CHAPTER

46

INFORMATION SYSTEMS



CHAPTER 46 INFORMATION SYSTEMS

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A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

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A = Added, R = Revised, D = Deleted, O = Overflow, C = Customer Originated Change

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ONBOARD NETWORK SYSTEM - MAINTENANCE PRACTICES

1. General

- A. This section gives maintenance tasks that support the onboard network system (ONS) and mass storage device (MSD).
 - (1) ONS tasks show the steps to operate the ONS browser, to interface with other line replaceable units (LRU).
 - (2) MSD tasks show the steps to maintain loadable software airplane parts (LSAP) hosted by network file server's internal drive.

TASK 46-13-00-480-801

2. Onboard Network System Maintenance Laptop Connection

A. General

- (1) This task gives the steps to connect the maintenance laptop, SPL-11321 with the Onboard Network System (ONS), and start the ONS Maintenance browser.
 - (a) ONS Maintenance is a web site hosted by the Network File Server (NFS), M2889.
 - (b) The desktop icon tells the laptop's browser (typically, Internet Explorer) to connect with ONS Maintenance.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description | _ |
|-----------|---|---|
| SPL-11321 | Laptop - Maintenance | |
| | Part #: G45002-29 Supplier: 81205 | |
| STD-9080 | Cable - Ethernet (Cat 5E, RJ-45 Connectors) | |

C. Location Zones

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

D. Before Laptop Connection

SUBTASK 46-13-00-860-006

(1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 006, 009, 010, 013, 015-018, 020-025, 027

C 1 C01958 NETWORK FILE SERVER

AKS 006-999

This circuit breaker is inoperative and should remain open:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 007, 008, 011, 012, 014, 019, 026, 028-999

C 1 C01958 NETWORK FILE SERVER (INOP)

AKS 006-999



AKS 006-999

E. Connection Procedure Using Ethernet Cable

SUBTASK 46-13-00-480-008

- (1) Connect one end of the RJ-45 Ethernet cable, STD-9080 to the RJ45 port of the maintenance laptop, SPL-11321. Connect the opposite end to one of these data ports:
 - Flight deck port, M2979, located in the flight deck closet.
 - NFS front panel, shelf E5-2, M2889.

SUBTASK 46-13-00-480-009

- (2) Energize the maintenance laptop, SPL-11321.
 - (a) When it shows Welcome to Windows, then continue.

SUBTASK 46-13-00-480-010

- (3) Log-in as follows:
 - (a) Push the CTRL, ALT and DELETE keys at the same time.
 - 1) Make sure it shows: Log On to Windows.
 - (b) Enter the User Name and Password, and then select OK.

SUBTASK 46-13-00-860-007

- (4) Set your web browser to show the ONS Maintenance menu.
 - NOTE: The desktop icon contains the URL: http://ms.ons.pnet.
 - (a) Double-click on the ONS Maintenance desktop icon, or use your web browser and input this URL: http://ms.ons.pnet.
 - (b) Make sure the ONS Maintenance main menu shows.



TASK 46-13-00-720-801

3. Onboard Network System NFS Message Check

A. General

- (1) This task gives the steps to do a check of the network file server (NFS) fault messages.
 - (a) When the fault results show no LRU names, and no messages, then the NFS senses normal operation of each interface.
 - (b) When the fault results show an LRU, there is an interface problem between that LRU and NFS.
 - (c) When a message shows for the NFS, it can refer to an internal fault or software configuration problem.
 - (d) When a message shows for an LRU other than NFS, it refers to an interface fault with NFS, or a fault reported by the LRU.
 - (e) The NFS Message page shows the condition at the time you made the page selection. To examine the present message condition, you must refresh the browser page. You can click once on the refresh button, or select a different page and then select again the NFS Message page.

B. Tools/Equipment

<u>NOTE</u>: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

AKS 006-999



| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

C. Location Zones

| Zone | Area | |
|------|---------------------------|--|
| 211 | Flight Compartment - Left | |

D. Before the Fault Check

SUBTASK 46-13-00-480-007

- Do this task: Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801.
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

E. NFS Message Check of Interfacing Systems

SUBTASK 46-13-00-720-009

- (1) Using the ONS maintenance browser, make your selection: Extended Maintenance > ONS Maintenance > Existing Faults.
 - (a) Examine the message adjacent to each LRU.

NOTE: The result only shows an LRU client when there is a message. When there is no message, the LRU does not show.

SUBTASK 46-13-00-720-010

- (2) Select one target LRU at a time, and examine the fault details. Do these steps:
 - (a) Click once on the LRU name.
 - (b) Examine the specific fault data in the Fault Details box.
 - (c) Use the scroll bar to see the complete message, or multiple messages.
 - (d) Do the steps again for each LRU.
 - (e) If you find a problem, then a maintenance action is required.

F. Put the Aircraft Back to it's Usual Condition

SUBTASK 46-13-00-080-007

(1) If the maintenance laptop, SPL-11321 is no longer required, stop the ONS maintenance browser, and disconnect the laptop.



TASK 46-13-00-750-801

4. Onboard Network System Airplane Credentials Check

A. General

- This task contains four sections.
 - (a) Steps to do a check of the airplane credential installed in the network file server (NFS).
 - (b) Steps to make (or, generate) a certificate signing request (CSR).
 - NOTE: The Boeing Company recommends that you make a CSR only when specified by a maintenance order.
 - (c) Steps to install the serviceable software part (or, NFS OAS airplane keys) into the NFS operating system.
 - (d) Installation check.

EFFECTIVITY AKS 006-999



- (2) There can be multiple ways to transmit the CSR. Refer to your Engineering department for the preferred method.
 - · Manual using an approved data loader or laptop.
 - · Automatic using Boeing Electronic Distribution of Software (BEDS).
- (3) To do this task, the aircraft must be on the ground with its weight compressing the landing gear.

B. References

| Reference | Title |
|------------------|---|
| 46-13-01-470-801 | Network File Server Software Installation (P/B 201) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

D. Location Zones

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

E. Before the Procedure

SUBTASK 46-13-00-480-004

- Connect the maintenance laptop, SPL-11321 to the NFS. Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Activate the ONS maintenance browser.

F. Airplane Credentials Check

SUBTASK 46-13-00-720-002

- (1) On the ONS maintenance browser menu bar, make your selection: Line Maintenance > Security > Security Airplane Credentials.
 - (a) A progress window can show temporarily.
 - (b) Examine the result in the box below the words Airplane Credentials Status.
 - 1) If the conditions that follow exist, then the credential is serviceable.
 - a) The result shows the words: A valid, CA-signed Airplane Certificate exists.
 - b) The time/date stamp agrees with your airline or operator's requirements.
 - c) Stop, and then go to the step below titled "Put the Aircraft Back to it's Usual Condition."
 - 2) If you find a problem, then continue.

G. Credential Signing Request - Procedure

SUBTASK 46-13-00-470-003

- (1) To make a new certificate signing request (CSR), do the steps that follow.
 - (a) Click once on the GENERATE CREDENTIALS button.
 - (b) When the confirmation box shows, confirm the data shown and push CONTINUE.
 - (c) Examine the result in the box below the words Key Generation Status.

AKS 006-999



 If the result shows a file was successfully created, then make a record of this file name.

NOTE: You will need the file name to locate and upload the file in the next step.

SUBTASK 46-13-00-470-004

- (2) Transfer the CSR file from the NFS to the maintenance laptop.
 - (a) Using the maintenance browser, make your selection: LINE MAINTENANCE > CLIENT FILES.
 - (b) Below the words CLIENT NAME, make your selection NFS.OAS, and then select CONTINUE.
 - (c) Find the CSR file and click on it once, to highlight it.
 - NOTE: The CSR file will show in this format: GMTdate-GMTtime-<Tail ID>-CSR.
 - (d) Make your selection COPY, and then select CONTINUE.
 - (e) Make your selection SAVE, and then navigate to save the file to a directory on the maintenance laptop.

SUBTASK 46-13-00-860-004

(3) Transmit the file to your engineering department, or network operator for processing.

SUBTASK 46-13-00-070-003

- (4) If you found one or more obsolete CSR files on the server, you can erase them, if time permits.
 - NOTE: Do not erase the most recent CSR, the one you sent to engineering.
 - (a) Click once on the target CSR file to highlight.
 - (b) Click once on the ERASE button.

H. Airplane Keys Installation Procedure

SUBTASK 46-13-00-470-005

- (1) Receive the new Loadable Software Airplane Part (LSAP), and transfer the part from the laptop to the MSD. Do this task: (Mass Storage Device Software Part Installation, TASK 46-13-00-470-802).
 - NOTE: When BEDS is serviceable, you can disregard this step. The LSAP is sent to the MSD automatically by the network administrator.
 - NOTE: Typically, this LSAP is identified as: 46 NFS OAS AIRPLANE KEYS AMI.

SUBTASK 46-13-00-470-006

(2) On the MSD, find this same LSAP, and install into the NFS operating system. Do this task: (Network File Server Software Installation, TASK 46-13-01-470-801).

I. Installation Test

SUBTASK 46-13-00-720-003

- (1) On the ONS maintenance browser menu bar, make your selection: Line Maintenance > Security > Security Airplane Credentials.
 - (a) Examine the result in the box below the words Airplane Credentials Status.
 - Make sure the result shows the words: A valid, CA-signed Airplane Certificate exists.
 - 2) Make sure the time/date stamp agrees with the credential you just installed.

SUBTASK 46-13-00-720-004

(2) Do a check of the NFS fault messages. This is the task: (Onboard Network System NFS Message Check, TASK 46-13-00-720-801).

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(a) If you find a problem, then a maintenance action is required.

J. Put the Aircraft Back to it's Usual Condition

SUBTASK 46-13-00-080-004

 If the maintenance laptop, SPL-11321 is no longer required, stop the ONS maintenance browser, and disconnect the laptop.



TASK 46-13-00-750-802

5. Onboard Network System Server Credentials Check

A. General

- (1) This task gives the steps to do a check, and if necessary, to make new server credentials.
 - NOTE: When a new server credential is made, new client credentials are also made at the same time.
- (2) The Boeing Company recommends that you make a new server credential only when specified by a maintenance order.
- (3) To do this task, the aircraft must be on the ground with its weight compressing the landing gear.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

C. Location Zones

| Zone | Area | |
|------|---------------------------|--|
| 211 | Flight Compartment - Left | |

D. Before the Procedure

SUBTASK 46-13-00-480-011

- (1) Connect the maintenance laptop, SPL-11321. Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Activate the ONS maintenance browser.

E. Server Credentials Check

SUBTASK 46-13-00-720-011

- (1) On the ONS maintenance browser menu bar, make your selection: Line Maintenance > Security > Security Server Credentials.
 - (a) Wait for the result to show below the words: Select server(s) to generate new credentials.
 - (b) Examine the result in the box as follows:
 - 1) The data shows a time-date stamp when the last credentials were made.
 - 2) If you find a problem, then continue.

NOTE: Know and follow the policies and procedures set by your airline or operator. If the credentials do not show, or are expired based on your operator's policy, then continue with the next step.

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SUBTASK 46-13-00-470-012

(2) To make a new server credential, do these steps:

NOTE: The Boeing Company recommends that you do this only when specified by a maintenance order.

- (a) Click once on the GENERATE CREDENTIALS button.
- (b) When the confirmation box shows, click once on CONTINUE.
- (c) A progress box will show. Wait for the result.
- (d) Examine the result in the box below the words: Server Credentials Results.
 - 1) A successful result will show these words:
 - · Credentials last generated on: <date/time stamp of the credential>
 - · Successfully generated onboard certificate authority

F. Put the Aircraft Back to it's Usual Condition

SUBTASK 46-13-00-080-008

(1) If the laptop is no longer required, stop the ONS maintenance browser, and disconnect the laptop.



TASK 46-13-00-750-803

6. Onboard Network System Client Credentials Check

A. General

(1) This task gives the steps to do a check, and if necessary, to make and install a new client credential.

NOTE: Each LRU must have a serviceable client credential to communicate with the server.

(2) To do this task, the aircraft must be on the ground with its weight compressing the landing gear.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

C. Location Zones

| Zone | Area | |
|------|---------------------------|--|
| 211 | Flight Compartment - Left | |

D. Before the Procedure

SUBTASK 46-13-00-480-012

- (1) Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

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E. Client Credentials Check

SUBTASK 46-13-00-720-012

- (1) On the ONS maintenance browser menu bar, make your selection: Line Maintenance > Security > Security Client Credentials.
 - (a) Wait for the result to show below the words: Select client(s) to generate new credentials.
 - (b) Examine the record to find each client, and the condition of its credential.

NOTE: Typically, the credentials status will show the words "Last generated" with a date and time stamp. If the status shows the words: No credentials exist, then this condition is unserviceable.

1) If you find a problem, then continue.

SUBTASK 46-13-00-470-013

(2) To make one or more new client credentials, do these steps:

NOTE: Each client (or, LRU) must have its own unique credential.

- (a) Click once on the client name to highlight it.
- (b) Make your selection GENERATE CREDENTIALS.
- (c) In the confirmation box, make your selection CONTINUE.
- (d) Examine the result in the box below the words Credentials Generation Status.
 - A credential is serviceable when the status shows the words: Successfully retrieved and installed credentials
 - 2) Use the scroll bar to see all of the clients and the status.
- (e) Let the NFS operate for at least two minutes before you do the next ONS maintenance task.

F. Put the Aircraft Back to it's Usual Condition

SUBTASK 46-13-00-080-009

(1) If the data loader is no longer required, stop the ONS maintenance browser, and disconnect the laptop.



TASK 46-13-00-860-801

7. Onboard Network System Airplane Identification Check

A. General

- (1) This task gives the steps to do a check, and if necessary, to update the airplane identification in network file server (NFS).
 - (a) If ONS senses that Airplane Identification data is missing, a pop-up message shows when you get access to the ONS maintenance web site.
 - (b) Without Airplane Identification information, some ONS Maintenance functions are unserviceable.
- (2) The tail ID numbers entered in the onboard network system (ONS), and the tail ID number recorded on the flight compartment placard, must agree.
- (3) To do this task, the aircraft must be on the ground with its weight compressing the landing gear.

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B. References

| Reference | Title |
|------------------|-----------------------------------|
| 24-22-00-860-811 | Supply Electrical Power (P/B 201) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

D. Location Zones

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

E. Before the Procedure

SUBTASK 46-13-00-840-001

(1) If the aircraft is not energized, then supply electrical power, (Supply Electrical Power, TASK 24-22-00-860-811).

SUBTASK 46-13-00-480-015

- (2) Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

F. Airplane Identification Check

SUBTASK 46-13-00-860-008

(1) Find and examine the aircraft placard, and make a record of the aircraft registration number (tail number).

SUBTASK 46-13-00-860-009

- (2) Using the ONS maintenance browser, make your selection: Line Maintenance > Airplane Identification.
 - (a) Examine the data shown with the aircraft placard data.
 - 1) If Model, Aircraft Number, and ATA-Airline ID all agree, then click once on the Home icon, in the upper left corner. No additional action is necessary.
 - 2) If one or more data records does not agree, then continue.

G. Airplane Identification Changes

SUBTASK 46-13-00-860-010

- (1) Enter the correct data: Model, Aircraft Number, and ATA-Airline ID, and then click once on SAVE.
 - (a) Select the correct Aircraft model from the drop-down menu.
 - (b) Enter the correct Aircraft Number data using the virtual keyboard function.
 - (c) Enter the correct ATA-Airline ID using the virtual keyboard function.
 - (d) When complete, click once on SAVE, to save to memory.

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H. Put the Aircraft Back to it's Usual Condition

SUBTASK 46-13-00-840-002

(1) If the laptop is no longer required, stop the ONS maintenance browser, and disconnect the laptop.



TASK 46-13-00-720-802

8. Onboard Network System Input Monitoring Check

A. General

- (1) This task gives the steps to do a check of the analog and digital inputs of the network file server (NFS), M2889.
- (2) This task gives you the condition of the communication channels that follow, for the targeted unit:
 - Ethernet
 - 429 receive
 - · 429 transmit
 - 717 Receive
 - · Input discretes
 - · Output discretes.
- (3) To do this task the weight-on-wheels discrete must be in the GROUND condition.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

C. Location Zones

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

D. Before the Check

SUBTASK 46-13-00-480-013

- (1) Do this task: Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801.
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

E. ONS Input Monitoring Check - Procedure

SUBTASK 46-13-00-720-013

- (1) Set the ONS browser to show the INPUT MONITORING page as follows:
 - (a) From the menu bar, make the selection: EXTENDED MAINTENANCE > INPUT MONITORING.
 - (b) Select NFS and then click once on CONTINUE.
 - 1) Make sure the result shows the correct target, and these buttons:

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- Ethernet
- 429 Receive
- 429 Transmit
- 717 Receive
- Input Discretes
- · Output Discretes.

SUBTASK 46-13-00-720-014

- (2) Click once on the ETHERNET button.
 - (a) Examine the result for each port shown.
 - 1) If the status shows UP, the connection is serviceable.
 - 2) If the status shows DOWN or UNAVAILABLE, the connection is unserviceable.
 - 3) Use the NEXT and PREVIOUS buttons to show more pages of data.
 - (b) To return to the input monitor page, click once on RETURN.

SUBTASK 46-13-00-720-015

- (3) Click once on the 429 RECEIVE button.
 - (a) Examine the result for each port shown.
 - 1) If the status shows UP, the connection is serviceable.
 - 2) If the status shows DOWN or UNAVAILABLE, the connection is unserviceable.
 - 3) Use the NEXT and PREVIOUS buttons to show more pages of data.
 - (b) To return to the input monitor page, click once on RETURN.

SUBTASK 46-13-00-720-016

- (4) Click once on the 429 TRANSMIT button.
 - (a) Examine the result for each port shown.
 - 1) If the status shows UP, the connection is serviceable.
 - 2) If the status shows DOWN or UNAVAILABLE, the connection is unserviceable.
 - 3) Use the NEXT and PREVIOUS buttons to show more pages of data.
 - (b) To return to the input monitor page, click once on RETURN.

SUBTASK 46-13-00-720-017

- (5) Click once on the INPUT DISCRETES button.
 - (a) Examine the result for each port shown.
 - 1) If the status shows Ground, the connection is serviceable.
 - 2) If the status shows Open, Disabled, Failed, or Unavailable, then the connection is unserviceable.
 - Use the NEXT and PREVIOUS buttons to show more pages of data.
 - (b) To return to the input monitor page, click once on RETURN.

SUBTASK 46-13-00-720-018

- (6) Click once on the OUTPUT DISCRETES button.
 - (a) Examine the result for each port shown.
 - 1) If the status shows Ground, the connection is serviceable.

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- 2) If the status shows Open, Disabled, Failed, or Unavailable, then the connection is unserviceable.
- 3) Use the NEXT and PREVIOUS buttons to show more pages of data.
- (b) To return to the input monitor page, click once on RETURN.

SUBTASK 46-13-00-720-022

- (7) Click once on the 717 RECEIVE button.
 - (a) Examine the result for each bus shown.
 - 1) If the status shows Active, the connection is serviceable.
 - 2) If the status shows Failed, the connection is unserviceable.
 - 3) Use the NEXT and PREVIOUS buttons to show more pages of data.
 - (b) To return to the input monitor page, click once on RETURN.

F. Put the Aircraft Back to it's Usual Condition

SUBTASK 46-13-00-080-010

(1) If the maintenance laptop, SPL-11321 is no longer required, stop the ONS maintenance browser, and disconnect the laptop.



TASK 46-13-00-720-803

9. Onboard Network System Configuration Check

A. General

- (1) This task gives you the serial number, hardware number, and software part number from the target server.
- (2) This procedure is applicable to the unit that follows:
 - · Network file server (NFS), M2889.
- (3) To do this task the weight-on-wheels discrete must be in the GROUND condition.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

C. Location Zones

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

D. ONS Configuration Check - Procedure

SUBTASK 46-13-00-480-014

- Do this task: Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801.
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

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SUBTASK 46-13-00-720-019

- (2) Using the ONS maintenance browser, make your selection: Line Maintenance > ONS System Configuration.
 - (a) Make sure the result shows the words System Configuration, and a table of data.

SUBTASK 46-13-00-720-020

- (3) If necessary, make a record of the data for your target LRU.
 - LRU name
 - · Software part number
 - · Nomenclature.
 - (a) To download a complete record of the software parts shown, make your selection: DOWNLOAD REPORT, and follow the on-screen commands.
 - (b) To examine the hardware part number and serial number, click once on the target LRU, below the words LRU NAME, to highlight.
 - 1) The hardware data shows below the words: Details of Selected Hardware.
 - (c) Make sure the data agrees with the requirement specified by your airline or operator.

E. Put the Aircraft Back To Its Usual Condition

SUBTASK 46-13-00-080-011

(1) If the maintenance laptop, SPL-11321 is no longer required, stop the ONS maintenance browser, and disconnect the laptop.



TASK 46-13-00-470-801

10. Onboard Network System LRU Software Installation

A. General

- (1) This procedure gives the steps to operate the ONS maintenance browser to do a software installation, using the maintenance laptop, SPL-11321.
- (2) This procedure is applicable to the unit(s) that follow:
 - Network File Server (NFS) M2889
- (3) The ONS maintenance browser is a web site hosted by the network file server (NFS).
- (4) The LSAP to be installed is saved on the mass storage device (MSD), which is a function of the NFS.
- (5) Refer to the software installation task for your specific LRU for additional steps and checks.
- (6) To do this task the aircraft must be on the ground, with its weight compressing the landing gear.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

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C. Location Zones

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

D. Before Software Installation

SUBTASK 46-13-00-480-005

- (1) Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

SUBTASK 46-13-00-470-007

- (2) Do this task: (Mass Storage Device Software Parts Check, TASK 46-13-00-720-804).
 - (a) Make sure that the correct software parts, those required for the target LRU, are available in the MSD.

E. ONS Maintenance Browser Operation - LRU Software Installation

SUBTASK 46-13-00-470-008

(1) Using the ONS maintenance browser, make your selection: Line Maintenance > Data Load.

SUBTASK 46-13-00-470-009

- (2) In the DATA LOAD window, find and select the target LRU.
 - (a) Select CONTINUE.
 - (b) If another pop-up box shows (for example, to select left or right), make your selection and click once on CONTINUE.
 - (c) Make sure a window shows with the words: Select part number(s) to load to the selected LRU(s).

SUBTASK 46-13-00-470-010

- (3) Select one or more parts to install.
 - (a) Click once on each software part to highlight it.
 - (b) Click once on the SELECT button.
 - NOTE: The SELECT button causes a second box to show with your selections.
 - (c) Make sure the parts in the box shown below the words Selected Parts are correct.
 - NOTE: To remove a part from the group, click once on the part to highlight. Then click once on UNSELECT.
 - (d) Click once on CONTINUE.

SUBTASK 46-13-00-470-011

- (4) If one or more confirmation window shows, do these steps:
 - (a) Read and follow the instruction shown.
 - (b) Make your selection: CONFIRM.

SUBTASK 46-13-00-720-005

- (5) Examine the DATA LOAD RESULT page.
 - (a) Adjacent to each part number installed, make sure the LOAD STATUS shows the word SUCCESS.

