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AgustaWestland Products

SERVICE BULLETIN

N° 139-717

DATE: January 12, 2023

REV. : /

TITLE

ATA 31 - KIT QUICK ACCESS RECORDER (HOMP)

REVISION LOG

First Issue

1. PLANNING INFORMATION

A. EFFECTIVITY

AW139 helicopters from S/N 31700 onwards or from S/N 41501 onwards.

B. COMPLIANCE

At Customer's option.

C. CONCURRENT REQUIREMENTS

N.A.

D. REASON

This Service Bulletin is issued in order to provide the necessary instructions on how to perform the installation of the kit quick access recorder (HOMP) P/N 4G3130F00413.

E. DESCRIPTION

The QAR records the flight data that are sent from the MAU2. The flight data format is the same format that the multi-purpose flight recorder uses to record the flight data from the MAU1. The QAR also records the GPS position data from the GPS that is installed in the MAU2. The QAR receives the flight data through a ARINC717 line and the GPS position data through an A429 line.

The QAR records the flight data when a PCMCIA card is put into the related slot and the configuration of the QAR is completed.

The connector J386 lets a laptop be connected to do the configuration of the QAR or make the analysis of the recorded flight data.

The QAR starts to record the flight data on the PCMCIA card when the first engine is started. The QAR stops to record when the helicopter is on the ground and all the systems are de-energized.

F. APPROVAL

The technical content of this Service Bulletin is approved under the authority of DOA nr. EASA.21.J.005. For helicopters registered under other Aviation Authorities, before applying the Service Bulletin, applicable Aviation Authority approval must be checked within Leonardo Helicopters customer portal.

EASA states mandatory compliance with inspections, modifications or technical directives and related time of compliance by means of relevant Airworthiness Directives.

If an aircraft listed in the effectivity embodies a modification or repair not LHD certified and affecting the content of this Service Bulletin, it is responsibility of the

Owner/Operator to obtain a formal approval by Aviation Authority having jurisdiction on the aircraft, for any adaptation necessary before incorporation of the present Service Bulletin.

G. MANPOWER

To comply with this Service Bulletin one hundred and twenty (120) MMH are deemed necessary.

MMH are based on hands-on time and can change with personnel and facilities available.

H. WEIGHT AND BALANCE

WEIGHT (kg)	1.59	
	ARM (mm)	**MOMENT (kgmm)**
LONGITUDINAL BALANCE	6084	9673.56
LATERAL BALANCE	524	833.16

I. REFERENCES

1) PUBLICATIONS

Following Data Modules refer to AMP:

DATA MODULE		**DESCRIPTION**	**PART**
DM01	39-A-00-20-00-00A-120A-A	Helicopter on ground for a safe maintenance.	-
DM02	39-A-06-41-00-00A-010A-A	Access doors and panels - General data	-
DM03	39-A-11-00-01-00A-720A-A	Decal - Install procedure	-
DM04	39-A-20-10-01-00A-259A-A	Ground connections - Other procedures to protect surfaces	-
DM05	39-A-20-10-08-00A-622A-A	Electrical contacts - Crimp	-
DM06	39-A-20-10-09-00A-920A-A	Bonded studs - Replacement	-
DM07	39-A-20-10-18-00A-691A-A	Electrical wires and cables - Marking	-
DM08	39-D-31-33-01-00A-720A-K	Quick access recorder - Install procedure	-
DM09	39-D-31-33-02-00A-921A-K	Connector J386 - Replacement	-

Following Data Modules refer to CSRP:

DATA MODULE		**DESCRIPTION**	**PART**
DM10	CSRP-A-51-42-00-00A-720A-D	Potted Inserts - Install procedure	-

2) ACRONYMS & ABBREVIATIONS

ADG	Aircraft Data Gateway
AMDI	Aircraft Material Data Information
AMP	Aircraft Maintenance Publication
AR	As Required
DM	Data Module
DOA	Design Organization Approval
EASA	European Aviation Safety Agency
FDR	Flight Data Recorder
FIPS	Full Ice Protection System
IPD	Illustrated Part Data
ITEP	Illustrated tool and equipment publication
LH	Left Hand
LHD	Leonardo Helicopters Division
MMH	Maintenance Man Hours
N.A.	Not Applicable
PCMCIA	Personal Computer Memory Card International Association
P/N	Part Number
QAR	Quick Access Recorder
RCDR	Recorder
REC	Recorder
RH	Right Hand
SB	Service Bulletin
S/N	Serial Number

3) ANNEX

Annex A	Quick access recorder functional tests

J. PUBLICATIONS AFFECTED

N.A.

K. SOFTWARE ACCOMPLISHMENT SUMMARY

N.A.

2. MATERIAL INFORMATION

A. REQUIRED MATERIALS

1) PARTS

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
1	**4G3130F00413**		**KIT QUICK ACCESS RECORDER (HOMP)**	**REF**	**.**		**-**
2	**3G3106P01413**		**QUICK ACCESS RECORDER VARIANT**	**REF**	**..**	**(1)**	**-**
3	3G9C02B27621		Quick ACS RCDR (FDR variant) C/A(C2B276)	1	...		-
4	**3G3130P00111**		**QUICK ACCESS RECORDER ELECTRICAL C/A VARIANT**	**REF**	**..**	**(2)**	**-**
5	**3G9C01B29102**		**QUICK ACCESS RECORDER EXT. C/A (C1B291)**	**REF**	**...**		**-**
6	A556A-T22		Electrical wire	17 m	....		139-717L1
7	M39029/57-354		Electrical contact	4	....		139-717L1
8	M39029/58-360		Electrical contact	4	....		139-717L1
9	**3G9C02B30902**		**QUICK ACCESS RECORDER EXT. C/A (C2B309)**	**REF**	**...**		**-**
10	A532A100-1402C10		Backshell RFI S/DOWN C/CLMP	2	....		139-717L1
11	A556A-T22		Electrical wire	10 m	....		139-717L1
12	A561A-T2-22		Electrical wire	5 m	....		139-717L1
13	A561A-T3-22		Electrical wire	5 m	....		139-717L1
14	A590A02		Ferrule	3	....		139-717L1
15	M17/176-00002		Electrical wire	2 m	....		139-717L1
16	M23053/8-004-C		Insulation sleeving	2 m	....		139-717L1
17	M23053/8-005-C		Insulation sleeving	2 m	....		139-717L1
18	M24308/2-1	M24308/2-1F	Connector	1	....		139-717L1
19	M24308/26-1	M24308/26-1F	Screw	2	....		139-717L1
20	M39029/57-354		Electrical contact	10	....		139-717L1
21	M39029/58-360		Electrical contact	7	....		139-717L1
22	M39029/63-368		Electrical contact	3	....		139-717L1
23	M85049/48-2-1F		Backshell	1	....		139-717L1
24	MS25036-148		Terminal lug	1	....		139-717L1
25	MS27472T14B35P		Connector	1	....		139-717L1
26	MS27473T14B35S		Connector	1	....		139-717L1
27	A366A3E22C		Stud	2	...		139-717L1
28	AW001CB02H		Clamp	2	...		139-717L1
29	AW001CB04H		Clamp	2	...		139-717L1
30	AW001CL001-N6		Support	5	...		139-717L1
31	AW001CL509-N6		Support	2	...		139-717L1
32	ED300A202P1A		Decal	1	...		139-717L1
33	ED300J386A		Decal	1	...		139-717L1
34	M85049/95-14A-A		Retaining plate	1	...		139-717L1
35	MS21043-3		Nut	2	...		139-717L1
36	NAS1149D0332J		Washer	2	...		139-717L1
37	NAS1149DN416J		Washer	4	...		139-717L1
38	NAS1802-04-5		Screw	4	...		139-717L1
39	NAS43DD3-52N		Spacer	2	...		139-717L1
40	SK3000-2-S879	SK3000-2	Cover	2	...		139-717L1

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
41	**3G5306P38511**		**AFT RIGHT AVIONIC BAY RETROMOD**	**REF**	**..**	**(6)**	**-**
42	3G5306P38531		Cover BL 600 RH assy reworked	REF	...	(5)	-
43	3G5316A65831		Panel assy	1	...		139-717L2
44	A220ARD	AW002FB-RD	Receptacle	2	...		139-717L2
45	MS20426AD3-7		Rivet	0.1 kg	...		139-717L2
46	MS20470AD4-4-5		Rivet	4	...		139-717L2
47	**3G5310A36211**		**QUICK ACCESS RECORDER STRUCTURAL PROVISION**	**REF**	**..**	**(6)**	**-**
48	3G5315A83931		Support assy	1	...		139-717L2
49	3G5315A89731		Support assy	1	...		139-717L2
50	MS27039-1-06		Screw	6	...		139-717L2
51	NAS1149D0332J		Washer	6	...		139-717L2
52	NAS1832-3-3		Insert	6	...		139-717L2
53	**4G3130A00713**		**QUICK ACCESS RECORDER FULL INSTALLATION**	**REF**	**..**		**-**
54	010000343		PCMCIA card 512 MB	1	...		139-717L1 139-717L2
55	3G9A02B27621	3G9A02B27621A10R	Quick access recorder C/A (A2B276)	1	...		139-717L1 139-717L2
56	3G9B02B26621	3G9B02B26621A10R	Quick access recorder C/A (B2B266)	1	...		139-717L1 139-717L2
57	3G9C01A23521	3G9C01A23521A10R	Quick access recorder C/A (C1A235)	1	...		139-717L1 139-717L2
58	3G9C01B23221	4G3130A00713A2R	Quick access recorder C/A (C1B232)	1	...		139-717L1 139-717L2
59	3G9C02B23421		Quick access recorder C/A (C2B234)	1	...		139-717L1 139-717L2
60	900004953	AW001CK03LC	Lacing cord	2 m	...		139-717L1 139-717L2
61	A236A01AB		Nonmetallic channel	1.2 m	...		139-717L1 139-717L2
62	A236A02AB		Nonmetallic channel	1.2 m	...		139-717L1 139-717L2
63	A236A03AB		Nonmetallic channel	1.2 m	...		139-717L1 139-717L2
64	A366A3E12C		Stud	1	...		139-717L1 139-717L2
65	AW001CB02H		Clamp	2	...		139-717L1 139-717L2
66	D51640-0001		Quick access recorder control panel	1	...		139-717L1 139-717L2
67	ED300A202		Decal	1	...		139-717L1 139-717L2
68	ED300J386		Decal	1	...		139-717L1 139-717L2
69	MS21043L3	MS21043-3	Nut	1	...		139-717L1 139-717L2
70	NAS1149D0332J		Washer	1	...		139-717L1 139-717L2
71	SK3000-2-S879	SK3000-2	Protective cap	1	...		139-717L1 139-717L2
72	A590A02		Ferule, shielded cable	1	.		139-717L1 139-717L2
73	M23053/8-004-C		Insulation sleeving,electrical	2 m	.		139-717L1 139-717L2
74	M39029/56-351		Electrical contact	2	.		139-717L1 139-717L2
75	M39029/57-354		Electrical contact	3	.		139-717L1 139-717L2

#	P/N	ALTERNATIVE P/N	DESCRIPTION	Q.TY	LVL	NOTE	LOG P/N
76	**3G4600A21511**		**PHASE 8 ADG400 AND QUICK ACCESS REC. I/F**	**REF**	**..**	**(3)**	**-**
77	**3G9A02B67201**		**ADG-400 & QUICK ACCESS REC. I/F (A2B672)**	**REF**	**...**		**-**
78	809-001		End fitting	2	....		139-717L3
79	M17/176-00002		Electrical wire	10 m	....		139-717L3
80	M23053/8-005-C		Insulation sleeving	6 m	....		139-717L3
81	M39029/57-354		Electrical contact	2	....		139-717L3
82	M39029/58-360		Electrical contact	1	....		139-717L3
83	M39029/58-363		Electrical contact	1	....		139-717L3
84	M81824/1-1		Splice	2	....		139-717L3
85	M83519/1-3	A590A03	Ferule	3	....		139-717L3
86	**3G4600A21711**		**PHASE 8 ADG400 AND QAR AND FIPS I/F**	**REF**	**..**	**(4)**	**-**
87	**3G9A02A73901**		**ADG-400 & QAR & FIPS INTERFACE (A2A739)**	**REF**	**...**		**-**
88	A556A-T22		Electrical wire	1 m	....		139-717L4
89	M17/176-00002		Electrical wire	17 m	....		139-717L4
90	M23053/8-005-C		Insulation sleeving	6 m	....		139-717L4
91	M39029/56-348		Electrical contact	4	....		139-717L4
92	M39029/58-360		Electrical contact	4	....		139-717L4
93	M81824/1-1		Splice	4	....		139-717L4
94	M83519/1-3	A590A03	Ferule	8	....		139-717L4
95	**3G9C02B47901**		**ADG-400 & QAR & FIPS INTERFACE (C2B479)**	**REF**	**...**		**-**
96	A529A400-1702C		Backshell	1	....		139-717L4
97	A532A400-0902T		Backshell	1	....		139-717L4
98	A561A-T2-24		Electrical wire	33 m	....		139-717L4
99	A590A02		Ferrule	8	....		139-717L4
100	D38999/20WA35SN		Connector	1	....		139-717L4
101	D38999/26JE35PN		Connector	1	....		139-717L4
102	M23053/8-004-C		Insulation sleeving	6 m	....		139-717L4
103	M39029/56-348		Electrical contact	4	....		139-717L4
104	M39029/56-351		Electrical contact	4	....		139-717L4
105	M39029/57-354		Electrical contact	4	....		139-717L4
106	M39029/58-360		Electrical contact	4	....		139-717L4
107	M81824/1-1		Splice	4	....		139-717L4

Refer also to IPD for the spares materials required to comply with the AMP DMs referenced in the accomplishment instructions.

2) CONSUMABLES

The following consumable materials, or equivalent, are necessary to accomplish this Service Bulletin:

#	SPEC./LHD CODE NUMBER	DESCRIPTION	Q.TY	NOTE	PART
108	MMM-A-132, Type I, Class 3 199-05-002 Type II, Class 2	Adhesive EA934NA (C057)	AR	(7)	-
109	MMM-A-132, Type 2, Class II 199-05-002, Type I, Class 2	Adhesive EA9309.3NA (C021)	AR	(7)	-
110	Comp. 1 type I class 2	Peeling shim	AR	(7)	-

Refer also to AMDI for the consumable materials required to comply with the AMP DM referenced in the accomplishment instructions.

3) LOGISTIC MATRIX

In order to apply this Service Bulletin, the following Logistic P/N can be ordered in accordance with the applicable notes:

LOGISTIC P/N	Q.TY (PER HELO)	NOTE	PART
3G9C02B27621	1	(1)	-
139-717L1	1	(2)	-
139-717L2	1	(6)	-
139-717L3	1	(3)	-
139-717L4	1	(4)	-

NOTE

(1) Applicable to helicopters equipped with FDR and RIPS variant P/N 3G3106P01314.

(2) Applicable to helicopters equipped with kit limited ice protection system P/N 4G3000F00111.

(3) Applicable to helicopters equipped with kit PRIMUS EPIC phase 8 with ADG-400 P/N 4G4600F003**.

(4) Applicable to helicopters equipped with kit PRIMUS EPIC phase 8 with ADG-400 P/N 4G4600F003** and kit FIPS P/N 4G3000F002**.

(5) This item will not be supplied and will be reworked from existing cover P/N 3G5315A48231.

(6) Applicable to helicopters NOT equipped with kit limited ice protection system P/N 4G3000F00111.

(7) Item to procured as local supply.

B. SPECIAL TOOLS

Refer to ITEP for the special tools required to comply with the AMP DM referenced in the accomplishment instructions.

C. INDUSTRY SUPPORT INFORMATION

Customization.

3. ACCOMPLISHMENT INSTRUCTIONS

GENERAL NOTES

a) Place an identification tag on all components that are re-usable, including the attaching hardware that has been removed to gain access to the modification area and adequately protect them until their later re-use.

b) Shape the cables in order to prevent interference with the structure and the other existing installations, using where necessary suitable lacing cords and plastic cable tiedown.

c) Exercise extreme care during drilling operations to prevent instruments, cables and hoses damage.

d) After drilling, remove all swarf and sharp edges. Apply on bare metal a light film of primer unless the hole is used for ground connection.

e) During the installation of bonding braids or components requiring grounding, clean the surface structure in order to obtain a good ground contact.

f) Let adhesive cure at room temperature for at least 24 hours unless otherwise specified.

g) Exposed thread surface and nut must be protected using a layer of tectyl according to MIL-C-16173 grade I.

h) All lengths are in mm.

1. In accordance with AMP DM 39-A-00-20-00-00A-120A-A, prepare the helicopter on ground for a safe maintenance. Disconnect the battery, all electrical power sources and/or the external power supply.

NOTE

The following steps 2 and 3 are NOT applicable to helicopters equipped with kit limited ice protection system P/N 4G3000F00111.

2. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 3 thru 5, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform aft RH avionic bay retromod P/N 3G5306P38511 as described in the following procedure:
   2.1 With reference to Figures 3, remove the cover P/N 3G5315A48231 from the aft RH avionic bay.
   2.2 Put the cover P/N 3G5315A48231 on an applicable work table.
   2.3 With reference to Figure 3, perform the indicated cut-out on the cover P/N 3G5315A48231.
   2.4 With reference to Figure 4 Detail A, temporarily locate the panel assy P/N 3G5316A68531 on the cover P/N 3G5315A48231 and countermark the positions of n°2 receptacle holes and n°4 rivet holes.
   2.5 With reference to Figure 4 Detail A, drill n°2 holes Ø8.80÷9.00 and n°4 pilot holes Ø2.5 in the previously countermarked positions through the cover P/N 3G5315A48231.
   2.6 With reference to Figure 4 Section B-B, install n°2 receptacles P/N A220ARD by means of n°4 rivets P/N MS20426AD3-7.

NOTE

After installation of the panel assy restore the paint in the panel.

   2.7 With reference to Figure 5, install the panel assy P/N 3G5316A68531 by means of n°4 rivets P/N MS20470AD4-4-5.
   2.8 With reference to Figure 5, remark the reworked cover as P/N 3G5306P38531.
3. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 1 and 2, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform quick access recorder structural provision P/N 3G5310A36211 as described in the following procedure:
   3.1 In accordance with the applicable AMP DMs, remove all the equipment as required to perform the installation of the inserts on the panel assy RH upper.

NOTE

If necessary, remove the panel assy RH upper from the rear avionic bay.

   3.2 With reference to Figure 2 View A-A, temporarily locate the support assy P/N 3G5315A83931 and the support assy P/N 3G5315A89731 on the panel assy RH upper and countermark the positions of n°6 insert holes.

3.3 With reference to Figure 2 section B-B, drill n°6 holes Ø14.25÷14.38 in correspondence of previously marked positions on the panel assy RH upper.

3.4 In accordance with CSRP DM CSRP-A-51-42-00-00A-720A-D and with reference to Figure 2 section B-B, install n°6 inserts P/N NAS1832-3-3 by means of adhesive EA934NA (C057) on the panel assy RH upper.

3.5 In accordance with AMP DM 39-A-20-10-01-00A-259A-A and with reference to Figure 2 section B-B, prepare indicated contact surfaces to assure the correct electrical bonding.

3.6 With reference to Figure 2, install the support assy P/N 3G5315A83931 and the support assy P/N 3G5315A89731 by means of n°6 screws P/N MS27039-1-06 and n°6 washers P/N NAS1149D0332J.

3.7 If previously removed, reinstall the panel assy RH upper on the rear avionic bay.

3.8 In accordance with the applicable AMP DMs, reinstall all previously removed equipment as required on the panel assy RH upper.

NOTE

The following step 4 is applicable ONLY to helicopters equipped with FDR and RIPS variant P/N 3G3106P01314.

4. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 14, 15 and Figure 31 wiring diagram, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform quick access recorder installation variant P/N 3G3106P01413 as described in the following procedure:

4.1 With reference to Figure 31 wiring diagram (WAS), remove the electrical wires R1283C24-S (WH), R1283C24-S (BL) and R1284A24-S from the quick access recorder C/A P/N 3G9C02B23421 (C2B234).

