

AIRCRAFT PERSONALITY MODULE (APM) - MAINTENANCE PRACTICES

EFFECTIVITY: AIRCRAFT WITH CMU

1. General

- A. This section gives the procedures to do the Aircraft Personality Module (APM) programming.
- B. The APM is an EEPROM to store special data for the aircraft configuration and is attached to the CMU mounting tray.
- C. The APM programming can be accomplished in two different ways:
 - With the CDU ([AMM TASK 23-24-03-860-801-A/200](#)).
 - With the help of an laptop computer ([AMM TASK 23-24-03-860-802-A/200](#)).
- D. The procedures in this section are given in the sequence below. The tasks identified with (◆) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	DESCRIPTION	EFFECTIVITY
23-24-03-860-801-A	AIRCRAFT PERSONALITY MODULE - PROGRAMMING	AIRCRAFT WITH CMU
23-24-03-860-802-A	AIRCRAFT PERSONALITY MODULE - PROGRAMMING	AIRCRAFT WITH CMU

TASK 23-24-03-860-801-A

EFFECTIVITY: AIRCRAFT WITH CMU

2. AIRCRAFT PERSONALITY MODULE - PROGRAMMING

A. General

- (1) This task gives the procedures to do the Aircraft Personality Module (APM) programming.
- (2) This procedure shows basic parameters for the APM programming. If you need one specific configuration, contact your service provider to give you the proper parameters values.

B. References

REFERENCE	DESIGNATION
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE
AMM TASK 23-24-03-860-802-A/200	AIRCRAFT PERSONALITY MODULE - PROGRAMMING

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
223		Cockpit

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Cockpit

I. Preparation

SUBTASK 841-002-A

- (1) Energize the aircraft with the External DC-Power Supply ([AMM TASK 20-40-01-860-801-A/200](#)).
- (2) In the cockpit, on the circuit breaker panel, make sure that these circuit breakers are closed:
 - CDU 1(Location Tip: DC BUS 1/NAV/CDU 1) or CDU 2 (Location Tip: DC BUS 1/NAV/CDU 2).

- FMC 1(Location Tip: DC BUS 1/NAV/FMC 1) or FMC 2 (Location Tip: DC BUS 1/NAV/FMC 2).
- CMU (Location Tip: DC BUS 1/COMM/CMU).

NOTE: Use only one CDU for this procedure.

J. Programming Procedures ([Figure 201](#)) ([Figure 202](#))

SUBTASK 860-002-A

NOTE: The APM programming procedure is only applicable when:

- The CMU and the APM are unprogrammed.
- The CMU and the APM are programmed correctly and you must change some parameters.

The CMU has a flash memory which stores all the parameters contained in the APM. If you connect a blank APM to a programmed CMU, and you select WRITE TO APM on the CDU or cycle (open/close) the CMU circuit breaker, all data will be stored in the APM. Thus if there are parameters (as the three shown in table 201) not correct, it will not be possible to reprogram them with the CDU. If this condition occurs, reprogram the APM through of the laptop computer. Refer to [AMM TASK 23-24-03-860-802-A/200](#).

- (1) If the APM and the CMU are blank, do as follows:

NOTE: This procedure is not applicable if there are data stored in the APM or in the CMU flash memory.

- (a) Make sure that the CMU is initialized.

NOTE: Approximately 5 minutes are necessary for the CMU to be ready for the configuration procedure.

- (b) On the CDU, push the NAV function key.

Result:

1 The NAV INDEX 1/2 page comes into view on the CDU display.

- (c) Push the DATALINK line select key.

Result:

1 The DATALINK INDEX 1/1 page comes into view on the CDU display.

- (d) Push the CMU or ACARS line select key.

Result:

1 The ACARS MAIN MENU 1/2 page comes into view on the CDU display.

- (e) Push the SYS MENU line select key.

Result:

1 The CMU SYSTEM MENU page comes into view on the CDU display.

- (f) Push the MAINTENANCE line select key.

Result:

1 The CMU MAINT MENU 1/2 page comes into view on the CDU display.

- (g) Type the password "HONEY" on the CDU keyboard, and push the PROGRAM APM line select key.

NOTE: The default APM password, if not changed by the customer, is "HONEY". The password "GDCGDC" is used when the service provider is Honeywell Global Data Center. The password depends on the service provider used by the customer. Contact your service provider if you are not sure what is the correct password.