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F. Installation Check

SUBTASK 46-13-00-720-006

(1) Return to the software installation procedure for your applicable LRU.

NOTE: The software installation task, for the applicable LRU, will give you specific steps to do the software installation check.

G. Put the Aircraft Back to it's Usual Condition

SUBTASK 46-13-00-080-005

(1) If the laptop is no longer required, stop the ONS maintenance browser, and disconnect the laptop.

----- END OF TASK -----

TASK 46-13-00-070-801

11. Mass Storage Device Software Removal

A. General

- (1) This task gives the steps to remove one or more software parts from the Onboard Network System (ONS) Mass Storage Device (MSD).
 - (a) Removal prevents that file from future installation into the target Line Replaceable Unit (LRU).
 - (b) After removal, an electronic software delivery system can attempt to replace the part with the same, or similar part. Coordinate your action with your network operator.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

C. Location Zones

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

D. Before Software Removal

SUBTASK 46-13-00-480-001

- (1) Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

E. MSD Software Part Removal - Procedure

SUBTASK 46-13-00-070-001

- (1) Make the selection: Line Maintenance > MSD > MSD Manage.
 - (a) Examine the data that shows below the words: Select LSAP(s) to erase.
 - (b) Use the scroll bar to see the complete record.

SUBTASK 46-13-00-070-002

- (2) To make your selection and remove one or more parts. Do these steps:
 - (a) Click once on the part to highlight your selection.

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- 1) To deselect, click again on the part.
- 2) The page will let you select one, some, or all of the parts.
- (b) Click once on the ERASE button.
- (c) When the confirmation box shows, click once on CONTINUE.
- (d) Make sure that the progress box shows with the words: Successfully erased the selected LSAP(s).
- (e) In the confirmation box, click once on the OK button.

F. Put the Aircraft Back to it's Usual Condition

SUBTASK 46-13-00-080-001

 If the maintenance laptop, SPL-11321 is no longer required, stop the ONS maintenance browser, and disconnect the laptop.



TASK 46-13-00-470-802

12. Mass Storage Device Software Part Installation

A. General

(1) This task gives the steps to install (or, transfer) software parts from the maintenance laptop (ML) to the Network File Server (NFS) Mass Storage Device (MSD). These parts are for future installation into the applicable Line Replaceable Unit (LRU).

NOTE: Software parts saved on the MSD can be referred to as staged software.

- (2) Typically, the software parts are compressed (or; crated, zipped) into the .zip format.
- (3) To do this task the aircraft must be on the ground, with its weight compressing the landing gear.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

C. Location Zones

| 7 | _ | |
|------|---------------------------|--|
| Zone | Area | |
| 211 | Flight Compartment - Left | |

D. Before Software Installation

SUBTASK 46-13-00-480-002

- (1) Do this task: Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801.
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

SUBTASK 46-13-00-860-001

(2) To do a check of software already installed on the MSD, refer to (Mass Storage Device Software Parts Check, TASK 46-13-00-720-804).

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E. MSD Software Installation

SUBTASK 46-13-00-470-001

- (1) Put the source media into the maintenance laptop.
 - (a) Your source data can be a compact disk (CD), or a USB memory stick, or another method specified by your airline or operator.

SUBTASK 46-13-00-860-002

- (2) From the ONS maintenance browser, make your selection: Line Maintenance > MSD > MSD -Transfer
 - (a) Make sure the page shows the words: Select a file with parts to transfer.

SUBTASK 46-13-00-470-002

- (3) Find, select, and upload a software part as follows:
 - (a) Click once on the Browse button.
 - (b) When the Choose File window shows, find your software part on the laptop.
 - (c) Click once on that part to select, and then click on the Open button.
 - 1) Make sure the part shows adjacent to the browse button.
 - (d) Click once on the TRANSFER button.
 - 1) A progress window can show intermittently.
 - (e) In the Transfer Results box, make sure the correct part shows, and the status shows SUCCESS.
 - (f) To add another software part to the MSD, do the steps again. Refer back to the step: Click once on the Browse button.

F. Installation Check

SUBTASK 46-13-00-720-001

- (1) Do a check of the software installed. Do this task: (Mass Storage Device Software Parts Check, TASK 46-13-00-720-804).
 - (a) Make sure installed part is serviceable.

NOTE: When a part is saved to the MSD, it is available for installation into a network-connected LRU. If you must now install this software into the target LRU, refer to the software installation task for that specific LRU.

G. Put the Aircraft Back to it's Usual Condition

SUBTASK 46-13-00-080-002

(1) If the laptop is no longer required, stop the ONS maintenance browser, and disconnect the laptop.



TASK 46-13-00-720-804

13. Mass Storage Device Software Parts Check

A. General

(1) This task gives the steps to do a check of software parts hosted by the Network File Server (NFS) Mass Storage Device (MSD).

NOTE: The MSD refers to the server environment available to the overall network. In contrast, this task is not applicable to check software that operates the network file server.

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- (a) These parts contain the software to be installed into a connected Line Replaceable Unit (LRU).
- (b) Before you can install parts into a network-connected LRU, you must make sure the correct parts are on the server.
- (2) To do this task, you will operate the Onboard Network System (ONS) maintenance browser using a maintenance laptop.
- (3) This task gives access to a screen that can erase and add software parts from the MSD.
 - If you must remove software, refer to this task: (Mass Storage Device Software Removal, TASK 46-13-00-070-801).
 - If you must add software, refer to this task: (Mass Storage Device Software Part Installation, TASK 46-13-00-470-802).
- (4) To do this task the weight-on-wheels discrete must be in the GROUND condition.

B. Tools/Equipment

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NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-------------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

C. Location Zones

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

D. Prepare for the Check

SUBTASK 46-13-00-480-003

- (1) Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

E. Software Parts Check of Mass Storage Device - Procedure

SUBTASK 46-13-00-860-003

- (1) Make the selection: Line Maintenance > MSD > MSD Manage.
 - (a) Examine the table of data below the words: Select LSAP(s) to erase.
 - (b) Use the scroll bar to see the complete record.
 - (c) Make sure that the software parts that show agree with the requirement specified by your airline or operator.

F. Put the Aircraft Back to it's Usual Condition

SUBTASK 46-13-00-080-003

(1) If the laptop is no longer required, stop the ONS maintenance browser, and disconnect the laptop.

------ END OF TASK ------

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NETWORK FILE SERVER - MAINTENANCE PRACTICES

1. General

- A. This procedure gives you tasks to do maintenance to the Network File Server (NFS), M2889.
 - (1) Network File Server Deactivation.
 - (2) Network File Server Activation.
 - (3) A software installation task, to install software that operates the NFS.
 - (4) A task that deletes software parts from the NFS.
 - (5) A task that reformats (or, erases) the NFS operational drive, and installs the minimum operating system software parts into the NFS operating system.
 - (6) A fault log check, to examine faults recorded by the NFS.
 - (7) A log file check, to view log files, copy (or download) files, or delete files from the NFS.
 - (8) A software configuration check, to examine the operational software parts installed in the NFS.
- B. For tasks that require a serviceable NFS to operate or maintain the onboard network system, and mass storage device, refer to (ONBOARD NETWORK SYSTEM - MAINTENANCE PRACTICES, PAGEBLOCK 46-13-00/201).

TASK 46-13-01-040-801

2. Network File Server - Deactivation

(Figure 201)

A. General

(1) This procedure removes electrical power from the Network File Server.

B. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

C. Access Panels

| Number | Name/Location |
|--------|----------------------------------|
| 117A | Electronic Equipment Access Door |

D. Procedure

SUBTASK 46-13-01-860-015

(1) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 006, 009, 010, 013, 015-018, 020-025, 027

C 1 C01958 NETWORK FILE SERVER

AKS 006-999

This circuit breaker is inoperative and should remain open:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 007, 008, 011, 012, 014, 019, 026, 028-999

C 1 C01958 NETWORK FILE SERVER (INOP)

AKS 006-999



AKS 006-999

E. Network File Server - Tryout

NOTE: This tryout is to make sure the Network File Server is in a zero energy state.

SUBTASK 46-13-01-010-003

(1) Open this access panel:

Number Name/Location

117A Electronic Equipment Access Door

SUBTASK 46-13-01-860-016

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(2) Make sure that this circuit breaker is open and has safety tag:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 006, 009, 010, 013, 015-018, 020-025, 027

C 1 C01958 NETWORK FILE SERVER

AKS 006-999

This circuit breaker is inoperative and should remain open:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 007, 008, 011, 012, 014, 019, 026, 028-999

C 1 C01958 NETWORK FILE SERVER (INOP)

AKS 006-999

SUBTASK 46-13-01-700-001

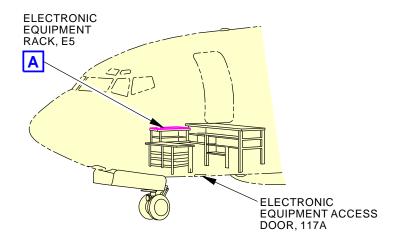
(3) Make sure the LED lights on the front panel of the Network File Server are not illuminated.

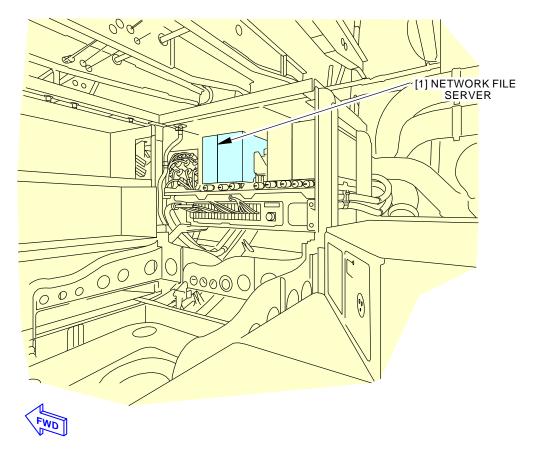
----- END OF TASK -----

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Network File Server Figure 201/46-13-01-990-802

AKS 006-999

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46-13-01

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TASK 46-13-01-440-801

3. Network File Server - Activation

(Figure 201)

- A. General
 - (1) This procedure adds electrical power to the Network File Server.
- B. Location Zones

| Zone | Area | |
|------|----------------------------|--|
| 211 | Flight Compartment - Left | |
| 212 | Flight Compartment - Right | |

C. Access Panels

| Number | Name/Location |
|--------|----------------------------------|
| 117A | Electronic Equipment Access Door |

D. Procedure

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SUBTASK 46-13-01-860-017

(1) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12 Row Col Number Name

AKS 006, 009, 010, 013, 015-018, 020-025, 027

C 1 C01958 NETWORK FILE SERVER

AKS 006-999

This circuit breaker is inoperative and should remain open:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 007, 008, 011, 012, 014, 019, 026, 028-999

C 1 C01958 NETWORK FILE SERVER (INOP)

AKS 006-999

SUBTASK 46-13-01-440-001

(2) Close this access panel:

| <u>Number</u> | Name/Location |
|---------------|----------------------------------|
| 117A | Electronic Equipment Access Door |

—— END OF TASK ———

TASK 46-13-01-470-801

- 4. Network File Server Software Installation
 - A. General
 - (1) This task gives the steps to install operational software into the Network File Server (NFS), M2889, from the mass storage device (MSD).
 - (a) This task is applicable to software hosted by the NFS operating system:
 - NFS SERVER OS
 - NFS OPC
 - NFS NETMANAGER APP

AKS 006-999



- NFS BOOT OS
- NED OPS
- NED OPC
- (2) To do this task, the weight-on-wheels discrete must be in the GROUND condition.

B. References

| Reference | Title |
|------------------|--|
| 46-13-00-470-801 | Onboard Network System LRU Software Installation (P/B 201) |
| 46-13-00-480-801 | Onboard Network System Maintenance Laptop Connection (P/B 201) |
| 46-13-00-720-801 | Onboard Network System NFS Message Check (P/B 201) |
| 46-13-00-720-804 | Mass Storage Device Software Parts Check (P/B 201) |
| 46-13-00-750-803 | Onboard Network System Client Credentials Check (P/B 201) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

D. Location Zones

I

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

E. Before the NFS Software Installation

SUBTASK 46-13-01-860-009

(1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 006, 009, 010, 013, 015-018, 020-025, 027

C 1 C01958 NETWORK FILE SERVER

AKS 006-999

This circuit breaker is inoperative and should remain open:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 007, 008, 011, 012, 014, 019, 026, 028-999

C 1 C01958 NETWORK FILE SERVER (INOP)

AKS 006-999

SUBTASK 46-13-01-480-006

- (2) Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

SUBTASK 46-13-01-860-010

(3) Make sure that the new software part, or parts, are available on the MSD. Do this task: (Mass Storage Device Software Parts Check, TASK 46-13-00-720-804).

AKS 006-999



F. NFS Software Installation - Procedure

SUBTASK 46-13-01-470-005

- (1) Using the ONS maintenance browser, make your selection: Line Maintenance > ONS Configuration.
 - (a) Make sure the result shows the words ONS Configuration, and a table of data.

SUBTASK 46-13-01-470-006

- (2) Make a record of the NFS hardware and software configuration. You can download, or get the data one line at a time.
 - (a) To download the record as a software file, make your selection DOWNLOAD REPORT.
 - 1) Follow the on-screen instructions.
 - (b) To examine the data manually, do these steps that follow.
 - 1) In the column for LRU NAME, use the cursor to click once on NFS.
 - a) Examine the data below the words: Details of Selected Hardware.
 - 2) Make a record of the data for the NFS:
 - Serial number
 - · Hardware part number
 - · Software part number.
 - (c) Compare the data with the requirement specified by your airline or operator.

SUBTASK 46-13-01-470-007

(3) Install the new software part, or parts. This is the task: (Onboard Network System LRU Software Installation, TASK 46-13-00-470-801).

NOTE: During software installation to the NFS, the installation program will install the parts, shut down, and reboot the NFS.

G. Software Installation Check

SUBTASK 46-13-01-720-009

- (1) Using the ONS browser, make your selection: Line Maintenance > ONS Configuration.
 - (a) Make sure the result shows the words ONS Configuration, and a table of data.
 - (b) In the column for LRU NAME, use the cursor to click once on NFS.
 - 1) Examine the data below the words: Details of Selected Hardware.
 - (c) Update your record of NFS data:
 - · Serial number
 - · Hardware number
 - · Software part number.
 - (d) Make sure the result agrees with the requirement specified by your airline or operator.

SUBTASK 46-13-01-720-010

- (2) Do a check of the client credentials. Do this task: (Onboard Network System Client Credentials Check, TASK 46-13-00-750-803).
 - (a) If you find a problem, then you must generate new client credentials.

SUBTASK 46-13-01-720-011

(3) Do a check of the NFS messages. This is the task: (Onboard Network System NFS Message Check, TASK 46-13-00-720-801).

AKS 006-999



- (a) If you find a problem, then maintenance action is required.
- (b) The software installation is serviceable when no LRU, and no messages, show on the NFS messages page.

H. Put the Airplane Back to Its Usual Condition

SUBTASK 46-13-01-080-007

(1) If the laptop is no longer required, stop the ONS maintenance browser and disconnect the laptop.



TASK 46-13-01-070-801

5. Network File Server Software Removal

A. General

- (1) This task gives the steps to remove operational software parts from the Network File Server (NFS), M2889.
 - (a) This task is applicable to software hosted by the NFS operating system.
- (2) To do this task, you will operate the Onboard Network System (ONS) maintenance browser using a maintenance laptop.
- (3) To do this task, the aircraft must be on the ground with its weight compressing the landing gear.

B. References

| Reference | Title |
|------------------|--|
| 24-22-00-860-811 | Supply Electrical Power (P/B 201) |
| 24-22-00-860-812 | Remove Electrical Power (P/B 201) |
| 46-13-00-480-801 | Onboard Network System Maintenance Laptop Connection (P/B 201) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

D. Location Zones

| Zone | Area | |
|------|---------------------------|--|
| 211 | Flight Compartment - Left | |

E. Prepare for Software Removal

SUBTASK 46-13-01-840-001

(1) If the airplane is not energized, supply electrical power (Supply Electrical Power, TASK 24-22-00-860-811).

EFFECTIVITY 46-13-01



SUBTASK 46-13-01-860-007

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(2) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 006, 009, 010, 013, 015-018, 020-025, 027

C 1 C01958 NETWORK FILE SERVER

AKS 006-999

This circuit breaker is inoperative and should remain open:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 007, 008, 011, 012, 014, 019, 026, 028-999

C 1 C01958 NETWORK FILE SERVER (INOP)

AKS 006-999

SUBTASK 46-13-01-480-005

- (3) Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

F. NFS Software Removal - Procedure

SUBTASK 46-13-01-070-002

- (1) Using the ONS maintenance browser, make your selection: Line Maintenance > ONS Configuration.
 - (a) Make sure the result shows the words ONS Configuration, and a table of data.

SUBTASK 46-13-01-070-003

(2) Make your selection: UNINSTALL NFS PARTS.

SUBTASK 46-13-01-070-004

- (3) Below the words SOFTWARE PART NUMBER:
 - (a) Click once on each LSAP to highlight the row.
 - 1) You can select one or more parts at this time.
 - (b) Make your selection: SELECT.

SUBTASK 46-13-01-070-005

- (4) Below the words: Selected Parts:
 - (a) Make sure that each LSAP shown is correct for removal.
 - 1) To remove an LSAP from the group, click once to highlight and make your selection: UNSELECT.
 - (b) Make your selection: CONTINUE.

NOTE: In the selected parts box, all parts shown (highlighted or not) will be erased.

SUBTASK 46-13-01-070-006

- (5) In the confirmation box, make your selection: CONTINUE.
 - (a) Make sure the box shows the words: Uninstalling selected parts.

SUBTASK 46-13-01-070-007

(6) In the results window, make sure the status for each LSAP shows the word: Successful.

AKS 006-999



SUBTASK 46-13-01-860-008

- (7) To download a record of the new software configuration, you can do the steps that follow:
 - (a) Using the ONS menu bar, make your selection: Line Maintenance > ONS Configuration.
 - (b) Make your selection: DOWNLOAD.
 - 1) Follow the on-screen instructions.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 46-13-01-080-006

- (1) If the maintenance laptop, SPL-11321 is not required for another task:
 - (a) Close the browser window.
 - (b) Shut down the laptop.
 - (c) Disconnect the Ethernet cable between the laptop and data port.

SUBTASK 46-13-01-840-002

(2) Remove electrical power if it is not necessary for other tasks: (Remove Electrical Power, TASK 24-22-00-860-812).



TASK 46-13-01-070-802

6. Network File Server Drive Reformat Procedure

A. General

- (1) This task gives the steps to erase all software parts on the Network File Server (NFS) operational drive, and to install the minimum operating system software parts.
 - (a) You will reboot the NFS to operate from the BOOT OS, and then replace the software on the operational drive.
 - (b) You will use the initial data loader (IDL) function to import the three specified crated parts, one at a time, and then install the parts as a group.
- (2) To do this task, the aircraft must be on the ground with its weight compressing the landing gear.

B. References

| Reference | Title |
|------------------|--|
| 46-13-00-470-802 | Mass Storage Device Software Part Installation (P/B 201) |
| 46-13-00-480-801 | Onboard Network System Maintenance Laptop Connection (P/B 201) |
| 46-13-00-720-803 | Onboard Network System Configuration Check (P/B 201) |
| 46-13-00-720-804 | Mass Storage Device Software Parts Check (P/B 201) |
| 46-13-00-750-803 | Onboard Network System Client Credentials Check (P/B 201) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

AKS 006-999



D. Location Zones

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

E. Prepare for NFS Software Installation

SUBTASK 46-13-01-480-001

- (1) Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

SUBTASK 46-13-01-470-001

- (2) Transfer the correct software parts to the maintenance laptop, SPL-11321, and into the IDL directory. Do these steps:
 - (a) Mount the source media using the laptop.
 - NOTE: Typically, the software parts can be on compact disk (CD) or USB memory stick. Or, the parts can already be present in a predefined laptop directory.
 - (b) Using the Windows Explorer application, examine the directory D:\IDL\737\CRATES.
 - 1) You can erase unserviceable (or, expired) parts that you find.
 - (c) Using the Windows Explorer application, transfer the software parts from the media to directory D:\IDL\737\CRATES.

SUBTASK 46-13-01-470-002

- (3) If the NFS is serviceable, download applicable log files from the NFS to the maintenance laptop. Do this task: (Network File Server Log File Check, TASK 46-13-01-710-802).
 - NOTE: Know and follow your airline's requirement for retention of log files. The steps that follow will erase all data from the NFS.

F. NFS Drive Reformat - Procedure

SUBTASK 46-13-01-860-013

- (1) Reboot the system into Boot OS. These are the steps:
 - (a) Make your selection: Extended Maintenance > ONS Maintenance > Reboot to Boot OS.
 - (b) Make your selection: Reboot.
 - (c) Make your selection: Continue.
 - 1) Make sure the status screen shows.

NOTE: The NFS can take approximately five minutes to reboot into Boot OS, and show the status screen.

SUBTASK 46-13-01-470-011

- (2) Mount the source data using the maintenance laptop, SPL-11321. These are the steps:
 - (a) Make your selection: INITIAL DATA LOAD > IMPORT PARTS.
 - 1) Make sure the part import page shows.
 - (b) Make your selection: Browse.
 - (c) Put the source media into the maintenance laptop.
 - 1) The source data can be a compact disc (CD), USB memory stick, or other method specified by your airline or operator.

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SUBTASK 46-13-01-470-003

- (3) Import the three specified software parts. Do these steps that follow:
 - NOTE: You must install all three software parts, and only the three parts specified, or the NFS will not operate.
 - (a) Make your selection: NFS SERVER OS.
 - (b) Make your selection: Open.
 - 1) Make sure the file path shows adjacent to the Browse button.
 - (c) Make your selection: IMPORT.
 - 1) Make sure the result shows the words: Successful upload of part.
 - (d) Make your selection: NFS NETMANAGER APP.
 - (e) Make your selection: Open.
 - 1) Make sure the file path shows adjacent to the Browse button.
 - (f) Make your selection: IMPORT.
 - 1) Make sure the result shows the words: Successful upload of part.
 - (g) Make your selection: NFS OPC.
 - (h) Make your selection: Open.
 - 1) Make sure the file path shows adjacent to the Browse button.
 - (i) Make your selection: IMPORT.
 - 1) Make sure the result shows the words: Successful upload of part.

SUBTASK 46-13-01-470-012

- (4) Complete the software installation of the three parts. Do these steps:
 - (a) On the browser's main menu bar, make your selection: INITIAL DATA LOAD > EXECUTE DATA LOAD.
 - (b) Make sure the applicable target and software parts are specified.
 - (c) Make your selection: CONTINUE.
 - 1) The system will do the installation, and reboot automatically.
 - 2) When the ONS Maintenance browser shows, the installation is complete.

G. Software Check - Procedure

SUBTASK 46-13-01-720-001

- (1) Do a check of the NFS operational software. This is the task:
 - Onboard Network System Configuration Check, TASK 46-13-00-720-803.
 - (a) Make sure that all required software parts are installed.
 - (b) If you must install parts in the NFS operational drive, refer to this task: (Network File Server Software Installation, TASK 46-13-01-470-801).

