: ALL

2. EQUIPMENT/FURNISHINGS - CLEANING

A. General

- WARNING:** • THE SOLVENTS AND CLEANERS CONTAIN TOXIC INGREDIENTS.
- WEAR GLOVES AND GOGGLES WHEN YOU USE THEM AND PREVENT THE CONTACT WITH YOUR SKIN OR EYES.
 - HAVE SUFFICIENT VENTILATION OR USE RESPIRATORS.

CAUTION: DO NOT LET THE AIRCRAFT STAY EMPTY AND ENERGIZED. A MEMBER OF THE MAINTENANCE TEAM, FAMILIAR WITH THE AIRCRAFT, MUST KNOW WHEN CLEANING PERSONNEL WILL GO OUT AND DEENERGIZE THE AIRCRAFT SAFELY.

- (1) This task gives instructions for the maintenance and cleaning procedures on materials and components of the aircraft interior.

B. References

| REFERENCE | DESIGNATION |
|---------------------------------|--|
| AMM TASK 20-40-01-860-801-A/200 | ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE |

C. Zones and Accesses

Not Applicable

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

| ITEM | DESCRIPTION | PURPOSE | QTY |
|------------------------|---------------------------|------------------------|-----|
| Commercially Available | Rubber gloves | Hand protection | 1 |
| Commercially Available | Safety goggles | Eye protection | 1 |
| Commercially Available | Wiper-Soft, Lint-Free | Equipment for cleaning | AR |
| Commercially Available | Spatula-Plastic | Equipment for cleaning | AR |
| Commercially Available | Vacuum Cleaner | Equipment for cleaning | AR |
| Commercially Available | Brush-Soft Nylon Bristles | Equipment for cleaning | AR |



AIRCRAFT MAINTENANCE MANUAL

F. Consumable Materials

| SPECIFICATION (BRAND) | DESCRIPTION | QTY |
|---------------------------|-------------------------------------|-----|
| AMS 1630 or equivalent | Carpet Cleaner, Shampoo-type | AR |
| AMS 1550 or equivalent | General Purpose Detergent/Degreaser | AR |
| MIL-PRF-680 or equivalent | Solvent | AR |
| MIL-D-16791 Type I | Neutral Detergent | AR |
| TT-N-95, Type II | Naphtha | AR |

G. Expandable Parts

Not Applicable

H. Persons Recommended

Not Applicable

I. Preparation

SUBTASK 841-002-A

CAUTION: IF THE AIRCRAFT IS SUPPLIED WITH EXTERNAL POWER FOR CLEANING PROCEDURES ONLY, MAKE SURE THAT ONLY THE GROUND SERVICE BUSES ARE ENERGIZED. FOR THIS, MAKE SURE THAT THE "GPU AVAIL" INDICATION ABOVE THE EXTERNAL POWER RECEPTACLE IS "ON" AND THE "GPU AVAIL" INDICATION ON THE ELECTRICAL PANEL, ON THE OVERHEAD PANEL (GPU PUSHBUTTON), IS ALSO "ON".

- (1) If it is necessary to energize the aircraft for cleaning procedures, do as follows:
 - (a) Energize the aircraft with the External DC Power Supply ([AMM TASK 20-40-01-860-801-A/200](#)).

J. Cleaning Procedures for Carpets

SUBTASK 110-002-A

CAUTION: FROM THE INSTALLATION OF THE CARPET, VACUUM THE CARPET ONCE A WEEK MINIMUM TO REMOVE SOIL AND OTHER PARTICLES BEFORE THEY ARE EMBEDDED INTO THE PILE OF THE CARPET. IN HEAVY TRAFFIC, VACUUM THE CARPET MORE FREQUENTLY.

- (1) Regular Cleaning.
 - (a) Vacuum the carpet to remove all loose particles.
NOTE: Move the vacuum cleaner slowly to give time for dirty removal.
 - (b) Do not let the dust bag be more than half full.
NOTE: You cannot over-vacuum.
 - (c) Prepare the carpet cleaning-solution according to the manufacturer's instructions.
 - (d) Apply it onto the surface while you use a soft-bristle brush lightly.
 - (e) Let the cleaned area to dry.