Result:

- 1 The INDEX field comes into view on the upper left side of the CDU display.

CAUTION: IF YOU ENTER ONE OR MORE OF THE THREE PARAMETERS SHOWN IN TABLE 201 INCORRECTLY, IT WILL NOT BE POSSIBLE TO CORRECT THEM OR PROGRAM OTHER PARAMETER WITH THE CDU. IF THIS CONDITION OCCURS, REPROGRAM THE APM THROUGH OF THE LAPTOP COMPUTER. REFER TO [AMM TASK 23-24-03-860-802-A/200](#).

- (h) Do the minimum APM configuration, as shown in table 201 (Minimum Configuration). To do this, type the INDEX number and push the INDEX line select key.

Table 201 - MINIMUM CONFIGURATION

Index	Display Parameter	Value
28	CDU 1 INSTALLED	1
49	DISPLAY DEVICE	5
58	FIDB ID	EMBR-XXXXX

- (i) Push the WRITE DATA TO APM line select key.

Result:

- 1 The CDU display goes back to the FMS page. DMU fail message appears on CDU.

- (j) Do the two actions above for other indexes in table 201 (Minimum Configuration).

NOTE: Approximately 3 minutes are necessary for the CMU to be ready for the other index configuration procedure.

- (k) Reselect ACARS to check if the indexes were correctly programmed.

NOTE: When you reselect ACARS, the CDU shows the last page that was used.

- (l) Cycle (open/close) the CMU circuit breaker (Location Tip: DC BUS 1/COMM/CMU).

- (2) Do the APM configuration as follows:

NOTE: This configuration procedure is only applicable if, at least, the parameters shown in table 201 (Minimum Configuration) are correctly configured.

- (a) Make sure that the CMU is initialized.

NOTE: Approximately 5 minutes are necessary for the CMU to be ready for the configuration procedure.

- (b) On the CDU, push the NAV function key.

Result:

- 1 The NAV INDEX 1/2 page comes into view on the CDU display.

- (c) Push the DATALINK line select key.
Result:
1 The DATALINK INDEX 1/1 page comes into view on the CDU display.
- (d) Push the ACARS or CMU line select key.
Result:
1 The ACARS MAIN MENU 1/2 page comes into view on the CDU display.
- (e) Push the SYS MENU line select key.
Result:
1 The CMU SYSTEM MENU page comes into view on the CDU display.
- (f) Push the MAINTENANCE line select key.
Result:
1 The CMU MAINT MENU 1/2 page comes into view on the CDU display.
- (g) Type the password "HONEY" on the CDU keyboard, and push the Program APM line select key.

NOTE: The default APM password, if not changed by the customer, is "HONEY". The password "GDCGDC" is used when the service provider is Honeywell Global Data Center. The password depends on the service provider used by the customer. Contact your service provider if you are not sure what is the correct password.

Result:

- 1 The INDEX field comes into view on the upper left side of the CDU display.
- (h) Make sure that the INDEX numbers shown in Table 202 (Parameters Configuration) are those for the APM configuration. To do this, type the INDEX number and push the INDEX line select key.

NOTE: For configuration of the INDEX 83 it is necessary the ICAO Aircraft ID. The ICAO Aircraft ID is the Mode S address. The correct number can be determined by enabling the TCAS display on either MFD.

- (i) On the MFD#1, select the TCAS page.
- (j) On the RMU#1, push the L3 key and use the knob to select squawk code 0003.
- (k) On the RMU#1, push the L4 key to select the STAND BY mode.
- (l) On the RMU#1, hold the TST key until the CODE 0003 XPDR STATUS screen is shown on the MFD#1.

Result:

- 1 The Mode S address will appear along with the letter H indicating the hexadecimal readout. The H is not part of the number.

NOTE: Read and write down the number with which to configure INDEX 83.

- (m) Make sure that the parameters are the same as those shown in Table 202 (Parameters Configuration).

NOTE: YES is for logic level 1, and NO is for logic level 0.

- (n) Push the WRITE DATA TO APM line select key when the configuration is done.

Result:

- 1 The CDU display goes back to the FMS page. DMU fail message appears on CDU.

(o) Reselect ACARS to check if the indexes were correctly programed.