SUBTASK 46-13-01-720-002

- Do this task: (Mass Storage Device Software Parts Check, TASK 46-13-00-720-804).
 - (a) Make sure that all required software parts are installed.
 - (b) If you must install parts to the MSD, refer to this task: (Mass Storage Device Software Part Installation, TASK 46-13-00-470-802).

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H. Credentials Check - Procedure

SUBTASK 46-13-01-470-004

(1) You must generate new credentials for each network client. Do this task: (Onboard Network System Client Credentials Check, TASK 46-13-00-750-803).

I. Put the Airplane Back to Its Usual Condition

SUBTASK 46-13-01-080-001

 If the laptop is no longer required, stop the ONS maintenance browser, and disconnect the laptop.



TASK 46-13-01-710-801

7. Network File Server Fault Check

A. General

- (1) This task gives the steps to do a fault log check of the Network File Server (NFS), M2889.
- (2) To do this check, the weight-on-wheels discrete must be in the ground condition.

B. References

| Reference | Title |
|------------------|--|
| 46-13-00-480-801 | Onboard Network System Maintenance Laptop Connection (P/B 201) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

D. Location Zones

| Zone | Area | |
|------|---------------------------|--|
| 211 | Flight Compartment - Left | |

E. Before the Fault Log Check

SUBTASK 46-13-01-480-002

- (1) Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

F. NFS Fault Log Check Procedure

SUBTASK 46-13-01-720-003

- (1) Using the ONS maintenance browser, make your selection: Extended Maintenance > ONS Maintenance > Existing Faults.
 - (a) If the result shows no Line Replaceable Unit (LRU), and no fault message, then the NFS is serviceable.

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(b) If one or more LRUs shows, then continue.

NOTE: The result only shows an LRU client when there is a message. When there is no message, the LRU does not show. When an LRU does show, typically the message refers to an NFS-to-LRU interface problem, or an NFS software or hardware problem. Some conditions can cause more than one message to show.

SUBTASK 46-13-01-720-004

- (2) Select one target LRU at a time, and examine the fault details. Do these steps:
 - (a) Click once on the LRU name.
 - (b) Make a record of each fault code shown in the Fault Details box.
 - (c) Use the scroll bar to see the message, or messages.
 - (d) Do the steps for each LRU shown in the Fault Results box.
 - (e) If you find one or more maintenance messages, then a maintenance action is required.

G. Put the Aircraft Back to its Usual Condition

SUBTASK 46-13-01-080-002

(1) Exit the ONS browser, and disconnect the maintenance laptop, if not required for another task.



TASK 46-13-01-710-802

8. Network File Server Log File Check

A. General

- (1) This procedure gives access to the Network File Server (NFS) log files. You can do three tasks as follows:
 - (a) View a record of available log files.
 - (b) Make a copy of one or more log files to the laptop's internal drive, or removable media.
 - (c) Delete (or, erase) one or more log files from the NFS.
- (2) To do this check, you will operate the ONS maintenance browser using the maintenance laptop, SPL-11321.
- (3) To do this check, the weight-on-wheels discrete must be in the ground condition.

B. References

| Reference | Title |
|------------------|--|
| 46-13-00-480-801 | Onboard Network System Maintenance Laptop Connection |
| | (P/B 201) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

D. Location Zones

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

AKS 006-999



E. Before Log File Check Procedure

SUBTASK 46-13-01-480-003

- (1) Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

F. Log File Check Procedure

SUBTASK 46-13-01-860-001

- (1) Set the ONS maintenance browser to show the NFS LOGS page.
 - (a) Make your selection: Extended Maintenance > ONS Maintenance > Logs.
 - (b) In the NFS LOGS box, make your selection.
 - 1) Click once on one of the log types:
 - Performance
 - · Security
 - · Syslogs.
 - 2) Click once on the CONTINUE button.

SUBTASK 46-13-01-860-002

- (2) The result can contain many files, on one or more pages. To examine all files, do these steps:
 - (a) If shown, use the vertical scroll bar to examine all records on the page.
 - (b) If shown, use the FIRST, LAST, PREVIOUS, or NEXT buttons to examine all pages. NOTE: A page can show 100 log files.

SUBTASK 46-13-01-860-014

- (3) If your selection was SYSLOGS, then do this step:
 - (a) Make your selection: GET LATEST LOGS.

SUBTASK 46-13-01-860-003

- (4) To download a log file, do the steps that follow.
 - (a) Click once on the target log file. You can highlight one, some, or all of the log files.
 - (b) Click once on the DOWNLOAD button.
 - (c) When the operating system shows the navigation box, save the log files into a folder on the internal drive, or removable media.

SUBTASK 46-13-01-070-001

- (5) To erase a log file from the NFS, do the steps that follow.
 - (a) Click once on the target log file. You can highlight one, some, or all of the log files.
 - (b) Click once on the DELETE button.
 - (c) When the confirmation box shows, click once on the CONFIRM button.

G. Put the Airplane Back to Its Usual Condition

SUBTASK 46-13-01-080-003

(1) If the maintenance laptop, SPL-11321 is no longer required, stop the ONS maintenance browser, and disconnect the laptop.

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|--|------------|-------|------|--|
|--|------------|-------|------|--|

AKS 006-999



TASK 46-13-01-710-803

Network File Server Software Check

A. General

 This procedure gives the steps to examine the software installed in the network file server (NFS).

NOTE: The software in the task refers to the parts that operate the server.

- (2) To do this task, you will use the maintenance laptop, SPL-11321 to operate the ONS maintenance browser.
- (3) The aircraft must be on the ground before you can install software.

B. References

| Reference | Title |
|------------------|--|
| 46-13-00-720-803 | Onboard Network System Configuration Check (P/B 201) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

D. Location Zones

| Zone | Area | |
|------|----------------------------|--|
| 212 | Flight Compartment - Right | |

E. Prepare for the Procedure

SUBTASK 46-13-01-860-004

Get a record of correct software part numbers for the NFS on the target aircraft.

SUBTASK 46-13-01-860-005

(2) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 006, 009, 010, 013, 015-018, 020-025, 027

C 1 C01958 NETWORK FILE SERVER

AKS 006-999

This circuit breaker is inoperative and should remain open:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 007, 008, 011, 012, 014, 019, 026, 028-999

C 1 C01958 NETWORK FILE SERVER (INOP)

AKS 006-999

F. Procedure

SUBTASK 46-13-01-720-005

(1) Do a check of the NFS operational software. This is the task: (Onboard Network System Configuration Check, TASK 46-13-00-720-803).

AKS 006-999



(a) Make sure that all software parts installed on the NFS agree with the software specified in your record.

| G. | Put the | Aircraft | Back | To Its | Usual | Condition |
|----|---------|----------|------|--------|-------|-----------|
|----|---------|----------|------|--------|-------|-----------|

SUBTASK 46-13-01-080-004

(1) Exit the ONS browser, and disconnect the maintenance laptop, if not required for another task.

----- END OF TASK -----

AKS 006-999



NETWORK FILE SERVER - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks:
 - (1) Removal of the Network File Server (NFS), M2889.
 - (2) Installation of the NFS, M2889.

TASK 46-13-01-000-801

2. Network File Server Removal

Figure 401

A. General

- (1) This task gives the steps to remove the Network File Server (NFS).
 - (a) The NFS, M2889, is installed on shelf E5-2.

B. References

| Reference | Title |
|------------------|---|
| 06-41-00-800-801 | Finding an Access Door or Panel on the Lower Half of the Fuselage (P/B 201) |
| 20-10-07-000-801 | E/E Box Removal (P/B 201) |
| 20-40-12-000-802 | ESDS Handling for Metal Encased Unit Removal (P/B 201) |
| 46-13-01-710-802 | Network File Server Log File Check (P/B 201) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

D. Location Zones

| Zone | Area |
|------|--|
| 118 | Electrical and Electronics Compartment - Right |
| 211 | Flight Compartment - Left |

E. Access Panels

| Number | Name/Location |
|--------|----------------------------------|
| 117A | Electronic Equipment Access Door |

F. Prepare for the Procedure

SUBTASK 46-13-01-470-008

(1) The Boeing Company recommends you make a back-up copy of the applicable files from the NFS to the maintenance laptop, SPL-11321. Do this task: (Network File Server Log File Check, TASK 46-13-01-710-802).

NOTE: Know and follow your airline or operator's procedure for record retention.

AKS 006-999



SUBTASK 46-13-01-040-001

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(2) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 006, 009, 010, 013, 015-018, 020-025, 027

C 1 C01958 NETWORK FILE SERVER

AKS 006-999

This circuit breaker is inoperative and should remain open:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 007, 008, 011, 012, 014, 019, 026, 028-999

C 1 C01958 NETWORK FILE SERVER (INOP)

AKS 006-999

SUBTASK 46-13-01-010-001

- (3) Get access to the main equipment center.
 - (a) You can refer to:(Finding an Access Door or Panel on the Lower Half of the Fuselage, TASK 06-41-00-800-801).
 - (b) Open this access panel:

Number Name/Location

117A Electronic Equipment Access Door

G. NFS Removal Procedure

SUBTASK 46-13-01-020-001

(1) Do this task: (ESDS Handling for Metal Encased Unit Removal, TASK 20-40-12-000-802).

SUBTASK 46-13-01-020-002

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (2) Remove the network file network file server [1]. This is the task: (E/E Box Removal, TASK 20-10-07-000-801).
 - (a) Put protective covers on the electrical connectors.

------ END OF TASK ------

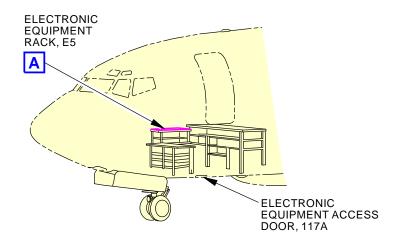
46-13-01

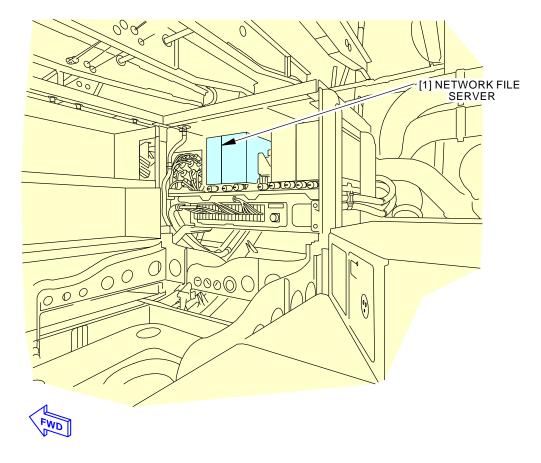
AKS 006-999

EFFECTIVITY

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Network File Server Installation Figure 401/46-13-01-990-801

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TASK 46-13-01-400-801

3. Network File Server Installation

Figure 401

I

A. General

- (1) This task gives the steps to install the Network File Server (NFS), M2889.
- (2) The NFS is installed on shelf E5-2 in the E/E bay.
- (3) To complete this task, a maintenance laptop, SPL-11321 is required.

B. References

| Reference | Title |
|------------------|---|
| 06-41-00-800-801 | Finding an Access Door or Panel on the Lower Half of the Fuselage (P/B 201) |
| 20-10-07-400-801 | E/E Box Installation (P/B 201) |
| 20-40-12-400-802 | ESDS Handling for Metal Encased Unit Installation (P/B 201) |
| 46-13-00-470-802 | Mass Storage Device Software Part Installation (P/B 201) |
| 46-13-00-720-803 | Onboard Network System Configuration Check (P/B 201) |
| 46-13-00-720-804 | Mass Storage Device Software Parts Check (P/B 201) |
| 46-13-00-750-803 | Onboard Network System Client Credentials Check (P/B 201) |
| 46-13-01-470-801 | Network File Server Software Installation (P/B 201) |
| 46-13-01-720-801 | Network File Server Operational Test (P/B 501) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

D. Expendables/Parts

| AMM Item | Description | AIPC Reference | AIPC Effectivity |
|----------|---------------------|------------------|-------------------------|
| 1 | Network file server | 34-61-02-02C-005 | AKS 006, 009, 010, 013, |
| | | | 015-018, 020-023 |

E. Location Zones

| Zone | Area |
|------|--|
| 118 | Electrical and Electronics Compartment - Right |
| 211 | Flight Compartment - Left |
| | |

F. Access Panels

| Number Name/Location | |
|----------------------|----------------------------------|
| 117A | Electronic Equipment Access Door |

AKS 006-999



G. Prepare for the Installation

SUBTASK 46-13-01-860-011

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(1) Make sure that this circuit breaker is open and has safety tag:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 006, 009, 010, 013, 015-018, 020-025, 027

C 1 C01958 NETWORK FILE SERVER

AKS 006-999

This circuit breaker is inoperative and should remain open:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 007, 008, 011, 012, 014, 019, 026, 028-999

C 1 C01958 NETWORK FILE SERVER (INOP)

AKS 006-999

SUBTASK 46-13-01-010-002

(2) Make sure that this access panel is open:

Number Name/Location

117A Electronic Equipment Access Door

(a) You can refer to:(Finding an Access Door or Panel on the Lower Half of the Fuselage, TASK 06-41-00-800-801).

H. NFS Installation Procedure

SUBTASK 46-13-01-420-001

CAUTION: DO NOT TOUCH THE UNIT BEFORE YOU DO THE PROCEDURE FOR DEVICES THAT ARE SENSITIVE TO ELECTROSTATIC DISCHARGE. ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

(1) Do this task: (ESDS Handling for Metal Encased Unit Installation, TASK 20-40-12-400-802).

SUBTASK 46-13-01-420-002

- (2) Remove the protective covers from the connectors and examine the electrical connectors and wires for damage, and dirt.
 - (a) Repair the problems that you find.

SUBTASK 46-13-01-420-003

(3) Install the network file server [1]. This is the task: (E/E Box Installation, TASK 20-10-07-400-801).

SUBTASK 46-13-01-860-012

(4) Remove the safety tag and close this circuit breaker:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 006, 009, 010, 013, 015-018, 020-025, 027

C 1 C01958 NETWORK FILE SERVER

AKS 006-999



AKS 006, 009, 010, 013, 015-018, 020-025, 027 (Continued)

(Continued)

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 006-999

This circuit breaker is inoperative and should remain open:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 007, 008, 011, 012, 014, 019, 026, 028-999

C 1 C01958 NETWORK FILE SERVER (INOP)

AKS 006-999

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I. LRU Post-Installation Test

SUBTASK 46-13-01-720-012

- (1) Do a check of the NFS operational software. This is the task: (Onboard Network System Configuration Check, TASK 46-13-00-720-803).
 - (a) Make sure that all required software parts are installed.
 - (b) If you must install parts in the NFS operational drive, refer to this task: (Network File Server Software Installation, TASK 46-13-01-470-801).

SUBTASK 46-13-01-470-009

- (2) Do this task: (Mass Storage Device Software Parts Check, TASK 46-13-00-720-804).
 - (a) Make sure that all required software parts are installed.
 - (b) If you must install parts in the MSD, refer to this task: (Mass Storage Device Software Part Installation, TASK 46-13-00-470-802).

SUBTASK 46-13-01-470-010

(3) You must generate new credentials for each network client. Do this task: (Onboard Network System Client Credentials Check, TASK 46-13-00-750-803).

SUBTASK 46-13-01-720-013

(4) Do an operational test. Do this task: (Network File Server Operational Test, TASK 46-13-01-720-801).

J. Put the Airplane Back to Its Usual Condition

SUBTASK 46-13-01-080-008

(1) Stop the ONS maintenance browser, and disconnect the laptop.

SUBTASK 46-13-01-410-001

(2) Close this access panel:

| <u>Number</u> | Name/Location |
|---------------|----------------------------------|
| 117A | Electronic Equipment Access Door |
| | END OF TASK |

EFFECTIVITY 46-13-01



NETWORK FILE SERVER - ADJUSTMENT/TEST

1. General

- A. This procedure has one task:
 - (1) An operational test to make sure that the network file server (NFS), M2889, is serviceable.

TASK 46-13-01-720-801

2. Network File Server Operational Test

A. General

- (1) This procedure makes sure that the Network File Server (NFS) is serviceable.
 - NFS, M2889 on shelf E5-2, in the E/E bay.
- (2) The aircraft must be on the ground with weight on the wheels before you do this task.

B. References

| Reference | Title |
|------------------|--|
| 46-13-00-480-801 | Onboard Network System Maintenance Laptop Connection (P/B 201) |
| 46-13-00-720-801 | Onboard Network System NFS Message Check (P/B 201) |
| 46-13-00-720-802 | Onboard Network System Input Monitoring Check (P/B 201) |
| 46-13-01-710-802 | Network File Server Log File Check (P/B 201) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|-----------------------------------|
| SPL-11321 | Laptop - Maintenance |
| | Part #: G45002-29 Supplier: 81205 |

D. Location Zones

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| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |

E. Before the Operational Test

SUBTASK 46-13-01-860-006

(1) Make sure that this circuit breaker is closed:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 006, 009, 010, 013, 015-018, 020-025, 027

C 1 C01958 NETWORK FILE SERVER

AKS 006-999

This circuit breaker is inoperative and should remain open:

F/O Electrical System Panel, P6-12

Row Col Number Name

AKS 007, 008, 011, 012, 014, 019, 026, 028-999

C 1 C01958 NETWORK FILE SERVER (INOP)

AKS 006-999



AKS 006-999

F. Operational Test Procedure

SUBTASK 46-13-01-480-004

- Do this task: (Onboard Network System Maintenance Laptop Connection, TASK 46-13-00-480-801).
 - (a) Using the maintenance laptop, SPL-11321, activate the ONS maintenance browser.

SUBTASK 46-13-01-720-006

- (2) Do this task: (Network File Server Log File Check, TASK 46-13-01-710-802).
 - (a) If you find a problem, then a maintenance action is required.

SUBTASK 46-13-01-720-007

- (3) Do a check of the NFS input monitoring. This is the task: (Onboard Network System Input Monitoring Check, TASK 46-13-00-720-802).
 - (a) In that task, when you must select an item to monitor, make your selection NFS. You can ignore the other items to monitor.
 - (b) Make sure the specified ports and busses are serviceable.

SUBTASK 46-13-01-720-008

- (4) Do a check of the NFS Messages. This is the task: (Onboard Network System NFS Message Check, TASK 46-13-00-720-801).
 - (a) If no NFS messages show, then the NFS is serviceable.

G. Put the Aircraft Back to its Usual Condition

SUBTASK 46-13-01-080-005

 Exit the ONS browser, and disconnect the maintenance laptop, SPL-11321, if not required for another task.

——— END OF TASK ———



ELECTRONIC FLIGHT BAG CLASS 2 - MAINTENANCE PRACTICES

1. General

- A. This section gives the procedures to do system maintenance on the Electronic Flight Bag (EFB).
- B. Procedures that prepare the EFB for software installation:
- C. Procedures that install the operating system, the OPTADMW part, and additional LSAP are as follows:
- D. Procedures that manage the EFB configuration
- E. A description of the procedures follows.
 - (1) These are EFB data handling procedures:
 - (a) Data download task that transfers data from the EDU to a portable data loader or external memory device.
 - (b) Data download steps using the OSLoader Installer boot disk.
 - (2) These are EFB configuration management procedures:
 - (a) A software check procedure to examine LSAP condition.
 - (b) An EFB side verification procedure to make sure the left and right EDU each have the same software parts.
 - (c) A tail identification number check.
 - (d) A procedure to examine the condition of analog discrete inputs.
 - (e) A procedure to examine the condition of each ARINC 429 input.
 - (f) A procedure to examine the condition of the Ethernet connection.
 - (g) A procedure to remove one or more LSAP applications from the EFB operating system.
 - (3) Preparation of the Data Loader
 - (a) Steps to transfer loadable software airplane parts (LSAP) from compact disc (CD) or digital video disc (DVD) to your portable data loader.
 - (4) EFB drive preparation and recovery tasks:
 - (a) A procedure to erase the EFB primary drive.
 - (b) A procedure to initialize the primary drive, and install everything.
 - (5) Windows operating system (OS) installation:
 - (a) Installation of the OS from media (specifically, USB flash memory or optical drive).
 - (b) Installation of the OS from the side-opposite EFB using the crossload function.
 - (c) Installation of the OS from a portable data loader.
 - (6) Installation of the necessary LSAP identified as OPTADMW.
 - (a) OPTADMW installation from media.
 - (b) OPTADMW installation using crossload.
 - (c) OPTADMW installation from a portable data loader.
 - (7) Installation of additional loadable software airplane parts (LSAP):
 - (a) Installation of LSAP into the EFB using the portable data loader.
 - (b) Installation of LSAP into the EFB using removable media.
 - (c) Installation of LSAP from one EFB to the opposite-side EFB using the crossload function.

46-15-00

FFFFCTIVITY



TASK 46-15-00-470-804

2. Data Download - Procedure

A. General

- (1) This task gives the steps to download data (typically, log files) from the captain's, and first officer's Electronic Flight Bag (EFB) to the Portable Data Loader (PDL).
- (2) The EFB requires an ARINC 615A compliant data loader. These combinations are approved and recommended:
 - (a) ARINC 615/615A data loader, COM-4963 with dataloader, COM-11626 installed. Connect using adapter cable, COM-12461.
 - (b) laptop, STD-11661 with dataloader, COM-11626 installed. Connect using adapter cable, COM-12462.
- (3) To do this task, the airplane must be on the ground.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|--|
| COM-4963 | Loader - Data, ARINC 615/615A (Model is PMAT 2000) |
| | Part #: P2K-615A-06 Supplier: 0BAW0 Opt Part #: 80000-05 Supplier: 0BAW0 |
| COM-11626 | Dataload Software - ARINC 615A, PMAT2000 (EFB) |
| | Part #: 82112 Supplier: 0BAW0 |
| COM-12461 | Cable - Adapter, Electronic Flight Bag, PMAT2000 (EFB) |
| | Part #: 80072-4 Supplier: 0BAW0 |
| COM-12462 | Cable - Adapter, Electronic Flight Bag, Laptop (EFB) |
| | Part #: 80088-1 Supplier: 0BAW0 |
| STD-11661 | Laptop - Generic (Minimum requirements: Windows XP SP2, |
| | 500MHz processor, 256MB RAM, 10/100 BaseT Ethernet port, |
| | CD-ROM/DVD media drive, 60GB hard drive, English Language) |

C. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

D. Download Procedure

SUBTASK 46-15-00-860-003

Set the captain's, or first officer's EFB to show the LOAD MENU. Do the steps that follow.

NOTE: To download data from EFB-R, or EFB-L and EFB-R at the same time, then do the steps that follow on captain's and first officer's EFBs.

To download data only from EFB-L, then do the steps that follow only using EFB-L.

- (a) On the MAIN MENU, make your selection SYSTEM PAGE.
- (b) On the SYSTEM page, make your selection EFB MAINTENANCE.
- (c) On the EFB MAINTENANCE page, make your selection LOAD MENU.



(d) In the dialog box, make your selection: OK.

NOTE: The OK selection does not cause the system to restart. The dialog box tells you that a software restart will be required to return to the MAIN MENU.

