

AIR CONDITIONING SYSTEM OIL SMOKE/FUME CONTAMINATION (REMOVAL) -
MAINTENANCE PRACTICES

1. General

- A. There is one task in this procedure. The oil fumes and the smoke from an APU/engine failure can get into the airplane cabin and cause contamination of the conditioned air. This procedure gives instructions to remove the oil contamination from the air conditioning and pneumatic systems. You must first isolate the cause of the oil contamination and repair the problem before you do this procedure.

TASK 21-00-01-802-022

2. Removal of Oil Contamination from the Air Conditioning and Pneumatic Systems

A. References

- (1) AMM 21-00-00/201, Air Conditioning
- (2) AMM 21-31-00/001, Cabin Pressure Control System
- (3) AMM 21-41-00/001, Crew Rest Area Heating System
- (4) AMM 21-42-00/001, Supplemental Heating Systems
- (5) AMM 21-43-00/001, Forward Cargo Compartment Heating System
- (6) AMM 21-44-00/001, Aft Cargo Compartment Heating System
- (7) AMM 21-49-00/001, Door Area Heaters
- (8) AMM 21-51-05/201, Water Separator
- (9) AMM 24-22-00/201, Manual Control
- (10) AMM 36-00-00/201, Pneumatic System
- (11) AMM 36-11-14/401, Pneumatic Ground Connection Check Valve
- (12) AMM 49-11-00/201, Auxiliary Power Unit
- (13) AMM 52-11-00/001, Main Entry Doors
- (14) AMM 71-00-00/201, Power Plant

B. Access

(1) Location Zones

- 133 Air Conditioning Equipment Bay, Left
- 134 Air Conditioning Equipment Bay, Right

(2) Access Panels

- 191NL Air Conditioning Access Door
- 192HR Air Conditioning Access Door

C. Procedure

S 012-001

- (1) Open the access doors to the air conditioning bays.

S 022-002

- (2) Remove the water separators (AMM 21-51-05/201).

S 162-003

- (3) Clean the coalescer bags in the water separators.

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- S 422-004
- (4) Install the water separators (AMM 21-51-05/201).
- S 162-005
- (5) Clean the pneumatic ducts and the components where you can see the oil contamination.
- S 962-030
- (6) Replace the components if they have too much contamination.
- S 862-023
- (7) Supply electrical power (AMM 24-22-00/201).
- S 862-024
- (8) Make sure these switches are set to OFF at the P5 overhead panel:
- (a) PACKS 1, 2 and 3 switches (the air conditioning packs are off)
 - (b) L and R ISLN switches (the wing isolation valves are closed)
 - (c) APU BLEED switch (the APU bleed air shutoff valve is closed)
 - (d) ENGINE BLEED 1, 2, 3, and 4 switches (the engine bleed air pressure regulating and shutoff valves are closed)
 - (e) TRIM AIR switch (the trim air pressure regulating and shutoff valve is closed)
 - (f) HI FLOW switch
 - (g) PASSENGER AIRPLANES;
UPR and LWR RECIRC switches (the recirculation fans are off)
 - (h) AFT CARGO HT switch
 - (i) FREIGHTERS;
FLT DECK FAN switch.
- S 022-006
- (9) Remove one of the two check valves at the pneumatic ground connectors (AMM 36-11-14/401).

NOTE: This will permit the initial bleed air, which has more oil contamination, to go out through the check valve opening.

S 862-007

WARNING: DO NOT GO NEAR THE CHECK VALVES WHEN YOU PRESSURIZE THE APU PNEUMATIC DUCT. THE APU BLEED AIR CAN CAUSE INJURY TO PERSONS WHEN THE BLEED AIR GOES OUT THROUGH THE CHECK VALVE OPENING.

(10) Pressurize the APU pneumatic duct:

NOTE: This procedure will remove the oil contamination from the APU bleed air. The APU bleed air will go out through the check valve opening.

- (a) Start the APU and let the operation of the APU become stable (AMM 49-11-00/201).
- (b) Put the APU BLEED switch to ON.

NOTE: The APU bleed air shutoff valve opens and the bleed air goes out through the check valve opening.

- (c) Let the APU operate until the APU bleed air has no smell of the oil contamination.
- (d) Stop the APU (AMM 49-11-00/201).
- (e) Put the APU BLEED switch to OFF.

NOTE: The APU bleed air shutoff valve closes.

S 862-025

WARNING: DO NOT GO NEAR THE CHECK VALVES WHEN YOU PRESSURIZE THE ENGINE PNEUMATIC DUCTS. THE ENGINE BLEED AIR CAN CAUSE INJURY TO PERSONS WHEN THE BLEED AIR GOES OUT THROUGH THE CHECK VALVE OPENING.

(11) Pressurize the pneumatic ducts for the left engines (No. 1 and 2):

NOTE: This procedure will remove the oil contamination from the bleed air for the left engines. The engine bleed air will go out through the check valve opening.

- (a) Start the left engines and let the engines operate at ground idle speed (AMM 71-00-00/201).
- (b) Put the ENGINE BLEED 1 and 2 switches to ON.

NOTE: The engine bleed air pressure regulating and shutoff valves open.

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- (c) Put the L ISLN switch to ON.

NOTE: The left wing isolation valve opens and the engine bleed air goes out through the check valve opening.

- (d) Let the engines operate until the engine bleed air has no smell of the oil contamination.
(e) Stop the engines (AMM 71-00-00/201).
(f) Put the L ISLN switch to OFF.

NOTE: The left wing isolation valve closes.

- (g) Put the ENGINE BLEED 1 and 2 switches to OFF.

NOTE: The engine bleed air pressure regulating and shutoff valves close.