- (f) Vacuum it to complete the cleaning.
- (2) General Spot Cleaning.
- Blot spills with white paper towels or a clean absorbent cloth.
 - Lightly use a knife, spoon or spatula and a wiper to clean the area.
 - Do a visual check if the spot was removed.
- CAUTION:**
- BEFORE YOU APPLY CLEANING CHEMICAL TO THE CARPET, DO A TEST FOR COLORFASTNESS ON IN A SAMPLE OR IN A PART OF THE CARPET THAT CANNOT BE EASILY SEEN.
 - MAKE SURE THAT ALL SOLUTIONS HAVE PH BETWEEN 4 AND 7.
 - DO NOT SQUIRT SOLVENT INTO THE CARPET, IT CAN DISSOLVE THE BACKING MATERIALS.
- (d) Prepare the carpet cleaning solution. Use the treatments written in table 701 to soak the area to remove the dirty spots.

- NOTE:**
- Use the manufacturer's instructions.
 - Use the same order of treatment as given in table 701.

To remove these spots, use the order of the treatments given in the table:

Table 701 - CARPET - SPOT TREATMENT

| SPOT | ORDER OF TREATMENT | | |
|-----------------------|---|--|------------------------|
| | STEP 1 | STEP 2 | STEP 3 |
| Alcoholic Beverages | Cold water | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Bleach | Cold water | Ammonia solution | White vinegar solution |
| Blood | Cold water | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Butter | Solvent | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Chewing Gum | Chill with aerosol freezing agent or ice cubes in a plastic bag. Pick or scrape off gum | Solvent | - |
| Chocolate | Carpet shampoo. This solution must be well rinsed with clear water | Ammonia solution | White vinegar solution |
| Coffee | Cold water | Carpet shampoo. This solution must be well rinsed with clear water | Solvent |
| Colas and Soft Drinks | Cold water | Carpet shampoo. This solution must be well rinsed with clear water | - |

Table 701 - CARPET - SPOT TREATMENT (Continued)

| SPOT | ORDER OF TREATMENT | | |
|--------------------|---|--|--|
| | STEP 1 | STEP 2 | STEP 3 |
| Cooking Oils | Solvent | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Cream | Carpet shampoo. This solution must be well rinsed with clear water. | Solvent | - |
| Egg | Carpet shampoo. This solution must be well rinsed with clear water | - | - |
| Excrement | Cold water | Carpet shampoo. This solution must be well rinsed with clear water | Ammonia solution |
| Floor Wax | Solvent | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Fruit Juice | Cold water | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Furniture Polish | Solvent | Carpet shampoo. This solution must be well rinsed with clear water | Ammonia solution and white vinegar solution |
| Gravy and Sauces | Warm water | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Ink (fountain pen) | Cold Water | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Ink (ball point) | Solvent | Alcohol, methylated spirits or mineral turpentine | Carpet shampoo. This solution must be well rinsed with clear water |
| Ink (felt tip) | Warm water | Carpet shampoo. This solution must be well rinsed with clear water | Acetone. |
| Ketchup | Warm water | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Lipstick | Solvent | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Mercurochrome | Carpet shampoo. This solution must be well rinsed with clear water | Ammonia solution | White vinegar solution |
| Milk | Warm water | Solvent | Carpet shampoo. This solution must be well rinsed with clear water |
| Mustard | Carpet shampoo. This solution must be well rinsed with clear water | - | - |
| Nail Polish | Acetone | Solvent | - |
| Oil and Grease | Solvent | Carpet shampoo. This solution must be well rinsed with clear water | - |

Table 701 - CARPET - SPOT TREATMENT (Continued)

| SPOT | ORDER OF TREATMENT | | |
|------------------|---|--|---|
| | STEP 1 | STEP 2 | STEP 3 |
| Paint (latex) | Cold water | Carpet shampoo. This solution must be well rinsed with clear water | Solvent |
| Paint (oil) | Alcohol, methylated spirits or mineral turpentine | Solvent | Carpet shampoo. This solution must be well rinsed with clear water |
| Rust | Solvent | Carpet shampoo. This solution must be well rinsed with clear water | Rust remover |
| Salad Dressing | Carpet shampoo. This solution must be well rinsed with clear water. | Solvent | - |
| Shoe Polish | Solvent | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Soot | Solvent | Carpet shampoo. This solution must be well rinsed with clear water | Ammonia solution and white vinegar solution |
| Tar | Solvent | - | - |
| Tea | Cold water | Carpet shampoo. This solution must be well rinsed with clear water | Solvent |
| Urine (fresh) | Cold water | Carpet shampoo. This solution must be well rinsed with clear water | - |
| Urine (old) | Carpet shampoo. This solution must be well rinsed with clear water. | Ammonia solution | White vinegar solution |
| Vomit | Carpet shampoo. This solution must be well rinsed with clear water | - | - |
| Wine | Absorbent powder (salt, talc or proprietary absorbent powders) | Cold water | Carpet shampoo. This solution must be well rinsed with clear water |
| Unknown Material | Solvent. | Absorbent cleaner (host or Dramatic) | Carpet shampoo. This solution must be well rinsed with clear water. |