1) Wait for the LOAD MENU to show. This can take approximately three minutes.

SUBTASK 46-15-00-860-004

- (2) On the LOAD MENU, make your selection: ACCEPT LOAD.
 - (a) Make sure the box shows the words: ACCEPT LOAD IDLE.

SUBTASK 46-15-00-480-003

- (3) Connect the portable data loader (PDL) to the FLT DK EFB PORT, on P61.
 - (a) If using the ARINC 615/615A data loader, COM-4963, connect using adapter cable, COM-12461.
 - (b) If using laptop, STD-11661, connect using adapter cable, COM-12462.
 - (c) Energize the data loader.

SUBTASK 46-15-00-860-005

- (4) Activate the 615A DATALOADER application. Do these steps:
 - (a) Select ARINC 615A DATALOADER from the main menu.
 - 1) On ARINC 615/615A data loader, COM-4963, select from the main menu.
 - 2) On laptop, STD-11661, find and select the desktop icon.
 - (b) Make sure 615A DATALOADER x.x.x screen appears.
 - (c) Enter the correct USER NAME, or press the space bar.
 - NOTE: Follow your airline's procedure for USER NAME.
 - (d) Select the correct tail number.
 - (e) Select ELECTRONIC FLIGHT BAG (EFB) for the connection type.
 - (f) Select CONTINUE.
 - 1) Make sure that the operation menu shows, with the words 615A DATALOADER.

SUBTASK 46-15-00-470-002

(5) Do an operator defined download. These are the steps:

NOTE: Operator defined download refers to the transfer of data from the EFB to the internal drive of the portable data loader.

- (a) Select the function: Operator Defined Download.
 - 1) Make sure the window shows with the words: SELECT A TARGET.
- (b) Set the target EFB to download.
 - 1) Select the green box adjacent the target name.
 - 2) You can select EFB-L, EFB-R, or the two together.
 - 3) If the target EFB does not show in the window, make sure the EFB shows the words: ACCEPT LOAD IDLE.
- (c) Select the CONTINUE button.
 - 1) Make sure the window shows with the words DOWNLOAD LIST.
- (d) Make your selection of one, or more files for download.
 - 1) You can select one or more at a time, or use the SELECT ALL button.
 - 2) You un-do your selection using the CLEAR SELECTION button.



- (e) Push the START button.
- (f) Let the system work until the progress bar shows green, or red in color.
 - 1) A green bar shows the transfer was successful.
 - 2) A red bar shows the transfer was unsuccessful.
- (g) Adjacent to the colored progress bar, select the CLOSE button.
- (h) You can find the downloaded files at this data loader location:C:\datafiles\Downloads\615A\<date and time stamp>\<filename>.

SUBTASK 46-15-00-860-007

- (6) Set the applicable EFB to show the MAIN MENU. Do the steps that follow.
 - (a) On the bezel frame below the touchscreen, push the MENU button.
 - NOTE: The MENU button is in the center position.
 - (b) On the LOAD MENU, make your selection: RETURN TO MAIN.
 - (c) In the confirmation box, make your selection: OK.
 - NOTE: When you confirm the selection, the display shows the words: RETURN TO MAIN SELECTED.

E. Put the Aircraft Back to its Usual Condition

SUBTASK 46-15-00-860-006

- (1) To exit and show the 615A DATALOADER menu, select the button: GO BACK.
 - (a) When the words CLOSE LOADER, and ONE OR MORE SESSIONS ARE STILL RUNNING, then select YES.
 - (b) Make sure the MAIN MENU shows.

SUBTASK 46-15-00-080-001

(2) Disconnect the data cable from the FLT DK EFB PORT on panel P61.



TASK 46-15-00-470-817

3. Data Download Using OSLoader Installer Procedure

A. General

- (1) This procedure gives the steps to download data (typically, log files) from the electronic flight bag (EFB) to removable USB media.
 - (a) Use this procedure when the EFB main menu, or load menu are unserviceable.
- (2) To do this task, you must have these tools:
 - (a) The OSLoader Installer bootable compact disc (CD) (or; Boot Disk, SPL-14399).
 - 1) This disc is made by your EFB administrator.
 - (b) One USB CD/DVD optical drive
 - (c) One removable USB media (for example, a flash memory drive)
- (3) To do this task, the airplane must be on the ground.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.



| Reference | Description |
|-----------|--|
| SPL-14399 | OS Loader Installer Bootable CD |
| STD-9090 | Stick - USB, Memory (128MB Capacity Minimum) |
| STD-13361 | Cable - USB (1 meter) |
| STD-13362 | ROM Drive - USB CD/DVD |

C. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

D. Prepare for the Download - Procedure

SUBTASK 46-15-00-480-015

 Obtain the OSLoader Installer bootable CD (or, Boot Disk, SPL-14399), from the EFB administrator.

SUBTASK 46-15-00-040-009

- (2) De-energize the Electronic Display Unit (EDU). Do the steps that follow.
 - (a) On the bezel adjacent to the touch-screen, push the Shutdown button.
 - (b) On the EFB main menu, make your selection: Turn off.

SUBTASK 46-15-00-480-016

- (3) Connect the USB CD/DVD ROM Drive, STD-13362 to the USB port.
 - (a) Connect using USB Cable, STD-13361.

SUBTASK 46-15-00-480-017

(4) Insert the Boot Disk, SPL-14399 into the USB CD/DVD ROM Drive, STD-13362.

SUBTASK 46-15-00-480-018

(5) Make sure the USB CD/DVD ROM Drive, STD-13362 is the only external device connected to the EDU USB port.

E. OSLoader Installer Download - Procedure

SUBTASK 46-15-00-470-049

- (1) Energize the EFB system processing unit.
 - (a) Let the EFB boot from the external USB CD drive.

SUBTASK 46-15-00-480-019

- (2) When the Install Menu shows, connect a USB memory stick, STD-9090 to a USB port on the EFB system.
 - (a) If the EFB system does not show the Install Menu after 5 minutes, obtain a serviceable copy of the OSLoader installer bootable CD, and/or a serviceable USB CD drive, and restart the procedure.

SUBTASK 46-15-00-470-050

- (3) On the Install Menu, make your selection: DOWNLOAD LOGS TO MEDIA.
 - (a) The display shows the words: Please Wait While the logs are copied."

SUBTASK 46-15-00-470-051

- (4) The installation is complete when the display shows the words: LOG DOWNLOAD COMPLETE OK, and the selection: SHUTDOWN.
 - (a) Make your selection: SHUTDOWN.

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- (b) If the display shows an unserviceable result (for example, LOG DOWNLOAD FAIL), then:
 - Make sure the USB flash memory device is not locked, or that write-protection is not set to ON.
 - Make sure the USB flash memory device is serviceable.
 - 3) Begin the procedure again. Refer to Prepare for the Download Procedure, at the beginning of this task.
 - If the procedure fails the second time, then stop. A corrective maintenance action is required.

F. Put the Airplane Back To Its Usual Condition

SUBTASK 46-15-00-080-018

(1) When the EFB EDU has shut down, remove the Boot Disk, SPL-14399 from the USB CD/DVD ROM Drive, STD-13362.

SUBTASK 46-15-00-080-019

(2) Disconnect the USB CD/DVD ROM Drive, STD-13362 and USB Cable, STD-13361 from the USB port.

SUBTASK 46-15-00-080-020

(3) Disconnect the USB memory stick, STD-9090 from the USB port.

SUBTASK 46-15-00-840-007

- (4) Energize the EFB EDU.
 - (a) Push and hold the Power button down for 15 seconds, and then release.
 - (b) Let the EDU boot up and show the main menu.



TASK 46-15-00-710-803

4. Software Check - Procedure

A. General

- (1) This task gives the steps to do a check of the software installed in the captain's or first officer's Electronic Flight Bag (EFB).
- (2) The color of each part shown on the SYSTEM CONFIG page tells you its condition.
 - (a) An LSAP that shows white in color is serviceable.
 - (b) An LSAP that shows amber in color is unserviceable.
 - (c) An LSAP that shows cyan in color is in the check process. If it is cyan for more than eight minutes, it is unserviceable.

B. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

C. EFB Software Check Procedure

SUBTASK 46-15-00-860-012

- (1) Determine which EFB you will check.
 - (a) To do a check of EFB-L, you must use the Captain's electronic display unit (EDU).
 - (b) To do a check of EFB-R, you must use the First Officer's EDU.



SUBTASK 46-15-00-860-013

- (2) Set the EFB to show the MAIN MENU.
 - (a) Find and select the SHOW button.
 - (b) Make your selection: MENU.

SUBTASK 46-15-00-860-014

- (3) Set the applicable EFB to show the SYSTEM CONFIG page.
 - (a) Make your selection: SYSTEM PAGE.
 - (b) Make your selection: EFB MAINTENANCE.
 - (c) Make your selection: SYSTEM CONFIG.

SUBTASK 46-15-00-860-015

- (4) Examine the SYSTEM CONFIG page.
 - (a) Use the scroll bar to see the complete record.
 - (b) Make sure that each LSAP shows white in color.
 - 1) If an LSAP shows amber or cyan in color, you must correct the problem.
 - (c) Make sure the correct Loadable Software Airplane Part (LSAP) part numbers show.

alpha-numeric part number, and not by part name.

Make sure the parts that show agree with your airline or operator's requirements.
 NOTE: SYSTEM CONFIG shows the sequence of parts according to the

SUBTASK 46-15-00-860-016

- (5) Make sure that EFB-L and EFB-R each contain the same software. Do this task: (Reference Not Currently Available).
 - (a) If the software in EFB-L and EFB-R do not agree, you must correct the problem.

D. Put the Aircraft Back to Its Usual Condition

SUBTASK 46-15-00-860-017

- (1) Set the EFB to show the MAIN MENU.
 - (a) Find and select the SHOW button.
 - (b) Make your selection: MENU.

----- END OF TASK -----

TASK 46-15-00-710-812

5. EFB Side Verification Procedure

A. General

- (1) This procedure gives the steps to make sure that two Electronic Flight Bag (EFB) Electronic Display Unit (EDU) is each set to the correct physical location on the airplane.
 - (a) Make sure the captain's EDU is set to LEFT EFB.
 - (b) Make sure the first officer's EDU is set to RIGHT EFB.
- (2) Do this procedure every time after you do one of these actions:
 - (a) An EFB unit was installed or replaced.
 - (b) An EFB operating system (that is, block point) upgrade was installed.
 - (c) EFB system wiring was repaired or replaced.
- (3) To do this task, the airplane must be on the ground.

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AKS 001-006, 009, 010, 013, 015-018, 020-025, 027

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B. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

C. EFB Side Verification - Procedure

SUBTASK 46-15-00-860-081

(1) From the MAIN MENU on the captain's and first officer's EDU, make your selection: SYSTEM PAGE

SUBTASK 46-15-00-860-082

(2) On the SYSTEM PAGE, make your selection: EFB MAINTENANCE.

SUBTASK 46-15-00-860-083

(3) On EFB MAINTENANCE, make your selection: CONFIG COMPARE.

SUBTASK 46-15-00-860-084

(4) On the captain's EDU, make sure that CONFIG COMPARE shows the words LEFT EFB in the left-hand column.

SUBTASK 46-15-00-860-085

(5) On the first officer's EDU, make sure that CONFIG COMPARE shows the words RIGHT EFB in the right-hand column.

D. Put the Airplane Back To Its Usual Condition

SUBTASK 46-15-00-840-008

(1) Set the EFB to show the MAIN MENU.



TASK 46-15-00-710-804

6. Tail Identification Check - Procedure

A. General

- (1) This procedure gives the steps to do a check of the aircraft tail identification (ID) number recorded in captain's, and first officer's Electronic Flight Bag (EFB).
- (2) This procedure also gives the steps to set the Tail ID number.
- (3) The tail ID numbers entered in the captain's, and first officer's DUs must agree with the tail ID number recorded on the flight compartment placard.

B. Location Zones

| Zone | Area | |
|------|----------------------------|--|
| 211 | Flight Compartment - Left | |
| 212 | Flight Compartment - Right | |

C. Tail ID Check Procedure

SUBTASK 46-15-00-860-034

(1) Find and examine the aircraft placard, and make a record of the aircraft registration number (tail number).

SUBTASK 46-15-00-860-035

- (2) Set the captain's and first officer's EFB to show the LOAD MENU. Do the steps that follow on the two EFBs.
 - (a) On the MAIN MENU, make your selection: SYSTEM PAGE.



- (b) Make your selection: EFB MAINTENANCE.
- (c) Make your selection: LOAD MENU.
- (d) In the confirmation box, make your selection: OK.

NOTE: The OK selection does not cause the system to restart. The dialog box tells you that a software restart will be required to return to the MAIN MENU.

1) Wait for the LOAD MENU to show. This can take approximately three minutes.

SUBTASK 46-15-00-860-036

(3) On the load menu, make your selection: TAIL ID ENTRY.

SUBTASK 46-15-00-710-006

- (4) On the captain's EFB, examine the data below the words: CURRENT TAIL ID.
 - (a) If the data shown, and the aircraft registration number agree, then the TAIL ID is serviceable.
 - (b) If the TAIL ID on the IDENT page and on the placard do not agree, then do the Set Tail ID procedure that follows.

SUBTASK 46-15-00-710-005

- (5) On the first officer's EFB, examine the data below the words: CURRENT TAIL ID.
 - (a) If the data shown, and the aircraft registration number agree, then the TAIL ID is serviceable.
 - (b) If the TAIL ID on the IDENT page and on the placard do not agree, then do the Set Tail ID procedure that follows.

D. Set Tail Identification Procedure

SUBTASK 46-15-00-860-038

- (1) To set the tail identification using the touchscreen keypad, do the steps that follow.
 - (a) Enter the correct aircraft registration number.
 - (b) Make your selection: SAVE TAIL ID.
 - (c) Make sure that the condition changes to COMPLETE.
 - (d) Make sure the CURRENT TAIL ID agrees with the aircraft registration number.

SUBTASK 46-15-00-860-039

- (2) To set the tail identification using the information from the opposite-side EFB, do the steps that follow.
 - (a) Examine the USE OFFSIDE ID button for the tail ID.
 - (b) If the offside data is correct, then make your selection: USE OFFSIDE ID.
 - (c) Make your selection: SAVE TAIL ID.
 - (d) Make sure that the condition changes to COMPLETE.
 - (e) Make sure the CURRENT TAIL ID agrees with the aircraft registration number.

SUBTASK 46-15-00-860-040

- (3) Set the captain's, and first officer's EFB to show the MAIN MENU. Do the steps that follow on the two EFBs.
 - (a) On the EFB bezel, push the MENU, or BACK (<=) button.
 - (b) On the LOAD MENU, make your selection: RETURN TO MAIN.
 - (c) In the confirmation box, make your selection: OK.



| (d) | Make sure | the EFB | shows the | MAIN | MENU. |
|-----|-----------|---------|-----------|------|-------|
|-----|-----------|---------|-----------|------|-------|

| END | OF | TASK | |
|----------------|-----|-------------|--|
| | OI. | IAOIN | |

TASK 46-15-00-710-810

7. Analog Discrete Input Check - Procedure

A. General

- (1) This task gives you steps to make sure that communications to the Electronic Flight Bag (EFB) from connected analog discretes are serviceable.
- (2) The task gives the steps to examine the program PIN code for the captain's and first officer's EFB.

B. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

C. Analog Discretes Input Check - Procedure

SUBTASK 46-15-00-860-026

- (1) Set the captain's, and first officer's EFB to show the ANALOG DISCRETE INPUTS page. Do the steps that follow.
 - (a) From the MAIN MENU, make your selection: SYSTEM PAGE.
 - (b) Make your selection: EFB MAINTENANCE.
 - (c) Make your selection: INPUT MONITORING.
 - (d) Make your selection: ANALOG DISCRETE INPUTS.

SUBTASK 46-15-00-860-027

- (2) Examine the result.
 - (a) For each input shown, make sure the result shows: GND, or OPEN.

NOTE: The GND (ground) condition tells you the circuit is complete. The OPEN condition tells you the circuit is not complete.

AKS 013, 015-018, 020-025, 027

SUBTASK 46-15-00-860-028

- (3) At the bottom of the ANALOG DISCRETE INPUTS page, examine the program PIN code.
 - (a) Make sure the captain's EFB shows code 16.
 - (b) Make sure the first officer's EFB shows the code: 37.

AKS 001-006, 009, 010, 013, 015-018, 020-025, 027

----- END OF TASK -----

TASK 46-15-00-710-809

8. ARINC 429 Input Monitor Check - Procedure

A. General

I

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(1) This task gives you steps to make sure that Aeronautical Radio Incorporated (ARINC) 429 communications to the Electronic Flight Bag (EFB) from connected systems are serviceable.



B. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

C. ARINC 429 Input Check - Procedure

SUBTASK 46-15-00-860-029

- (1) Set the captain's, and first officer's Electronic Display Unit (EDU) to show the ARINC 429 INPUTS page. Do the steps that follow.
 - (a) From the MAIN MENU, make your selection: SYSTEM PAGE.
 - (b) Make your selection: EFB MAINTENANCE.
 - (c) Make your selection: INPUT MONITORING.
 - (d) Make your selection: ARINC 429 INPUTS.

SUBTASK 46-15-00-860-030

(2) Make sure that each interface on the page shows the condition PRESENT, or ABSENT.

NOTE: If the INPUT ACTIVITY shows as PRESENT, or ABSENT, then the EFB senses the interface. The ABSENT condition tells you that the interface is installed, but is not serviceable.

The ARINC 429 INPUT MONITOR page only shows the interface when that system is installed. If a system is not installed, it does not show on the page.

- ADIRU-ADR
- ADIRU-IR
- CDS-DEU
- FMC 02
- FMC 09
- GPS
- PR1

D. Put the Airplane Back to its Usual Condition

SUBTASK 46-15-00-860-031

- (1) Set the EFB to show the MAIN MENU. Do the steps that follow.
 - (a) On the ARINC 429 INPUTS page, make your selection: SHOW.
 - (b) Then make your selection: MENU.
 - (c) Make sure the EFB shows the main menu.



TASK 46-15-00-710-811

9. Ethernet Input Monitor Check - Procedure

A. General

This task shows you how to make sure that communications between the Electronic Flight Bag (EFB) and Ethernet connected systems are serviceable.

B. Location Zones

| Zone | Area |
|------|---------------------------|
| 211 | Flight Compartment - Left |



(Continued)

| Zone | Area |
|------|----------------------------|
| 212 | Flight Compartment - Right |

C. Ethernet Input Check - Procedure

SUBTASK 46-15-00-860-041

- Set the captain's, and first officer's EFB to show the ETHERNET INPUTS page. Do the steps that follow.
 - (a) From the MAIN MENU, make your selection: SYSTEM PAGE.
 - (b) Make your selection: EFB MAINTENANCE.
 - (c) Make your selection: INPUT MONITORING.
 - (d) Make your selection: ETHERNET INPUTS.

SUBTASK 46-15-00-860-042

(2) Make sure that each interface on the page shows the condition PRESENT, or ABSENT.

NOTE: If the INPUT ACTIVITY shows as PRESENT, or ABSENT, then the EFB senses the interface. The ABSENT condition tells you that the interface is installed, but is not serviceable.

The ETHERNET INPUTS page only shows the interface when that system is connected. If a system is not connected, it does not show on the page.

- DATA LOADER
- RIGHT EFB (if this check is on the Captain's EDU)
- LEFT EFB (if this check is on the First Officer's EDU)
- VIDEO.

D. Put the Aircraft Back to Its Usual Condition

SUBTASK 46-15-00-840-002

- (1) Set the EFB to show the MAIN MENU.
 - (a) Find and select the SHOW button.
 - (b) Make your selection: MENU.

----- END OF TASK -----

TASK 46-15-00-070-803

10. EFB Drive Erase Procedure

A. General

- (1) This task gives the steps to erase all software from the Electronic Flight Bag (EFB) Electronic Display Unit (EDU).
 - (a) This procedure will erase the drive only. No Loadable Software Airplane Part (LSAP) are installed after the drive has been erased.
 - For units that will remain in service, and need software installation, you can refer to (EFB Initialization and Recovery - Procedure, TASK 46-15-00-470-808).
- (2) To do this task, these tools that follow are necessary.
 - USB DVD optical drive (USB CD/DVD ROM Drive, STD-13362).
 - EFB OSLoader Installer compact disc (Boot Disk, SPL-14399).

NOTE: The EFB OSLoader Installer disk is made by your EFB Administrator.



(3) After the this procedure is complete, you must do this task (EFB Initialization and Recovery - Procedure, TASK 46-15-00-470-808), or the EFB will not operate.

B. References

| Reference | Title |
|------------------|--|
| 46-15-01-000-801 | Electronic Display Unit Removal (P/B 401) |
| 46-15-01-400-801 | Electronic Display Unit Installation (P/B 401) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description | |
|-----------|---------------------------------|--|
| SPL-14399 | OS Loader Installer Bootable CD | |
| STD-13361 | Cable - USB (1 meter) | |
| STD-13362 | ROM Drive - USB CD/DVD | |

D. Prepare for Drive Erase

SUBTASK 46-15-00-040-010

- De-energize the EDU. Do the steps that follow.
 - (a) On the bezel adjacent to the touch-screen, push the Shutdown button.
 - (b) On the EFB main menu, make your selection: Turn off.

SUBTASK 46-15-00-480-020

- (2) Connect the USB CD/DVD ROM Drive, STD-13362 to the USB port.
 - (a) Connect each using USB Cable, STD-13361.

SUBTASK 46-15-00-480-021

(3) Put the Boot Disk, SPL-14399 into the USB CD/DVD ROM Drive, STD-13362.

SUBTASK 46-15-00-860-086

(4) Make sure that the CD/DVD ROM drive is the only device connected to the EFB USB ports.

E. EFB Drive Erase - Procedure

SUBTASK 46-15-00-470-009

- (1) Energize the EFB System processing unit.
 - (a) Let the EFB System processing unit boot from the external USB drive. This can take approximately three minutes.
 - (b) During boot-up, the display shows the words: Please Wait while the Boeing OSLoader Initializes. This is its usual operation and is not a fault.
 - (c) When the display shows the Install Menu, then continue.
 - If the display does not show the Install Menu after five minutes, then obtain a serviceable Boot Disk, SPL-14399, or USB CD/DVD ROM Drive, STD-13362, and begin this procedure again.

SUBTASK 46-15-00-080-002

- Make your selection: REMOVAL ALL SOFTWARE.
 - (a) When the display shows the words: REMOVAL COMPLETE OK, then continue.
 - (b) The display shows the words: Please Wait While the Software is Removed. This can take up to one minute. This is its usual operation and is not a fault.



- (c) When the display shows the words: REMOVAL COMPLETE OK, then continue.
 - 1) If the display shows the words: REMOVAL FAIL, or other unserviceable result, then begin the procedure again.
 - If the displays shows the words REMOVAL FAIL a second time, then remove the EFB EDU, and install a serviceable unit (Electronic Display Unit Removal, TASK 46-15-01-000-801, and Electronic Display Unit Installation, TASK 46-15-01-400-801).