NOTE: When you reselect ACARS, the CDU shows the last page that was used.

(3) Table 202 - PARAMETERS CONFIGURATION

Index	Display Parameter	Value
1	1553 INSTALLED	0
2	VHF 1 INSTALLED	0
3	VHF 2 INSTALLED	0
4	VHF 3 INSTALLED	1
5	VDR 1 INSTALLED	0
6	VDR 2 INSTALLED	0
7	VDR 3 INSTALLED	0
8	ACMS BUS HIGH SPEED	0
9	ACMS INSTALLED	0
10	MONITOR ACMS	0
11	ADL HIGH SPEED	0
12	ADL INSTALLED	0
13	TAIL NUMBER	see note 5
14	A/C TYPE	see note 6
15	AIRLINE ID	see note 1
16	ATIS ENABLED	1
17	PDC ENABLED	1
18	FLT SYS MSGS ENABLED	1
19	OCEANIC CLX ENABLED	1
20	PUSHBACK CLX ENABLED	1
21	TAXI CLX ENABLED	1
22	TWIP ENABLED	1
23	CABIN HIGH SPEED	0
24	CABIN 1 INSTALLED	0
25	MONITOR CABIN 1	0
26	CABIN 2 INSTALLED	0
27	MONITOR CABIN 2	0
28	CDU 1 INSTALLED	1
29	CDU 2 INSTALLED	1 or 0 (see note 2)
30	CDU 3 INSTALLED	0
31	CMC HIGH SPEED	0
32	CMC INSTALLED	1
33	MONITOR CMC	1

(3) Table 202 - PARAMETERS CONFIGURATION (Continued)

Index	Display Parameter	Value
34	CVR HIGH SPEED	0
35	CVR INSTALLED	0
36	DCDU HIGH SPEED	0
37	DCDU 1 INSTALLED	0
38	MONITOR DCDU 1	0
39	DCDU 2 INSTALLED	0
40	MONITOR DCDU 2	0
41	DDB 8 HIGH SPEED	0
42	DDB 8 INSTALLED	1
43	MONITOR DDB 8	1
44	DDB 9 HIGH SPEED	0
45	DDB 9 INSTALLED	1
46	MONITOR DDB 9	1
47	DEFAULT CHARS PER LINE	40
48	DEFAULT PRINTER ALERT	0
49	DISPLAY DEVICE	5
50	ELS HIGH SPEED	0
51	ELS INSTALLED	0
52	ENET 1 INSTALLED	0
53	ENET 2 INSTALLED	0
54	ENET 3 INSTALLED	0
55	ENET 4 INSTALLED	0
56	ENET SPEED	0
57	ENET TYPE	0
58	FIDB ID	EMBR-XXXXX
59	FLEET ID	Mixed
60	FMC 1 INSTALLED	1
61	MONITOR FMC 1	0
62	FMC 2 INSTALLED	1 or 0 (see note 2)
63	MONITOR FMC 2	0
64	FMC 3 INSTALLED	0
65	MONITOR FMC 3	0
66	HS FMC 1 INSTALLED	0
67	MONITOR HS FMC 1	0
68	HS FMC 2 INSTALLED	0
69	MONITOR HS FMC 2	0
70	HS FMC 3 INSTALLED	0
71	MONITOR HS FMC 3	0

(3) Table 202 - PARAMETERS CONFIGURATION (Continued)

Index	Display Parameter	Value
72	FMS HIGH SPEED	0
73	GATELINK HIGH SPEED	0
74	GATELINK INSTALLED	0
75	GPSSU HIGH SPEED	0
76	GPSSU INSTALLED	1
77	MONITOR GPSSU	0
78	HF HIGH SPEED	0
79	HF 1 INSTALLED	0
80	MONITOR HF 1	0
81	HF 2 INSTALLED	0
82	MONITOR HF 2	0
83	ICAO AIRCRAFT ID	see note 4
84	ICAO AIRLINE ID	see note 1
85	MCDU HIGH SPEED	0
86	MCDU 1 INSTALLED	0
87	MONITOR MCDU 1	0
88	MCDU 2 INSTALLED	0
89	MONITOR MCDU 2	0
90	MCDU 3 INSTALLED	0
91	MONITOR MCDU 3	0
92	MSG AURAL ALERT LENGTH	1000
93	OOOI 1 HIGH SPEED	0
94	OOOI 1 INSTALLED	1
95	MONITOR OOOI 1	1
96	OOOI 2 HIGH SPEED	1
97	OOOI 2 INSTALLED	1
98	MONITOR OOOI 2	1
99	MONITOR OOOI 3	1
100	OOOI 3 HIGH SPEED	1
101	OOOI 3 INSTALLED	1
102	OOOI 4 HIGH SPEED	0
103	OOOI 4 INSTALLED	0
104	MONITOR OOOI 4	0
105	OOOI 5 HIGH SPEED	0
106	OOOI 5 INSTALLED	0
107	MONITOR OOOI 5	0
108	OOOI 6 HIGH SPEED	0
109	OOOI 6 INSTALLED	0