S 862-026

WARNING: DO NOT GO NEAR THE CHECK VALVES WHEN YOU PRESSURIZE THE ENGINE PNEUMATIC DUCTS. THE ENGINE BLEED AIR CAN CAUSE INJURY TO PERSONS WHEN THE BLEED AIR GOES OUT THROUGH THE CHECK VALVE OPENING.

- (12) Pressurize the pneumatic ducts for the right engines (No. 3 and 4):

NOTE: This procedure will remove the oil contamination from the bleed air for the right engines. The engine bleed air will go out through the check valve opening.

- (a) Start the right engines and let the engines operate at ground idle speed (AMM 71-00-00/201).
(b) Put the ENGINE BLEED 3 and 4 switches to ON.

NOTE: The engine bleed air pressure regulating and shutoff valves open.

- (c) Put the R ISLN switch to ON.

NOTE: The right wing isolation valve opens and the engine bleed air goes out through the check valve opening.

- (d) Let the engines operate until the engine bleed air has no smell of the oil contamination.
- (e) Stop the engines (AMM 71-00-00/201).
- (f) Put the R ISLN switch to OFF.

NOTE: The right wing isolation valve closes.

- (g) Put the ENGINE BLEED 3 and 4 switches to OFF.

NOTE: The engine bleed air pressure regulating and shutoff valves close.

S 422-008

- (13) Install the check valve which you removed from the pneumatic ground connector (AMM 36-11-14/401).

S 862-009

- (14) Start the APU again (AMM 49-11-00/201).

S 862-028

- (15) Set the APU BLEED switch to ON.

S 862-010

- (16) Operate the three air conditioning packs:

NOTE: This procedure uses the APU bleed air to remove the oil contamination from the conditioned air in the airplane.

WARNING: MAKE SURE THERE IS AN EXIT FOR THE CONDITIONED AIR IN THE AIRPLANE. ACCIDENTAL CABIN PRESSURIZATION CAN CAUSE INJURY TO PERSONS.

- (a) Make sure the pressurization outflow valves are open (AMM 21-31-00/001) or at least one entry door is open (AMM 52-11-00/001).
- (b) Set the position of these switches on the P5 overhead panel as follows:
 - 1) L and R ISLN switches to ON
 - 2) PACKS 1, 2 and 3 switches to NORM

- 3) TRIM AIR switch to ON
- 4) PASSENGER AIRPLANES;
UPR and LWR RECIRC switches to ON
- 5) AFT CARGO HT switch to ON
- 6) PASS TEMP and FLT DECK switches to AUTO
- 7) HI FLOW switch to ON
- 8) GASPER AIR switch to ON (on some airplanes only)
- 9) FREIGHTERS;
FLT DECK FAN switch to ON.
- (c) Let the air conditioning packs operate until the conditioned air in the airplane has no smell of the oil contamination.
- (d) Set the PACKS 1, 2 and 3 switches to OFF.

S 862-011

- (17) Stop the APU (AMM 49-11-00/201).

S 862-012

- (18) Set the APU BLEED switch to OFF.

S 862-013

- (19) Start the engines and let the engines operate at ground idle speed (AMM 71-00-00/201).

S 862-014

- (20) Operate the three air conditioning packs:

NOTE: This procedure uses the engine bleed air to remove the oil contamination from the conditioned air in the airplane.

- (a) Set the position of these switches on the P5 overhead panel as follows:
 - 1) PACKS 1, 2 and 3 switches to NORM
 - 2) ENGINE BLEED 1, 2, 3 and 4 switches to ON
- (b) Let the air conditioning packs operate until the conditioned air in the airplane has no smell of the oil contamination.
- (c) Set the PACKS 1, 2 and 3 switches to OFF.

S 862-027

- (21) Operate the applicable heating systems in the airplane until the heated air has no smell of the oil contamination:
 - (a) Crew Rest Area Heating System (AMM 21-41-00/001).

- (b) PASSENGER AIRPLANES;
Crew Rest Area Heating System (AMM 21-41-00/001).
- (c) Supplemental Heating Systems (AMM 21-42-00/001).
- (d) Forward Cargo Compartment Heating System (AMM 21-43-00/001).
- (e) Aft Cargo Compartment Heating System (AMM 21-44-00/001).
- (f) Door Area Heaters (AMM 21-49-00/001).
- (g) PASSENGER AIRPLANES;
Door Area Heaters (AMM 21-49-00/001).

S 862-015

- (22) Stop the engines (AMM 71-00-00/201).

S 862-016

- (23) Set these switches to OFF at the P5 overhead panel:
 - (a) ENGINE BLEED 1, 2, 3 and 4 switches
 - (b) L and R ISLN switches
 - (c) TRIM AIR switch
 - (d) UPR and LWR RECIRC switches
 - (e) PASSENGER AIRPLANES;
UPR and LWR RECIRC switches
 - (f) AFT CARGO HT switch
 - (g) GASPER AIR switch (on some airplanes only)
 - (h) FREIGHTERS;
FLT DECK FAN switch.

S 212-017

- (24) Examine these components for oil contamination:
 - (a) Heat exchangers
 - (b) Coalescer bags in the water separators
 - (c) PASSENGER AIRPLANES;
Recirculation fan filters
 - (d) Gasper air fan filters (on some airplanes only)
 - (e) Door 5 overhead crew rest fan filter (on some airplanes only)
 - (f) Ozone Converters

S 162-018

- (25) Clean the components or replace them if they have too much contamination.

S 862-019

- (26) Do the procedure again until the conditioned air in the airplane has no smell of the oil contamination.

S 412-020

- (27) Close the access doors to the air conditioning bays.

S 862-021

- (28) Remove the electrical power if it is not necessary (AMM 24-22-00/201).

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