SUBTASK 46-15-00-860-025

(3) Make your selection: SHUTDOWN.

SUBTASK 46-15-00-860-087

(4) Open this circuit breaker and install safety tag:

F/O Electrical System Panel, P6-12

| Row | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|-----|------------|---------------|-------------|
| Α | 1 | C01668 | CAPT EFB |

F. Return the Airplane To It's Usual Condition

SUBTASK 46-15-00-080-021

(1) Remove the Boot Disk, SPL-14399, and disconnect the USB CD/DVD ROM Drive, STD-13362 from the USB data port.



TASK 46-15-00-070-801

11. LSAP Removal - Procedure

A. General

- (1) This procedure gives the steps to erase one or more Loadable Software Airplane Part (LSAP) from the Electronic Flight Bag (EFB) Electronic Display Unit (EDU).
 - (a) You can erase an LSAP from the captain's or first officer's EDU, but only on one unit at a time.

NOTE: When returned to service, the captain's EFB must have the same LSAPs installed as the first officer's EFB.

- (b) You can erase one, or more LSAP at the same time.
- (2) The airplane must be on the ground before you can erase software.

B. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

C. Software Removal Procedure

SUBTASK 46-15-00-860-018

- (1) Determine which EFB you will change.
 - (a) To remove software from EFB-L, you must use the Captain's electronic display unit (EDU).
 - (b) To remove software from EFB-R, you must use the First Officer's EDU.

SUBTASK 46-15-00-860-019

(2) Set the applicable EFB to show the LOAD MENU. Do the steps that follow.



- (a) On the MAIN MENU, make your selection: SYSTEM PAGE.
- (b) Make your selection: EFB MAINTENANCE.
- (c) Make your selection: LOAD MENU.
- (d) In the confirmation box, make your selection: OK.

NOTE: The OK selection does not cause the system to restart. The dialog box tells you that a software restart will be required to return to the MAIN MENU.

1) Wait for the LOAD MENU to show. This can take approximately three minutes.

SUBTASK 46-15-00-070-001

(3) On the LOAD MENU, make your selection: DELETE LSAP.

SUBTASK 46-15-00-070-002

- (4) Make your selection of one or more LSAPs to erase.
 - (a) Make your selection for the applicable software part.
 - 1) Make sure the green check-mark ($\sqrt{}$) shows adjacent to the part.
 - (b) To remove the part, make your selection again on the applicable part.
 - 1) Make sure the green check-mark ($\sqrt{\ }$) does not show.
 - (c) To select all part numbers on the page, use the SELECT ALL button at the bottom of the page.
 - 1) To remove the green check-mark for all part numbers at the same time, make your selection: SELECT NONE.

SUBTASK 46-15-00-070-003

- (5) To complete the removal sequence, push the DELETE button at the bottom of the page.
 - (a) To escape the delete function with no changes, push the MENU button on the bezel frame.

NOTE: The menu button is in the center position.

D. Put the Aircraft Back to Its Usual Condition

SUBTASK 46-15-00-860-022

- (1) Set the captain's and first officer's EFB to show the MAIN MENU.
 - (a) Find and select the SHOW button.
 - (b) Make your selection: MENU.

----- END OF TASK -----

TASK 46-15-00-470-806

12. Compact Disc To Portable Data Loader - Software Transfer Procedure

A. General

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- (1) This procedure gives the steps to transfer software from a Compact Disc (CD) to a portable data loader, for future installation in the Electronic Flight Bag (EFB).
- (2) The EFB requires an ARINC 615A compliant data loader. These tool combinations are approved and recommended:
 - (a) ARINC 615/615A data loader, COM-4963 with LoadStar application software, COM-7085 installed.
 - (b) laptop, STD-11661 with LoadStar application software, COM-7085 installed.
- (3) This task gives two ways to load software:

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- (a) Use the recommended procedure when Loadable Software Airplane Part (LSAP) are found and installed by the installation program.
- (b) Use the alternate procedure when you must find and install LSAPs manually using Windows Internet Explorer.

NOTE: The Boeing Company recommends that you install software into the EFBs from the data loader's internal disk drive. It is not recommended to install software from compact disk (CD), or removable media, directly to the EFB.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|---|
| COM-4963 | Loader - Data, ARINC 615/615A (Model is PMAT 2000) |
| | Part #: P2K-615A-06 Supplier: 0BAW0 Opt Part #: 80000-05 Supplier: 0BAW0 |
| COM-7085 | Software - LoadStar Application |
| STD-11661 | Laptop - Generic (Minimum requirements: Windows XP SP2, 500MHz processor, 256MB RAM, 10/100 BaseT Ethernet port, CD-ROM/DVD media drive, 60GB hard drive, English Language) |

C. Recommended Installation Procedure

SUBTASK 46-15-00-470-011

- (1) Use this procedure to install LSAPs into the LoadStar application software, COM-7085 as follows:
 - NOTE: This is the recommended procedure. Use these instructions when the media part number that you want to load shows in the CONFIRM MOVING MEDIA SET window. Use the alternate procedure below when the media part number that you want to load does not show in the CONFIRM MOVING MEDIA SET window.
 - (a) Load the CD into the CD drive of the data loader.
 - 1) For data loaders that require an external CD drive, connect the CD drive to the data loader.
 - (b) Energize the portable data loader.
 - 1) For log-in user name and password, follow your airline procedure, or push the space bar.
 - (c) When the MAIN MENU shows, select the LoadStar function.
 - NOTE: If the MAIN MENU is not displayed, select the MAIN MENU shortcut.
 - (d) Select the LIBRARY tab.
 - (e) Select INSTALL SOFTWARE.
 - (f) From the INSTALL SOFTWARE window, select CD ROM.
 - (g) Click on NEXT.
 - (h) When the message window shows the words: Confirm that you want to move media set (media part number XXX-xxx-XXX-xx) with one disk to the NEWLOADS directory", select YES.
 - (i) On the drop-down menu that shows, use a check mark to select the applicable media part number.



- (j) Click on NEXT.
- (k) Make sure the INSTALL SOFTWARE window shows.
- (I) Select the applicable airplane model and tail number.
- (m) Click on NEXT.
- (n) When the LoadStar message window shows "Do you want to continue", select YES.
- (o) At load completion, click on OK.

D. Alternate Installation Procedure

SUBTASK 46-15-00-470-012

- Use this alternate procedure to load software into the LoadStar application software, COM-7085 as follows:
 - NOTE: Use this alternate procedure when the media part number that you want to load does not show in the CONFIRM MOVING MEDIA SET window. Use the recommended procedure above when the media part number that you want to load shows in the CONFIRM MOVING MEDIA SET window.
 - (a) Put the correct CD into the CD drive of the data loader.
 - For data loaders that require an external CD drive, connect the CD drive to the data loader.
 - (b) Energize the portable data loader.
 - For log-in user name and password, follow your airline procedure, or push the space bar.
 - Make a new directory as follows:
 - 1) Open Windows Explorer.
 - Make sure c:\Datafiles\Newloads\<PART FOLDER NAME>\DISK001 shows.
 - 3) Rename < PART FOLDER NAME>
 - NOTE: If there is not a specific name to be used, try using the applicable system that the software is being installed for. Use a name such as <AIMS II> or <EFB>. The DISK001 is mandatory and must be spelled as shown.
 - 4) Using Windows Explorer, copy the contents from the CD drive to the new directory you made in the previous step.
 - Select the LoadStar icon from the main menu of the data loader.
 - If the main menu does not show, double-click on the main menu shortcut on the desktop.
 - If prompted, enter:
 - 1) USER NAME
 - PASSWORD
 - NOTE: Follow your recommended airline procedure for this step. if user name and password is not required, press the space bar.
 - (f) Select the LIBRARY tab.
 - (g) Select INSTALL SOFTWARE.
 - (h) Make sure the GETS LOAD FROM: is set to NEW LOAD DIRECTORY.
 - Select the correct folder name in the window labeled NEW LOADS. This is the part folder name you created in the "Rename <PART FOLDER NAME>" step above.

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- (j) Select the button labeled NEXT.
- (k) Confirm the diskette part number, and software part number.
- (I) Select MODEL.
- (m) Select tail number.
- (n) Select the button labeled NEXT.
- (o) When the installation is complete, select OK.
- (p) If you want to transfer another CD, repeat these steps starting with "Put the correct CD in the CD-ROM drive".
- (g) Remove the CD from the CD-ROM drive when the software installation is complete.



TASK 46-15-00-470-808

13. EFB Initialization and Recovery - Procedure

A. General

- (1) This task gives the steps to partition and install the OSLoader.
 - (a) The steps erase all software and data from the Electronic Flight Bag (EFB) Electronic Display Unit (EDU).
- (2) To do this task, these tools that follow are mandatory.
 - USB DVD optical drive (USB CD/DVD ROM Drive, STD-13362).
 - EFB OSLoader Installer compact disc (Boot Disk, SPL-14399).

NOTE: The EFB OSLoader Installer disk is made by your EFB Administrator.

(3) After the initialization steps are complete, you must install the operating system.

B. References

| Reference | Title |
|------------------|--|
| 46-15-01-000-801 | Electronic Display Unit Removal (P/B 401) |
| 46-15-01-400-801 | Electronic Display Unit Installation (P/B 401) |

C. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|-----------|---------------------------------|
| SPL-14399 | OS Loader Installer Bootable CD |
| STD-13361 | Cable - USB (1 meter) |
| STD-13362 | ROM Drive - USB CD/DVD |

D. Prepare for Initialization

SUBTASK 46-15-00-040-002

- (1) De-energize the EDU. Do the steps that follow.
 - (a) On the bezel adjacent to the touch-screen, push the Shutdown button.
 - (b) On the EFB main menu, make your selection: Turn off.

SUBTASK 46-15-00-480-007

(2) Connect the USB CD/DVD ROM Drive, STD-13362 to the USB port.



(a) Connect each using USB Cable, STD-13361.

SUBTASK 46-15-00-480-008

(3) Put the Boot Disk, SPL-14399 into the USB CD/DVD ROM Drive, STD-13362.

SUBTASK 46-15-00-860-080

(4) Make sure that the CD/DVD ROM drive is the only device connected to the EFB USB ports.

E. EFB Initialize - Procedure

SUBTASK 46-15-00-440-002

- (1) Energize the EDU.
 - (a) Push and hold the Power button down for 15 seconds, and then release.
 - (b) Let the EDU boot from the external USB drive.
 - NOTE: When the EFB boots from the boot disk, the EFB shows "Please Wait While the Boeing OSLoader Initializes..." This can take approximately three minutes. The optical drive will be active, but there will be no other progress indication. This is normal operation and is not a fault.
 - (c) If the Install Menu does not show after five minutes, obtain a serviceable copy of the OSLoader Installer bootable CD, or a serviceable USB CD drive.
 - 1) If you replaced the drive or disk, then begin this procedure again. Refer to the section: Prepare for Initialization.

SUBTASK 46-15-00-470-020

- (2) When the Install Menu shows, make your selection: INSTALL OS LOADER.
 - (a) Let the EFB EDU boot from the external USB drive. Wait for approximately three minutes.
 - NOTE: During the boot sequence, the EFB shows the message: Please Wait While the Boeing OSLoader Initializes. This can show for up to three minutes. This is its usual operation, and is not a fault.

SUBTASK 46-15-00-470-047

- (3) When the Install Menu shows, make your selection: INSTALL OS LOADER.
 - NOTE: When INSTALL OS LOADER is selected, the EDU shows the words: Please Wait While the Boeing OSLoader Installs. This can show for up to five minutes. This is its usual operation, and is not a fault.
 - (a) If the EFB EDU does not show the Install Menu after five minutes, replace the Boot Disk, SPL-14399 with a serviceable disk.
 - (b) If the EFB EDU again does not show the Install menu after five minutes, replace the USB CD/DVD ROM Drive, STD-13362

SUBTASK 46-15-00-040-003

- (4) When the Install Menu shows the words INSTALL COMPLETE OK, make your selection: SHUTDOWN.
 - (a) Let the
 - (b) If the display shows the words: INSTALL FAILURE, or another unserviceable message, then begin this procedure again.
 - (c) If the words INSTALL FAILURE shows again, for the second time, then remove the EDU, and install a serviceable EDU. These are the tasks: (Electronic Display Unit Removal, TASK 46-15-01-000-801, and Electronic Display Unit Installation, TASK 46-15-01-400-801).



SUBTASK 46-15-00-080-003

(5) Remove the Boot Disk, SPL-14399 from the USB CD/DVD ROM Drive, STD-13362.

SUBTASK 46-15-00-470-021

(6) Do an installation of the Windows operating system (OS). Do one of these tasks: (EFB Operating System Installation Using Media - Procedure, TASK 46-15-00-470-809 or EFB Operating System Installation Using Crossload - Procedure, TASK 46-15-00-470-810 or EFB Operating System Installation Using Data Loader - Procedure, TASK 46-15-00-470-811).

SUBTASK 46-15-00-470-022

(7) Do an installation of the Loadable Software Airplane Part (LSAP): OPTADMW. Do one of these tasks: (OPTADMW Installation Using Media - Procedure, TASK 46-15-00-470-813 or OPTADMW Installation Using Crossload - Procedure, TASK 46-15-00-470-814).

SUBTASK 46-15-00-470-048

(8) Do an installation of the LSAP: 46 FLEET UMS. LSAP. Do one of these tasks: (OPTADMW Installation Using Media - Procedure, TASK 46-15-00-470-813 or OPTADMW Installation Using Crossload - Procedure, TASK 46-15-00-470-814).

SUBTASK 46-15-00-860-063

(9) Set the correct tail identification number into the EFB EDU, (Tail Identification Check - Procedure, TASK 46-15-00-710-804).

SUBTASK 46-15-00-470-023

(10) Do the installation of operator or airline specified software parts. Do one of these tasks: (LSAP Installation Using Data Loader - Procedure, TASK 46-15-00-470-801 or LSAP Installation using Crossload - Procedure, TASK 46-15-00-470-802).

F. Installation Check

SUBTASK 46-15-00-720-001

(1) Do a check of the software installation. Do this task: (Software Check - Procedure, TASK 46-15-00-710-803).

G. Put the Airplane Back To Its Usual Condition

SUBTASK 46-15-00-080-016

(1) Remove the Boot Disk, SPL-14399 from the USB CD/DVD ROM Drive, STD-13362.

SUBTASK 46-15-00-080-017

(2) Disconnect the USB CD/DVD ROM Drive, STD-13362 from the USB port.



TASK 46-15-00-470-809

14. EFB Operating System Installation Using Media - Procedure

A. General

- (1) This task gives the steps to install the EFB operating system, after you have completed EFB initialization.
 - (a) Use this procedure when no Loadable Software Airplane Part (LSAP) identified as WINDOWS OS is present.
 - (b) This procedure does not erase other EFB software or data.
- (2) To do this task, the LSAP identified as WINDOWS OS is necessary. The LSAP can be in one of these formats:
 - (a) Digital versatile disc (DVD)



- (b) USB memory stick.
- (3) To do this task, the opposite-side EFB must remain de-energized.

B. Tools/Equipment

| Reference | Description | |
|-----------|------------------------|--|
| STD-13361 | Cable - USB (1 meter) | |
| STD-13362 | ROM Drive - USB CD/DVD | |

C. Prepare for Installation

SUBTASK 46-15-00-080-004

(1) Make sure that no portable data loader is connected to the EFB system.

SUBTASK 46-15-00-040-004

- (2) De-energize the captain's, and first officers's electronic display unit (EDU).
 - (a) If the EDU is energized, push and hold the Power button down for 15 seconds, and then release.

SUBTASK 46-15-00-480-009

- Connect your source media to the EFB.
 - (a) If using DVD;
 - 1) Connect the USB CD/DVD ROM Drive, STD-13362 to the USB port.
 - a) Connect each using USB Cable, STD-13361.
 - 2) Put the OS LSAP DVD into the USB CD/DVD ROM Drive, STD-13362.
 - (b) If using a USB memory stick;
 - 1) Insert the memory stick into the USB port on the EFB.

D. Operating System Installation

SUBTASK 46-15-00-440-003

(1) Energize the EDU.

NOTE: The Windows OS installation is automatic, and takes approximately 20 minutes.

- (a) Push and hold the Power button down for four seconds, and then release.
- (b) Let the system boot-up. The EDU will show the sequence that follows. This can take approximately 20 minutes.
 - 1) The EDU shows the words: Searching for WINDOWS OS.
 - 2) The EDU shows the words: Copying (step 1 of 3) <OS PN> from media.
 - 3) The EDU shows the words: Checking (Step 2 of 3).
 - 4) The EDU shows the words: Installing (Step 3 of 3).
 - 5) The Windows operating system will automatically boot twice.
- (c) When the MAIN MENU, or TAIL ID ENTRY page shows, the installation is complete.

SUBTASK 46-15-00-860-064

- (2) If the EFB shows the words: LOAD ERROR, then do these steps:
 - (a) If the EFB shows the words: LOAD ERROR, then get a serviceable LSAP identified as WINDOWS OS.
 - (b) Using the new serviceable WINDOWS OS part, do the operating system installation again.



SUBTASK 46-15-00-860-067

- (3) If the EFB shows the words: LOAD ERROR, then do these steps:
 - (a) Make sure the opposite-side EFB is serviceable.
 - (b) Make sure the opposite-side EFB has installed the LSAP identified as WINDOWS OS.
 - (c) If the problem continues, do the operating system installation using an alternate method: (EFB Operating System Installation Using Media - Procedure, TASK 46-15-00-470-809 or EFB Operating System Installation Using Crossload - Procedure, TASK 46-15-00-470-810 or EFB Operating System Installation Using Data Loader -Procedure, TASK 46-15-00-470-811).

SUBTASK 46-15-00-470-024

- (4) To make the EFB serviceable, you must complete two additional software installation tasks.
 - (a) Install OPTADMW, (OPTADMW Installation Using Media Procedure, TASK 46-15-00-470-813, or OPTADMW Installation Using Crossload Procedure, TASK 46-15-00-470-814).
 - (b) Install all owner or airline specified software parts, (LSAP Installation Using Data Loader Procedure, TASK 46-15-00-470-801 or LSAP Installation using Crossload Procedure, TASK 46-15-00-470-802).



TASK 46-15-00-470-810

15. EFB Operating System Installation Using Crossload - Procedure

A. General

- (1) This task gives the steps to install the Electronic Flight Bag (EFB) operating system, using the crossload function, after EFB initialization.
 - (a) Use this procedure when no Loadable Software Airplane Part (LSAP), identified as WINDOWS OS, is present in the target EDU.
 - (b) This procedure does not erase other EFB software or data.
 - (c) For information about EFB initialization, refer to: (EFB Initialization and Recovery Procedure, TASK 46-15-00-470-808).
 - The EFB Electronic Display Unit (EDU) must be initialized before you can install the operating system.
- (2) For this task, the target EDU is the unit that receives the software installation. The side-opposite EDU is the source of the software part.
- (3) To do this task, these are two requirements:
 - (a) The side-opposite EFB must be energized and serviceable.
 - (b) The side-opposite EFB must have installed the LSAP identified as: WINDOWS OS (Software Check Procedure, TASK 46-15-00-710-803).

B. Prepare for Crossload Installation

SUBTASK 46-15-00-080-005

(1) Make sure that no portable data loader is connected to the EFB system.

SUBTASK 46-15-00-080-006

(2) Make sure that no USB media is connected to the EFB system.

SUBTASK 46-15-00-440-004

(3) Make sure the side-opposite EDU is energized.



(a) If the EDU is not energized, push and hold the Power button down for four seconds, and then release.

SUBTASK 46-15-00-860-065

(4) Make sure the side-opposite EDU contains the LSAP identified as: Windows OS (Software Check - Procedure, TASK 46-15-00-710-803).

SUBTASK 46-15-00-040-005

- (5) Make sure the target EDU is de-energized.
 - (a) If the EDU is energized, push and hold the Power button down for 15 seconds, and then release.

C. Operating System Installation

SUBTASK 46-15-00-470-025

(1) Energize the target EDU. Do the steps that follow.

NOTE: During this step, do not de-energize the two EFBs, or make these selections: SHUTDOWN, RESTART, or RETURN TO MAIN.

- (a) Push and hold the Power button down for four seconds, and then release.
- (b) Let the system complete the automatic sequence that follows. This can take approximately 20 minutes.
 - 1) The EDU shows the words: Searching for WINDOWS OS.
 - 2) The EDU shows the words: Copying (step 1 of 3) <OS PN> from media.
 - 3) The EDU shows the words: Checking (Step 2 of 3).
 - 4) The EDU shows the words: Installing (Step 3 of 3).
 - 5) The Windows operating system will automatically boot twice.
- (c) When target EDU shows the MAIN MENU, or TAIL ID ENTRY page, then the installation is complete.
- (d) If the display shows the result: LOAD ERROR, then do these steps.
 - 1) Make sure the side-opposite EFB system is energized and serviceable.
 - Make sure the side-opposite EFB system has installed software with the nomenclature WINDOWS OS (Software Check - Procedure, TASK 46-15-00-710-803).
- (e) If the EDU shows the page: SEARCHING FOR OPTADMW LSAP, then do one of these tasks (OPTADMW Installation Using Media Procedure, TASK 46-15-00-470-813, or OPTADMW Installation Using Data Loader Procedure, TASK 46-15-00-470-815).

NOTE: The automatic crossload sequence also copies the software part OPTADMW from the side-opposite EDU, if present.

SUBTASK 46-15-00-860-066

- (2) If the EFB shows the words: LOAD ERROR, then do these steps:
 - (a) Make sure the opposite-side EFB is serviceable.
 - (b) Make sure the opposite-side EFB has installed the LSAP identified as WINDOWS OS.
 - (c) If the problem continues, do the operating system installation using an alternate method: (EFB Operating System Installation Using Media Procedure, TASK 46-15-00-470-809 or EFB Operating System Installation Using Crossload Procedure, TASK 46-15-00-470-810 or EFB Operating System Installation Using Data Loader Procedure, TASK 46-15-00-470-811).



SUBTASK 46-15-00-470-026

- (3) To make the EFB serviceable, you must complete two additional software installation tasks.
 - (a) Make sure the LSAP: OPTADMW is installed and serviceable, (Software Check Procedure, TASK 46-15-00-710-803).

NOTE: The automatic crossload sequence also copies the software part OPTADMW from the side-opposite EDU, if present.

- 1) If the LSAP is missing, or unserviceable, then install OPTADMW, (OPTADMW Installation Using Media Procedure, TASK 46-15-00-470-813, or OPTADMW Installation Using Crossload Procedure, TASK 46-15-00-470-814).
- (b) Install all owner or airline specified software parts, (LSAP Installation Using Data Loader Procedure, TASK 46-15-00-470-801 or LSAP Installation using Crossload Procedure, TASK 46-15-00-470-802).