(3) Table 202 - PARAMETERS CONFIGURATION (Continued)

Index	Display Parameter	Value
110	MONITOR OOOI 6	0
111	PRNT AURAL ALERT LENGTH	1000
112	PRINTER HIGH SPEED	0 (see note 3)
113	PRINTER WIDTH 1	40 (see note 3)
114	PRINTER WIDTH 2	64 (see note 3)
115	PRINTER WIDTH 3	80 (see note 3)
116	PRINTER WIDTH 4	88 (see note 3)
117	PRINTER WIDTH 5	132 (see note 3)
118	PRINTER HAS DEGREE SYM	0 (see note 3)
119	DEGREE SYM CODE	20 (see note 3)
120	PRINTER INSTALLED	1 (see note 3)
121	MONITOR PRINTER	1 (see note 3)
122	PRINTER SYMBOL SET	96 (see note 3)
123	PRINTER TYPE	0 (see note 3)
124	AURAL ALERT REPEAT	0
125	RESET APPLIES TO VISUAL	0
126	SDU HIGH SPEED	0
127	SDU 1 INSTALLED	0
128	MONITOR SDU 1	0
129	SDU 2 INSTALLED	0
130	MONITOR SDU 2	0
131	SELCAL AURAL ALERT LEN	0
132	SUPPORT ALERT RELAYS	0
133	SYS 1 HIGH SPEED	0
134	SYS 1 INSTALLED	0
135	MONITOR SYS 1	0
136	SYS 2 HIGH SPEED	0
137	SYS 2 INSTALLED	0
138	MONITOR SYS 2	0
139	SYS 3 HIGH SPEED	0
140	SYS 3 INSTALLED	0
141	MONITOR SYS 3	0
142	SYS 4 HIGH SPEED	0
143	SYS 4 INSTALLED	0
144	MONITOR SYS 4	0
145	SYS 5 HIGH SPEED	0
146	SYS 5 INSTALLED	0
147	MONITOR SYS 5	0

(3) Table 202 - PARAMETERS CONFIGURATION (Continued)

Index	Display Parameter	Value
148	MONITOR SYS 6	1
149	SYS 6 HIGH SPEED	1
150	SYS 6 INSTALLED	1
151	SYS 7 HIGH SPEED	0
152	SYS 7 INSTALLED	0
153	MONITOR SYS 7	0
154	SYS 8 HIGH SPEED	0
155	SYS 8 INSTALLED	0
156	MONITOR SYS 8	0
157	UHF INSTALLED	0
158	VDR ANALOG INTERFACE	0
159	MONITOR VDR 1	0
160	MONITOR VDR 2	0
161	MONITOR VDR 3	0
162	XPDR HIGH SPEED	0
163	XPDR 1 INSTALLED	0
164	MONITOR XPDR 1	0
165	XPDR 2 INSTALLED	0
166	MONITOR XPDR 2	0

- NOTE:**
1. Configure according to Service Provider.
 2. Configure with logic level 1 on Aircraft with FMC 2 (Dual FMS).
 3. Configure only on aircraft with printer.
 4. Enter with the number got in step (2) (I) 1.
 5. Configure according to aircraft registration.
 6. Configure according to aircraft type ("E145" for EMB-145() models or "E135" for EMB-135() models).