(e) Lightly apply it onto the surface with a soft-bristle brush.

(f) Do the operation again until the surface is fully cleaned.

NOTE: • Do not wet the carpet too much.
• Clean from the edge of the spot to prevent to much spread.

(g) When the spot is removed, apply pressure with paper towels or dry absorbent cloth to blot excessive moisture.

(h) Use a clean cloth soaked in warm water again from the edge to the center.

NOTE: Do not rub the carpet.

- (i) Apply pressure with paper towels or dry absorbent cloth to blot excessive moisture.
- (j) After the removal of the stains, clean the surface as in I.(1).

NOTE: Do not walk on moist areas of the carpet.

K. Cleaning Procedures for Seat Cover and Curtain Fabric

SUBTASK 110-003-A

NOTE: When the fire-blocking fabric is dirty, do a commercially dry cleaning, with solvent (solvent per MIL-PRF-680 or equivalent).

- (1) Seat Cover and Curtain Installed.
 - (a) Collect all loose particles with a vacuum cleaner.
 - (b) For stains not easy to remove, you can use a soft-bristle brush.
 - (c) Remove stains from fabric and be careful not to soak the seat upholstery, as in I.(2).
 - (d) If necessary, remove the upholstery to do the cleaning procedure.
- (2) Seat Cover and Curtain Removed.
 - (a) Apply a matching-type Velcro tape to all Velcro tapes to prevent damage during the cleaning.
 - (b) Remove the stains. Refer to the procedures in I.(2).
 - (c) Turn the seat-cover inner side out.

CAUTION: THE SOLUTION MUST BE COLD AND THE WATER CONTENTS MUST NOT BE OF MORE THAN 8% TO PREVENT THE COVER FROM BECOMING SHORTER.

- (d) Dry-clean with a mixture of solvent (solvent per MIL-PRF-680 or equivalent), neutral detergent, and cold water. The solution must be in the proportion recommended by the detergent manufacturer and the temperature must not be higher than 22°C (72°F).
- (e) Dry the cover at a temperature not higher than 55°C (130°F).
- (f) Remove the Velcro tape again.
- (g) Install the cover onto the seat.

L. Cleaning Procedures for Acrylic Parts

SUBTASK 110-004-A

- (1) Lightly rub the surface with a soft cloth soaked in neutral detergent to fully clean the surface.

- (2) Use a soft cloth soaked in clean water to fully remove the detergent.
- (3) Rub the surface dry with a soft clean cloth.

CAUTION: DO NOT PERMIT THE NAPHTHA TO COME TO THE PLASTIC SURFACES.

- (4) If necessary, clean the surface with a cloth soaked in Naphtha and detergent.
- (5) Rub the surface with a soft cloth soaked in neutral detergent to make sure that it is fully clean.
- (6) Fully remove all detergent with a soft cloth soaked in clean water.
- (7) Rub the surface dry with a soft clean cloth.

M. Cleaning Procedures for Leathers

SUBTASK 110-005-A

- (1) Regular Cleaning.
 - (a) Prepare the neutral detergent solution (Refer to the manufacturer's instructions) and apply foam only to leather with a soft cloth. Lightly wipe with circular movements.
 - (b) Remove all detergent with a soft cloth soaked in clean water.
 - (c) Rub the surface with a dry soft clean cloth.
- (2) Spot Cleaning.
 - (a) Clean stains (coffee, milk, and liqueur etc.) with neutral detergent (Refer to the manufacturer's instructions), as step L.(1).
 - (b) Clean stains (grease, butter etc.) with a soft cloth soaked in solvent (solvent per MIL-PRF-680 or equivalent).
 - (c) After the stain removal do as in step L.(1).