TASK 46-15-00-470-811

16. EFB Operating System Installation Using Data Loader - Procedure

A. General

- (1) This task gives the steps to install the Electronic Flight Bag (EFB) operating system, using a portable data loader, after EFB initialization.
 - (a) Use this procedure when no Loadable Software Airplane Part (LSAP), identified as WINDOWS OS, is present in the target EDU.
 - (b) This procedure does not erase other EFB software or data.
 - (c) For information about EFB initialization, refer to: (EFB Initialization and Recovery Procedure, TASK 46-15-00-470-808).
- (2) To do this task, these two items are necessary:
 - (a) An approved ARINC 615A data loader.
 - (b) The LSAP, identified as WINDOWS OS, must be installed on the data loader's internal drive.
- (3) For this task, the target Electronic Display Unit (EDU) refers to the unit that receives the software installation. The side-opposite EDU is not used.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description |
|---|--|
| COM-4963 Loader - Data, ARINC 615/615A (Model is PMAT 2000) | |
| | Part #: P2K-615A-06 Supplier: 0BAW0 Opt Part #: 80000-05 Supplier: 0BAW0 |
| COM-12461 | Cable - Adapter, Electronic Flight Bag, PMAT2000 (EFB) |
| | Part #: 80072-4 Supplier: 0BAW0 |
| COM-12462 | Cable - Adapter, Electronic Flight Bag, Laptop (EFB) |
| | Part #: 80088-1 Supplier: 0BAW0 |



(Continued)

| Reference | Description |
|-----------|--|
| STD-11661 | Laptop - Generic (Minimum requirements: Windows XP SP2, |
| | 500MHz processor, 256MB RAM, 10/100 BaseT Ethernet port, |
| | CD-ROM/DVD media drive, 60GB hard drive, English Language) |

C. Prepare for the Software Installation

SUBTASK 46-15-00-040-006

- Make sure the off-side EDU is de-energized.
 - (a) If the EDU is energized, push and hold the Power button down for 15 seconds, and then release.
 - (b) If the side-opposite EDU does not contain the LSAP identified as WINDOWS OS, then continue.

SUBTASK 46-15-00-080-007

(2) Make sure no USB media (for example; memory stick or optical drive) is connected to the EFB system.

SUBTASK 46-15-00-480-010

- (3) Connect the portable data loader (PDL) to the EDU data port.
 - (a) If using ARINC 615/615A data loader, COM-4963, then connect using adapter cable, COM-12461.
 - (b) If using laptop, STD-11661, then connect using adapter cable, COM-12462.

SUBTASK 46-15-00-480-011

(4) Energize the portable data loader.

D. Operating System Installation

SUBTASK 46-15-00-470-027

- (1) Energize the target EFB.
 - (a) Push and hold the Power button down for four seconds, and then release.
 - (b) When the display shows the words: Searching for WINDOWS OS, then continue.

SUBTASK 46-15-00-470-028

- (2) Use the data loader interface to find and install the LSAP identified as WINDOWS OS.
 - (a) Let the system complete the automatic sequence that follows. This can take approximately 20 minutes.
 - 1) The EDU shows the words: Searching for WINDOWS OS.
 - a) This can take approximately ten minutes.
 - b) This automatic step is complete when the data loader progress window shows the green indication.
 - After PDL green indication shows, you can disconnect the portable data loader and cable.
 - The EDU shows the words: Installing (Step 1 of 1) <OS part number> from data loader.
 - a) This can take up to five minutes.



Let the EFB automatically shut-down and reboot twice. After this, there are two possible results, as follows:

NOTE: Let the EFB shut down and boot-up two times. This is its usual operation, and is not a fault.

- a) If the result shows the words: LOAD ERROR, then do these steps:
 - <1> Get a serviceable LSAP identified as WINDOWS OS.
 - Using the new serviceable WINDOWS OS part, do the operating system installation again.
- b) If the result shows the words SEARCHING FOR OPTADMW LSAP, then the installation is complete.
 - <1> Continue with the two LSAP installation steps that follow.

SUBTASK 46-15-00-470-029

- (3) To make the EFB serviceable, you must complete two additional software installation tasks.
 - (a) Install OPTADMW, (OPTADMW Installation Using Media Procedure, TASK 46-15-00-470-813, or OPTADMW Installation Using Crossload Procedure, TASK 46-15-00-470-814).
 - (b) Install all owner or airline specified software parts, (LSAP Installation Using Data Loader Procedure, TASK 46-15-00-470-801 or LSAP Installation using Crossload Procedure, TASK 46-15-00-470-802).



TASK 46-15-00-470-812

17. EFB Operating System Installation Using Restore - Procedure

A. General

- (1) This task gives the steps to install the EFB operating system using the restore function.
 - (a) This procedure does not erase other EFB software or data.

B. Operating System Installation

SUBTASK 46-15-00-470-037

- Set the target EFB to show the LOAD MENU.
 - (a) From the MAIN MENU, make your selection: SYSTEM PAGE.
 - (b) Make your selection: EFB MAINTENANCE.
 - (c) Make your selection: LOAD MENU.
 - (d) In the confirmation box, make your selection: OK.
 - 1) Let the system boot into load mode.
 - 2) When the LOAD MENU page shows, then continue.

SUBTASK 46-15-00-470-038

- (2) Make your selection: RESTORE OS.
 - (a) The EFB will show an automated sequence. This can take approximately 15 minutes. These are the steps.
 - 1) The buttons on the LOAD MENU change to cyan in color.
 - 2) The display will show a black screen with no words.
 - 3) The display shows the words: Installing (Step 3 of 3).

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- 4) The Windows operating system will automatically boot twice.
- 5) The MAIN MENU shows.
- (b) When the MAIN MENU, or TAIL ID ENTRY page shows, the installation is complete.

SUBTASK 46-15-00-710-010

(3) Make sure the tail identification, time and date are correct (Tail Identification Check - Procedure, TASK 46-15-00-710-804).

SUBTASK 46-15-00-470-040

- (4) To make the EFB serviceable, you must complete two additional software installation tasks.
 - (a) Install OPTADMW, (OPTADMW Installation Using Media Procedure, TASK 46-15-00-470-813, or OPTADMW Installation Using Crossload Procedure, TASK 46-15-00-470-814).
 - (b) Install all owner or airline specified software parts, (LSAP Installation Using Data Loader Procedure, TASK 46-15-00-470-801 or LSAP Installation using Crossload Procedure, TASK 46-15-00-470-802).



TASK 46-15-00-470-813

18. OPTADMW Installation Using Media - Procedure

A. General

- (1) This task gives the steps to install the Loadable Software Airplane Part (LSAP) with the short part number: OPTADMW into the Electronic Flight Bag (EFB) Electronic Display Unit (EDU).
 - NOTE: OPTADMW refers to the short part number for that LSAP. This short part number is the first three, and middle four characters of the long part number, OPTxx-ADMW-yyyy. For the complete long part number, refer to your airline or airplane owner's requirement.
 - (a) Typically, you must install OPTADMW when these conditions exist:
 - 1) When OPTADMW is missing or unserviceable.
 - 2) After the EFB Initialization and Recovery procedure.
- (2) Typically, you install OPTADMW from one of these media formats:
 - (a) Compact disc (CD)
 - (b) USB memory stick.
- (3) To do this task, the opposite-side EFB must remain de-energized, or, have no LSAP identified as OPTADMW installed.

B. Tools/Equipment

| Reference | Description | |
|-----------|--|--|
| STD-9090 | Stick - USB, Memory (128MB Capacity Minimum) | |
| STD-13361 | Cable - USB (1 meter) | |
| STD-13362 | ROM Drive - USB CD/DVD | |

C. Prepare for OPTADMW Installation

SUBTASK 46-15-00-860-069

- (1) Make sure the side-opposite EFB is de-energized.
 - (a) If the EDU is energized, push and hold the Power button down for 15 seconds, and then release.



SUBTASK 46-15-00-080-008

(2) Make sure that no portable data loader is connected to the EFB system.

SUBTASK 46-15-00-480-012

- (3) Connect your source media, that contains the software part, to the EFB.
 - (a) If using a CD;
 - 1) Connect the USB CD/DVD ROM Drive, STD-13362 to the USB port.
 - a) Connect each using USB Cable, STD-13361.
 - 2) Put the CD into the USB CD/DVD ROM Drive, STD-13362.
 - (b) If using a USB memory stick;
 - 1) Insert the USB memory stick, STD-9090 into the USB port on the EFB.

D. OPTADMW Installation - Procedure

SUBTASK 46-15-00-470-030

- (1) Energize the EDU. This starts the installation.
 - (a) Push and hold the Power button down for four seconds, and then release.
 - (b) Let the system boot-up. The EDU will show the sequence that follows.
 - 1) The EDU shows the words: SEARCHING FOR OPTADMW LSAP.
 - 2) The EDU shows the words: LOADING <OPTADMW PN> FROM MEDIA.
 - (c) When the MAIN MENU, or TAIL ID ENTRY page shows, the installation is complete.

SUBTASK 46-15-00-860-070

- (2) If the EFB shows the words: LOAD FAILURE, then do these steps:
 - (a) Get a serviceable CD with the LSAP identified as OPTADMW.
 - (b) Put the serviceable CD into the optical drive.
 - (c) On the target EFB, make your selection: RESTART.

SUBTASK 46-15-00-470-035

- (3) To make the EFB serviceable after initialization, Windows OS, and OPTADMW installations, also do this step:
 - (a) Install all owner or airline specified software parts, (LSAP Installation Using Data Loader Procedure, TASK 46-15-00-470-801 or LSAP Installation using Crossload Procedure, TASK 46-15-00-470-802).

E. Put the Airplane Back To Its Usual Condition

SUBTASK 46-15-00-840-009

(1) Disconnect the USB memory, or USB cable and optical drive from the USB port.

| ——— END OF TASK ——— | |
|---------------------|--|
|---------------------|--|



TASK 46-15-00-470-814

19. OPTADMW Installation Using Crossload - Procedure

A. General

- (1) This task gives the steps to install the Loadable Software Airplane Part (LSAP) identified as OPTADMW, using the crossload function.
 - NOTE: OPTADMW refers to the short part number for that LSAP. This short part number is the first three, and middle four characters of the long part number, OPTxx-ADMW-yyyy. For the complete long part number, refer to your airline or airplane owner's requirement.
 - (a) Typically, you do the OPTADMW installation when the LSAP is missing or unserviceable, or after installation of the Windows operating system.
- (2) For this task, the target EDU is the unit that receives the software installation. The side-opposite EDU is the source of the software part.
- (3) To do this task, these are two requirements:
 - (a) The side-opposite EFB must be energized.
 - (b) The side-opposite EFB must have installed the LSAP identified as: OPTADMW.

B. Prepare for Crossload Installation

SUBTASK 46-15-00-080-009

(1) Make sure that no portable data loader, or flash memory device is connected to the EFB USB port.

SUBTASK 46-15-00-860-071

- (2) Make sure the side-opposite EDU is energized.
 - (a) If the EDU is not energized, push and hold the Power button down for four seconds, and then release.

SUBTASK 46-15-00-860-072

(3) Make sure the side-opposite EDU contains the LSAP identified as: OPTADMW, (Software Check - Procedure, TASK 46-15-00-710-803).

SUBTASK 46-15-00-040-007

- (4) Make sure the target EDU is de-energized.
 - (a) If the EDU is energized, push and hold the Power button down for 15 seconds, and then release.

C. OPTADMW Installation

SUBTASK 46-15-00-470-031

- (1) Energize the target EDU.
 - NOTE: During this step, do not de-energize the two EFBs. Do not make these selections: SHUTDOWN, RESTART, or RETURN TO MAIN.
 - (a) Push and hold the Power button down for four seconds, and then release.
 - (b) Let the system complete the automatic sequence. This can take approximately 20 minutes. This installation is complete when one of these three pages shows:
 - 1) MAIN MENU
 - 2) RESTART
 - 3) RETURN TO MAIN.

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SUBTASK 46-15-00-860-073

- (2) If the EFB shows the words: LOAD FAILURE, then do these steps:
 - (a) Make sure the opposite-side EFB is serviceable.
 - (b) Make sure the opposite-side EFB has installed the LSAP identified as OPTADMW.
 - (c) On the TARGET EFB, make your selection: RESTART.
 - 1) Let the automatic crossload sequence operate.
 - (d) If the words LOAD FAILURE show again, then do this task: (OPTADMW Installation Using Media Procedure, TASK 46-15-00-470-813).

D. Put the Airplane Back To Its Usual Condition

SUBTASK 46-15-00-840-010

(1) Set the captain's, and first officer's EFB to show the MAIN MENU.



TASK 46-15-00-470-815

20. OPTADMW Installation Using Data Loader - Procedure

A. General

- (1) This task gives the steps to install the Loadable Software Airplane Part (LSAP) identified as OPTADMW, using a portable data loader (PDL).
 - NOTE: OPTADMW refers to the short part number for that LSAP. This short part number is the first three, and middle four characters of the long part number, OPTxx-ADMW-yyyy. For the complete long part number, refer to your airline or airplane owner's requirement.
 - (a) Typically, you do the OPTADMW installation when the LSAP is missing or unserviceable, or after installation of the Windows operating system.
- (2) To do this task, these two items are necessary:
 - (a) An approved ARINC 615A data loader.
 - (b) The LSAP, identified as OPTADMW, must be installed on the data loader's internal drive.
- (3) For this task, the target Electronic Display Unit (EDU) refers to the unit that receives the software installation. The side-opposite EDU is not necessary.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description | | |
|-----------|--|--|--|
| COM-4963 | Loader - Data, ARINC 615/615A (Model is PMAT 2000) | | |
| | Part #: P2K-615A-06 Supplier: 0BAW0 Opt Part #: 80000-05 Supplier: 0BAW0 | | |
| COM-12461 | Cable - Adapter, Electronic Flight Bag, PMAT2000 (EFB) | | |
| | Part #: 80072-4 Supplier: 0BAW0 | | |
| COM-12462 | Cable - Adapter, Electronic Flight Bag, Laptop (EFB) | | |
| | Part #: 80088-1 Supplier: 0BAW0 | | |
| STD-11661 | Laptop - Generic (Minimum requirements: Windows XP SP2, | | |
| | 500MHz processor, 256MB RAM, 10/100 BaseT Ethernet port, | | |
| | CD-ROM/DVD media drive, 60GB hard drive, English Language) | | |



C. Prepare for Software Installation

SUBTASK 46-15-00-040-008

- Set the opposite-side EFB EDU is de-energized.
 - (a) If the opposite-side EDU does not have OPTADMW installed, it can remain energized.
 - (b) To shut down the EDU, push and hold the power button for 15 seconds, and then release.

SUBTASK 46-15-00-080-010

(2) Make sure no USB media (for example; flash memory or optical drive) is connected to the EFB system.

SUBTASK 46-15-00-480-013

- (3) Connect the portable data loader (PDL) to the EDU data port.
 - (a) If using ARINC 615/615A data loader, COM-4963, then connect using adapter cable, COM-12461.
 - (b) If using laptop, STD-11661, then connect using adapter cable, COM-12462.

SUBTASK 46-15-00-860-074

(4) Energize the portable data loader.

D. Software Installation - Procedure

SUBTASK 46-15-00-470-032

- (1) Energize the target EFB.
 - (a) Push and hold the Power button down for four seconds, and then release.

SUBTASK 46-15-00-470-033

- (2) Use the data loader interface to find and select the LSAP identified as OPTADMW.
 - (a) Let the system complete the automatic sequence that follows.
 - 1) The EDU shows the words: Searching for OPTADMW.
 - a) This automatic step is complete when the data loader progress window shows the green indication.
 - After PDL green indication shows, you can disconnect the portable data loader and cable.
 - 2) The EDU can show the words: LOADING OPTADMW LSAP.
 - 3) The EDU shows either the MAIN MENU, or TAIL ID ENTRY page.
 - (b) When target EDU shows the MAIN MENU, or TAIL ID ENTRY page, then the installation is complete.

SUBTASK 46-15-00-860-075

- (3) If the EFB shows the words: LOAD FAILURE, then do these steps:
 - (a) Get a serviceable LSAP identified as OPTADMW.
 - (b) Using the new serviceable OPTADMW part, do the installation again.

SUBTASK 46-15-00-470-034

- (4) To make the EFB serviceable after OPTADMW installation, also do this step:
 - (a) Install all owner or airline specified software parts, (LSAP Installation Using Data Loader Procedure, TASK 46-15-00-470-801 or LSAP Installation using Crossload Procedure, TASK 46-15-00-470-802).



E. Put the Airplane Back To Its Usual Condition

SUBTASK 46-15-00-080-011

(1) Disconnect the PDL and cable from the USB data port, if it's not necessary for more tasks.

----- END OF TASK -----

TASK 46-15-00-470-801

21. LSAP Installation Using Data Loader - Procedure

A. General

- (1) This procedure gives the steps to install one or more Loadable Software Airplane Part (LSAP) into the captain's or first officer's Electronic Flight Bag (EFB).
- (2) The EFB requires an ARINC 615A compliant data loader. These two tool combinations are approved and recommended:
 - (a) ARINC 615/615A data loader, COM-4963 with dataloader, COM-11626 installed. Connect using adapter cable, COM-12461.
 - (b) laptop, STD-11661 with dataloader, COM-12463 installed. Connect using adapter cable, COM-12462.
- (3) The airplane must be on the ground before you can install software.
- (4) Make sure you know and install the correct LSAP part numbers.

B. Tools/Equipment

NOTE: When more than one tool part number is listed under the same "Reference" number, the tools shown are alternates to each other within the same airplane series. Tool part numbers that are replaced or non-procurable are preceded by "Opt:", which stands for Optional.

| Reference | Description | | | |
|-----------|---|--|--|--|
| COM-4963 | Loader - Data, ARINC 615/615A (Model is PMAT 2000) | | | |
| | Part #: P2K-615A-06 Supplier: 0BAW0 Opt Part #: 80000-05 Supplier: 0BAW0 | | | |
| COM-11626 | Dataload Software - ARINC 615A, PMAT2000 (EFB) | | | |
| | Part #: 82112 Supplier: 0BAW0 | | | |
| COM-12461 | Cable - Adapter, Electronic Flight Bag, PMAT2000 (EFB) | | | |
| | Part #: 80072-4 Supplier: 0BAW0 | | | |
| COM-12462 | Cable - Adapter, Electronic Flight Bag, Laptop (EFB) | | | |
| | Part #: 80088-1 Supplier: 0BAW0 | | | |
| COM-12463 | Dataload Software - ARINC 615A, Laptop (EFB) | | | |
| STD-11661 | Laptop - Generic (Minimum requirements: Windows XP SP2, 500MHz processor, 256MB RAM, 10/100 BaseT Ethernet port, CD-ROM/DVD media drive, 60GB hard drive, English Language) | | | |

C. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |



D. Prepare for the Procedure

SUBTASK 46-15-00-860-001

(1) Make sure that the LSAPs to install are available on the internal drive of the ARINC 615/615A data loader, COM-4963, or laptop, STD-11661. Refer to this task: (Compact Disc To Portable Data Loader - Software Transfer Procedure, TASK 46-15-00-470-806).

NOTE: The Boeing Company recommends that you install software into the EFB from the data loader's internal disk drive. It is not recommended to install software from compact disk (CD), or removable media, directly to the EFB.

SUBTASK 46-15-00-480-001

- (2) Connect the portable data loader (PDL) to the Electronic Display Unit (EDU) data port.
 - (a) If using the ARINC 615/615A data loader, COM-4963, connect using adapter cable, COM-12461.
 - (b) If using laptop, STD-11661, connect using adapter cable, COM-12462.
 - (c) Energize the data loader.

SUBTASK 46-15-00-480-002

- (3) Activate the 615A DATALOADER application. Do these steps:
 - (a) Select ARINC 615A DATALOADER from the main menu.
 - 1) On ARINC 615/615A data loader, COM-4963, select from the main menu.
 - 2) On laptop, STD-11661, find and select the desktop icon.
 - (b) Make sure 615A DATALOADER x.x.x screen appears.
 - (c) Enter the correct USER NAME, or press the space bar.
 - NOTE: Follow your airline's procedure for USER NAME.
 - (d) Select the correct tail number.
 - (e) Select ELECTRONIC FLIGHT BAG (EFB) for the connection type.
 - (f) Select CONTINUE.
 - 1) Make sure that the operation menu shows, with the words 615A DATALOADER.

SUBTASK 46-15-00-860-002

- (4) Set the captain's or first officer's EFB to show the ACCEPT LOAD page.
 - (a) From the MAIN MENU, push the SYSTEM PAGE button.
 - (b) Push the EFB MAINTENANCE button.
 - (c) Push the LOAD MENU button.
 - NOTE: Let the system boot into load mode. This can take approximately three minutes.
 - (d) Push the ACCEPT LOAD button.

SUBTASK 46-15-00-470-001

- (5) Do the steps that follow to install one or more LSAPs.
 - (a) On main menu, make the ARINC 615A DATALOADER selection.
 - 1) Make sure 615A DATALOADER x.x.x screen appears.
 - (b) For USER NAME, follow your airline procedure.
 - (c) Select the correct tail number.
 - (d) Select ELECTRONIC FLIGHT BAG (EFB) for the connection type.
 - (e) Select CONTINUE.



- 1) Make sure a new screen is displayed.
- (f) Select UPLOAD.
 - 1) Make sure the SELECT A TARGET window shows.
- (g) Select the GREEN BOX for target (EFB-L, EFB-R or both) you want to load.

NOTE: The data loader will not see a target unless you have selected ACCEPT LOAD from the GROUND MAINTENANCE MENU and you have correct connections.

- 1) If the data loader does not show a target EFB, make sure cables are connected properly and the applicable EFB(s) show the DATA LOAD page.
- 2) If the data loader shows TARGET NOT FOUND, then make sure that the applicable EFB shows the DATA LOAD page.
- (h) Select CONTINUE.
- (i) Make sure the UPLOAD EFB window shows.
- (j) Set the SELECT LSAP SOURCE as follows:
 - Select the INTERNAL MSD if the software is installed on the hard drive with the LOADSTAR system.
 - 2) Or, select the REMOVABLE MEDIA, CD-ROM drive.
- (k) If applicable, select the correct model and tail number.
- (I) Select the software part number(s) to install.
- (m) Select CONTINUE and make sure the CONFIRM UPLOAD window shows.
- (n) Select CONTINUE UPLOAD.
- (o) Make sure the PROGRESS bar is green in color and STATUS changes to COMPLETED.

SUBTASK 46-15-00-860-047

- (6) Set the applicable EFB to show the MAIN MENU. Do the steps that follow.
 - (a) On the EFB, push the MENU, or BACK (<=) button.
 - (b) On the LOAD MENU page, make your selection: RETURN TO MAIN.
 - (c) Let the system boot into flight mode, and show the MAIN MENU. This can take approximately three minutes.

E. Installation Check

SUBTASK 46-15-00-710-001

(1) Make sure that all new software is loaded and operates correctly. Do this task: (Software Check - Procedure, TASK 46-15-00-710-803).

SUBTASK 46-15-00-710-002

(2) Make sure that the captain's and first officer's EFBs have the same software configuration. Do this task: (Reference Not Currently Available).



TASK 46-15-00-470-816

22. LSAP Installation Using Removable Media - Procedure

A. General

- (1) This procedure gives the steps to install one or more Loadable Software Airplane Part (LSAP), from removable media, into the captain's or first officer's Electronic Flight Bag (EFB).
- (2) The airplane must be on the ground before you can install software.