K. Follow-on

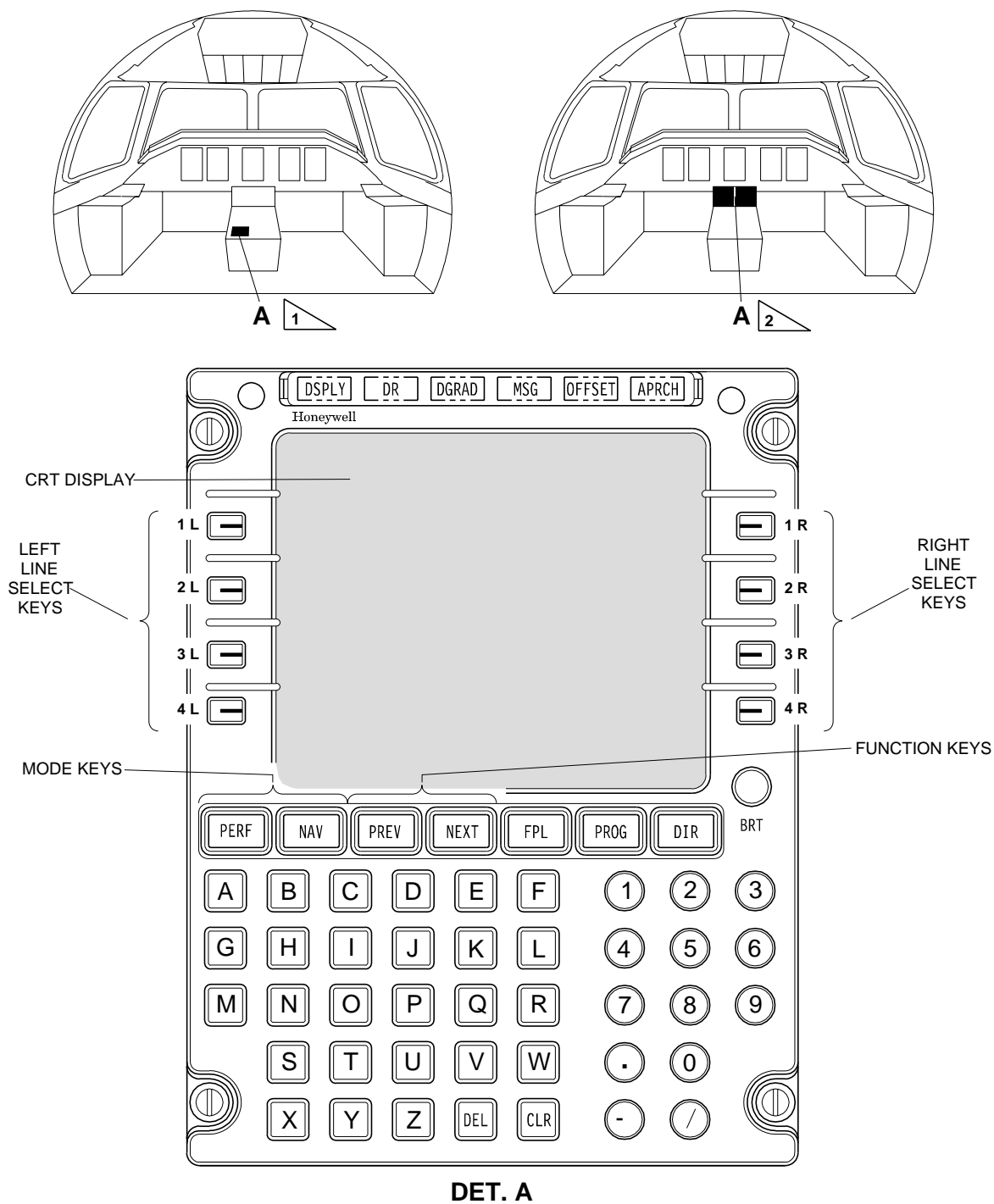
SUBTASK 842-002-A

- (1) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

EFFECTIVITY: AIRCRAFT WITH CDU-810

FMS CDU-810

Figure 201



1 AIRCRAFT WITH SINGLE FMS

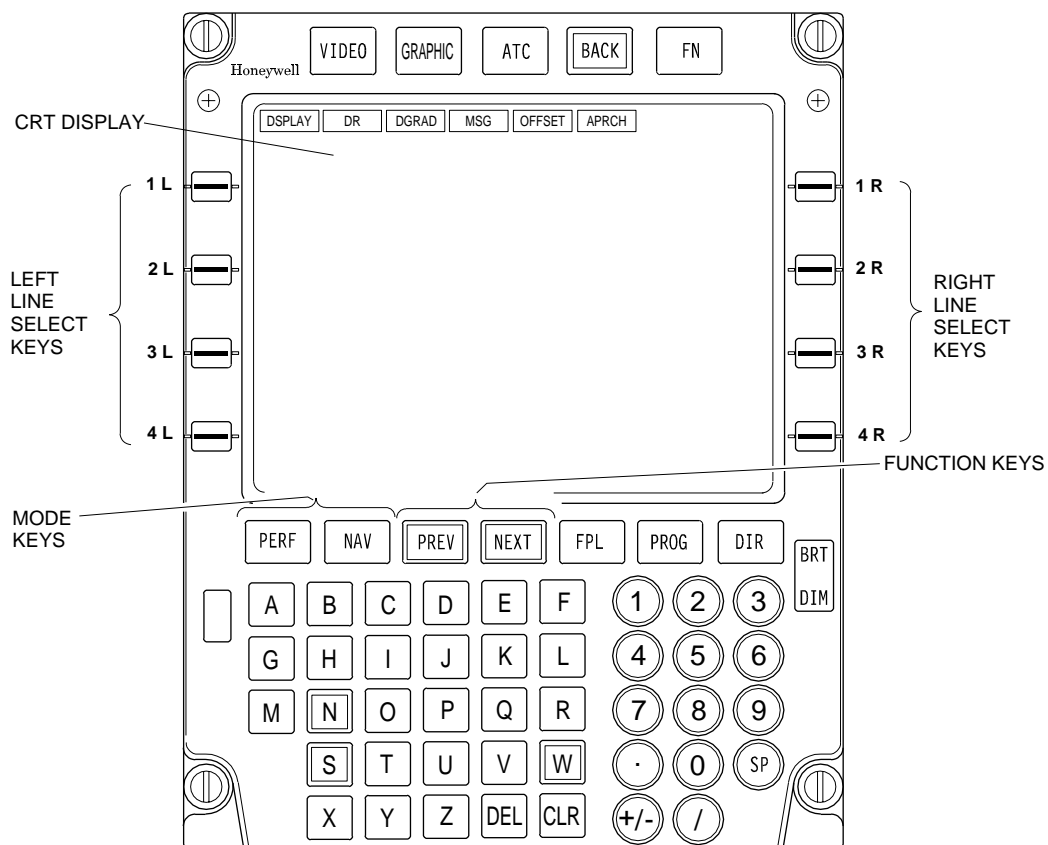
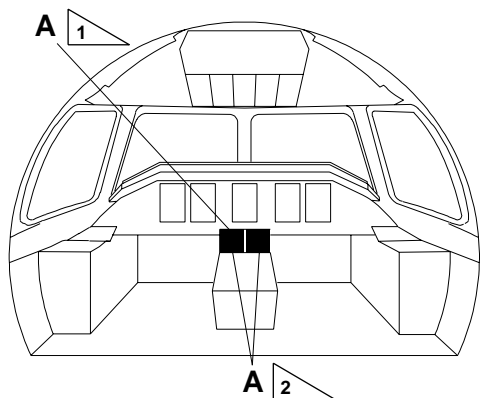
2 AIRCRAFT WITH DUAL FMS

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EFFECTIVITY: AIRCRAFT WITH CDU-820

FMS CDU-820

Figure 202



DET. A

- 1 AIRCRAFT WITH SINGLE FMS
- 2 AIRCRAFT WITH DUAL FMS

145AMM230649.MCE

TASK 23-24-03-860-802-A

EFFECTIVITY: AIRCRAFT WITH CMU

3. AIRCRAFT PERSONALITY MODULE - PROGRAMMING

A. General

- (1) This task gives the procedures to do the Aircraft Personality Module (APM) programming with the laptop computer.

B. References

REFERENCE	DESIGNATION
AMM MPP 06-41-01/100	-
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
213	113CZ	Forward electronic compartment

D. Tools and Equipment

ITEM	DESCRIPTION	PURPOSE	QTY
GSE 130	PC486 with software	To run the software to configure the APM	
GSE 363	CMU Maintenance Harness	To connect laptop computer to CMU	

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	Forward external fuselage - LH

I. Preparation

SUBTASK 841-003-A

- (1) Energize the aircraft with the External DC-Power Supply ([AMM TASK 20-40-01-860-801-A/200](#)).
- (2) On the circuit breaker panel, open the CMU circuit breaker.
- (3) Open access door 113CZ (AMM MPP 06-41-01/100).