NOTE

Use edging P/N A236A on metallic edges which can damage cable assemblies and where abrasion may occur.

Use braided tubing P/N A582A where cable assemblies chafing or contact with structure may occur.

Secure the cables by means of existing hardware. If necessary, replace existing clamps with suitable clamps.

4.2 With reference to Figure 15 and Figure 31 wiring diagram (BECOMES), lay down the quick ACS RCDR (FDR variant) C/A P/N 3G9C02B27621 (C2B276) following the existing route unless otherwise indicated on the figures.

NOTE

The following step 5 is applicable ONLY to helicopters equipped with kit limited ice protection system P/N 4G3000F00111.

5. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 16 thru 19 and Figure 32 wiring diagram, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform quick access recorder electrical C/A variant P/N 3G3130P00111 as described in the following procedure:

5.1 With reference to Figures 29 and 32 wiring diagram, remove the electrical wires R1286A24-S(WH), R1286A24-S(OR), R1286A24-S(BL), R1286AA22-S and the electrical connector J386 from the quick access recorder C/A P/N 3G9C02B23421 (C2B234).

5.2 With reference to Figure 18 View C-C, at position n°1, install support P/N AW001CL001-N6 by means of adhesive EA9309.3NA (C021).

5.3 With reference to Figure 18 View C-C, at positions n°2-3, install n°2 supports P/N AW001CL509-N6 as indicated.

5.4 With reference to Figure 17 View looking rear LH side STA 7200, at positions n°4-5-6-7, install n°4 supports P/N AW001CL001-N6 by means of adhesive EA9309.3NA (C021).

5.5 In accordance with AMP DM 39-A-20-10-09-00A-920A-A and with reference to Figure 11 View C-C, at positions n°8-9, install n°2 studs P/N A366A3E22C by means of adhesive EA9309.3NA (C021). Install n°2 clamps P/N AW001CB02H and P/N AW001CB04H, n°2 spacers P/N NAS43DD3-52N by means of washer P/N NAS1149D0332J and nut P/N MS21043-3.

NOTE

Use edging P/N A236A on metallic edges which can damage cable assemblies and where abrasion may occur.

Use braided tubing P/N A582A where cable assemblies chafing or contact with structure may occur.

Secure the cables by means of previously installed fixing hardware and existing hardware. If necessary replace existing clamps with suitable clamps.

5.1 With reference to Figures 17 thru 19, table on Figure 36 and Figure 32 wiring diagram, assemble the quick access recorder ext. C/A P/N 3G9C01B29102 (C1B291) as described in the following procedure:

5.1.1 With reference to Figure 32 wiring diagram, cut n°4 wires P/N A556A-T22 of adequate length and lay down between sectioning connector A202J1 and quick access recorder connector A202P1A.

5.1.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 36 and Figure 32 wiring diagram, perform electrical connections between sectioning connector A202J1 and quick access recorder connector A202P1A.

5.1.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 32 wiring diagram, mark wires as R1282A22-G, R1282B22-G, R1281B22-G and R1285A22-G by means of marker sleeve.

5.2 With reference to Figures 17 thru 19, table on Figure 36 and Figure 32 wiring diagram, assemble the quick access recorder ext. C/A P/N 3G9C02B30902 (C2B309) as described in the following procedure:

5.2.1 With reference to Figure 32 wiring diagram, cut n°1 wire P/N A561A-T2-22 of adequate length and lay down between sectioning connector A202J1 P/N MS27472T14B35P (backshell P/N A532A100-1402C10) and quick access recorder connector A202P1A P/N MS27473T14B35S (backshell P/N A532A100-1402C10).

5.2.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 36 and Figure 32 wiring diagram, perform electrical connections between sectioning connector A202J1 and quick access recorder connector A202P1A.

5.2.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 32 wiring diagram, mark wire as R1283C22-S by means of marker sleeve.

5.2.4 With reference to Figure 32 wiring diagram, cut n°1 wire P/N A556A-T22 of adequate length and lay down near to sectioning connector A202J1.

5.2.5 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 36 and Figure 32 wiring diagram, perform electrical connections to sectioning connector A202J1.

5.2.6 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 32 wiring diagram, mark wire as R1284A22-S by means of marker sleeve.

5.2.7 With reference to Figure 32 wiring diagram, cut n°1 wire P/N A556A-T22 of adequate length and lay down near to quick access recorder connector A202P1A.

5.2.8 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 36 and Figure 32 wiring diagram, perform electrical connections to quick access recorder connector A202P1A.

5.2.9 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 32 wiring diagram, mark wire as R1284B22-S by means of marker sleeve.

5.2.10 With reference to Figure 32 wiring diagram, cut n°1 wire P/N M17/176-00002 of adequate length and lay down between sectioning connector A202J1 and quick access recorder connector A202P1A.

5.2.11 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 36 and Figure 32 wiring diagram, perform electrical connections between sectioning connector A202J1 and quick access recorder connector A202P1A.

5.2.12 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 32 wiring diagram, mark wire as R1289C22-S by means of marker sleeve.

5.2.13 With reference to Figure 32 wiring diagram, cut n°2 wires P/N A556A-T22 of adequate length and lay down between sectioning connector A202J1 and quick access recorder connector A202P1A.

5.2.14 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 36 and Figure 32 wiring diagram, perform electrical connections between sectioning connector A202J1 and quick access recorder connector A202P1A.

5.2.15 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 32 wiring diagram, mark wires as R1287A22-S and R1287B22-S by means of marker sleeve.

5.2.16 With reference to Figure 32 wiring diagram, cut n°1 wire P/N A561A-T3-22 of adequate length and lay down between connector J386A P/N M24308/2-1 (backshell P/N M85049/48-2-1F) and quick access recorder connector A202P1A.

5.2.17 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 36 and Figure 32 wiring diagram, perform electrical connections between connector J386A and quick access recorder connector A202P1A.

5.2.18 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 32 wiring diagram, mark wire as R1286A22-S by means of marker sleeve.

NOTE

The following step 6 is applicable ONLY to helicopters equipped with kit PRIMUS EPIC phase 8 with ADG-400 P/N 4G4600F003**.

6. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 20 thru 22 and Figure 33 wiring diagram, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform PHASE 8 ADG400 and quick access REC. I/F P/N 3G4600A21511 as described in the following procedure:

6.1 With reference to Figure 20 and Figure 33 wiring diagram (WAS), remove the electrical wires R1289A24-S(WH) and R1289A24-S(BL) from the quick access recorder C/A P/N 3G9A02B27621 (A2B276).

6.2 With reference to Figure 20 and Figure 33 wiring diagram (WAS), disconnect and remove or stow the electrical wires U9144A24-S(WH) and U9144A24-S(BL) from MAU 2 connector A2-9P1 and ADG-400 connector PL253P1.

NOTE

Use edging P/N A236A on metallic edges which can damage cable assemblies and where abrasion may occur.

Use braided tubing P/N A582A where cable assemblies chafing or contact with structure may occur.

Secure the cables by means of existing hardware. If necessary replace existing clamps with suitable clamps.

6.3 With reference to Figures 21 and 22, table on Figure 36 and Figure 33 wiring diagram (BECOMES), assemble the ADG-400 & quick access REC. I/F C/A P/N 3G9A02B67201 (A2B672) as described in the following procedure:

6.3.1 With reference to Figure 33 wiring diagram (BECOMES), cut n°3 wires P/N M17/176-00002 of adequate length and lay down between sectioning connector P110, n°2 splices P/N M81824/1-1 (SP10841 and SP10842), MAU 2 connector A2-9P1 and ADG-400 connector PL253P1.

6.3.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 36 and Figure 33 wiring diagram (BECOMES), perform electrical connections between sectioning connector P110, splices SP10841 and SP10842, MAU 2 connector A2-9P1 and ADG-400 connector PL253P1.

6.3.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 33 wiring diagram (BECOMES), mark wires as U9160A24-S, U9160B24-S and U9160C24-S by means of marker sleeve.

NOTE

The following step 7 is applicable ONLY to helicopters equipped with kit PRIMUS EPIC phase 8 with ADG-400 P/N 4G4600F003** AND kit FIPS P/N 4G3000F002**.

7. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 23 thru 28, Figures 34 and 35 wiring diagram, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform PHASE 8 ADG400 and QAR and FIPS I/F P/N 3G4600A21711 as described in the following procedure:

7.1 With reference to Figure 23 and Figure 34 wiring diagram (WAS), disconnect and remove or stow the electrical wires H1286D24-S(WH), H1286D24-S(BL), H1287D24-S(WH) and H1287D24-S(BL) from sectioning connector P2076 and splices SP3146, SP3147, SP3148 and SP3149.

7.2 With reference to Figure 23 and Figure 34 wiring diagram (WAS), disconnect and remove or stow the electrical wires H1286E24-S(WH), H1286E24-S(BL), H1287E24-S(WH) and H1287E24-S(BL) from ICB connectors A226P2 and A226P4, splices SP3146, SP3147, SP3148 and SP3149.

7.3 With reference to Figure 23 and Figure 34 wiring diagram (WAS), disconnect and remove or stow the electrical wires H1286F24-S(WH), H1286F24-S(BL), H1287F24-S(WH) and H1287F24-S(BL) from sectioning connector J197 and splices SP3146, SP3147, SP3148 and SP3149.

NOTE

Use edging P/N A236A on metallic edges which can damage cable assemblies and where abrasion may occur.

Use braided tubing P/N A582A where cable assemblies chafing or contact with structure may occur.

Secure the cables by means of existing hardware. If necessary replace existing clamps with suitable clamps.

7.4 With reference to Figures 26 thru 28, table on Figure 37 and Figure 34 wiring diagram (BECOMES), assemble the ADG-400 & QAR & FIPS interface C/A P/N 3G9C02B47901 (C2B479) as described in the following procedure:

7.4.1 With reference to Figure 34 wiring diagram (BECOMES), cut n°2 wires P/N A561A-T2-24 of adequate length and lay down between sectioning connector P2076 P/N D38999/26JE35PN (backshell P/N A529A400-1702C) and n°4 splices P/N M81824/1-1 (SP3861, SP3862, SP3863 and SP3864).

7.4.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 37 and Figure 34 wiring diagram (BECOMES), perform electrical connections between sectioning connector P2076 and splices SP3861, SP3862, SP3863 and SP3864.

7.4.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 34 wiring diagram (BECOMES), mark wires as U9165D24-S and U9166D24-S by means of marker sleeve.

7.4.4 With reference to Figure 34 wiring diagram (BECOMES), cut n°2 wires P/N A561A-T2-24 of adequate length and lay down between ICB connectors A226P2 and A226P4 and splices SP3861, SP3862, SP3863 and SP3864.

7.4.5 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 37 and Figure 34 wiring diagram (BECOMES), perform electrical connections between ICB connectors A226P2 and splices SP3861, SP3862, SP3863 and SP3864.

7.4.6 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 34 wiring diagram (BECOMES), mark wires as U9165A24-S and U9166A24-S by means of marker sleeve.

7.4.7 With reference to Figure 34 wiring diagram (BECOMES), cut n°2 wires P/N A561A-T2-24 of adequate length and lay down between quick access recorder connector A202P1 and splices SP3861, SP3862, SP3863 and SP3864.

7.4.8 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 37 and Figure 34 wiring diagram (BECOMES), perform electrical connections between quick access recorder connector A202P1 and splices SP3861, SP3862, SP3863 and SP3864.

7.4.9 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 34 wiring diagram (BECOMES), mark wires as U9165C24-S and U9166C24-S by means of marker sleeve.

7.4.10 With reference to Figure 34 wiring diagram (BECOMES), cut n°2 wires P/N A561A-T2-24 of adequate length and lay down between sectioning connector J197 P/N D38999/20WA35SN (backshell P/N A532A400-0902T) and splices SP3861, SP3862, SP3863 and SP3864.

7.4.11 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 37 and Figure 34 wiring diagram (BECOMES), perform electrical connections between sectioning connector 197 and splices SP3861, SP3862, SP3863 and SP3864.

7.4.12 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 34 wiring diagram (BECOMES), mark wires as U9165B24-S and U9166B24-S by means of marker sleeve.

7.5 With reference to Figures 24 and 25, table on Figure 37 and Figure 35 wiring diagram (BECOMES), assemble the ADG-400 & QAR & FIPS interface C/A P/N 3G9A02A73901 (A2A739) as described in the following procedure:

7.5.1 With reference to Figure 35 wiring diagram (BECOMES), cut n°2 wires P/N M17/176-00002 of adequate length and lay down between FIPS panel connectors PL101P1 and PL101P2, n°4 splices P/N M81824/1-1 (SP10843, SP10844, SP10845 and SP10846).

7.5.2 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 37 and Figure 35 wiring diagram (BECOMES), perform electrical connections between FIPS panel

connectors PL101P1 and PL101P2, splices SP10843, SP10844, SP10845 and SP10846.

7.5.3 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 35 wiring diagram (BECOMES), mark wires as U9167A24-S and U9168A24-S by means of marker sleeve.

7.5.4 With reference to Figure 35 wiring diagram (BECOMES), cut n°2 wires P/N M17/176-00002 of adequate length and lay down between sectioning connector P133 and splices SP10843, SP10844, SP10845 and SP10846.

7.5.5 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 37 and Figure 35 wiring diagram (BECOMES), perform electrical connections between sectioning connector P133 and splices SP10843, SP10844, SP10845 and SP10846.

7.5.6 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 35 wiring diagram (BECOMES), mark wires as U9167B24-S and U9168B24-S by means of marker sleeve.

7.5.7 With reference to Figure 35 wiring diagram (BECOMES), cut n°2 wires P/N M17/176-00002 of adequate length and lay down between ADG-400 connector PL253P7 and splices SP10843, SP10844, SP10845 and SP10846.

7.5.8 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 37 and Figure 35 wiring diagram (BECOMES), perform electrical connections between ADG-400 connector PL253P7 and splices SP10843, SP10844, SP10845 and SP10846.

7.5.9 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 35 wiring diagram (BECOMES), mark wires as U9167C24-S and U9168C24-S by means of marker sleeve.

7.5.10 With reference to Figure 35 wiring diagram, cut n°2 wires P/N A556A-T22 of adequate length and lay down near to ADG-400 connector PL253P7.

7.5.11 In accordance with AMP DM 39-A-20-10-08-00A-622A-A and with reference to table on Figure 37 and Figure 35 wiring diagram, perform electrical connections to ADG-400 connector PL253P7.

7.5.12 In accordance with AMP DM 39-A-20-10-18-00A-691A-A and with reference to Figure 35 wiring diagram, mark wires as U9169A22-S and U9170A22-S by means of marker sleeve.

8. In accordance with AMP DM 39-A-06-41-00-00A-010A-A and with reference to Figures 6 thru 13, remove all external panels, internal panels and internal liners as required to gain access to the area affected by the installation and perform quick access recorder full installation P/N 4G3130A00713 as described in the following procedure:

8.1 In accordance with AMP DM 39-A-20-10-09-00A-920A-A and with reference to Figure 11 View C-C, at position n°1, install stud P/N A366A3E12C by means of adhesive EA9309.3NA (C021). Install clamp P/N AW001CB02H by means of washer P/N NAS1149D0332J and nut P/N MS21043L3.

8.2 With reference to Figure 11 “View looking rear area”, at position n°2, install clamp P/N AW001CB02H on existing hardware.

NOTE

Use edging P/N A236A on metallic edges which can damage cable assemblies and where abrasion may occur.

Use braided tubing P/N A582A where cable assemblies chafing or contact with structure may occur.

Secure the cables by means of previously installed fixing hardware and existing hardware. If necessary replace existing clamps with suitable clamps.

NOTE

With reference to steps 8.3 and 8.4, the indicated connections of cables A2B276 and B2B266 have not to be performed in presence of RIPS variant P/N 3G3106P01314.

8.3 With reference to Figures 6 thru 13, lay down the following cable assemblies following the existing route unless otherwise indicated on the figures:

- quick access recorder C/A P/N 3G9A02B27621 (A2B276);
- quick access recorder C/A P/N 3G9B02B26621 (B2B266);
- quick access recorder C/A P/N 3G9C01A23521 (C1A235);
- quick access recorder C/A P/N 3G9C01B23221 (C1B232);
- quick access recorder C/A P/N 3G9C02B23421 (C2B234);

8.4 With reference to Figures 7 and 8 and Figure 30 wiring diagram, perform the electrical connections of C/A A2B276 between sectioning connector P110, MAU 2 connectors A2-1P1 and A2-9P1.

8.5 With reference to Figures 8 thru 12 and Figure 30 wiring diagram, perform the electrical connections of C/A B2B266 between sectioning connectors J110 and J208.

8.6 With reference to Figures 12 and 13 and Figure 29 wiring diagram, perform the electrical connections of C/A C1A235 between sectioning connector J301, terminal board TB309/3, relay socket K26P1 and fuse F301.

8.7 With reference to Figures 11 thru 13 and Figure 29 wiring diagram, perform the electrical connections of C/A C1B232 between sectioning connector P301, splice SP362, terminal board TB312 and quick access recorder connector A202P1.

NOTE

The following step 8.8 is NOT applicable to helicopters equipped with FDR and RIPS variant P/N 3G3106P01314 and to helicopters equipped with kit limited ice protection system P/N 4G3000F00111.

8.8 With reference to Figures 11 and 12 and Figures 29 and 30 wiring diagrams, perform the electrical connections of C/A C2B234 between sectioning connector P208, splice SP364, terminal board TB350, connector J386 and quick access recorder connector A202P1.

NOTE

The following steps 8.9 and 8.10 are applicable ONLY to helicopters equipped with FDR and RIPS variant P/N 3G3106P01314.

8.9 With reference to Figure 11 and Figure 29 wiring diagram, perform the electrical connections of C/A C2B234 between splice SP364, terminal board TB350, connector J386 and quick access recorder connector A202P1.

8.10 With reference to Figure 15 and Figure 31 wiring diagram (BECOMES), perform the electrical connections of C/A C2B276 between sectioning connector P311 and quick access recorder connector A202P1.

NOTE

The following step 8.11 is applicable ONLY to helicopters equipped with kit limited ice protection system P/N 4G3000F00111.

8.11 With reference to Figures 17, perform the connection between connectors A202P1 and A202J1 by means of retaining plate P/N M85049/95-14A-A, n°4 washers P/N NAS1149DN416J and n°4 screws P/N NAS1802-04-5.

8.12 Perform a pin-to-pin continuity check of all the electrical connections made.

NOTE

The following steps 8.13 thru 8.17 are NOT applicable to helicopters equipped with kit limited ice protection system P/N 4G3000F00111.

8.13 In accordance with applicable steps of AMP DM 39-D-31-33-02-00A-921A-K and with reference to Figures 11 View C-C, fix the connector J386 to the existing bracket and install the protective cap P/N SK3000-2-S879.

8.14 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 11 View C-C, install the decal P/N ED300J386 in an area adjacent to previously installed connector J386.

NOTE

In presence of gap between P/N D51640-0001 and P/N 3G5315A89731 add peeling shim comp. 1 type I class 2.

8.15 In accordance with AMP DM 39-D-31-33-01-00A-720A-K and with reference to Figures 11 View C-C, install the quick access recorder control panel P/N D51640-0001 and the PCMCIA card 512 MB P/N 010000343.

8.16 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figure 11 View C-C, install the decal P/N ED300A202 in an area adjacent to previously installed quick access recorder control panel.

8.17 With reference to Figures 11 View C-C, connect the connector A202P1 to the quick access recorder control panel A202.

NOTE

The following steps 8.18 thru 8.23 are applicable ONLY to helicopters equipped with kit limited ice protection system P/N 4G3000F00111.

8.18 With reference to Figures 19 View B, fix the connector J386A to the existing bracket by means of n°2 screws M24308/26-1 and install the protective cap P/N SK3000-2-S879.

8.19 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figures 19 View B, install the decal P/N ED300J386A in an area adjacent to previously installed connector J386A.