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(3) Make sure you install the correct LSAP part numbers.

B. Tools/Equipment

| Reference | Description |
|-----------|---|
| STD-13361 | Cable - USB (1 meter) |
| STD-13362 | ROM Drive - USB CD/DVD |
| STD-13649 | Drive - Flash, USB (2GB Capacity Minimum) |

C. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

D. Before the Procedure

SUBTASK 46-15-00-860-076

(1) Set the captain's, and first officer's EFB to show the MAIN MENU.

SUBTASK 46-15-00-860-077

- (2) Examine the MAIN MENU.
 - (a) If the DATA LOAD selection is present, and the word MEMO shows adjacent to the DATA LOAD button, then do these steps:
 - 1) Make your selection DATA LOAD.
 - 2) In the confirmation box, make your selection: OK.
 - 3) On the DATA LOAD page, make your selection: LOAD.
 - a) If the result then shows the word COMPLETE, then continue with the procedure.
 - b) If the result then shows the word ERROR, then a corrective action is necessary. These are the steps.
 - <1> Set the EFB system to show the FAULT LOG page.
 - <2> Correct each fault that shows with the prefix: "ELA:".
 - <3> After all ELA faults are corrected, then continue.
 - 4) Continue with the next step.
 - (b) If the DATA LOAD selection is present with no annunciation, then continue with the next step.
 - (c) If the DATA LOAD selection is not present, then continue with the next step.

E. Software Installation Procedure

SUBTASK 46-15-00-860-078

- (1) Set the captain's and first officer's EFB to show the LOAD MENU page. These are the steps:
 - (a) From the MAIN MENU, make your selection: SYSTEM PAGE.
 - (b) Make your selection: EFB MAINTENANCE.
 - (c) Make your selection: LOAD MENU.

SUBTASK 46-15-00-480-014

- (2) Connect your source media to the captain's, or first officer's EFB.
 - (a) If using a USB Flash Drive, STD-13649, insert the device into the USB port on the EFB.
 - (b) If using DVD;



- 1) Connect the USB CD/DVD ROM Drive, STD-13362 to the USB port.
 - a) Connect each using USB Cable, STD-13361.
- 2) Put the OS LSAP DVD into the USB CD/DVD ROM Drive, STD-13362.

NOTE: For the steps that follow, the removable media is referred to as the source EFB system.

SUBTASK 46-15-00-470-041

- (3) On the source EFB system, make your selection: MEDIA LOAD.
 - (a) Select the USB media that has the LSAPs you want to install.

NOTE: If the words "NO LSAPS FOUND" show, and you finished step 1, then report the problem to your airline's EFB administrator. You can obtain a serviceable LSAP and try again, or install using a different method.

SUBTASK 46-15-00-470-042

(4) To install the LSAP into the captain's, and first officer's EFB at the same time, make your selection: ACCEPT LOAD on the off-side EFB.

SUBTASK 46-15-00-470-043

- (5) On the source EFB system, make your selection of one or more LSAPs to install.
 - (a) To make your selection, click once on the applicable software part number to show the green check-mark ($\sqrt{}$).
 - 1) To remove the green check-mark, select the part number again.
 - 2) To select all part numbers on the page, make your selection: SELECT ALL.
 - 3) To remove the green check-mark from all part numbers at the same time, make your selection: SELECT NONE.

SUBTASK 46-15-00-470-044

- (6) On the source EFB system, make your destination selection from the buttons shown, then make your selection OK.
 - LOAD TO LEFT EFB
 - LOAD TO RIGHT EFB
 - · LOAD TO BOTH.
 - NOTE: During installation, do not push the MENU or BACK bezel keys, or touchscreen buttons. This stops the installation, and can cause damage to the EFB software.
 - (a) Make sure the source EFB System shows the words: LOADING TO [your selection], and the progress bar.
 - 1) During the installation, the display shows a progress indicator, and condition messages. Examples of the condition messages are as follows:
 - ACCEPTING LOAD WORKING
 - ACCEPTING LOAD RECEIVING [LSAP part number]
 - LOADING TO LEFT EFB
 - · LOADING TO RIGHT EFB.
 - If the result shows the words "load to [YOUR SELECTION] failed," then do these steps:

NOTE: If the result shows the condition FAILED, or the word ERROR, then the installation is unserviceable. You must correct the problem.

Make sure the opposite-side EFB system shows ACCEPT LOAD.



- b) Make sure the USB source media is connected.
- c) Make your selection: RETRY.
- 3) If the result shows the words ERROR LOADING TO [your selection], you can do the steps that follow.
 - a) Make your selection: RETRY.
 - b) To avoid doing the installation again, make your selection: OK.
- If the result shows the words ERROR LOADING TO [your selection], you can do the steps that follow.
 - a) Make your selection: RETRY.
 - b) To avoid doing the installation again, make your selection: OK.
- (b) When the result shows the words: LOAD TO [your selection] COMPLETE, make your selection: OK.

SUBTASK 46-15-00-470-045

- (7) You can install additional LSAPs from another removable USB media.
 - (a) Refer to the first step in this software installation procedure, and do the steps again.

SUBTASK 46-15-00-860-079

- (8) Set the two EFBs to show the MAIN MENU.
 - (a) You can push the MAIN MENU bezel key.

SUBTASK 46-15-00-470-046

- (9) Examine the MAIN MENU.
 - (a) If the DATA LOAD button is not present, then continue with the software installation check that follows.
 - (b) If the DATA LOAD button is present, then do these steps:
 - 1) If the word MEMO shows, adjacent to DATA LOAD, then:
 - Make your selection: LOAD, and wait for automatic software installation to complete.
 - <1> If the result shows the word COMPLETE, the ADEL software installation is serviceable. Then continue.
 - <2> If the result shows the word ERROR, then a maintenance action is required.
 - <a> Set the EFB System to show the FAULT LOG PAGE.
 -

 Correct each fault that shows the prefix "ELA:".
 - If the word MEMO does not show, adjacent to DATA LOAD, then continue with the software installation check that follows.

F. Software Installation Check

SUBTASK 46-15-00-710-009

- Do a check of the software installation on the applicable EFB(s). Do this task: (Software Check - Procedure, TASK 46-15-00-710-803).
 - (a) Make sure you do the configuration comparison check specified in that procedure.



G. Return the Aircraft to its Usual Condition

SUBTASK 46-15-00-080-012

(1) Disconnect and remove the USB media, or optical drive.

----- END OF TASK -----

TASK 46-15-00-470-802

23. LSAP Installation using Crossload - Procedure

A. General

- (1) This task gives the steps to install one or more LSAP from the captain's or first officer's electronic flight bag (EFB) into the opposite-side EFB.
- (2) To do this task, the airplane must be on the ground.

B. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

C. Crossload Procedure

SUBTASK 46-15-00-860-008

- Set the captain's and first officer's EFB to show the LOAD MENU. Do the steps that follow on the two EFBs.
 - (a) On the MAIN MENU, make your selection: SYSTEM PAGE.
 - (b) Make your selection: EFB MAINTENANCE.
 - (c) Make your selection: LOAD MENU.
 - (d) In the confirmation box, make your selection: OK.

NOTE: The OK selection does not cause the system to restart. The dialog box tells you that a software restart will be required to return to the MAIN MENU.

Wait for the LOAD MENU to show. This can take approximately three minutes.

SUBTASK 46-15-00-860-009

(2) On the target EFB only, make your selection: ACCEPT CROSSLOAD.

NOTE: The target EFB will receive the software installation. You must set the target EFB before you set the source EFB.

SUBTASK 46-15-00-860-010

(3) On the source EFB only, make your selection: CROSSLOAD.

NOTE: The source EFB will install the software into the target EFB.

SUBTASK 46-15-00-470-003

- (4) Using the source-EFB, make your selection of one or more software part(s) to crossload:
 - (a) To make your selection, push the applicable software part number, or part numbers to show the green check-mark.
 - 1) To remove the green check-mark, push the LSAP (or LSAPs) again.
 - (b) To select all part numbers on the page, use the SELECT ALL button at the bottom of the page.
 - To remove the green check-mark for all part numbers at the same time, make your selection: SELECT NONE.



SUBTASK 46-15-00-470-004

- (5) On the source EFB, make your selection: START CROSSLOAD.
 - <u>NOTE</u>: The START button shows on the last page of software parts.
 - (a) On the source EFB, make sure the word CROSSLOADING shows, and that the LSAPs show as each is installed.
 - (b) When the word COMPLETE shows above the START CROSSLOAD button, then continue.

SUBTASK 46-15-00-860-011

- (6) Set the captain's, and first officer's EFB to show the MAIN MENU. Do the steps that follow.
 - (a) On the bezel, push the MENU button.
 - (b) On the LOAD MENU, make your selection: RETURN TO MAIN.
 - (c) In the confirmation box, make your selection: OK.

D. Software Installation Check

SUBTASK 46-15-00-710-004

- Do a check of the software installation on the target EFB. Do this task: (Software Check -Procedure, TASK 46-15-00-710-803).
 - (a) Make sure that you do the configuration comparison check specified in that task.

E. Put the Aircraft Back to Its Usual Condition

SUBTASK 46-15-00-840-001

- (1) Set the EFB to show the MAIN MENU.
 - (a) Find and select the SHOW button.
 - (b) Make your selection: MENU.

| END | OF T | V C K | |
|-----|------|-------|--|



ELECTRONIC FLIGHT BAG - ADJUSTMENT/TEST

1. General

- A. This procedure gives the tests that follow for the electronic flight bag (EFB).
 - (1) An operational test of the electronic flight bag system.
 - (2) A system test of the electronic flight bag system.

TASK 46-15-00-710-802

2. Electronic Flight Bag - Operational Test

A. General

- (1) This task gives the steps to do an operational test of the captain's or first officer's Electronic Flight Bag (EFB)
 - (a) The operational check shows that the EFB is serviceable.
- (2) The same sequence of steps is used for the captain's Electronic Display Unit (EDU) and first officer's EDU.

B. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

C. EFB Operational Test

SUBTASK 46-15-00-860-032

- (1) Set the EFB to show the MAIN MENU.
 - (a) Using the SHOW button, make your selection: MENU.
 - (b) Or, push the MENU button, which is the center position on the bezel frame.

SUBTASK 46-15-00-860-033

(2) Make sure that all applications on the MAIN MENU show gray in color.

NOTE: Buttons that show gray in color are serviceable.

- (a) Push the touchscreen button for the first application.
 - Make sure that the application starts.
 - 2) Using the SHOW button, make your selection: MENU.
- (b) Continue to push the touchscreen button for each application on the main menu.
 - 1) Make sure that the application launches.
 - 2) Using the SHOW button, make your selection: MENU.

SUBTASK 46-15-00-860-052

(3) Do a check for EFB maintenance faults. Do the steps that follow.

NOTE: The FAULT LOG, on the EFB MAINTENANCE page, shows events or conditions intended for maintenance personnel. In contrast, a condition that shows in the SYSTEM FAULT LOG, on the SYSTEM page, is intended for the flight crew.

- (a) On the MAIN MENU, make your selection: SYSTEM PAGE.
- (b) Make your selection: EFB MAINTENANCE.
- (c) Make your selection: FAULT LOG.



- (d) Using the drop-down menu near the top left of the page, make your selection: Current faults expanded.
- (e) You can print a record of the fault log. At the bottom of the page, make your selection: PRINT.
- (f) Examine the FAULT LOG page.
 - 1) If you find one or more active (or current) faults, you must correct the problem.

SUBTASK 46-15-00-860-053

- (4) On the main menu, make your selection: VIEW OFFSIDE EFB.
 - (a) Make sure your EFB shows the word XFR (transfer), and data from the other EFB.
 - NOTE: When in transfer mode, you can not make a selection, or make changes to the opposite-side EFB.
 - (b) Push the MENU, or BACK (<=) bezel key.

SUBTASK 46-15-00-860-049

- (5) Do a check of the ARINC 429 INPUTS page. Do the steps that follow.
 - (a) From the MAIN MENU, make your selection: SYSTEM PAGE.
 - (b) Make your selection: EFB MAINTENANCE.
 - (c) Make your selection: INPUT MONITORING.
 - (d) Make your selection: ARINC 429 INPUTS.
 - (e) Make sure that each input condition shows the word PRESENT.
 - (f) Make your selection: SHOW.
 - (g) Make your selection: BACK (<=).
 - 1) Make sure the INPUT MONITORING page shows.

SUBTASK 46-15-00-860-050

- (6) Examine the analog discretes input page. Do the steps that follow.
 - (a) From the INPUT MONITORING page, make your selection: ANALOG DISCRETE INPUTS.
 - (b) Make sure that the input condition shows the condition: GND (or, ground).
 - (c) Use the scroll bar to show the bottom of the page to show the PROGRAM PIN CODE.
 - 1) For the captain's EFB, make sure the code is: 16.
 - 2) For the first officer's EFB, makes sure the code is: 37.
 - (d) Make your selection: SHOW.
 - (e) Make your selection: BACK (<=).
 - 1) Make sure the INPUT MONITORING page shows.

D. Print Operational Test

SUBTASK 46-15-00-860-051

(1) To make sure the EFB can print ARINC 429 text, you can do the steps that follow.

NOTE: This step is optional. Do the test print using the captains EFB, and again using the first officer's EFB.

- (a) On the EFB MAINTENANCE page, make your selection: SYSTEM CONFIG.
- (b) At the bottom of the page, make your selection: PRINT.



E. Put the Airplane Back to Its Usual Condition

SUBTASK 46-15-00-840-005

(1) Set the EFB to show the MAIN MENU.

(a) Make your selection: SHOW.

(b) Make your selection: MENU.

(c) Make sure the main menu shows.

----- END OF TASK -----

TASK 46-15-00-730-801

3. Electronic Flight Bag - System Test

A. General

- (1) The system test does a complete check of the Electronic Flight Bag (EFB) system. The test makes sure that all functions of the system operate satisfactorily.
- (2) The same sequence of steps is used for the captain's EFB or the first officer's EFB.

B. References

| Reference | Title |
|------------------|---|
| 46-15-00-710-804 | Tail Identification Check - Procedure (P/B 201) |
| 46-15-00-710-809 | ARINC 429 Input Monitor Check - Procedure (P/B 201) |
| 46-15-00-710-810 | Analog Discrete Input Check - Procedure (P/B 201) |
| 46-15-00-710-811 | Ethernet Input Monitor Check - Procedure (P/B 201) |

C. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

D. System Test - Procedure

SUBTASK 46-15-00-860-058

(1) Make sure that all applications on the MAIN MENU show gray in color.

NOTE: Buttons that show gray in color are serviceable.

- (a) Push the touchscreen button for the first application.
 - 1) Make sure that the application starts.
 - 2) Using the SHOW button, make your selection: MENU.
- (b) Continue to push the touchscreen button for each application on the main menu.
 - 1) Make sure that the application launches.
 - 2) Using the SHOW button, make your selection: MENU.

SUBTASK 46-15-00-860-059

- (2) On the main menu, make your selection: VIEW OFFSIDE EFB.
 - (a) Make sure your EFB shows the word XFR (transfer), and data from the other EFB.
 - NOTE: When in transfer mode, you can not make a selection, or make changes to the opposite-side EFB.
 - (b) Push the MENU, or BACK (<=) bezel key.



SUBTASK 46-15-00-860-060

I

(3) Do a check for EFB maintenance faults. Do the steps that follow.

NOTE: The FAULT LOG, on the EFB MAINTENANCE page, shows events or conditions intended for maintenance personnel. In contrast, a condition that shows in the SYSTEM FAULT LOG, on the SYSTEM page, is intended for the flight crew.

- (a) On the MAIN MENU, make your selection: SYSTEM PAGE.
- (b) Make your selection: EFB MAINTENANCE.
- (c) Make your selection: FAULT LOG.
- (d) Using the drop-down menu near the top left of the page, make your selection: Current faults expanded.
- (e) You can print a record of the fault log. At the bottom of the page, make your selection: PRINT.
- (f) Examine the FAULT LOG page.
 - 1) If you find one or more active (or current) faults, you must correct the problem.

SUBTASK 46-15-00-860-055

(4) Do this task: (ARINC 429 Input Monitor Check - Procedure, TASK 46-15-00-710-809).

SUBTASK 46-15-00-860-056

- (5) Do this task: (Analog Discrete Input Check Procedure, TASK 46-15-00-710-810).
 - (a) Make sure the program identification numbers (PIN) are correct as specified in that task.

SUBTASK 46-15-00-860-057

(6) Do this task: (Ethernet Input Monitor Check - Procedure, TASK 46-15-00-710-811).

SUBTASK 46-15-00-860-061

(7) Do this task: (Tail Identification Check - Procedure, TASK 46-15-00-710-804).

SUBTASK 46-15-00-860-062

- (8) Do the steps the follow to make sure the EFB can print ARINC 429 text.
 - (a) On the EFB MAINTENANCE page, make your selection: SYSTEM CONFIG.
 - (b) At the bottom of the page, make your selection: PRINT.

E. Put the Airplane Back to Its Usual Condition

SUBTASK 46-15-00-840-006

- (1) Set the EFB to show the MAIN MENU.
 - (a) Make your selection: SHOW.
 - (b) Make your selection: MENU.
 - (c) Make sure the main menu shows.

——— END OF TASK ——

46-15-00



ELECTRONIC DISPLAY UNIT - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks.
 - (1) Removal of the electronic display unit (EDU).
 - (2) Installation of the EDU.

TASK 46-15-01-000-801

2. Electronic Display Unit Removal

(Figure 401)

A. General

- (1) This task gives the steps to remove the Electronic Flight Bag (EFB) Electronic Display Unit (EDU).
 - · Captain's EDU.
 - · First officer's EDU.

B. Tools/Equipment

| Reference | Description |
|-----------|----------------|
| STD-13383 | Bit - Torx, #6 |

C. Location Zones

| Zone | Area | |
|------|----------------------------|--|
| 211 | Flight Compartment - Left | |
| 212 | Flight Compartment - Right | |

D. EDU Removal Procedure

SUBTASK 46-15-01-040-001

- (1) De-energize the captain's, and first officer's EFB. Do the steps that follow.
 - (a) Close all active applications.
 - (b) Make your selection: MAIN MENU.
 - (c) Make your selection: SHUTDOWN.

NOTE: This action is the same as pressing the EDU power-on/off button.

(d) On the bezel frame, make sure the Power button is not on.

SUBTASK 46-15-01-860-001

(2) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-12

| Row | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|-----|------------|---------------|-------------|
| Α | 1 | C01668 | CAPT EFB |
| Α | 2 | C01669 | F/O EFB |

SUBTASK 46-15-01-020-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (3) Do the steps that follow to remove the captain's or first officer's electronic display unit [1].
 - (a) Using a #6 torx bit, STD-13383, remove the two screws [2] at the base of the EDU.



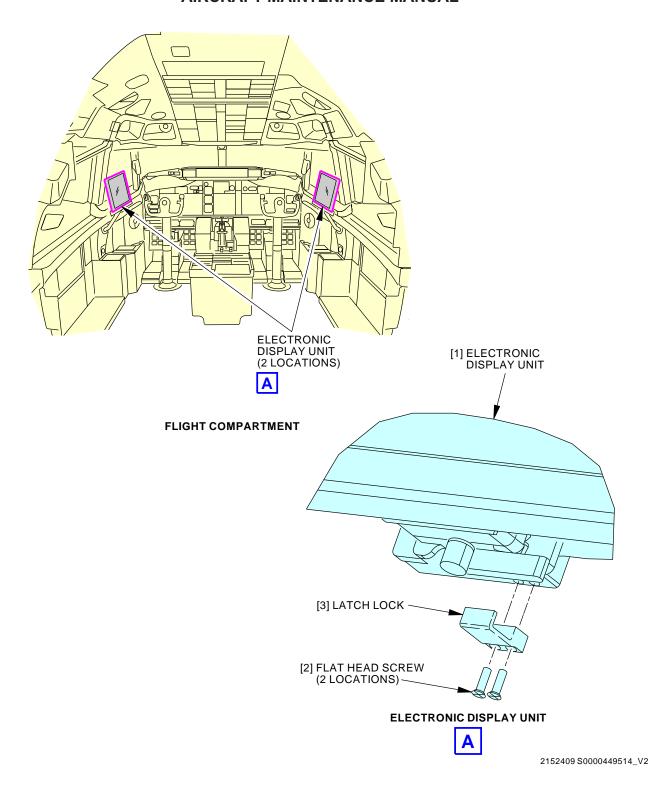
- 1) Save the screws [2] and latch lock [3] for future installation.
- (b) Rotate the latch to the unlocked position.
- (c) Slide the electronic display unit [1] up and remove.

SUBTASK 46-15-01-020-002

- (4) Put a protective cover on the front of the electronic display unit [1].
 - (a) Put protective caps on the EDU electrical connectors and on the EDU mount assembly connectors.

——— END OF TASK ———





Electronic Display Unit Installation Figure 401/46-15-01-990-801

 46-15-01

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TASK 46-15-01-400-801

3. Electronic Display Unit Installation

(Figure 401)

A. General

- (1) This task gives the steps to install the Electronic Flight Bag (EFB) Electronic Display Unit (EDU).
 - · Captain's EDU.
 - · First officer's EDU.

B. References

| Reference | Title |
|------------------|--|
| 46-15-00-710-802 | Electronic Flight Bag - Operational Test (P/B 501) |
| 46-15-00-710-803 | Software Check - Procedure (P/B 201) |
| 46-15-00-710-804 | Tail Identification Check - Procedure (P/B 201) |

C. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

D. EDU Installation Procedure

SUBTASK 46-15-01-860-002

(1) Make sure that these circuit breakers are open:

F/O Electrical System Panel, P6-12

| Row | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|-----|------------|---------------|-------------|
| Α | 1 | C01668 | CAPT EFB |
| Α | 2 | C01669 | F/O EFB |

SUBTASK 46-15-01-420-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (2) Install the electronic display unit [1] as follows:
 - (a) Remove the protective caps from the EDU electrical connectors and from the EDU mount assembly connectors.
 - (b) Put the EDU into the mount, and slide the EDU down until the connectors engage.
 - (c) Rotate the latch to the locked position.
 - (d) Install the two screws [2] and latch lock [3].

SUBTASK 46-15-01-860-003

(3) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-12

| Row | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|-----|------------|---------------|-------------|
| Α | 1 | C01668 | CAPT EFB |
| Α | 2 | C01669 | F/O EFB |



E. Installation Check

SUBTASK 46-15-01-710-001

- (1) Do this task: (Tail Identification Check Procedure, TASK 46-15-00-710-804).
 - (a) Make sure that the captain's and first officer's EFB are set with the correct tail identification number.

SUBTASK 46-15-01-710-002

- (2) Do this task: (Electronic Flight Bag Operational Test, TASK 46-15-00-710-802).
- (3) Do this task: (Software Check Procedure, TASK 46-15-00-710-803).

F. Return the Aircraft to its Usual Condition

SUBTASK 46-15-01-840-001

(1) Set the two EFBs to show the main menu.