J. Programming Procedures

SUBTASK 860-003-A

- (1) On the CMU (2), release the cover (3).
- (2) Connect the electrical connector (1) of the CMU maintenance harness (6) to the CMU (2).
- (3) Connect the electrical connector (5) of the CMU maintenance harness (6) to the serial data port of the laptop computer (4).
- (4) On the laptop computer (4), configure the Hyper Terminal as follows:

NOTE: Use the Windows 95 with environment in English.

- (a) Click on the Start button, select Programs, select Accessories, and click on the Hyper Terminal icon.

- (b) Click on the Hypertm.exe icon.

NOTE: It is not necessary to install the modem.

- (c) Dial "CMU Configuration" and click on the OK button.

- (d) Select COM1 and click on the OK button.

NOTE: If necessary use COM2 instead COM1.

- (e) Configure the Port as follows:

1 Bits per second: 19200.

2 Data bits: 8.

3 Parity: None.

4 Stop bits: 1.

5 Flow control: Xon/Xoff.

- (f) Click on the OK button.

- (5) On the circuit breaker panel, close the CMU circuit breaker.

- (6) Make sure that the CMU is initialized.

NOTE: Approximately 3 minutes are necessary for the CMU to be ready for the configuration procedure.

- (7) On the laptop computer (4), make sure that these messages are shown in the Hyper Terminal window in a sequence:

- Power-up trace stage.
- Bit functional test stage.

- (8) Do the APM configuration as follows:

- (a) On the laptop computer (4), push the Enter key.
 - 1 The DMT MAIN MENU comes into view in the Hyper Terminal window.
- (b) On the laptop computer (4), dial "E".
 - 1 The APM MENU comes into view in the Hyper Terminal window.
- (c) On the laptop computer (4), dial "A".
 - 1 NEW APM FILE CREATED comes into view in the Hyper Terminal window.
- (d) On the laptop computer (4), dial "X".
 - 1 The APM MENU comes into view in the Hyper Terminal window.
- (e) On the laptop computer (4), dial "F".
 - 1 The APM PARAMETER MENU comes into view in the Hyper Terminal window.
- (f) On the laptop computer (4), dial "A".
 - 1 APM PARAMETERS - APM comes into view in the Hyper Terminal window.
- (g) On the laptop computer (4), dial "N".
 - 1 APM PARAMETERS - AIRCRAFT comes into view in the Hyper Terminal window.
- (h) On the laptop computer (4), dial "G".
 - 1 Dial the FIDB ID and push the Enter key.
 - a Example: FIDB ID [EMBR-XXXXX].
- (i) On the laptop computer (4), dial "X".
 - 1 APM PARAMETER MENU comes into view in the Hyper Terminal window.
- (j) On the laptop computer (4), dial "L".
 - 1 APM PARAMETERS - DISPLAY DEVICE comes into view in the Hyper Terminal window.
- (k) On the laptop computer (4), dial "A".
 - 1 Dial "5" and push the Enter key.
- (l) On the laptop computer (4), dial "B".
 - 1 Dial "1" and push the Enter key.
- (m) On the laptop computer (4), dial "X".
 - 1 The APM PARAMETER MENU comes into view in the Hyper Terminal window.