8.20 With reference to Figures 19 View B, install the quick access recorder control panel P/N D51640-0001 and the PCMCIA card 512 MB P/N 010000343.

8.21 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figures 19 View B, install the decal P/N ED300A202 in an area adjacent to previously installed quick access recorder control panel.

8.22 With reference to Figures 19 View B, connect the connector A202P1A to the quick access recorder control panel A202.

8.23 In accordance with AMP DM 39-A-11-00-01-00A-720A-A and with reference to Figures 19 View B, install the decal P/N ED300A202P1A in an area adjacent to previously installed connector A202P1A.

9. With reference to Figures 3, install the cover reworked P/N 3G5306P38531 on the aft RH avionic bay.
10. In accordance with AMP DM 39-A-06-41-00-00A-010A-A, re-install all external panels, internal panels and internal liners previously removed.
11. In accordance with Annex A, perform the quick access recorder function test.
12. In accordance with weight and balance changes, update the Chart A (see Rotorcraft Flight Manual, Part II, section 6).
13. Return the helicopter to flight configuration and record for compliance with Part III of this Service Bulletin on the helicopter logbook.
14. Send the attached compliance form to the following mail box:

    engineering.support.lhd@leonardo.com

    As an alternative, gain access to My Communications section on Leonardo WebPortal and compile the “Service Bulletin Application Communication”.

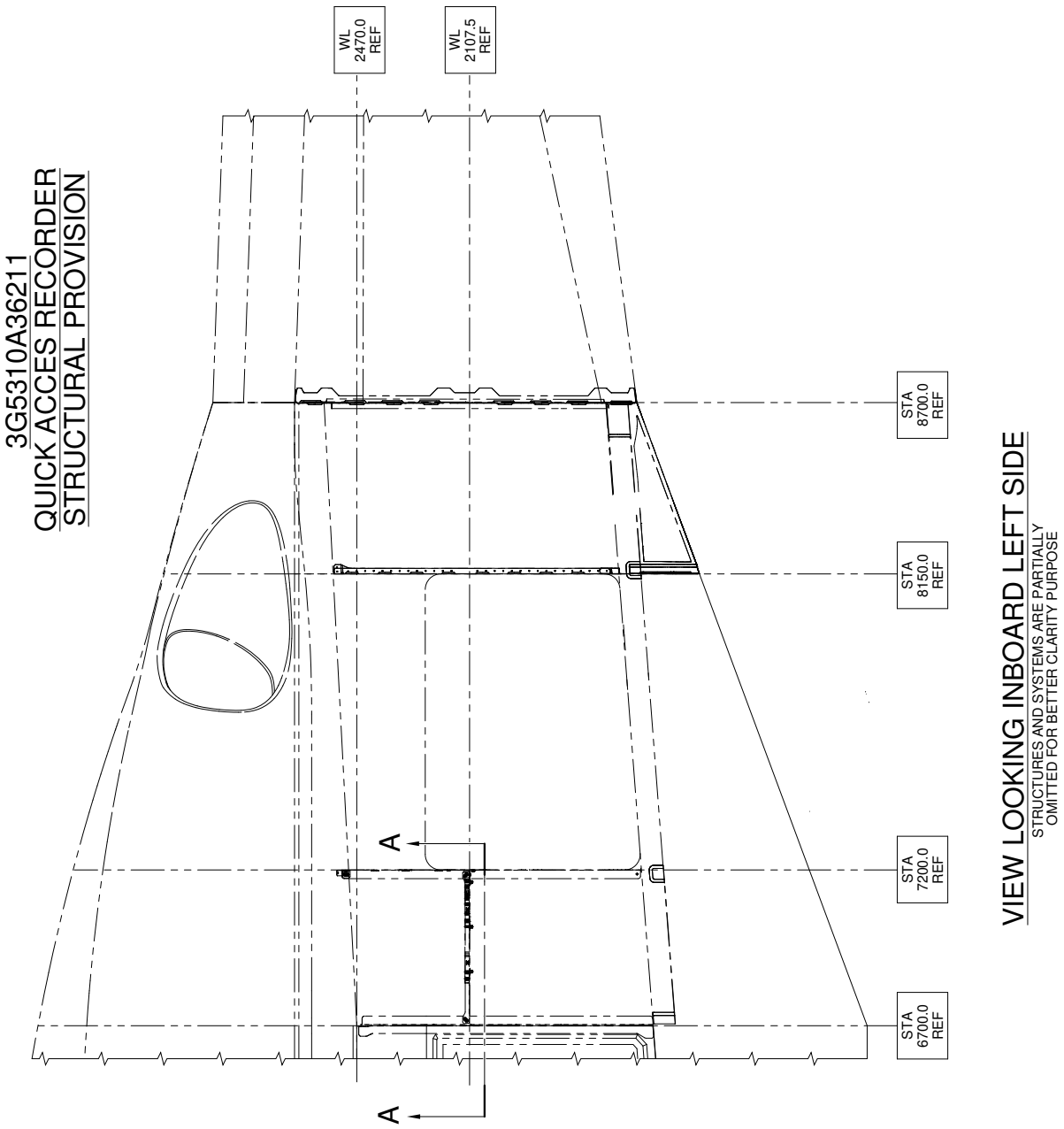

3G5310A36211
QUICK ACCES RECORDER
STRUCTURAL PROVISION
WL 2470.0 REF
WL 2107.5 REF
STA 8700.0 REF
STA 8150.0 REF
STA 7200.0 REF
STA 6700.0 REF
A
A
VIEW LOOKING INBOARD LEFT SIDE
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 1

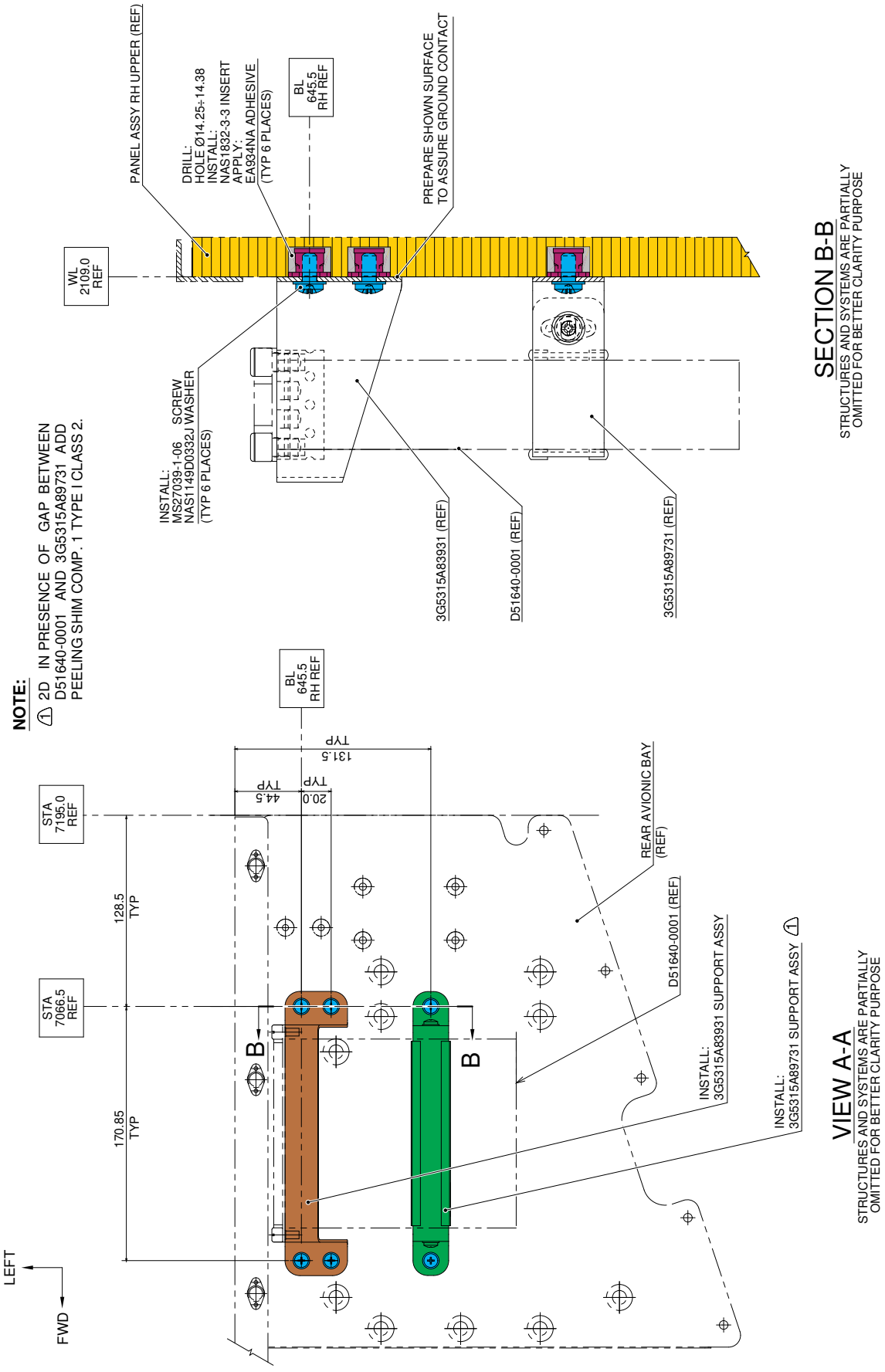

PANEL ASSY RH UPPER (REF)
DRILL:
HOLE Ø14.25÷14.38
INSTALL:
NAS1832-3-3 INSERT
APPLY:
EA934NA ADHESIVE
(TYP 6 PLACES)
BL
645.5
RH REF
PREPARE SHOWN SURFACE
TO ASSURE GROUND CONTACT
WL
2109.0
REF
INSTALL:
MS27039-1-06 SCREW
NAS1149D0332J WASHER
(TYP 6 PLACES)
3G5315A83931 (REF)
D51640-0001 (REF)
3G5315A89731 (REF)
SECTION B-B
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
NOTE:
1 2D IN PRESENCE OF GAP BETWEEN
D51640-0001 AND 3G5315A89731 ADD
PEELING SHIM COMP. 1 TYPE I CLASS 2.
BL
645.5
RH REF
131.5
TYP
20.0
TYP
44.5
TYP
STA
7195.0
REF
STA
7066.5
REF
128.5
TYP
170.85
TYP
REAR AVIONIC BAY
(REF)
D51640-0001 (REF)
INSTALL:
3G5315A83931 SUPPORT ASSY
INSTALL:
3G5315A89731 SUPPORT ASSY 1
B
B
VIEW A-A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
LEFT
FWD

Figure 2

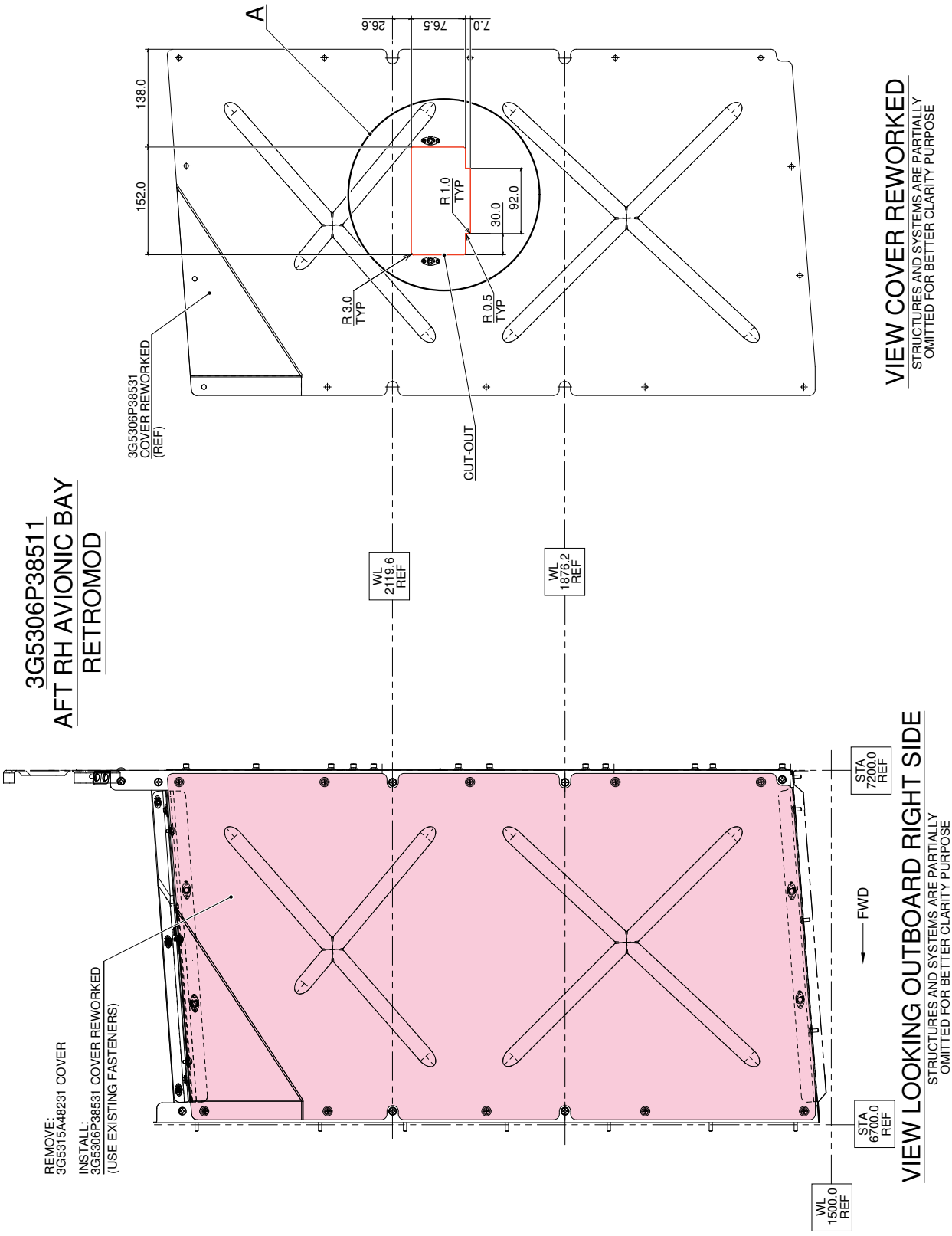
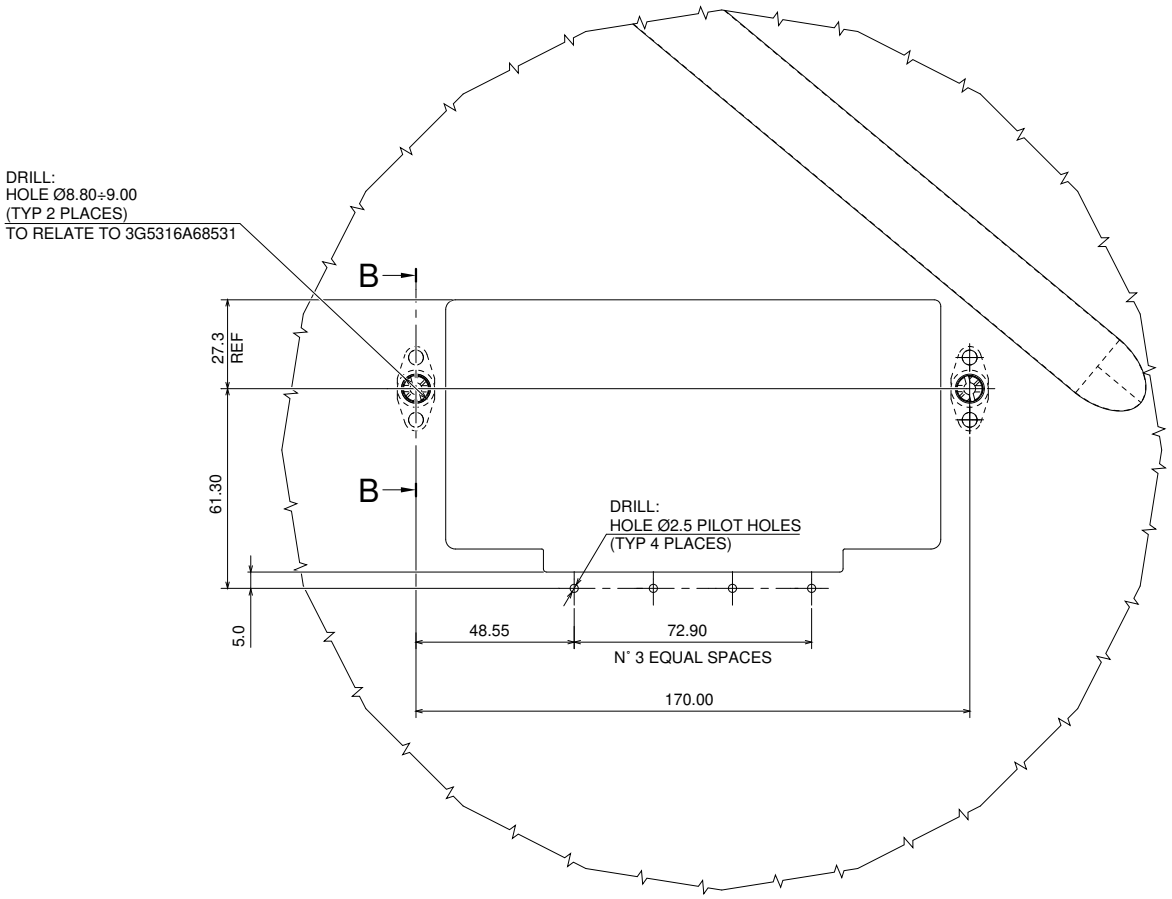
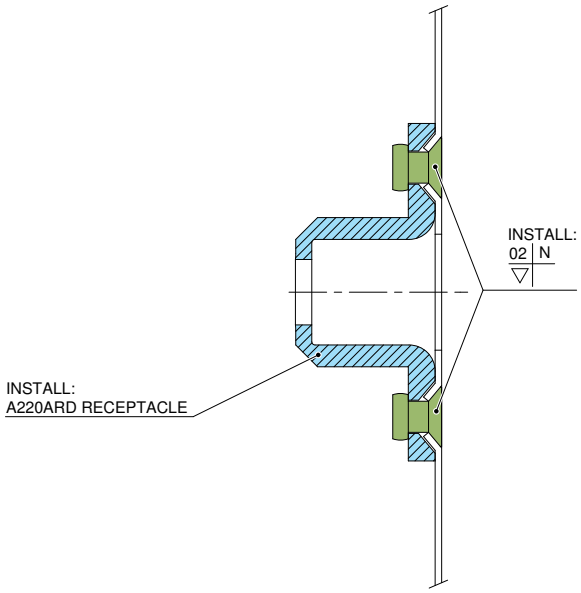

3G5306P38511
AFT RH AVIONIC BAY
RETROMOD
A
26.6
76.5
7.0
138.0
152.0
R 1.0
TYP
30.0
92.0
R 3.0
TYP
R 0.5
TYP
3G5306P38531
COVER REWORKED
(REF)
CUT-OUT
VIEW COVER REWORKED
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
WL
2119.6
REF
WL
1876.2
REF
STA
7200.0
REF
FWD
STA
6700.0
REF
WL
1500.0
REF
VIEW LOOKING OUTBOARD RIGHT SIDE
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
REMOVE:
3G5315A48231 COVER
INSTALL:
3G5306P38531 COVER REWORKED
(USE EXISTING FASTENERS)

Figure 3



DETAIL A

STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE



RIVET REFERENCE TABLE	
REF. N°	RIVET P/N
01	MS20470AD4
02	MS20426AD3
N	PRE-FORMED HEAD IS ON NEAR SIDE
F	PRE-FORMED HEAD IS ON FAR SIDE
▽	COUNTERSINK (100° ONLY) IS ON NEAR SIDE
△	COUNTERSINK (100° ONLY) IS ON FAR SIDE
⧖	COUNTERSINK (100° ONLY) IS ON BOTH SIDES