----- END OF TASK -----



ELECTRONIC DISPLAY UNIT - CLEANING/PAINTING

1. General

A. This procedure contains one task.

TASK 46-15-01-100-801

2. Electronic Display Unit Cleaning

A. General

- (1) This task gives the steps to clean the Electronic Flight Bag (EFB) Electronic Display Unit (EDU) as follows:
 - (a) Exterior surfaces except touchscreen.
 - (b) Display surface (touchscreen).
- (2) Cleaning materials of equal description and quality to those specified are approved for use.

B. Tools/Equipment

| Reference | Description | |
|-----------|----------------------|--|
| STD-123 | Brush - Soft Bristle | |

C. Consumable Materials

| Reference | Description | Specification |
|-----------|--|-----------------|
| B00130 | Alcohol - Isopropyl | TT-I-735 |
| B50117 | Detergent - General | |
| G00034 | Cotton Wiper - Process Cleaning Absorbent Wiper (Cheesecloth, Gauze) | BMS15-5 Class A |
| G01043 | Cloth - Lint-free | |
| G02418 | Water - De-ionized | |
| G02457 | Cleaner - Wet/Dry Anti-Static Sachet - ALGLAS Visial ALG/CR 215 | |

D. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

E. Procedure - Bezel, Sides, Rear, and Connector Inserts.

SUBTASK 46-15-01-160-001

CAUTION: DO NOT USE ABRASIVE MATERIALS WHEN YOU CLEAN THE DISPLAY SURFACE. ABRASIVE MATERIALS WILL CAUSE SCRATCHES IN THE DISPLAY SURFACE.

(1) Remove all dust particles from the bezel, bezel keys, side and back surfaces, and connector inserts with a clean, soft bristle brush, STD-123, or a clean, dry, lint-free cloth, G01043.

SUBTASK 46-15-01-160-002

(2) To remove oils or embedded dirt, wipe the surfaces with a cotton wiper, G00034 moistened with alcohol, B00130, or a mild mixture of general detergent, B50117 and de-ionized water, G02418.

NOTE: Make sure that you do not cause liquid to go into, or under the bezel frame.



F. Procedure - Touchscreen

SUBTASK 46-15-01-160-003

CAUTION: DO NOT USE ABRASIVE MATERIALS WHEN YOU CLEAN THE DISPLAY SURFACE. ABRASIVE MATERIALS WILL CAUSE SCRATCHES IN THE DISPLAY SURFACE.

(1) Wipe away all dust particles from the touchscreen with a clean, soft bristle brush, STD-123.

SUBTASK 46-15-01-160-004

CAUTION: DO NOT USE TOO MUCH FORCE WHEN YOU CLEAN THE DISPLAY SURFACE. TOO MUCH FORCE WILL CAUSE DAMAGE TO THE DISPLAY SURFACE.

- (2) Clean the display surface with the wet-and-dry anti-static sachets (ALGLAS Visial cleaner, G02457):
 - (a) Use the wet sachet to carefully clean the display surface. Wipe in a straight-line motion from top to bottom.
 - NOTE: Make sure that you do not push liquid under the bezel frame.
 - (b) Gradually move from one side of the display surface to the opposite side, while you clean from top to bottom.
 - (c) When the display surface is clean, use the dry sachet to carefully dry the display surface. Wipe in a straight-line motion, from top to bottom.

| | END | OF | TASK | |
|--|------------|----|-------------|--|
|--|------------|----|-------------|--|



ELECTRONIC SWITCHING MODULE UNIT - REMOVAL/INSTALLATION

1. General

- A. This section has two tasks.
 - (1) Removal of the electronic switching module unit, (ESMU).
 - (2) Installation of the ESMU.

TASK 46-15-02-000-801

2. Electronic Switching Module Unit Removal

(Figure 401)

A. General

- (1) This task gives the steps to remove the electronic flight bag (EFB) electronic switching module unit (ESMU).
 - · Captain's ESMU
 - · First officer's ESMU.
- (2) The ESMU and power converter unit (PCU) are assembled together. You will remove the assembly, and then separate the two LRUs.

B. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

C. ESMU Removal Procedure

SUBTASK 46-15-02-040-001

- (1) De-energize the captain's, and first officer's EFB. Do the steps that follow.
 - (a) Close all active applications.
 - (b) Make your selection: MAIN MENU.
 - (c) Make your selection: SHUTDOWN.
 - NOTE: This action is the same as pressing the EDU power-on/off button.
 - (d) On the bezel frame, make sure the Power button is not illuminated.

SUBTASK 46-15-02-860-001

(2) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-12

| Row | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|-----|------------|---------------|-------------|
| Α | 1 | C01668 | CAPT EFB |
| Α | 2 | C01669 | F/O EFB |

SUBTASK 46-15-02-020-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (3) At the F/O's flight stowage area only, do these steps that follow:
 - (a) Remove the two screws [2] that attach the data load port assembly [3] to the ESMU cover [4].



(b) Disconnect and remove the data load port assembly [3].

SUBTASK 46-15-02-020-002

- (4) Remove the cover [4]. Do these steps:
 - (a) Remove the six screws [5].
 - (b) Remove the cover [4].

SUBTASK 46-15-02-020-003

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

(5) Disconnect all electrical connectors and clamps from the electronic switching module unit [1] and power converter unit (PCU) [6].

SUBTASK 46-15-02-020-006

(6) Remove the three screws that attach the ESMU/PCU bracket [7] to the aircraft sidewall panel.

SUBTASK 46-15-02-020-007

(7) Remove the screw [8] and washers [9] that attach the ground strap [10].

SUBTASK 46-15-02-020-004

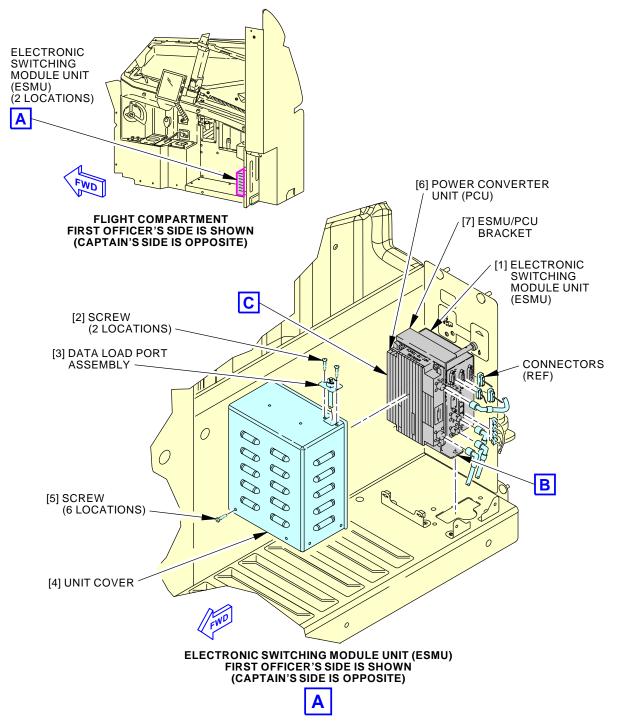
(8) Remove the ESMU [1], PCU [6], and bracket [7] together, as one unit.

SUBTASK 46-15-02-020-005

- (9) Separate the electronic switching module unit [1] from the PCU [6] and bracket [7]. Do these steps:
 - (a) Remove the four screws [11], eight washers [12], and four lock nuts [13].
 - (b) Remove the ESMU [1].
 - (c) Protect the PCU and ESMU from damage.
 - (d) Keep all of the hardware for ESMU installation.

----- END OF TASK -----





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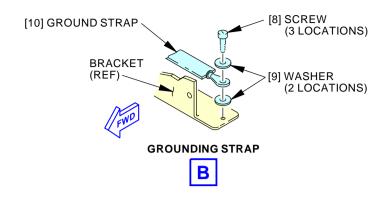
Electronic Switching Module Unit Installation Figure 401/46-15-02-990-801 (Sheet 1 of 2)

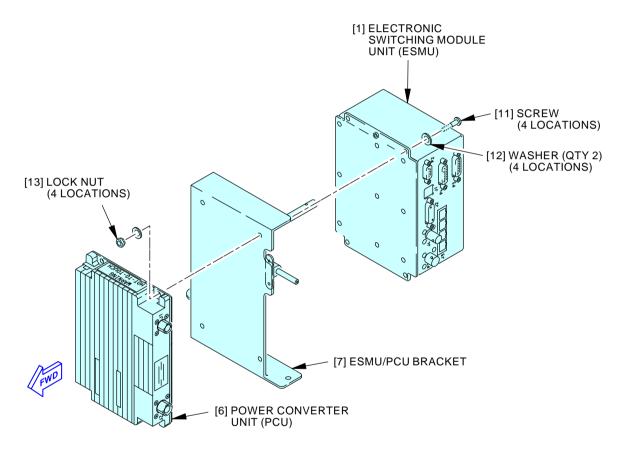
EFFECTIVITY AKS 001-006, 009, 010, 013, 015-018, 020-025, 027

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ELECTRONIC SWITCHING MODULE UNIT (ESMU)
FIRST OFFICER'S SIDE IS SHOWN
(CAPTAIN'S SIDE IS OPPOSITE)



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Electronic Switching Module Unit Installation Figure 401/46-15-02-990-801 (Sheet 2 of 2)

AKS 001-006, 009, 010, 013, 015-018, 020-025, 027

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TASK 46-15-02-400-801

3. Electronic Switching Module Unit Installation

(Figure 401)

A. General

- (1) This task gives the steps to install the electronic flight bag (EFB) electronic switching module unit (ESMU).
 - · Captain's ESMU
 - · First officer's ESMU.
- (2) You will assemble the ESMU and power converter unit (PCU) together, and then install the assembly.

B. References

| Reference | Title |
|------------------|--|
| 46-15-00-710-802 | Electronic Flight Bag - Operational Test (P/B 501) |
| 46-15-00-710-803 | Software Check - Procedure (P/B 201) |
| 46-15-00-710-804 | Tail Identification Check - Procedure (P/B 201) |
| Toolo/Equipment | |

C. Tools/Equipment

| Reference | Description |
|-----------|--------------------------------------|
| STD-6972 | Milliohmmeter - 0.0 to 0.1 Ohm Range |

D. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

E. ESMU Installation Procedure

SUBTASK 46-15-02-860-002

(1) Make sure that these circuit breakers are open:

F/O Electrical System Panel, P6-12

| Row | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|-----|------------|---------------|-------------|
| Α | 1 | C01668 | CAPT EFB |
| Α | 2 | C01669 | F/O EFB |

SUBTASK 46-15-02-420-001

<u>CAUTION</u>: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (2) Assemble the electronic switching module unit [1], power converter unit [6] and bracket [7]. Do these steps:
 - (a) Put the ESMU [1], bracket [7] and PCU [6] together.
 - (b) Install four screws [11] with eight washers [12], and four lock nuts [13] and hand tighten.
 - (c) Protect the assembly from damage.

SUBTASK 46-15-02-420-002

(3) Put the ESMU [1], PCU [6], and bracket [7] assembly into the aircraft stowage mount and sidewall panel.



SUBTASK 46-15-02-420-003

(4) Install three screws that attach the ESMU/PCU bracket [7] to the aircraft sidewall panel.

SUBTASK 46-15-02-420-004

(5) Install the ground strap [10] using one screw [8] and two washers [9].

SUBTASK 46-15-02-760-001

- (6) Using a milliohmmeter, STD-6972, do a resistance check of the ground strap.
 - (a) Make sure the resistance from cable to ground is 0.003 ohms or less.

SUBTASK 46-15-02-420-005

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

(7) Connect all electrical connectors and clamps to the electronic switching module unit [1] and power converter unit (PCU) [6].

SUBTASK 46-15-02-420-006

- (8) Install the cover [4]. Do these steps:
 - (a) Put the cover [4] over the LRU and cables.
 - (b) Install the six screws [5] and hand-tighten

SUBTASK 46-15-02-420-007

- (9) On the F/O's flight stowage area only, install the data load port assembly [3]. Do these steps:
 - (a) Put the data load port assembly [3] in the cover [4].
 - (b) Install the two screws [2] and hand-tighten.

SUBTASK 46-15-02-860-003

(10) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-12

| Row | <u>Col</u> | Number | <u>Name</u> |
|-----|------------|--------|-------------|
| Α | 1 | C01668 | CAPT EFB |
| Δ | 2 | C01669 | F/O FFR |

F. Installation Check

SUBTASK 46-15-02-710-001

(1) Do this task: (Electronic Flight Bag - Operational Test, TASK 46-15-00-710-802).

SUBTASK 46-15-02-710-002

(2) Do this task: (Software Check - Procedure, TASK 46-15-00-710-803).

SUBTASK 46-15-02-710-003

- (3) Do this task: (Tail Identification Check Procedure, TASK 46-15-00-710-804).
 - (a) Make sure the captain's and first officer's EFB are set with the correct tail identification number.

G. Return the Aircraft to its Usual Condition

SUBTASK 46-15-02-860-004

(1) Set the two EFBs to show the main menu.

| ——— END OF TASK ——— | | END | OF | TASK | |
|---------------------|--|------------|----|-------------|--|
|---------------------|--|------------|----|-------------|--|

46-15-02

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POWER CONVERTER UNIT - REMOVAL/INSTALLATION

1. General

- A. This procedure contains two tasks.
 - (1) Removal of the power converter unit (PCU)
 - (2) Installation of the PCU.

TASK 46-15-03-000-801

2. Power Converter Unit Removal

(Figure 401)

A. General

- (1) This task gives the steps to remove the electronic flight bag (EFB) power converter unit (PCU).
 - (a) Captain's PCU.
 - (b) First Officer's PCU.
- (2) The PCU and electronic switching module unit (ESMU) are attached to each other. You will remove the assembly, and then separate the two LRUs.

B. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

C. Before the PCU Removal

SUBTASK 46-15-03-040-001

- (1) De-energize the captain's, and first officer's EFB. Do the steps that follow.
 - (a) Close all active applications.
 - (b) Make your selection: MAIN MENU.
 - (c) Make your selection: SHUTDOWN.
 - NOTE: This action is the same as pressing the EDU power-on/off button.
 - (d) On the bezel frame, make sure the Power button is not on.

SUBTASK 46-15-03-860-001

(2) Open these circuit breakers and install safety tags:

F/O Electrical System Panel, P6-12

| Row | <u>Col</u> | <u>Number</u> | <u>Name</u> |
|-----|------------|---------------|-------------|
| Α | 1 | C01668 | CAPT EFB |
| Α | 2 | C01669 | F/O EFB |

D. PCU Removal

SUBTASK 46-15-03-020-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (1) At the F/O's flight stowage area only, do these steps that follow:
 - (a) Remove the two screws [2] that attach the data load port assembly [3] to the ESMU cover [4].



(b) Disconnect and remove the data load port assembly [3].

SUBTASK 46-15-03-020-002

- Remove the cover [4]. Do these steps:
 - (a) Remove the six screws [5].
 - (b) Remove the cover [4].

SUBTASK 46-15-03-020-003

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

(3) Disconnect the connectors and clamps from the power converter unit [1] and electronic switching module unit [6].

SUBTASK 46-15-03-020-004

(4) Remove the three screws that attach the ESMU/PCU bracket [7] to the aircraft sidewall panel.

SUBTASK 46-15-03-020-005

Remove the screw [8] and washers [9] that attach the ground strap [10].

SUBTASK 46-15-03-020-006

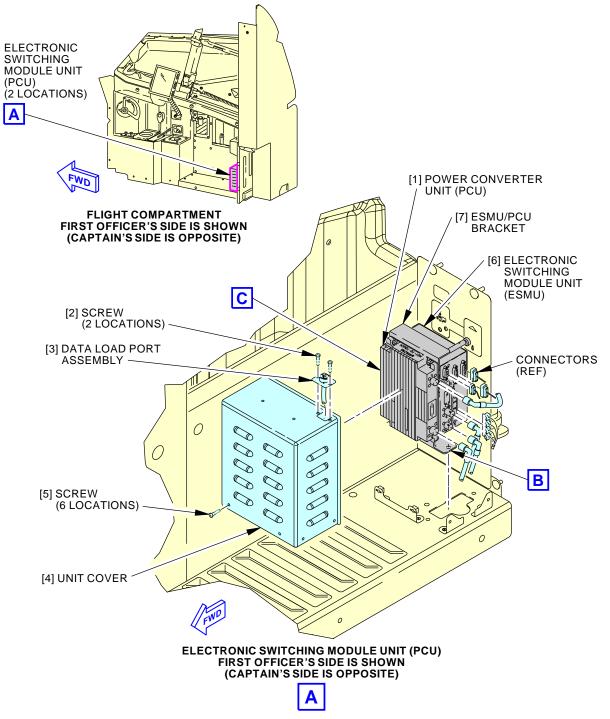
(6) Remove the PCU [1], ESMU [6], and bracket [7] together, as one unit.

SUBTASK 46-15-03-020-007

- Separate the power converter unit [1], ESMU [6] and bracket [7]. Do these steps:
 - Remove the four screws [11], eight washers [12], and four lock nuts [13].
 - (b) Remove the power converter unit [1].
 - (c) Protect the PCU and ESMU from damage.
 - (d) Keep all of the hardware for ESMU installation.

—— END OF TASK —





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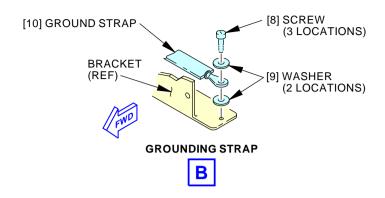
Power Converter Unit Installation Figure 401/46-15-03-990-801 (Sheet 1 of 2)

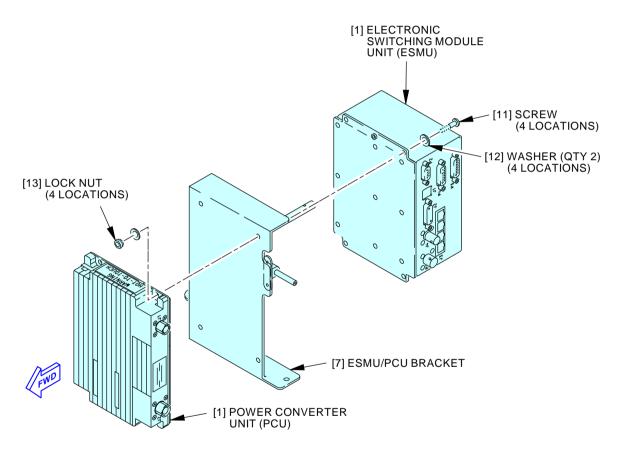
EFFECTIVITY AKS 001-006, 009, 010, 013, 015-018, 020-025, 027

46-15-03

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ELECTRONIC SWITCHING MODULE UNIT (PCU) FIRST OFFICER'S SIDE IS SHOWN (CAPTAIN'S SIDE IS OPPOSITE)



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Power Converter Unit Installation Figure 401/46-15-03-990-801 (Sheet 2 of 2)

EFFECTIVITY AKS 001-006, 009, 010, 013, 015-018, 020-025, 027

46-15-03

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TASK 46-15-03-400-801

3. Power Converter Unit Installation

(Figure 401)

A. General

- (1) This task gives the steps to install the electronic flight bag (EFB) power converter unit (PCU).
 - · Captain's PCU
 - · First officer's PCU.
- (2) You will assemble the PCU and electronic switching module unit (ESMU) together, and then install the assembly.

B. References

| Reference | Title |
|------------------|--|
| 46-15-00-710-802 | Electronic Flight Bag - Operational Test (P/B 501) |
| 46-15-00-710-803 | Software Check - Procedure (P/B 201) |
| 46-15-00-710-804 | Tail Identification Check - Procedure (P/B 201) |

C. Tools/Equipment

| 100is/Equipment | | | |
|-----------------|--------------------------------------|--|--|
| Reference | Description | | |
| STD-6972 | Milliohmmeter - 0.0 to 0.1 Ohm Range | | |

D. Location Zones

| Zone | Area |
|------|----------------------------|
| 211 | Flight Compartment - Left |
| 212 | Flight Compartment - Right |

E. PCU Installation Procedure

SUBTASK 46-15-03-860-002

(1) Make sure that these circuit breakers are open:

F/O Electrical System Panel, P6-12

| Row | <u>Col</u> | <u>Number</u> | <u>Name</u> | |
|-----|------------|---------------|-------------|--|
| Α | 1 | C01668 | CAPT EFB | |
| Α | 2 | C01669 | F/O EFB | |

SUBTASK 46-15-03-420-001

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

- (2) Assemble the power converter unit [1], ESMU [6] and bracket [7]. Do these steps:
 - (a) Put the PCU [1], bracket [7] and ESMU [6] together.
 - (b) Install four screws [11] with eight washers [12], and four lock nuts [13] and hand tighten.
 - (c) Protect the assembly from damage.

SUBTASK 46-15-03-420-002

(3) Put the PCU [1], ESMU [6], and bracket [7] assembly into the aircraft stowage mount and sidewall panel.

SUBTASK 46-15-03-420-003

(4) Install three screws that attach the ESMU/PCU bracket [7] to the aircraft sidewall panel.



SUBTASK 46-15-03-420-004

(5) Install the ground strap [10] using one screw [8] and two washers [9].

SUBTASK 46-15-03-710-001

- (6) Using a milliohmmeter, STD-6972, do a resistance check of the ground strap.
 - (a) Make sure the resistance from cable to ground is 0.003 ohms or less.

SUBTASK 46-15-03-420-005

CAUTION: DO NOT TOUCH THE CONNECTOR PINS OR OTHER CONDUCTORS ON THE UNIT. IF YOU TOUCH THESE CONDUCTORS, ELECTROSTATIC DISCHARGE CAN CAUSE DAMAGE TO THE UNIT.

(7) Connect all electrical connectors and clamps to the power converter unit [1] and ESMU [6].

SUBTASK 46-15-03-420-006

- (8) Install the cover [4]. Do these steps:
 - (a) Put the cover [4] over the LRU and cables.
 - (b) Install the six screws [5] and hand-tighten.

SUBTASK 46-15-03-420-007

- (9) On the F/O's flight stowage area only, install the data load port assembly [3]. Do these steps:
 - (a) Put the data load port assembly [3] in the cover [4].
 - (b) Install the two screws [2] and hand-tighten.

SUBTASK 46-15-03-860-003

(10) Remove the safety tags and close these circuit breakers:

F/O Electrical System Panel, P6-12

| Row | <u>Col</u> | <u>Number</u> | <u>Name</u> | |
|-----|------------|---------------|-------------|--|
| Α | 1 | C01668 | CAPT EFB | |
| Α | 2 | C01669 | F/O EFB | |

F. Installation Check

SUBTASK 46-15-03-710-002

Do this task: (Electronic Flight Bag - Operational Test, TASK 46-15-00-710-802).

SUBTASK 46-15-03-710-003

(2) Do this task: (Software Check - Procedure, TASK 46-15-00-710-803).

- (3) Do this task: (Tail Identification Check Procedure, TASK 46-15-00-710-804).
 - Make sure the captain's and first officer's EFB are set with the correct tail identification number.

G. Return the Aircraft to its Usual Condition

SUBTASK 46-15-03-840-001

FFFFCTIVITY

(1) Set the two EFBs to show the main menu.

| | AF T | 017 | |
|---------|-------------|-------|--|
| END | OF TA | ۱SK - | |