N. Cleaning Procedures for Metal Surfaces

SUBTASK 110-006-A

- CAUTION:**
- DO NOT LET SOLVENTS CONTACT THE DÉCOR MATERIAL OR PLASTIC COMPONENTS. MEK AND ACETONE CAN DAMAGE SOME COMPONENTS AND MATERIALS.
 - WHEN YOU SOAK THE CLOTH, DO NOT PUT IT OVER THE SOLVENT CONTAINER MOUTH AND TURN THE CONTAINER. THIS CAN CAUSE CONTAMINATION OF THE SOLVENT SOURCE. ALWAYS POUR THE SOLVENT ONTO THE CLOTH OR USE A DISPENSER CAN DESIGNED TO ISOLATE CONTAMINANTS.

- (1) Use of solvents:

- NOTE:**
- We recommend that you apply a corrosion inhibitor on metal surfaces independently of the cleaning material that you use. Metal surfaces are normally treated or anodized to prevent corrosion. Normal wear, and

abnormal abuse affect corrosion, and it is always an important factor in aircraft.

- Do not scour or abrade surfaces. Corrosion protection is normally a thin layer of anodize or organic agent. Abrasion can remove the protective film or coating.

- Do not permit solvent to evaporate on surface.

- Do not use cloth a second time because this can redeposit contaminants on the surface.

- (a) Dampen a clean dry cotton cloth with the solvent. Pour the solvent onto the cloth.

- (b) Wipe the metal surfaces with the solvent. Repeat applications as necessary to remove all dirt. For oxidation, powdery white corrosion, use corrosion inhibitor/cleaner.

- (c) Dry the parts with a clean, dry cotton cloth.

CAUTION: DO NOT USE BRULIN 815MX CLEANER UNDILUTED. SOLUTIONS STRONGER THAN SPECIFIED CAN DAMAGE THE DECORATIVE SURFACES.

(2) Use of BRULIN 815MX:

NOTE: Cool water works best with normal dirt and dust. Warm water works best with oily surfaces.

- (a) Prepare a solution of BRULIN 815MX with cool or lukewarm water within 32°C - 49°C (90°F - 120°F). Prepare a solution with 1 part BRULIN 815MX to 64 parts of water by volume, for light dirt. You can increase the solution up to 1 part of BRULIN 815MX to 10 parts of water by volume.

- (b) Apply the solution with a spray bottle, soft bristled brush, sponge or cotton cloth.

- (c) Rub the surface with a wet sponge or cotton cloth. You can also spray the material onto the surfaces and rub with a clean sponge or soft bristled brush. Do not permit excess to run off onto adjacent surfaces. Take care that excess does not come into contact with porous surfaces.

- (d) Rub the dirty area as necessary, and repeat applications of the solution to remove contamination.

- (e) Rinse the surface with a fresh sponge or a cloth dampened with clean water to remove residue.

- (f) Dry the surface with a clean, dry cotton cloth.

(3) Use of CALLA 301-A LEMON:

NOTE: Cool water works best with normal dirt and dust. Warm water works best with oily surfaces.

- (a) Prepare a solution of CALLA 301-A LEMON with cool or lukewarm water within 32°C - 49°C (90°F - 120°F). Prepare a solution with 1 part CALLA 301-A LEMON

to 4-8 parts of water by volume for normal cleaning. For concentrated dirt or spots, use full strength.

- (b) Apply the solution with a spray bottle, soft bristled brush, or cotton cloth.
- (c) Spray the solution onto the surface. Rub the surface with a clean cloth or sponge. Do not permit excess to run off onto adjacent surfaces. Take care that excess does not come into contact with porous surfaces.
- (d) Rub the dirty area as necessary, and repeat applications as necessary to remove contamination.
- (e) Rinse the surface with a fresh sponge or a cloth dampened with clean water to remove residue.
- (f) Dry the surface with a clean, dry cotton cloth.

O. Cleaning Procedures for Plastic or Vinyl Panels

SUBTASK 110-007-A

- (1) Use of mild household detergent:
 - (a) Prepare a solution of mild household detergent with lukewarm water within 32°C - 49°C (90°F - 120°F). Prepare the solution with 1 part detergent to 50 parts of water by volume.
 - (b) Wet a cotton cloth or sponge with the solution.
 - (c) Apply the solution to the surface. Use circular swipes. Do not permit excess to run off onto adjacent surfaces.
 - (d) Rub the dirty area as necessary, and repeat applications of the solution to remove contamination.
 - (e) Rinse the surface with a fresh sponge or a cloth dampened with clean water to remove residue.
 - (f) Dry the surface with a clean, dry cotton cloth.