SECTION B-B

(TYP 2 PLACES)
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 4

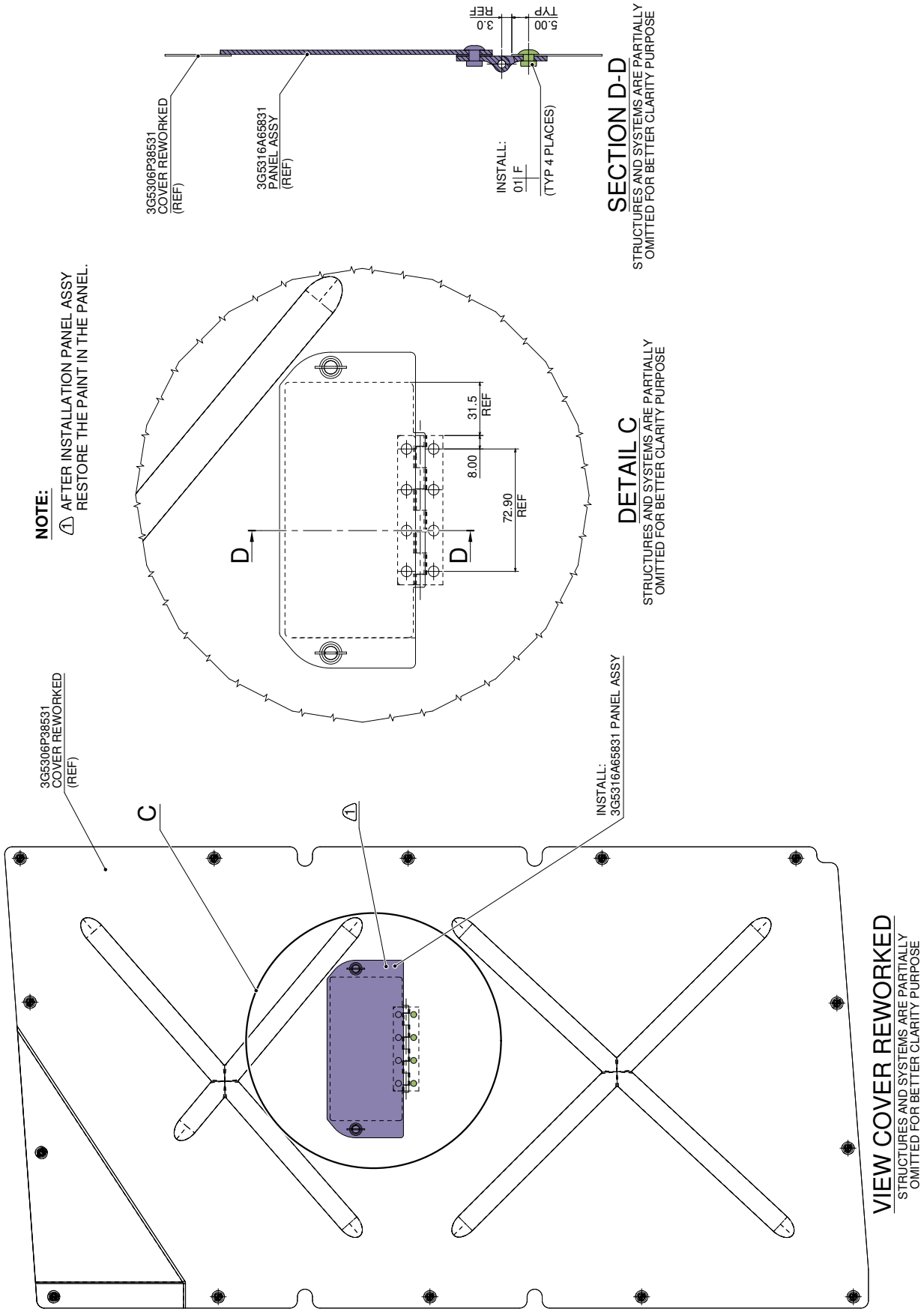

SECTION D-D
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
3G5306P38531 COVER REWORKED (REF)
3G5316A65831 PANEL ASSY (REF)
INSTALL: 01| F
(TYP 4 PLACES)
5.00 TYP
3.0 REF
DETAIL C
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
31.5 REF
8.00
72.90 REF
D
D
NOTE:
1 AFTER INSTALLATION PANEL ASSY RESTORE THE PAINT IN THE PANEL.
VIEW COVER REWORKED
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
3G5306P38531 COVER REWORKED (REF)
C
1
INSTALL: 3G5316A65831 PANEL ASSY

Figure 5

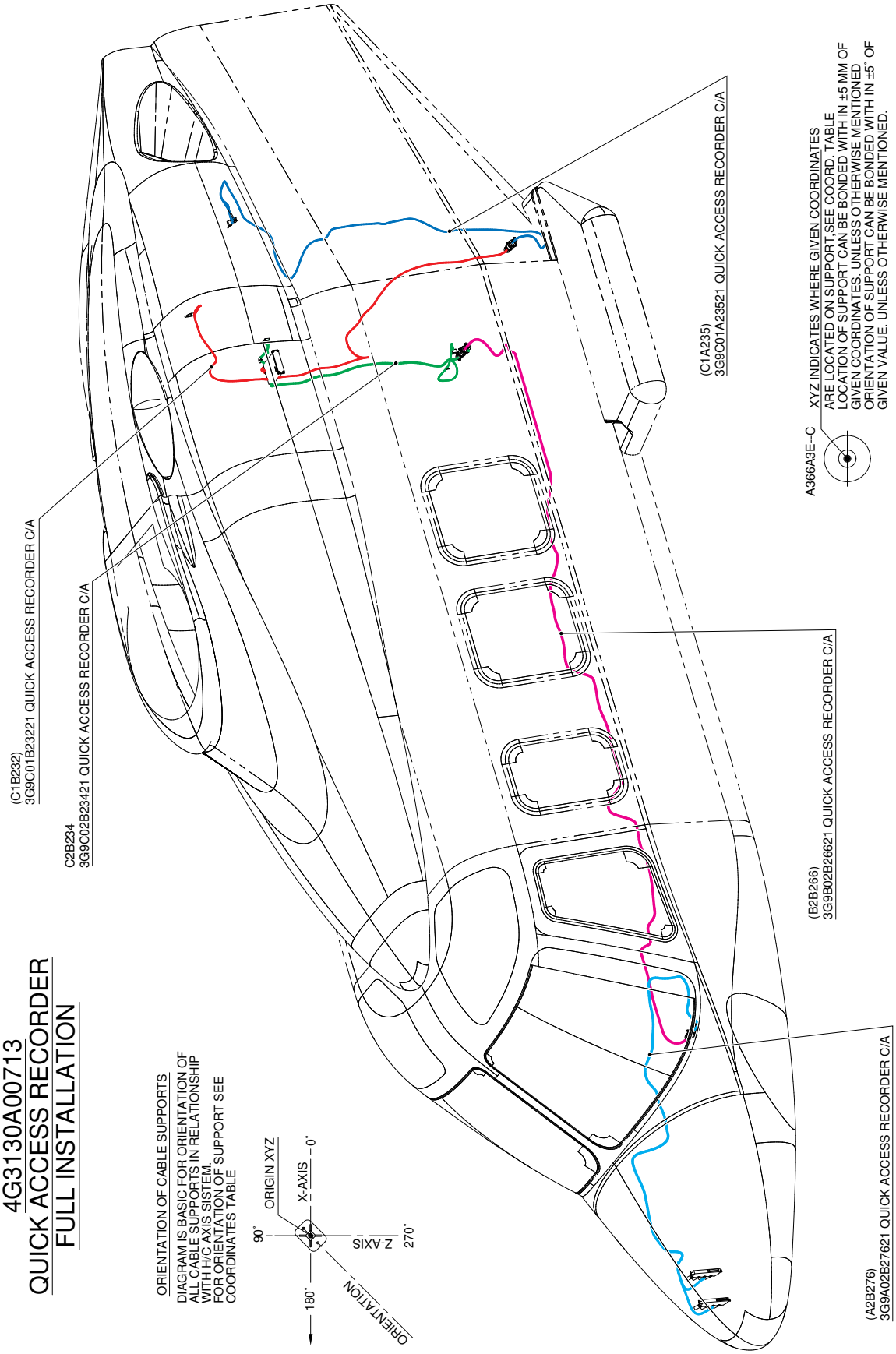

4G3130A00713
QUICK ACCESS RECORDER
FULL INSTALLATION
(C1B232)
3G9C01B23221 QUICK ACCESS RECORDER C/A
C2B234
3G9C02B23421 QUICK ACCESS RECORDER C/A
(C1A235)
3G9C01A23521 QUICK ACCESS RECORDER C/A
(B2B266)
3G9B02B26621 QUICK ACCESS RECORDER C/A
(A2B276)
3G9A02B27621 QUICK ACCESS RECORDER C/A
A366A3E--C
XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT.SEE COORD. TABLE
LOCATION OF SUPPORT CAN BE BONDED WITH IN ±5 MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED
ORIENTATION OF SUPPORT CAN BE BONDED WITH IN ±5° OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.
ORIENTATION OF CABLE SUPPORTS
DIAGRAM IS BASIC FOR ORIENTATION OF ALL CABLE SUPPORTS IN RELATIONSHIP WITH H/C AXIS SISTEM.
FOR ORIENTATION OF SUPPORT SEE COORDINATES TABLE
ORIGIN XYZ
X-AXIS
0°
90°
Z-AXIS
270°
180°
ORIENTATION

Figure 6

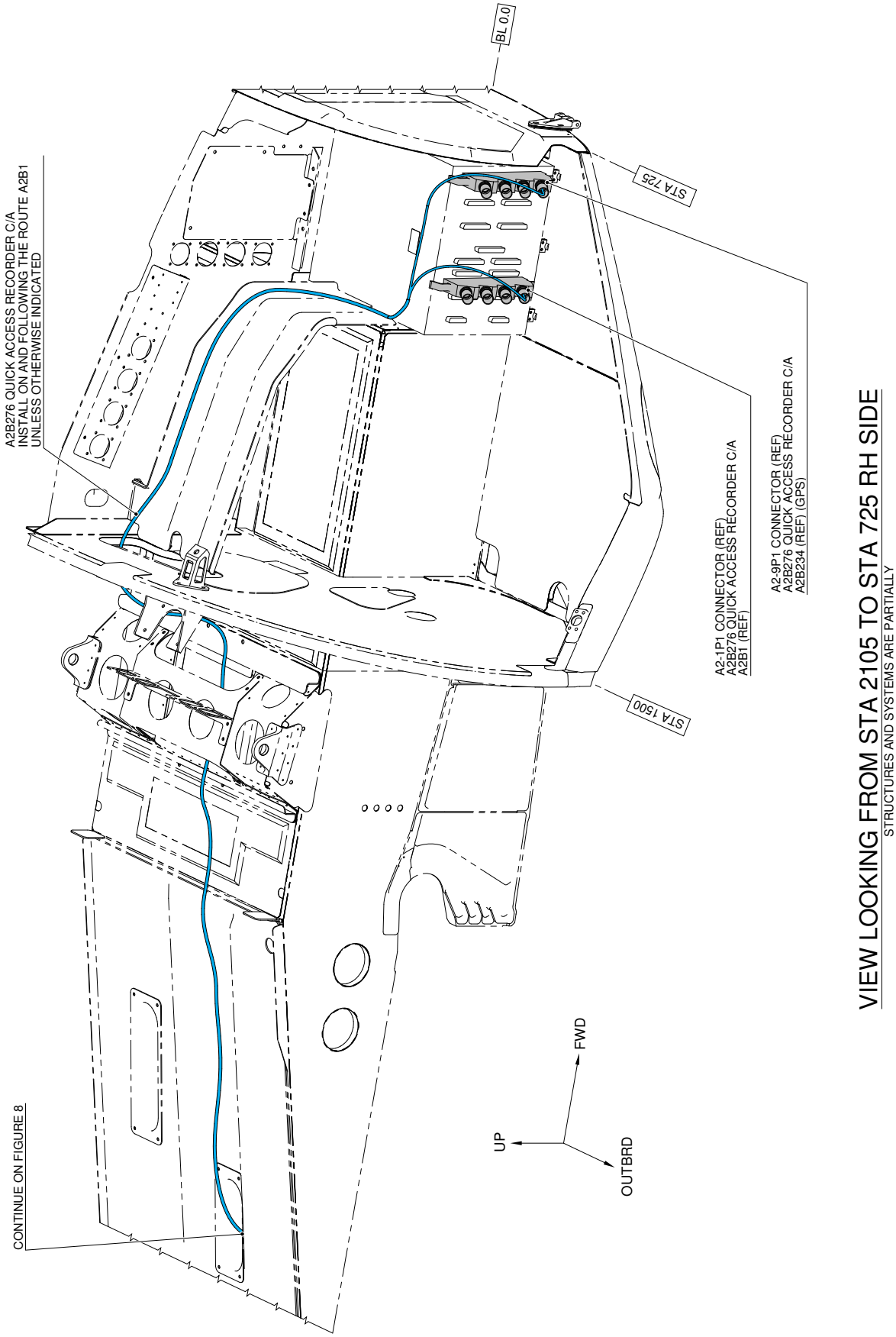

VIEW LOOKING FROM STA 2105 TO STA 725 RH SIDE
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
BL 0.0
STA 725
STA 1500
A2B276 QUICK ACCESS RECORDER C/A INSTALL ON AND FOLLOWING THE ROUTE A2B1 UNLESS OTHERWISE INDICATED
A2-1P1 CONNECTOR (REF) A2B276 QUICK ACCESS RECORDER C/A A2B1 (REF)
A2-9P1 CONNECTOR (REF) A2B276 QUICK ACCESS RECORDER C/A A2B234 (REF) (GPS)
CONTINUE ON FIGURE 8
FWD
UP
OUTBRD

Figure 7

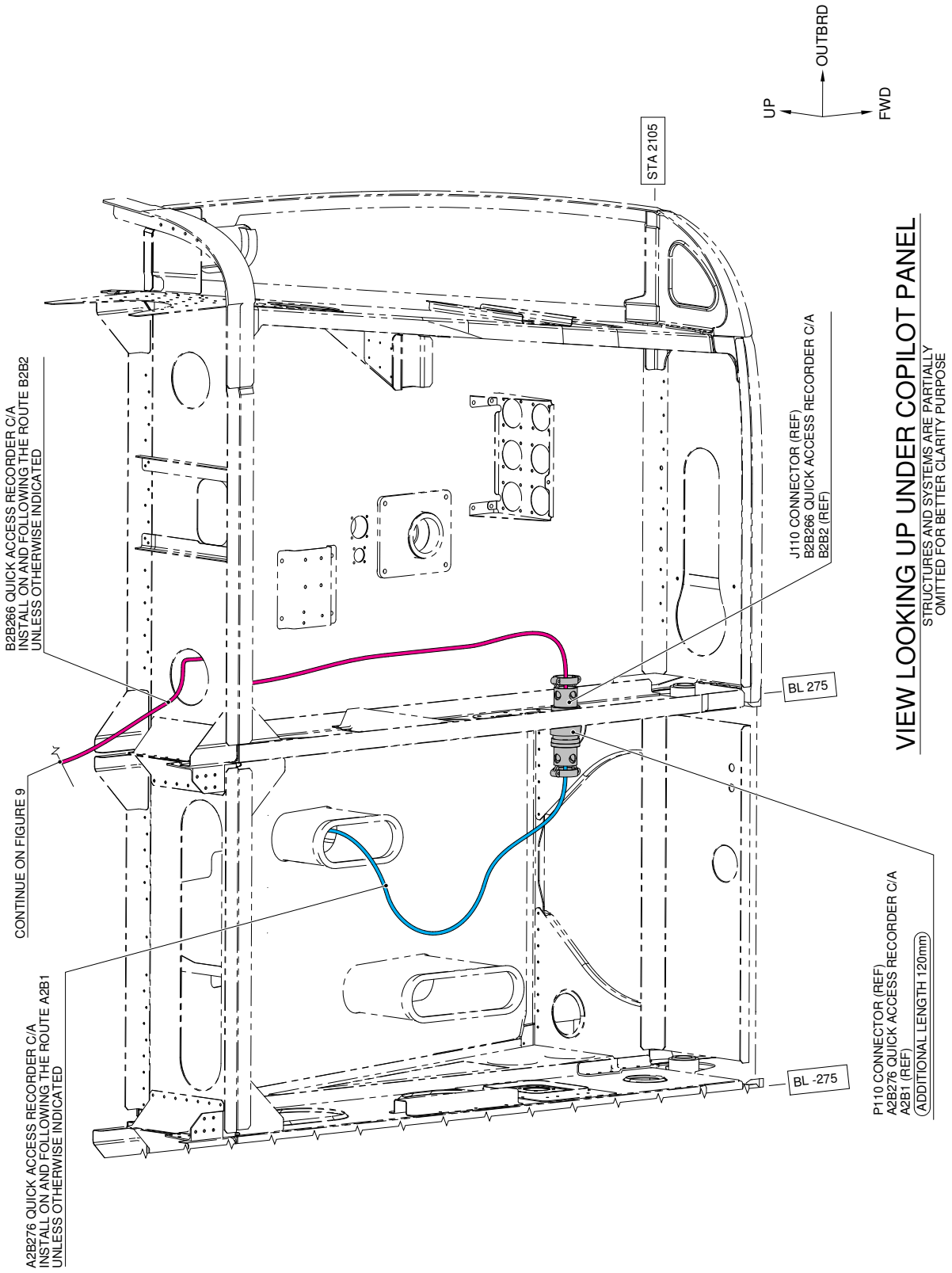

OUTBRD
UP
FWD
STA 2105
VIEW LOOKING UP UNDER COPILOT PANEL
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
B2B266 QUICK ACCESS RECORDER C/A
INSTALL ON AND FOLLOWING THE ROUTE B2B2
UNLESS OTHERWISE INDICATED
J110 CONNECTOR (REF)
B2B266 QUICK ACCESS RECORDER C/A
B2B2 (REF)
BL 275
CONTINUE ON FIGURE 9
A2B276 QUICK ACCESS RECORDER C/A
INSTALL ON AND FOLLOWING THE ROUTE A2B1
UNLESS OTHERWISE INDICATED
BL -275
P110 CONNECTOR (REF)
A2B276 QUICK ACCESS RECORDER C/A
A2B1 (REF)
(ADDITIONAL LENGTH 120mm)