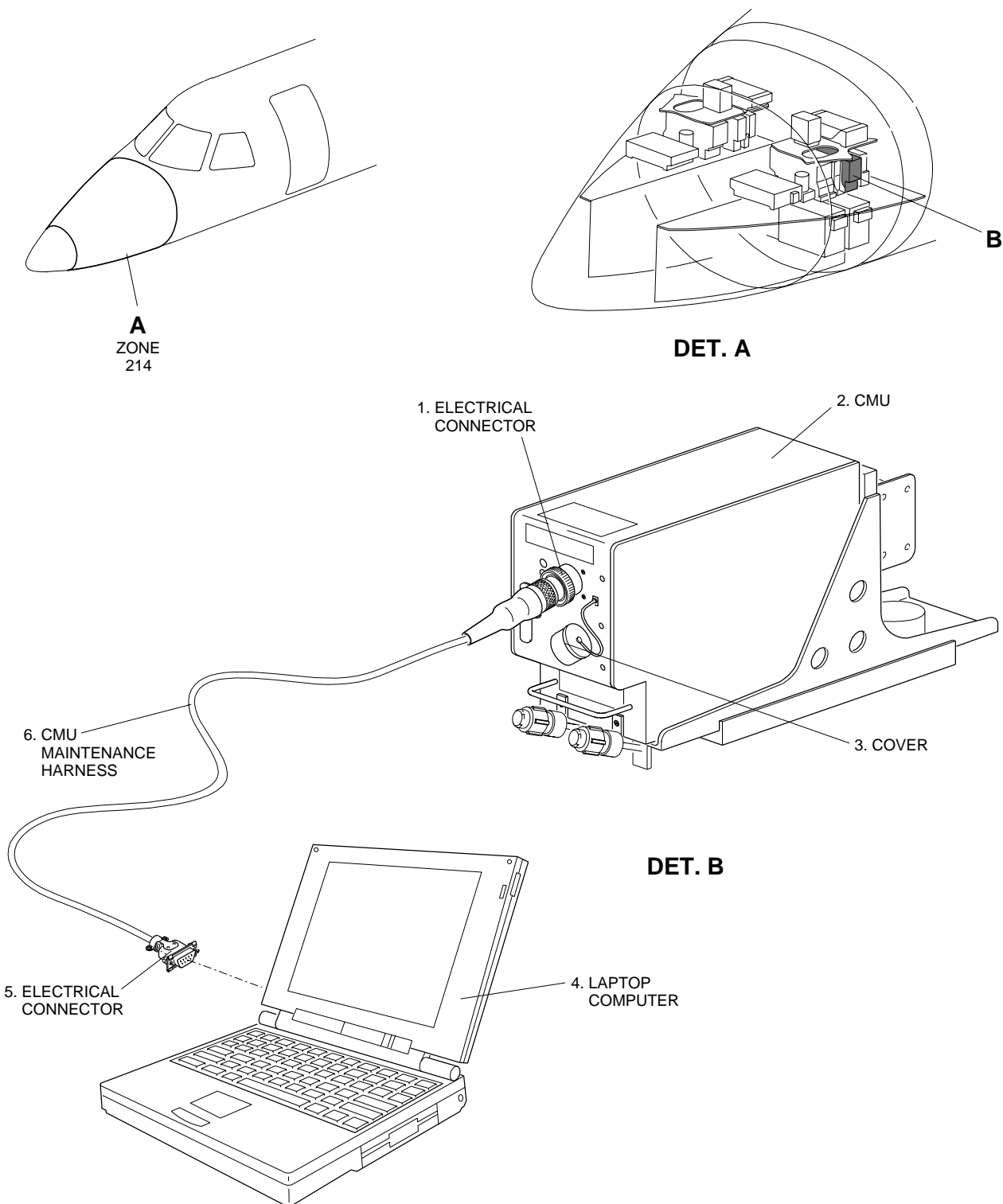
- (n) On the laptop computer (4), dial "X".
 - 1 The APM MENU comes into view in the Hyper Terminal window.
- (o) On the laptop computer (4), dial "B".
 - 1 WRITE NEW APM FILE WARNING comes into view in the Hyper Terminal window.
- (p) On the laptop computer (4), dial "C".
 - 1 NOTE: Await approximately 15 seconds.
NEW APM FILE WRITTEN TO APM DEVICE comes into view in the Hyper Terminal window.
- (q) On the circuit breaker panel, open the CMU circuit breaker.
- (r) On the CMU (2), disconnect the electrical connector (1) and put the cover (3) on position.
- (s) On the laptop computer (4), disconnect the electrical connector (5) and close the Hyper Terminal programs.

K. Follow-on

SUBTASK 842-003-A

- (1) On the circuit breaker panel, close the CMU circuit breaker.
- (2) Close access door 113CZ (AMM MPP 06-41-01/100).
- (3) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

EFFECTIVITY: AIRCRAFT WITH CMU
Aircraft Personality Module (APM) - Programming
Figure 203



145AMM230616.MCE