CAUTION: DO NOT USE BRULIN 815MX CLEANER UNDILUTED. SOLUTIONS STRONGER THAN SPECIFIED CAN DAMAGE THE DECORATIVE SURFACES.

- (2) Use of BRULIN 815MX:

NOTE: Cool water works best with normal dirt and dust. Warm water works best with oily surfaces.

- (a) Prepare a solution of BRULIN 815MX with cool or lukewarm water within 32°C - 49°C (90°F - 120°F). Prepare a solution with 1 part BRULIN 815MX to 64 parts of water by volume, for light dirt. You can increase the solution up to 1 part of BRULIN 815MX to 10 parts of water by volume.
 - (b) Apply the solution with a spray bottle, soft bristled brush, sponge or cotton cloth.

- (c) Spray the solution onto the surface. Rub the surface with a clean cloth or sponge. Do not permit excess to run off onto adjacent surfaces. Take care that excess does not come into contact with porous surfaces.
 - (d) Rub the dirty area as necessary, and repeat applications of the solution to remove contamination.
 - (e) Rinse the surface with a fresh sponge or a cloth dampened with clean water to remove residue.
 - (f) Dry the surface with a clean, dry cotton cloth.
- (3) Use of CALLA 301-A LEMON:
- NOTE: Cool water works best with normal dirt and dust. Warm water works best with oily surfaces.
- (a) Prepare a solution of CALLA 301-A LEMON with cool or lukewarm water within 32°C - 49°C (90°F - 120°F). Prepare a solution with 1 part CALLA 301-A LEMON to 4-8 parts of water by volume for normal cleaning. For concentrated dirt or spots, use full strength.
 - (b) Apply the solution with a spray bottle, soft bristled brush, or cotton cloth.
 - (c) Spray the solution onto the surface. Rub the surface with a clean cloth or sponge. Do not permit excess to run off onto adjacent surfaces. Take care that excess does not come into contact with porous surfaces.
 - (d) Rub the dirty area as necessary, and repeat applications of the solution to remove contamination.
 - (e) Rinse the surface with a fresh sponge or a cloth dampened with clean water to remove residue.
 - (f) Dry the surface with a clean, dry cotton cloth.

P. Cleaning Procedures for Painted Surfaces

SUBTASK 110-008-A

- (1) Apply neutral detergent to the dirty area with a soft cloth.
 - (2) Rub the surface with a soft clean cloth soaked in clean water to remove the detergent.
 - (3) Rub the surface dry with a soft clean cloth.
- CAUTION: DO NOT USE CHLORINATED AND FLUOROCARBON SOLVENTS IN AREAS PAINTED WITH WATER-BASE PAINTS.
- (4) If necessary, rub the surface with a cloth dampened with solvent (solvent per MIL-PRF-680 or equivalent).
 - (5) Apply neutral detergent to the dirty area with a soft cloth.
 - (6) Rub the surface with a soft clean cloth soaked in clean water to remove the detergent.
 - (7) Rub the surface dry with a soft clean cloth.



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Q. Cleaning Procedures for Decals

SUBTASK 110-009-A

CAUTION: DO NOT USE ORGANIC SOLVENTS (METHYL-ETHYL-KETONE, ALCOHOL, CHLORINATED SOLVENTS, FLUORINATED SOLVENTS, ETC.). THE MATERIAL IS NOT RESISTANT TO ORGANIC SOLVENTS.

- (1) Rub the decal with a soft clean cloth soaked in neutral detergent (Refer to the manufacturer's instructions).
- (2) Remove all detergent with a soft cloth soaked in clean water.
- (3) Rub the surface dry with a soft clean cloth.

R. Cleaning Procedures for Cargo Compartment Lining Panels

SUBTASK 110-010-A

CAUTION: DO NOT PERMIT THE PRODUCT TO COME TO THE ADHESIVE TAPES THAT SEAL THE PANELS.

- (1) Rub the lining panels with a soft clean cloth soaked in solvent (solvent per MIL-PRF-680 or equivalent).
- (2) Repeat the operation until the panels are fully clean.

S. Follow-on

SUBTASK 842-002-A

- (1) If the aircraft was energized for cleaning procedures, do as follows:
 - (a) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).