Figure 8

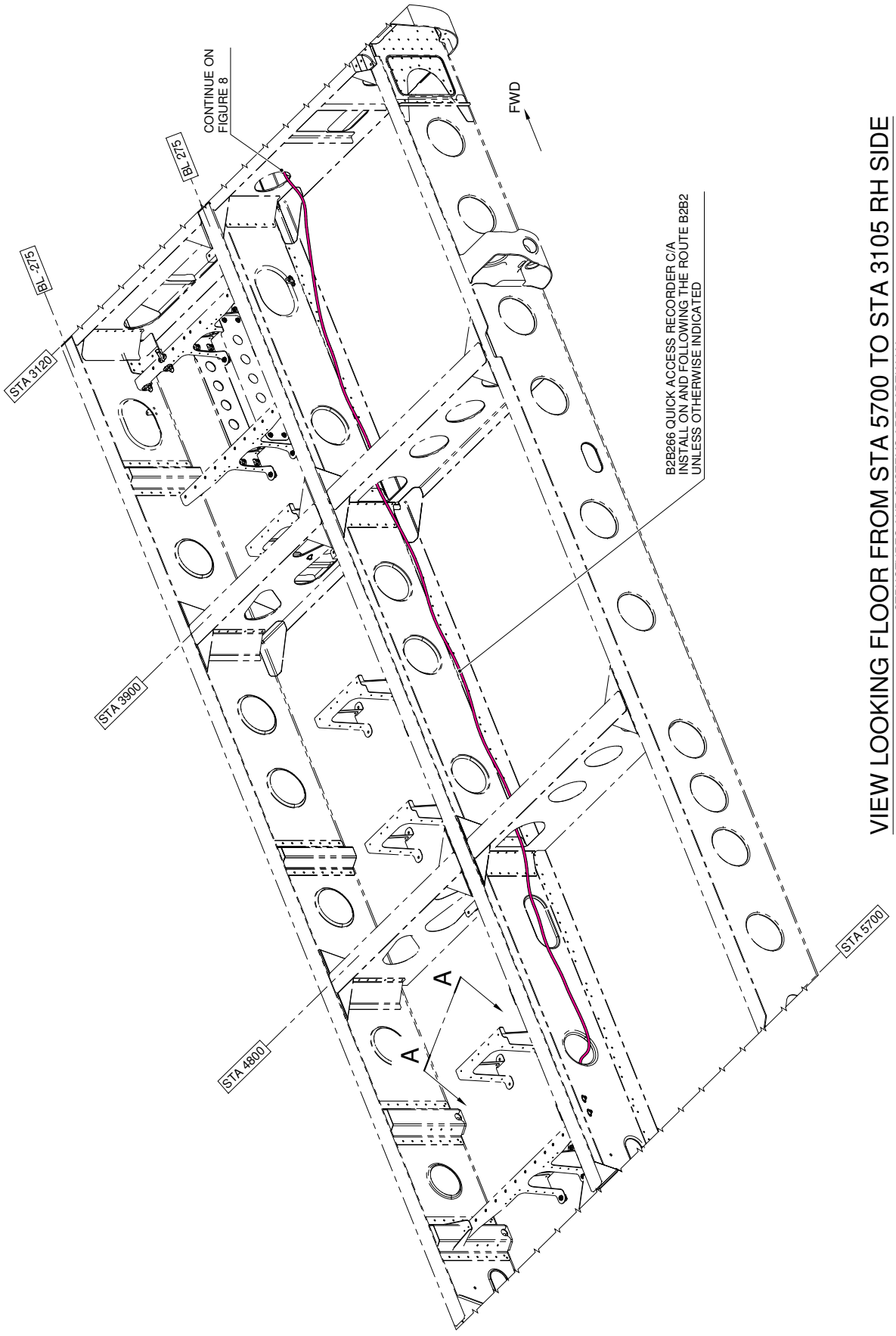
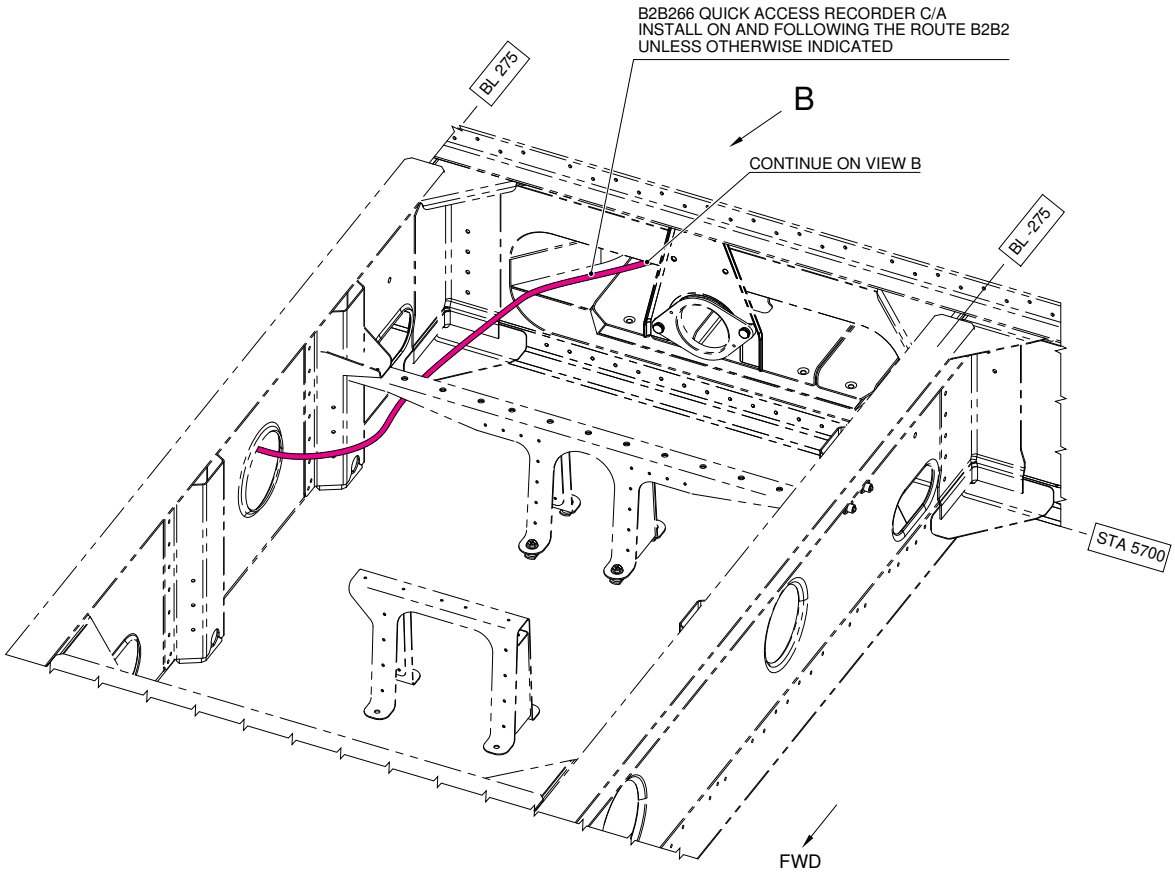
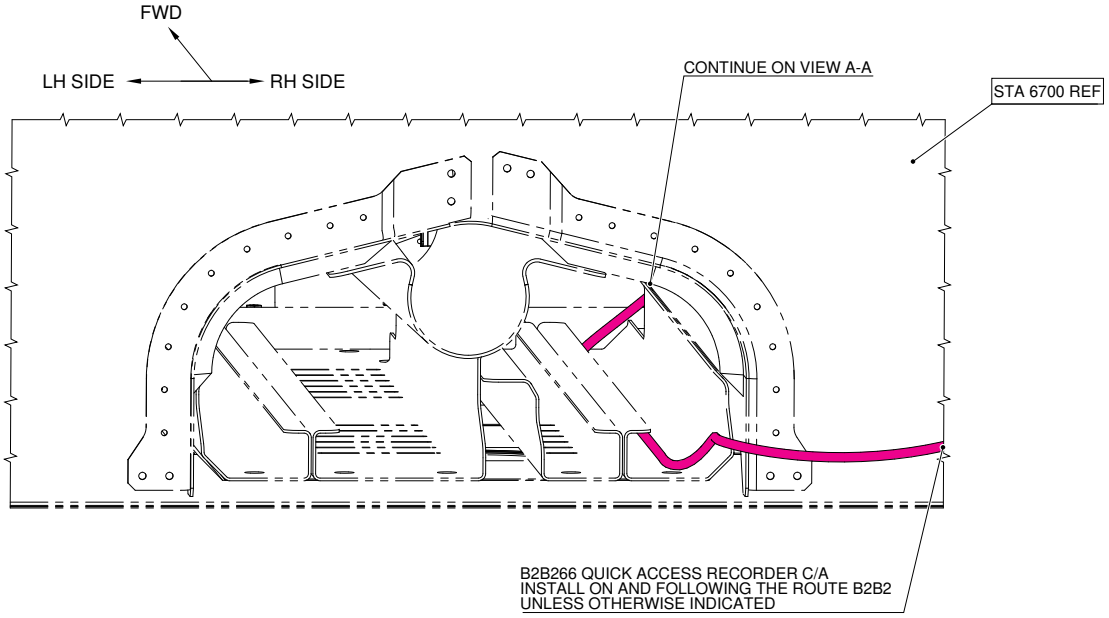

VIEW LOOKING FLOOR FROM STA 5700 TO STA 3105 RH SIDE
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
B2B266 QUICK ACCESS RECORDER C/A INSTALL ON AND FOLLOWING THE ROUTE B2B2 UNLESS OTHERWISE INDICATED
CONTINUE ON FIGURE 8
FWD
BL 275
BL -275
STA 3120
STA 3900
STA 4800
STA 5700
A
A

Figure 9



VIEW A-A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE



VIEW B
VIEW LOOKING INSIDE TUNNEL
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 10

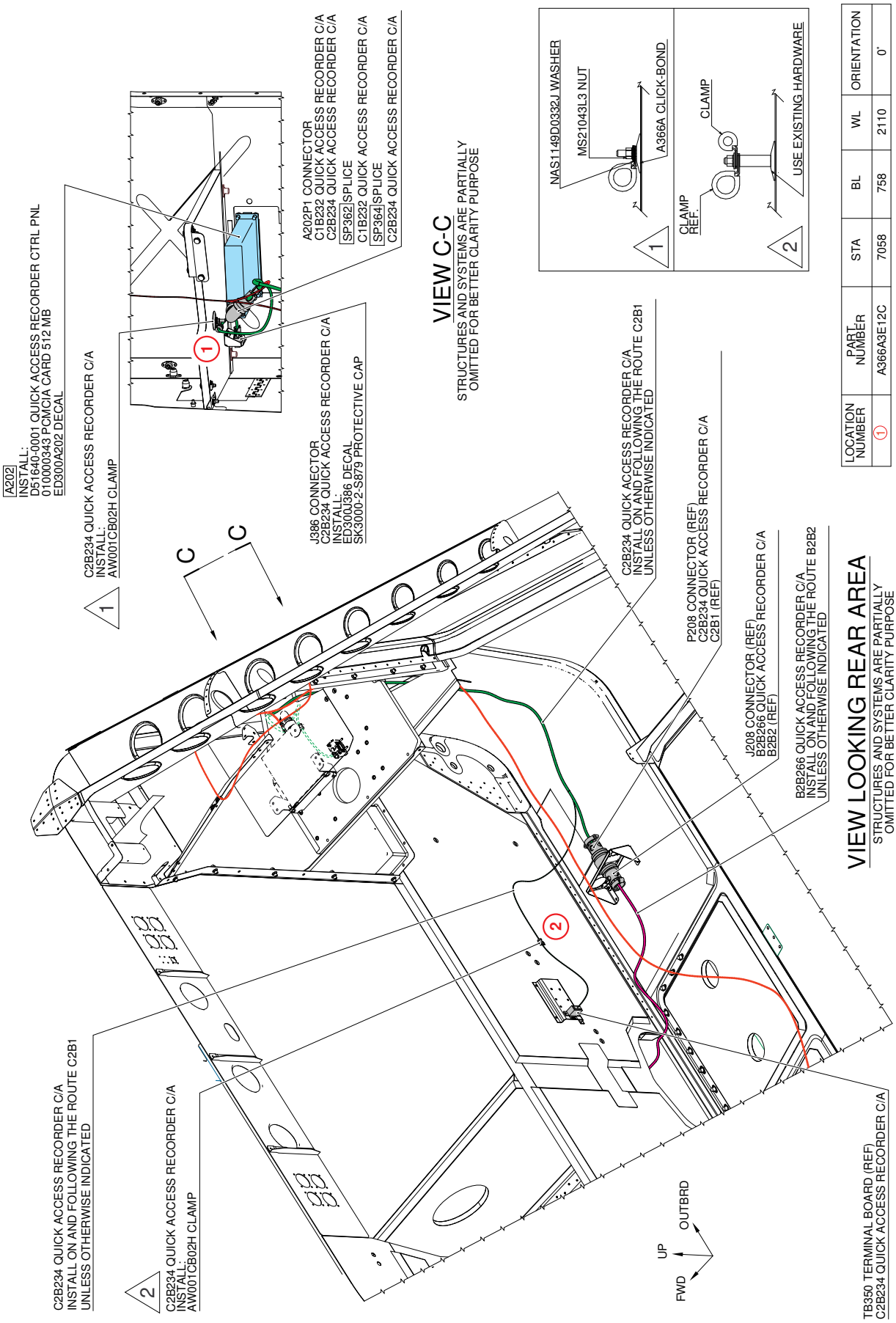

A202
INSTALL:
D51640-0001 QUICK ACCESS RECORDER CTRL PNL
010000343 PCMCIA CARD 512 MB
ED300A202 DECAL
1
C2B234 QUICK ACCESS RECORDER C/A
INSTALL:
AW001CB02H CLAMP
A202P1 CONNECTOR
C1B232 QUICK ACCESS RECORDER C/A
C2B234 QUICK ACCESS RECORDER C/A
SP362 SPLICE
C1B232 QUICK ACCESS RECORDER C/A
SP364 SPLICE
C2B234 QUICK ACCESS RECORDER C/A
J386 CONNECTOR
C2B234 QUICK ACCESS RECORDER C/A
INSTALL:
ED300J386 DECAL
SK3000-2-S879 PROTECTIVE CAP
VIEW C-C
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
NAS1149D0332J WASHER
MS21043L3 NUT
A366A CLICK-BOND
1
CLAMP
REF.
CLAMP
2
USE EXISTING HARDWARE
LOCATION NUMBER
PART NUMBER
STA
BL
WL
ORIENTATION
1
A366A3E12C
7058
758
2110
0°
C2B234 QUICK ACCESS RECORDER C/A
INSTALL ON AND FOLLOWING THE ROUTE C2B1
UNLESS OTHERWISE INDICATED
C2B234 QUICK ACCESS RECORDER C/A
INSTALL:
AW001CB02H CLAMP
2
P208 CONNECTOR (REF)
C2B234 QUICK ACCESS RECORDER C/A
C2B1 (REF)
J208 CONNECTOR (REF)
B2B266 QUICK ACCESS RECORDER C/A
B2B2 (REF)
B2B266 QUICK ACCESS RECORDER C/A
INSTALL ON AND FOLLOWING THE ROUTE B2B2
UNLESS OTHERWISE INDICATED
VIEW LOOKING REAR AREA
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
TB350 TERMINAL BOARD (REF)
C2B234 QUICK ACCESS RECORDER C/A
UP
OUTBRD
FWD

Figure 11

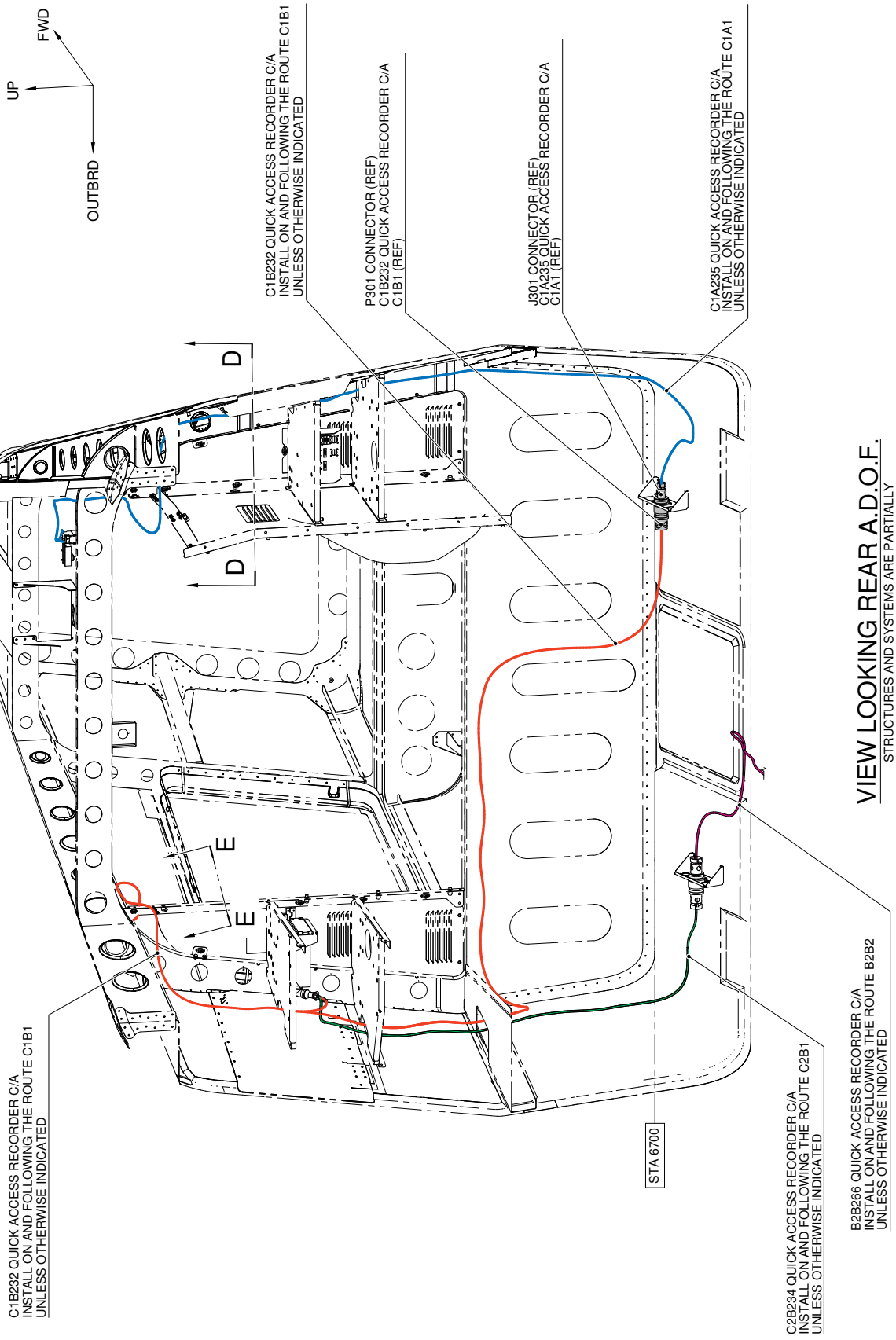
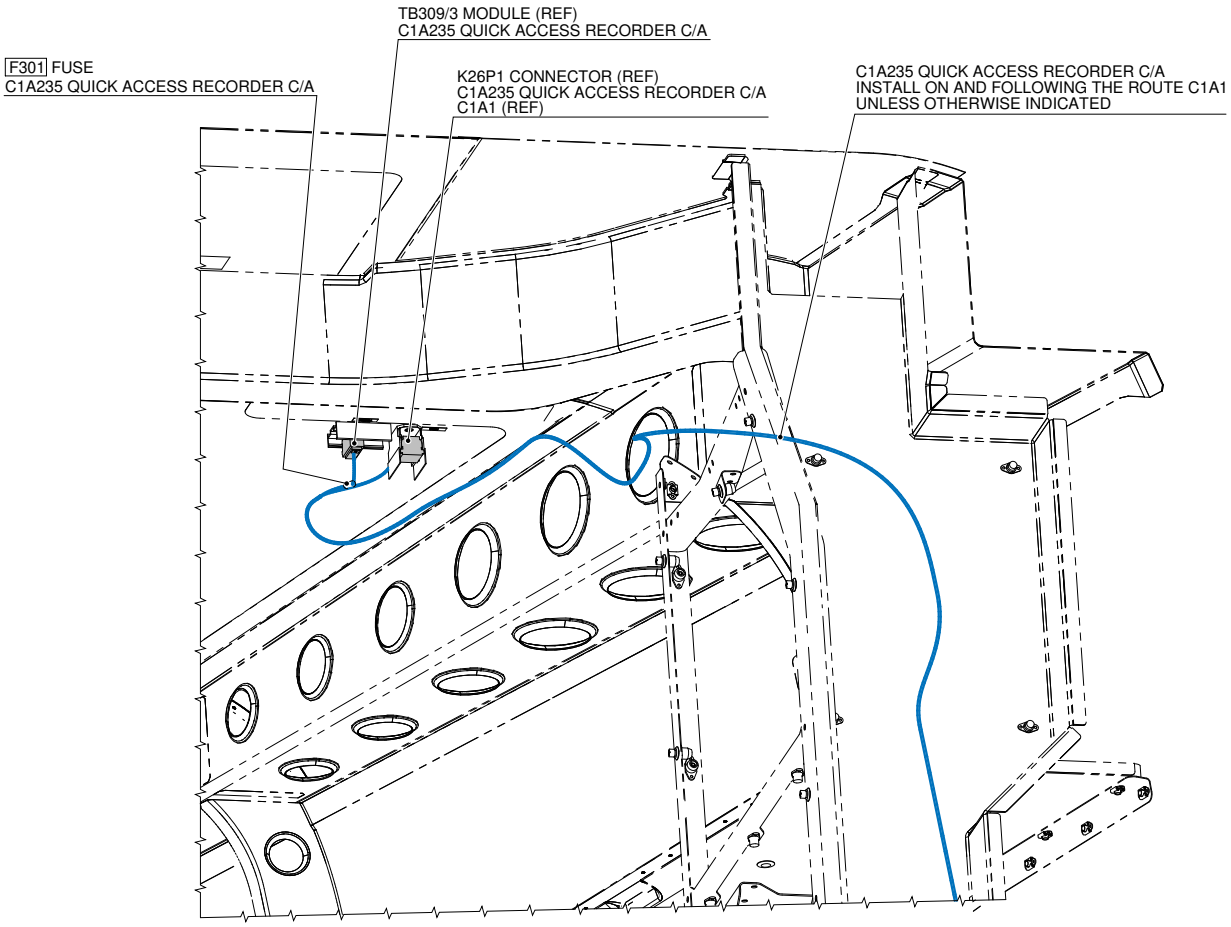
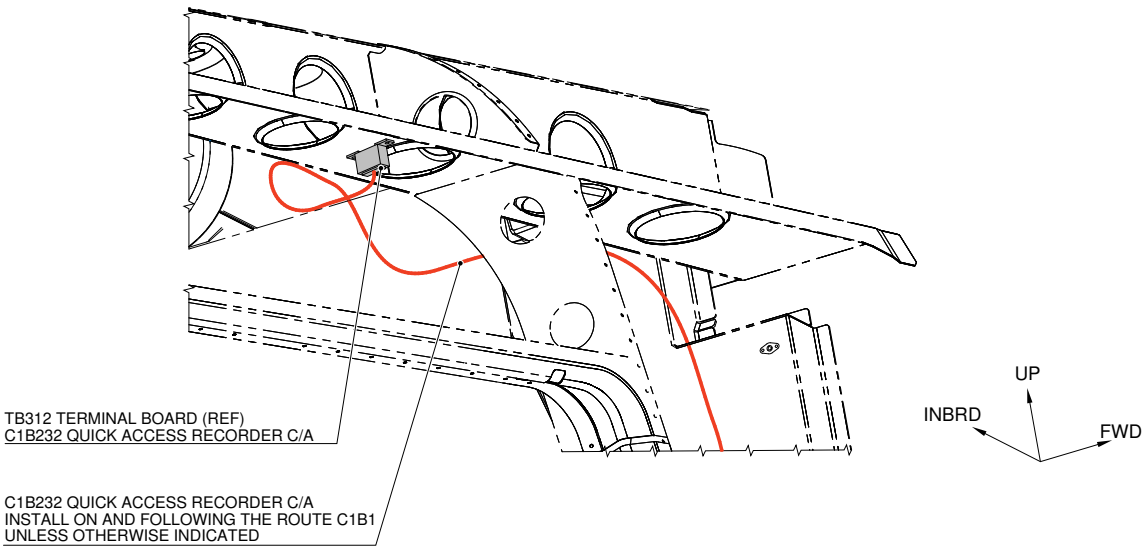

FWD
UP
OUTBRD
C1B232 QUICK ACCESS RECORDER C/A
INSTALL ON AND FOLLOWING THE ROUTE C1B1
UNLESS OTHERWISE INDICATED
P301 CONNECTOR (REF)
C1B232 QUICK ACCESS RECORDER C/A
C1B1 (REF)
J301 CONNECTOR (REF)
C1A235 QUICK ACCESS RECORDER C/A
C1A1 (REF)
C1A235 QUICK ACCESS RECORDER C/A
INSTALL ON AND FOLLOWING THE ROUTE C1A1
UNLESS OTHERWISE INDICATED
D
D
E
E
STA 6700
C1B232 QUICK ACCESS RECORDER C/A
INSTALL ON AND FOLLOWING THE ROUTE C1B1
UNLESS OTHERWISE INDICATED
C2B234 QUICK ACCESS RECORDER C/A
INSTALL ON AND FOLLOWING THE ROUTE C2B1
UNLESS OTHERWISE INDICATED
B2B266 QUICK ACCESS RECORDER C/A
INSTALL ON AND FOLLOWING THE ROUTE B2B2
UNLESS OTHERWISE INDICATED
VIEW LOOKING REAR A.D.O.F.
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 12



VIEW D-D

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE



VIEW E-E

STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE

Figure 13

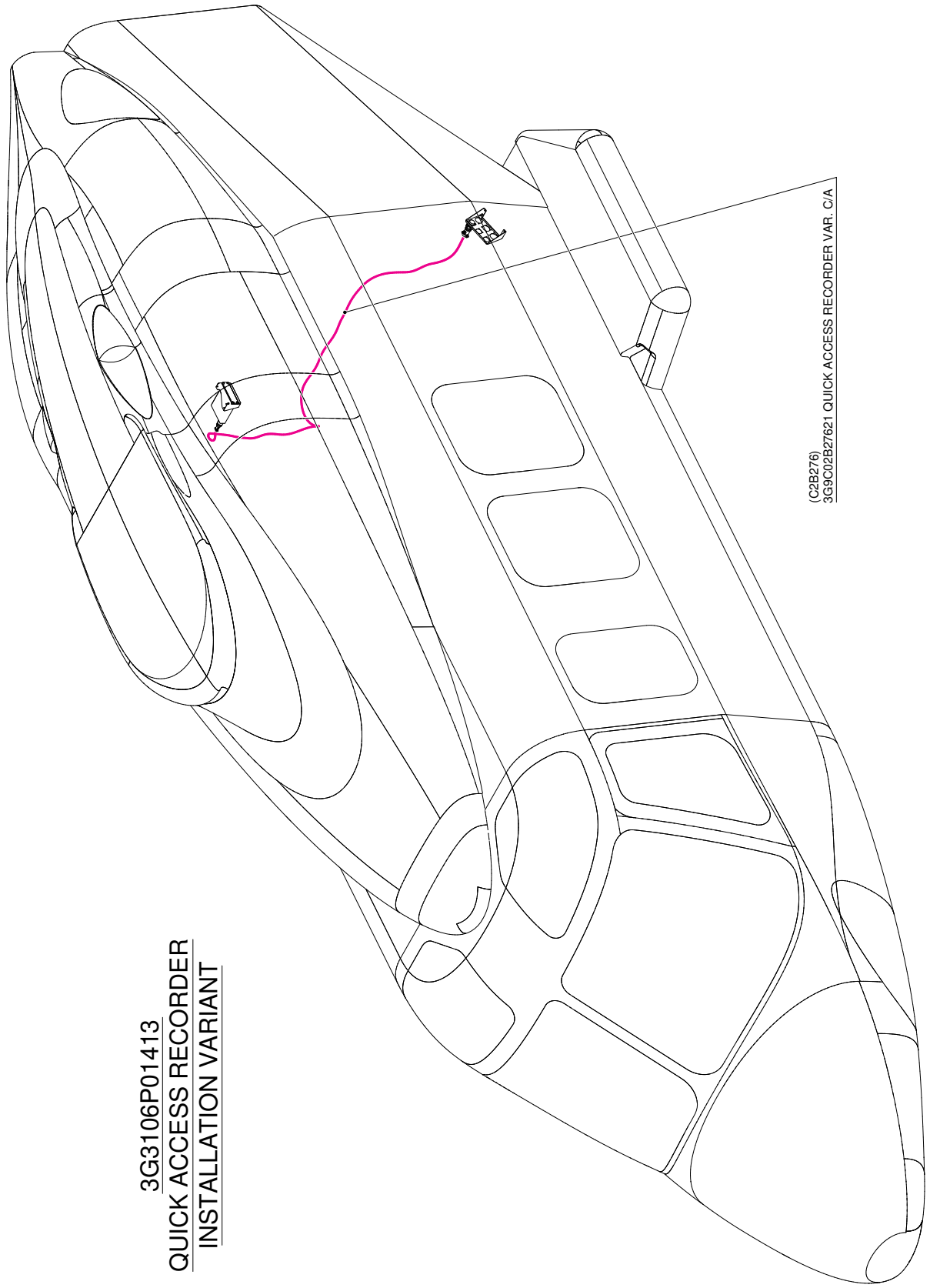

(C2B276)
3G9C02B27621 QUICK ACCESS RECORDER VAR. C/A
3G3106P01413
QUICK ACCESS RECORDER
INSTALLATION VARIANT

Figure 14

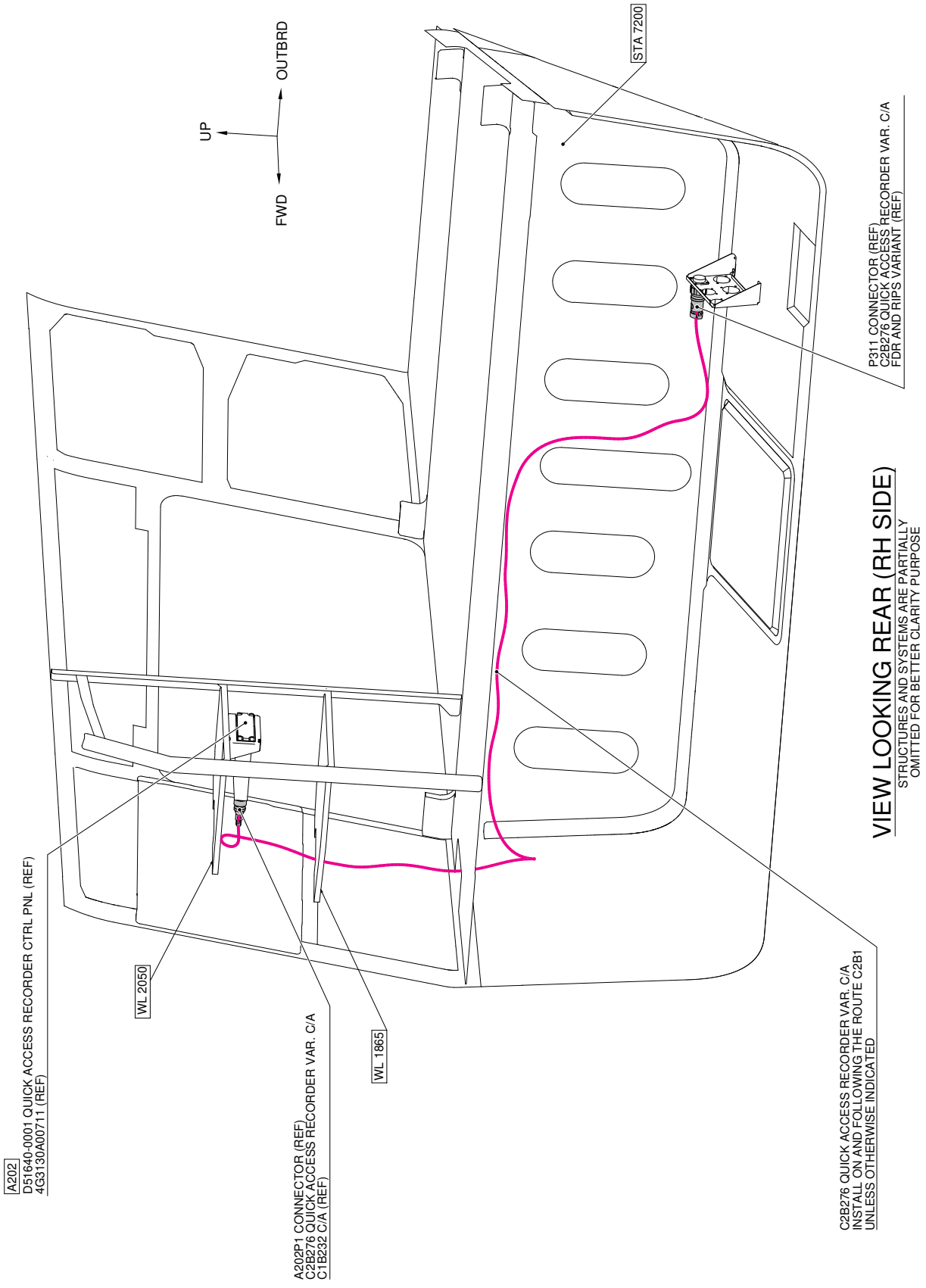

UP
OUTBRD
FWD
STA 7200
P311 CONNECTOR (REF)
C2B276 QUICK ACCESS RECORDER VAR. C/A
FDR AND RIPS VARIANT (REF)
VIEW LOOKING REAR (RH SIDE)
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
A202
D51640-0001 QUICK ACCESS RECORDER CTRL PNL (REF)
4G3130A00711 (REF)
WL 2050
A202P1 CONNECTOR (REF)
C2B276 QUICK ACCESS RECORDER VAR. C/A
C1B232 C/A (REF)
WL 1865
C2B276 QUICK ACCESS RECORDER VAR. C/A
INSTALL ON AND FOLLOWING THE ROUTE C2B1
UNLESS OTHERWISE INDICATED

Figure 15

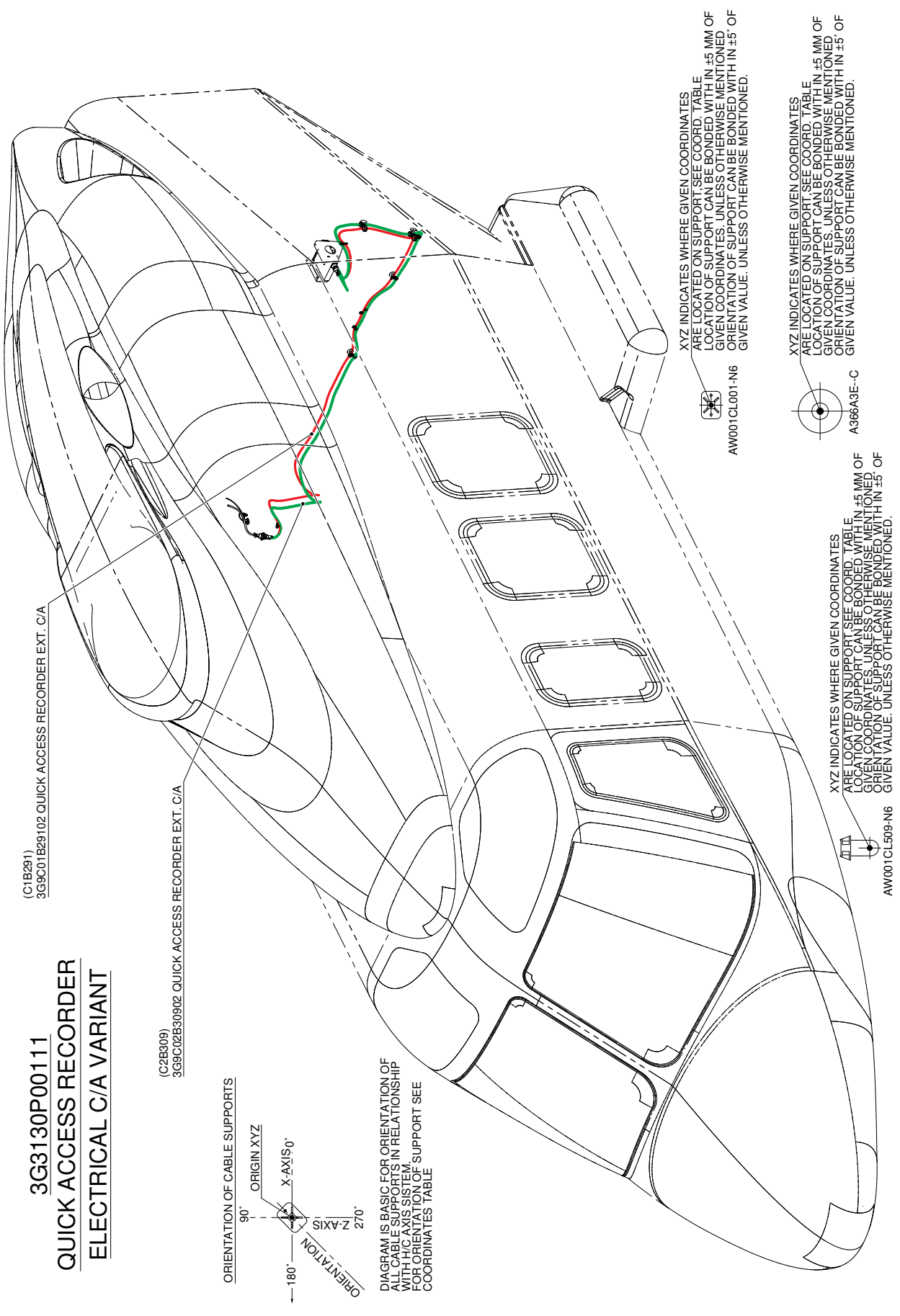

3G3130P00111
QUICK ACCESS RECORDER
ELECTRICAL C/A VARIANT
(C1B291)
3G9C01B29102 QUICK ACCESS RECORDER EXT. C/A
(C2B309)
3G9C02B30902 QUICK ACCESS RECORDER EXT. C/A
ORIENTATION OF CABLE SUPPORTS
90°
ORIGIN XYZ
X-AXIS 0°
180°
ORIENTATION
Z-AXIS
270°
DIAGRAM IS BASIC FOR ORIENTATION OF ALL CABLE SUPPORTS IN RELATIONSHIP WITH H/C AXIS SISTEM. FOR ORIENTATION OF SUPPORT SEE COORDINATES TABLE
XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT.SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN ±5 MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN ±5° OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.
AW001CL001-N6
XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT.SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN ±5 MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN ±5° OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.
A366A3E--C
XYZ INDICATES WHERE GIVEN COORDINATES ARE LOCATED ON SUPPORT.SEE COORD. TABLE LOCATION OF SUPPORT CAN BE BONDED WITH IN ±5 MM OF GIVEN COORDINATES. UNLESS OTHERWISE MENTIONED ORIENTATION OF SUPPORT CAN BE BONDED WITH IN ±5° OF GIVEN VALUE. UNLESS OTHERWISE MENTIONED.
AW001CL509-N6

Figure 16

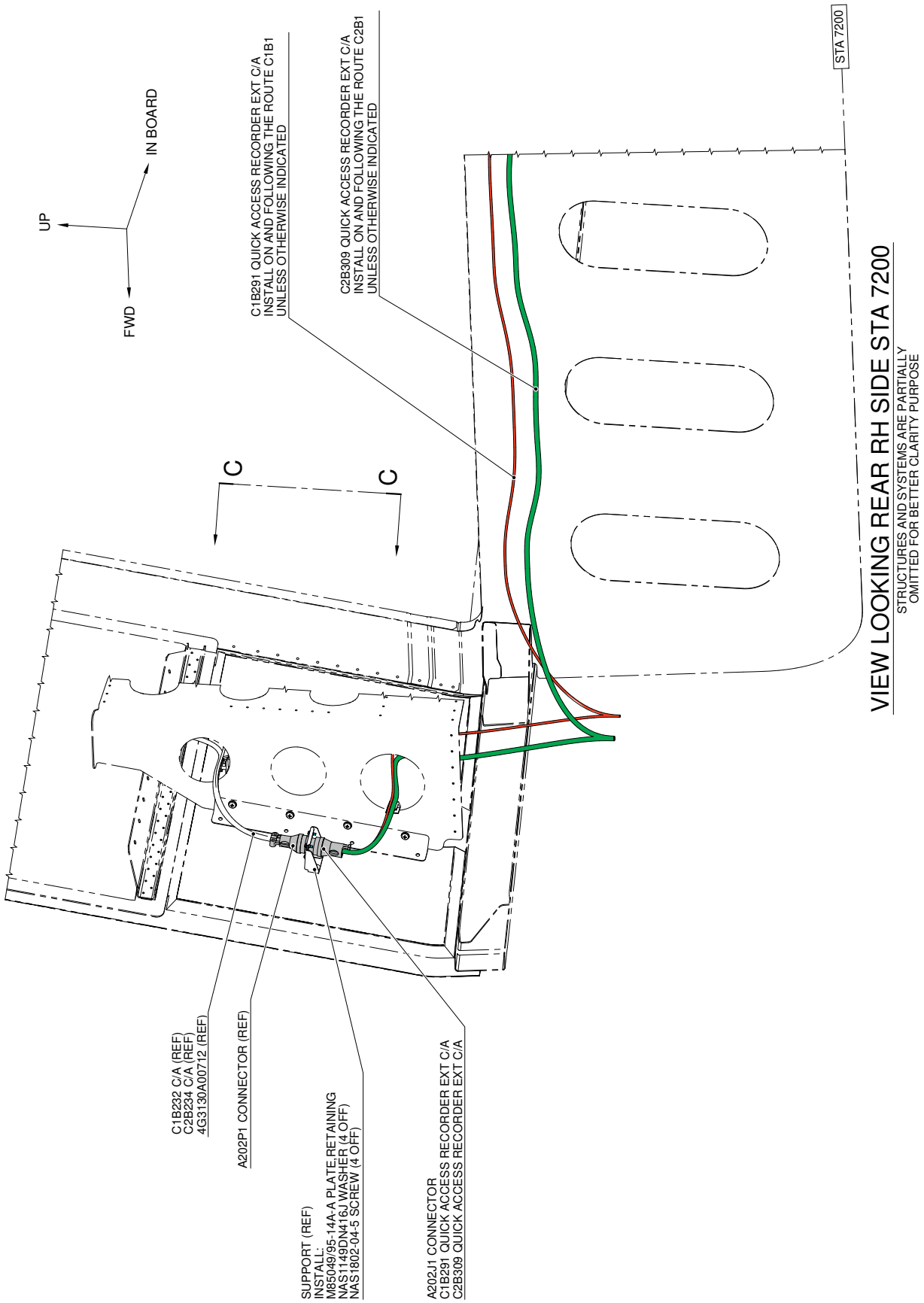
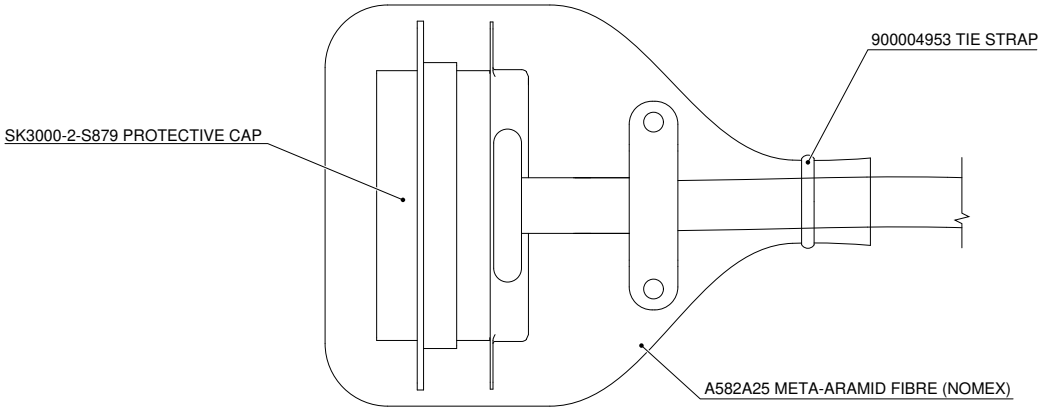
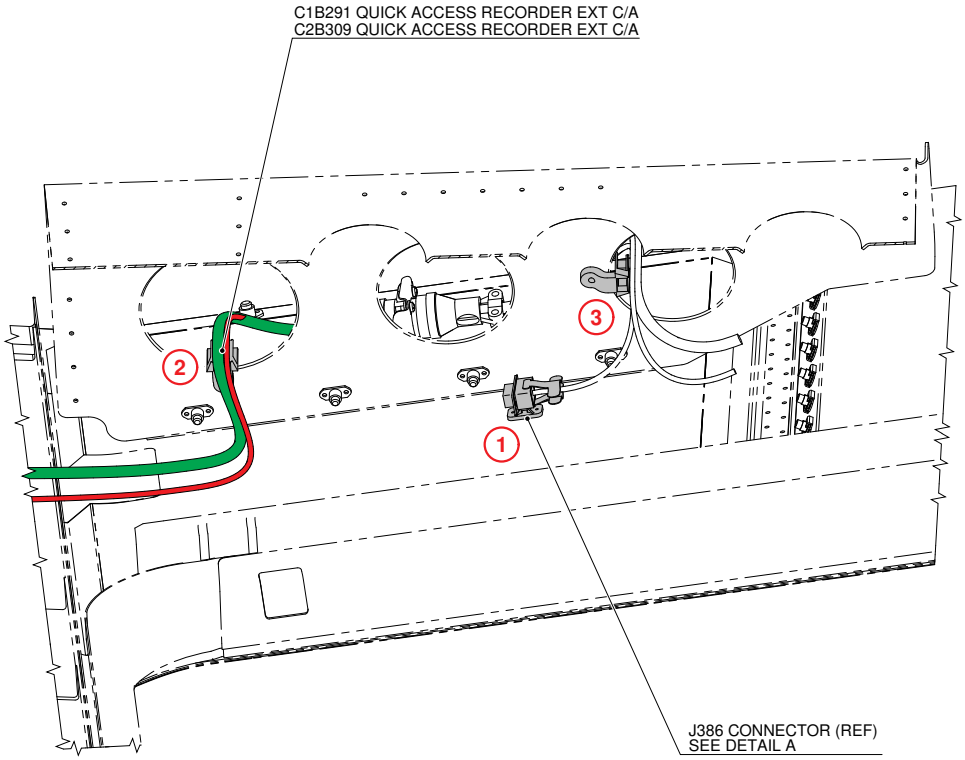

UP
IN BOARD
FWD
C1B291 QUICK ACCESS RECORDER EXT C/A
INSTALL ON AND FOLLOWING THE ROUTE C1B1
UNLESS OTHERWISE INDICATED
C2B309 QUICK ACCESS RECORDER EXT C/A
INSTALL ON AND FOLLOWING THE ROUTE C2B1
UNLESS OTHERWISE INDICATED
STA 7200
C
C
VIEW LOOKING REAR RH SIDE STA 7200
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
C1B232 C/A (REF)
C2B234 C/A (REF)
4G3130A00712 (REF)
A202P1 CONNECTOR (REF)
SUPPORT (REF)
INSTALL:
M85049/95-14A-A PLATE,RETAINING
NAS1149DN416J WASHER (4 OFF)
NAS1802-04-5 SCREW (4 OFF)
A202J1 CONNECTOR
C1B291 QUICK ACCESS RECORDER EXT C/A
C2B309 QUICK ACCESS RECORDER EXT C/A

Figure 17



COVER THE CONNECTOR ASSEMBLY WITH THE NOMEX FIBRE SLEEVE AND USE
THE CABLE STRAPS TO TIE UP SLEEVE FIRMLY TO THE CONNECTOR CABLING.
USE CABLE STRAPS TO FIX THE CONNECTOR ASSY TO THE CABLE LOOM OR SUPPORT

DETAIL A



VIEW C-C

STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

LOCATION NUMBER	PART NUMBER	STA	BL	WL	ORIENTATION
①	AW001CL001-N6	6930	1003	1805	90˚
②	AW001CL509-N6	6898	997	1632	0˚
③	AW001CL509-N6	6898	927	1847	-90˚

Figure 18

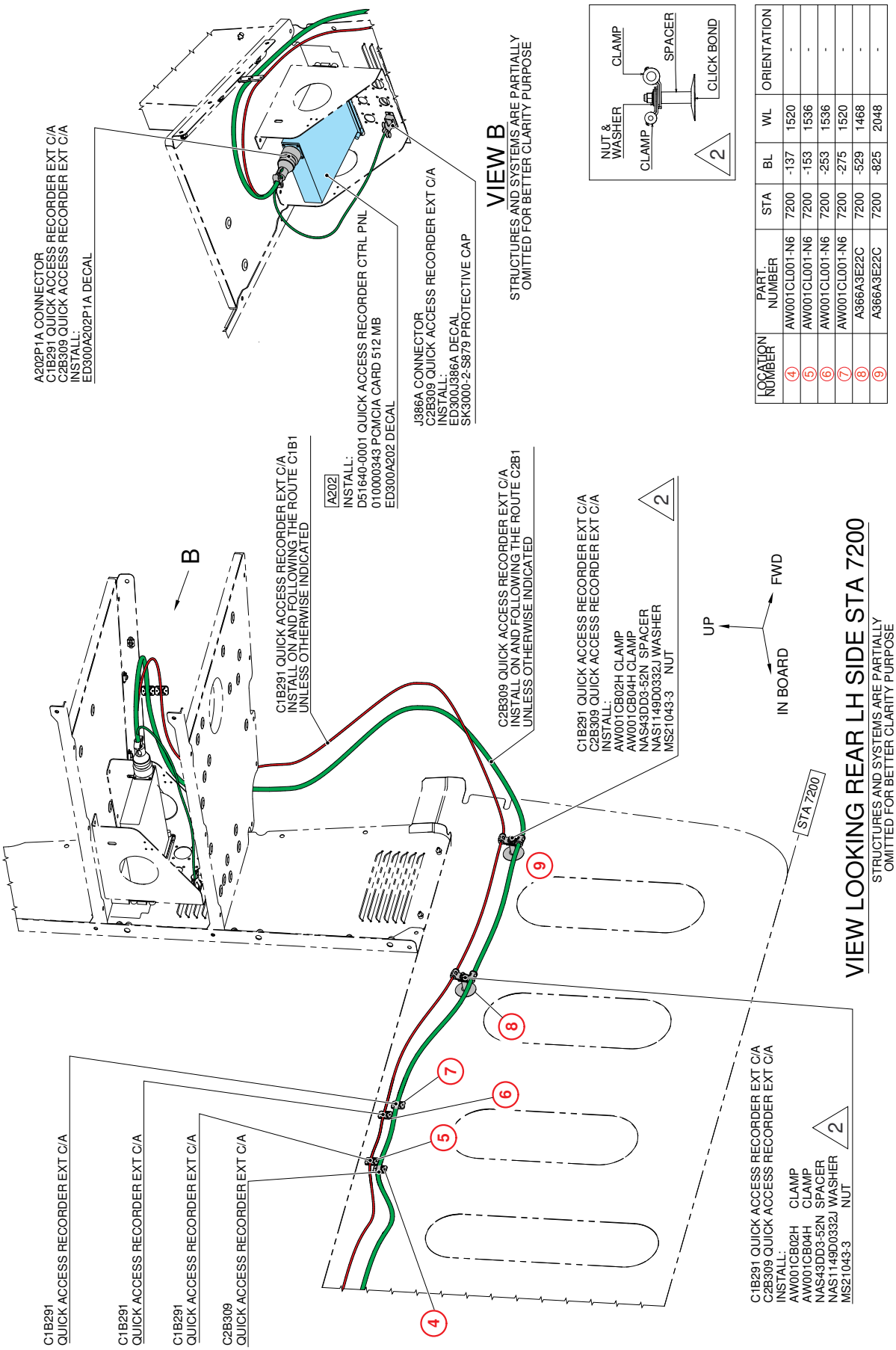

A202P1A CONNECTOR
C1B291 QUICK ACCESS RECORDER EXT C/A
C2B309 QUICK ACCESS RECORDER EXT C/A
INSTALL:
ED300A202P1A DECAL
VIEW B
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
J386A CONNECTOR
C2B309 QUICK ACCESS RECORDER EXT C/A
INSTALL:
ED300J386A DECAL
SK3000-2-S879 PROTECTIVE CAP
A202
INSTALL:
D51640-0001 QUICK ACCESS RECORDER CTRL PNL
010000343 PCMCIA CARD 512 MB
ED300A202 DECAL
NUT & WASHER
CLAMP
CLAMP
SPACER
CLICK BOND
2
LOCATION NUMBER
PART NUMBER
STA
BL
WL
ORIENTATION
④ AW001CL001-N6 7200 -137 1520 -
⑤ AW001CL001-N6 7200 -153 1536 -
⑥ AW001CL001-N6 7200 -253 1536 -
⑦ AW001CL001-N6 7200 -275 1520 -
⑧ A366A3E22C 7200 -529 1468 -
⑨ A366A3E22C 7200 -825 2048 -
B
C1B291 QUICK ACCESS RECORDER EXT C/A
INSTALL ON AND FOLLOWING THE ROUTE C1B1
UNLESS OTHERWISE INDICATED
C2B309 QUICK ACCESS RECORDER EXT C/A
INSTALL ON AND FOLLOWING THE ROUTE C2B1
UNLESS OTHERWISE INDICATED
C1B291 QUICK ACCESS RECORDER EXT C/A
C2B309 QUICK ACCESS RECORDER EXT C/A
INSTALL:
AW001CB02H CLAMP
AW001CB04H CLAMP
NAS43DD3-52N SPACER
NAS1149D0332J WASHER
MS21043-3 NUT
2
UP
FWD
IN BOARD
STA 7200
VIEW LOOKING REAR LH SIDE STA 7200
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
C1B291 QUICK ACCESS RECORDER EXT C/A
C1B291 QUICK ACCESS RECORDER EXT C/A
C1B291 QUICK ACCESS RECORDER EXT C/A
C2B309 QUICK ACCESS RECORDER EXT C/A
C1B291 QUICK ACCESS RECORDER EXT C/A
C2B309 QUICK ACCESS RECORDER EXT C/A
INSTALL:
AW001CB02H CLAMP
AW001CB04H CLAMP
NAS43DD3-52N SPACER
NAS1149D0332J WASHER
MS21043-3 NUT
2

Figure 19

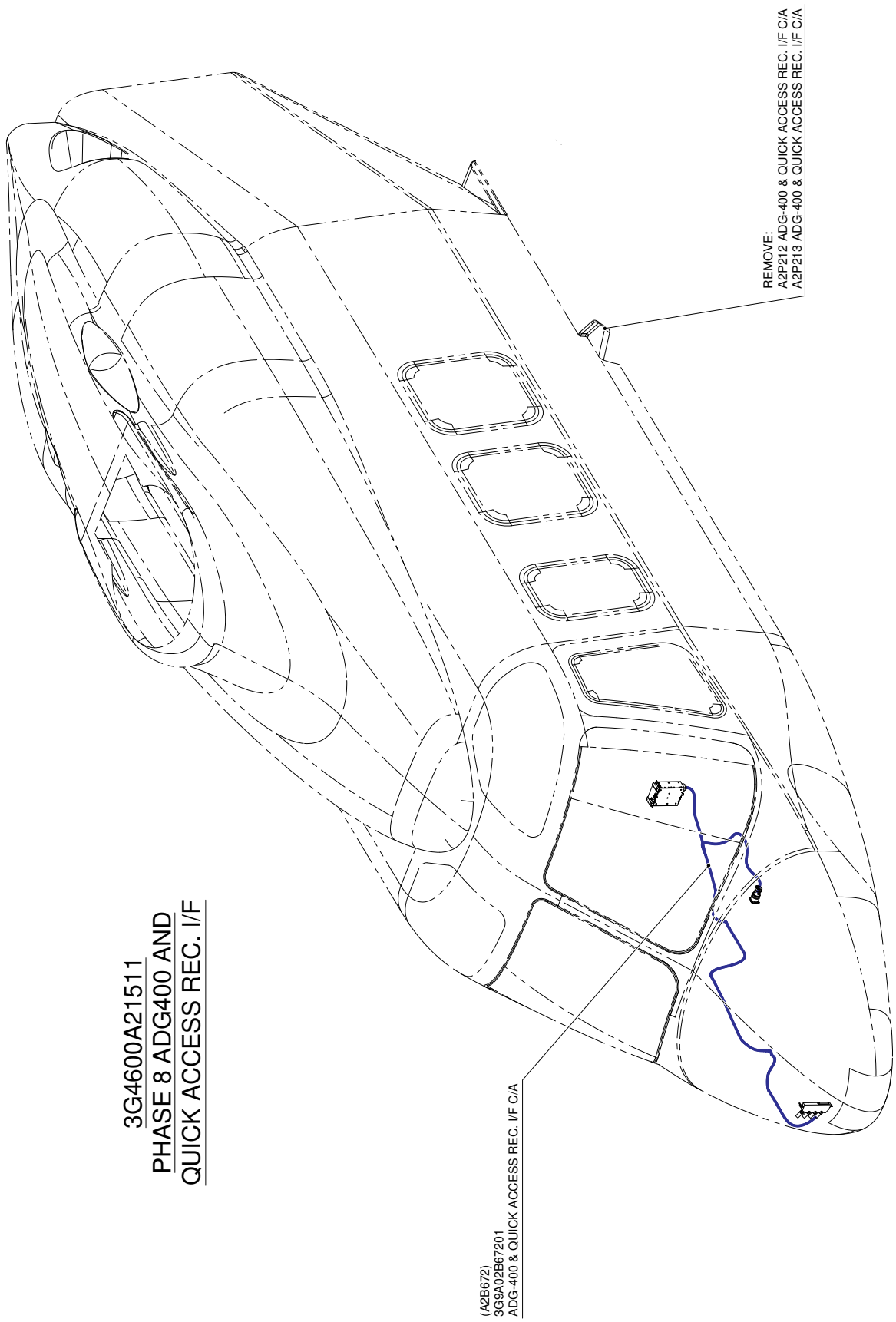

REMOVE:
A2P212 ADG-400 & QUICK ACCESS REC. I/F C/A
A2P213 ADG-400 & QUICK ACCESS REC. I/F C/A
3G4600A21511
PHASE 8 ADG400 AND
QUICK ACCESS REC. I/F
(A2B672)
3G9A02B67201
ADG-400 & QUICK ACCESS REC. I/F C/A

Figure 20

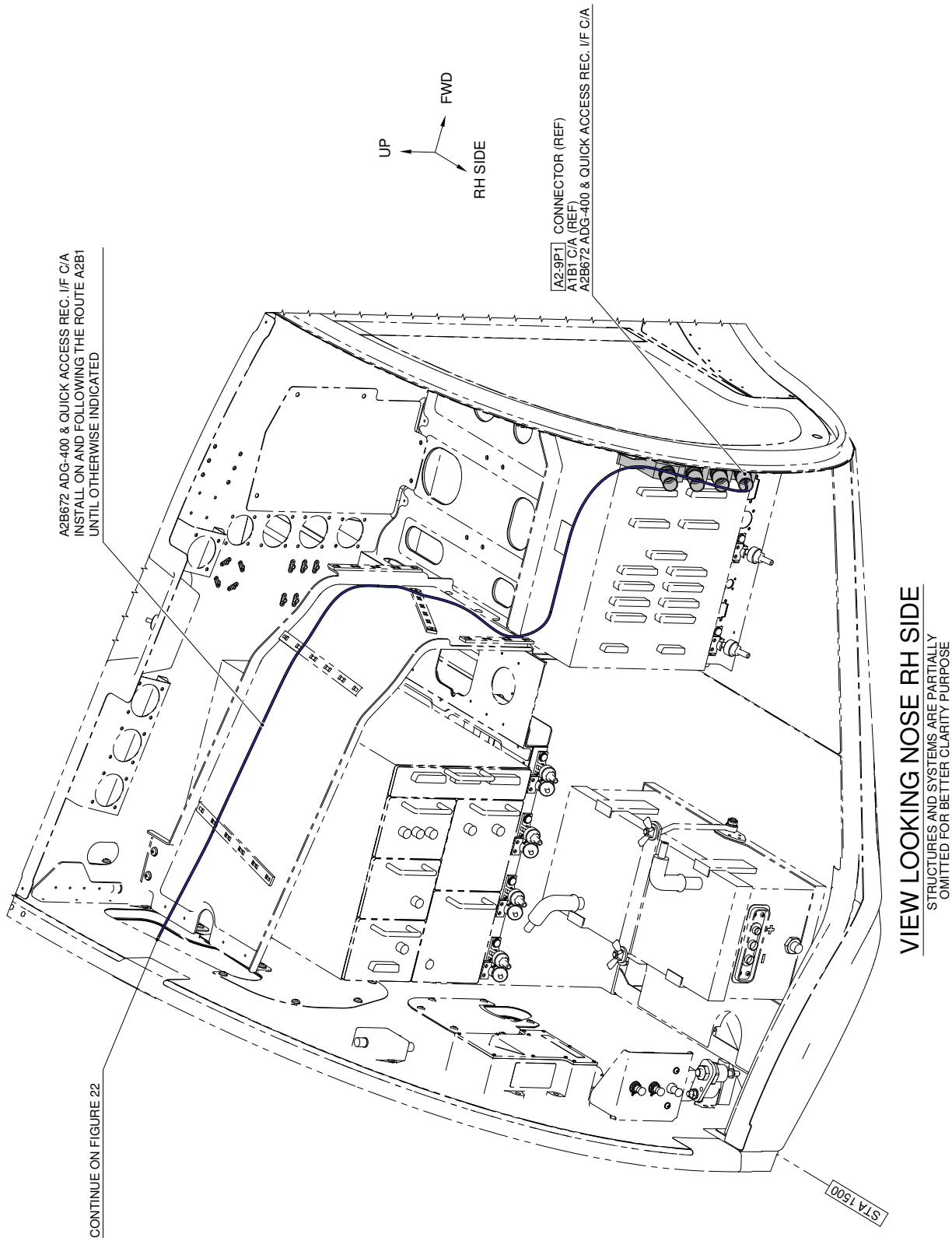

UP
FWD
RH SIDE
A2-9P1 CONNECTOR (REF)
A1B1 C/A (REF)
A2B672 ADG-400 & QUICK ACCESS REC. I/F C/A
A2B672 ADG-400 & QUICK ACCESS REC. I/F C/A
INSTALL ON AND FOLLOWING THE ROUTE A2B1
UNTIL OTHERWISE INDICATED
CONTINUE ON FIGURE 22
STA 1500
VIEW LOOKING NOSE RH SIDE
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 21

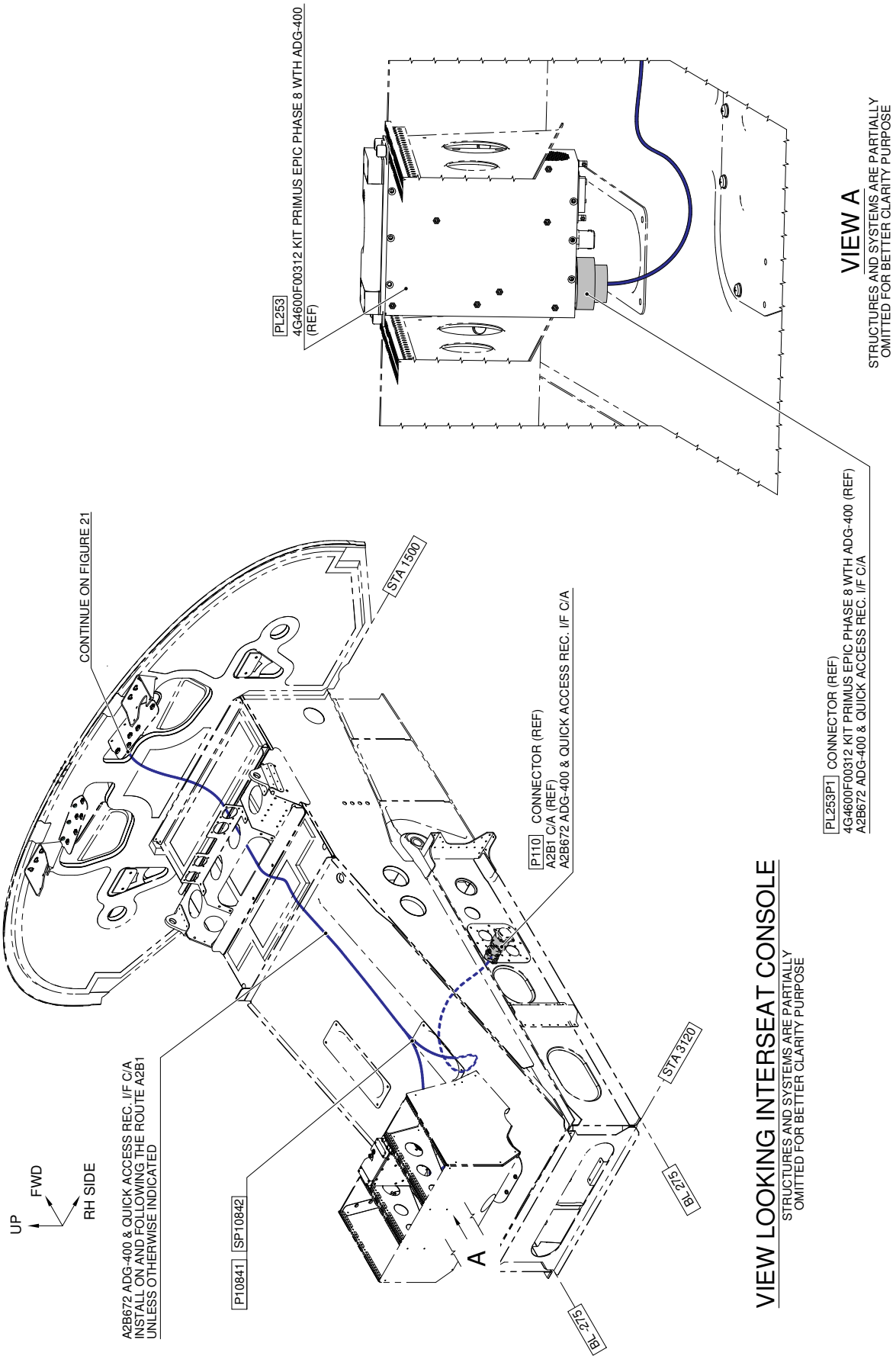

PL253
4G4600F00312 KIT PRIMUS EPIC PHASE 8 WTH ADG-400
(REF)
VIEW A
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE
CONTINUE ON FIGURE 21
STA 1500
P110 CONNECTOR (REF)
A2B1 C/A (REF)
A2B672 ADG-400 & QUICK ACCESS REC. I/F C/A
PL253P1 CONNECTOR (REF)
4G4600F00312 KIT PRIMUS EPIC PHASE 8 WTH ADG-400 (REF)
A2B672 ADG-400 & QUICK ACCESS REC. I/F C/A
A2B672 ADG-400 & QUICK ACCESS REC. I/F C/A
INSTALL ON AND FOLLOWING THE ROUTE A2B1
UNLESS OTHERWISE INDICATED
P10841
SP10842
UP
FWD
RH SIDE
A
STA 3120
BL 2.75
BL -2.75
VIEW LOOKING INTERSEAT CONSOLE
STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 22

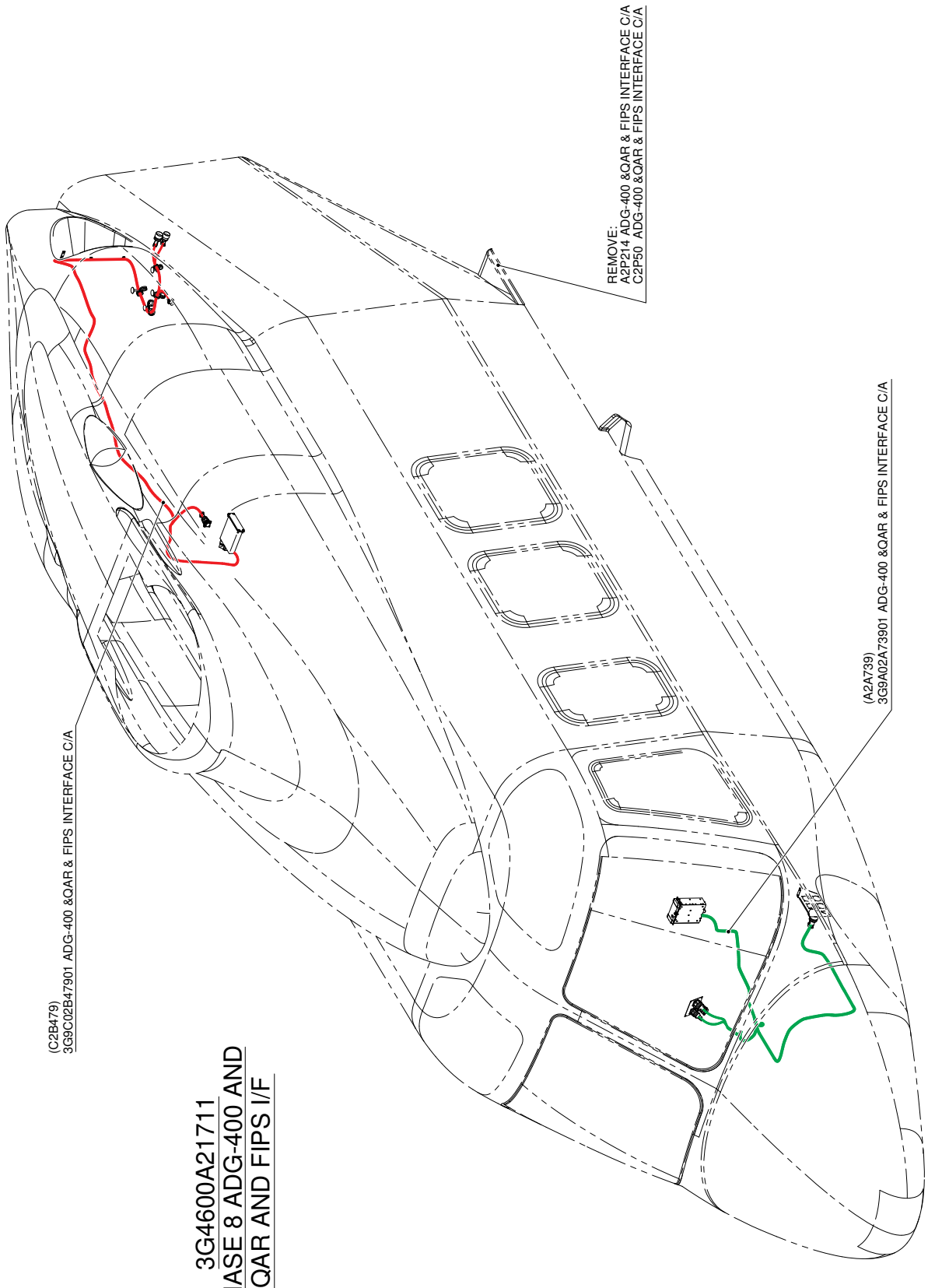

REMOVE:
A2P214 ADG-400 &QAR & FIPS INTERFACE C/A
C2P50 ADG-400 &QAR & FIPS INTERFACE C/A
(C2B479)
3G9C02B47901 ADG-400 &QAR & FIPS INTERFACE C/A
(A2A739)
3G9A02A73901 ADG-400 &QAR & FIPS INTERFACE C/A
3G4600A21711
PHASE 8 ADG-400 AND
QAR AND FIPS I/F

Figure 23

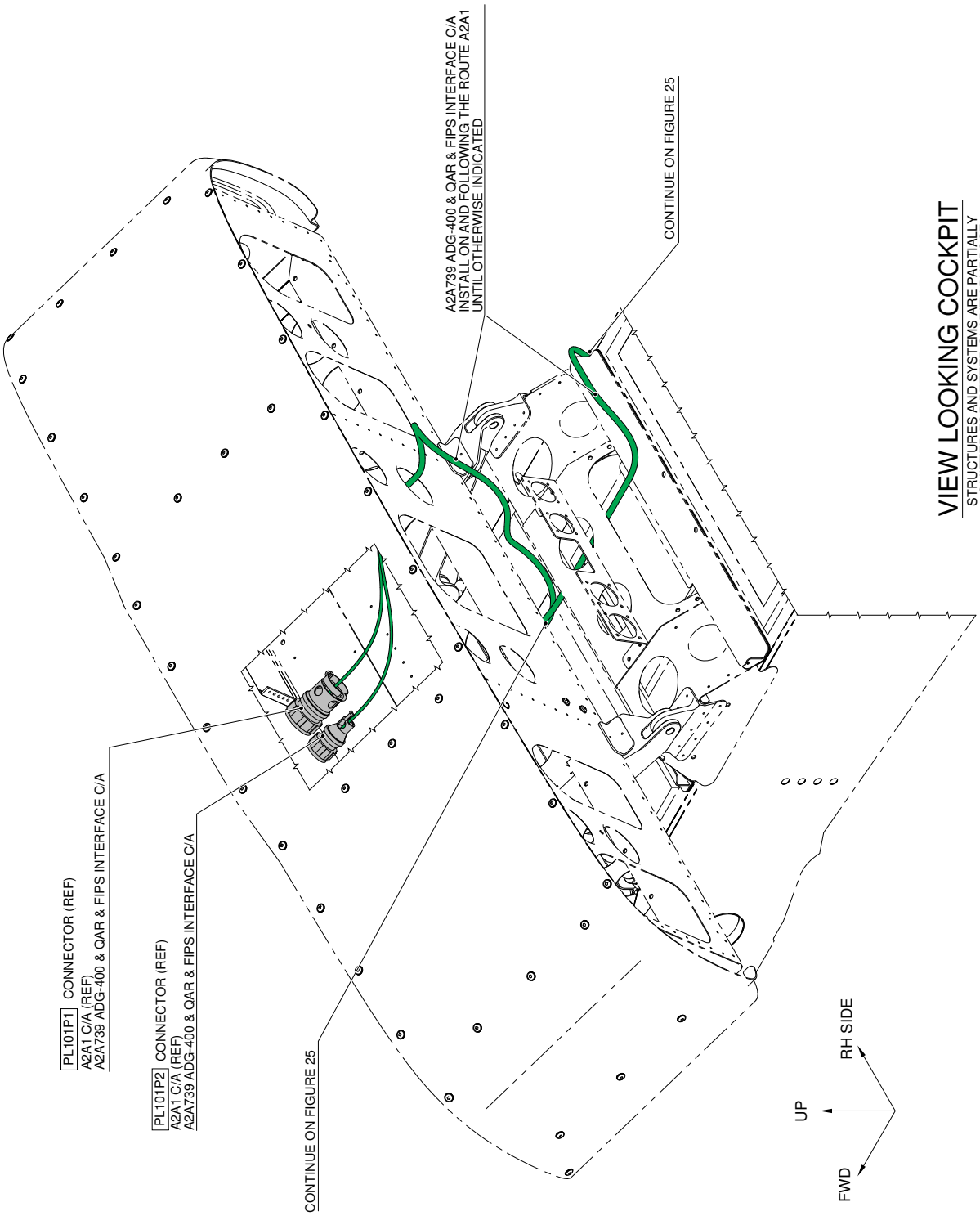

VIEW LOOKING COCKPIT
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
A2A739 ADG-400 & QAR & FIPS INTERFACE C/A INSTALL ON AND FOLLOWING THE ROUTE A2A1 UNTIL OTHERWISE INDICATED
CONTINUE ON FIGURE 25
PL101P1 CONNECTOR (REF)
A2A1 C/A (REF)
A2A739 ADG-400 & QAR & FIPS INTERFACE C/A
PL101P2 CONNECTOR (REF)
A2A1 C/A (REF)
A2A739 ADG-400 & QAR & FIPS INTERFACE C/A
CONTINUE ON FIGURE 25
UP
RH SIDE
FWD

Figure 24

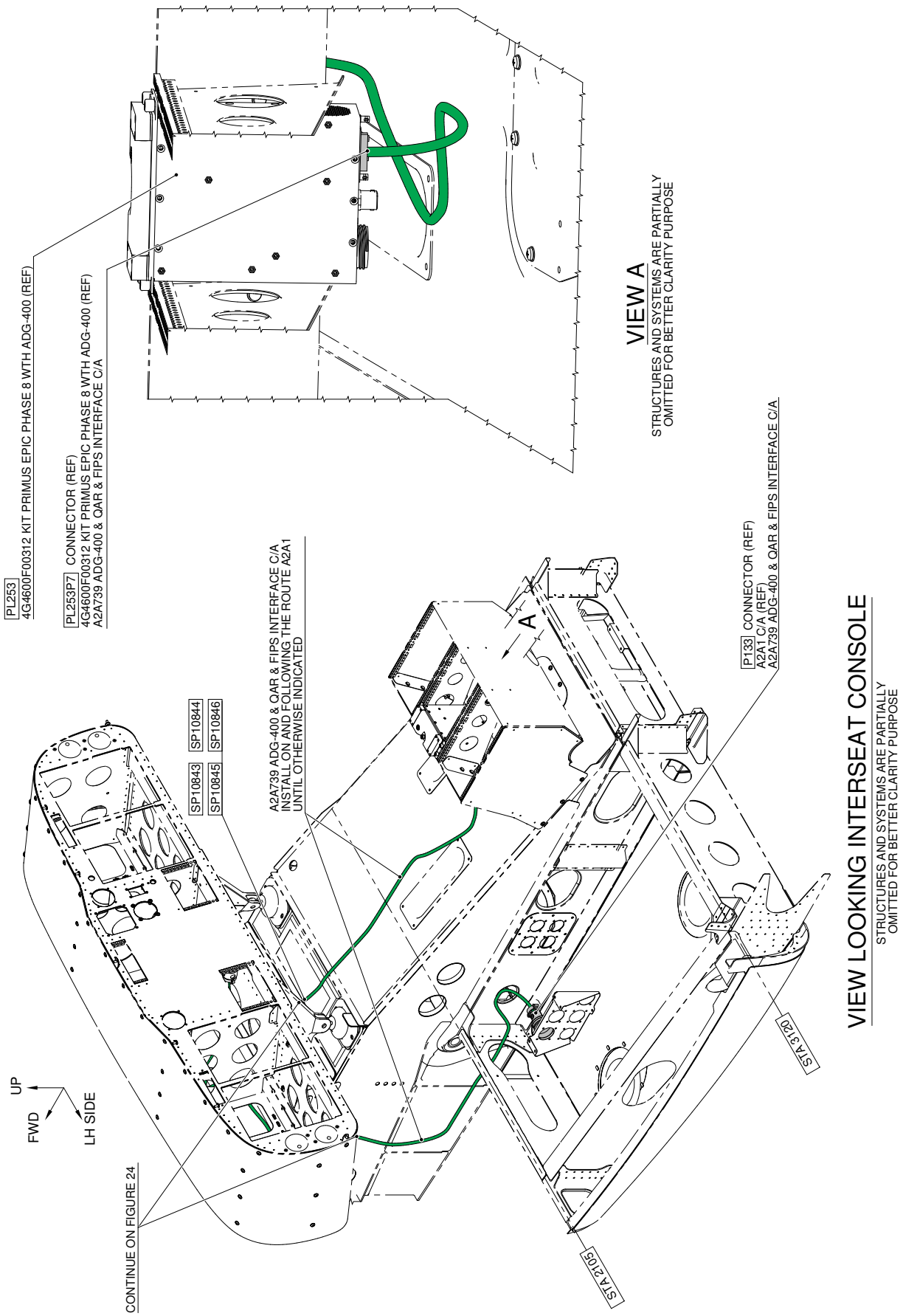

VIEW A
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
PL253
4G4600F00312 KIT PRIMUS EPIC PHASE 8 WTH ADG-400 (REF)
PL253P7 CONNECTOR (REF)
4G4600F00312 KIT PRIMUS EPIC PHASE 8 WTH ADG-400 (REF)
A2A739 ADG-400 & QAR & FIPS INTERFACE C/A
VIEW LOOKING INTERSEAT CONSOLE
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
P133 CONNECTOR (REF)
A2A1 C/A (REF)
A2A739 ADG-400 & QAR & FIPS INTERFACE C/A
A2A739 ADG-400 & QAR & FIPS INTERFACE C/A
INSTALL ON AND FOLLOWING THE ROUTE A2A1
UNTIL OTHERWISE INDICATED
SP10844
SP10846
SP10843
SP10845
A
A
STA 1205
STA 1320
UP
FWD
LH SIDE
CONTINUE ON FIGURE 24

Figure 25

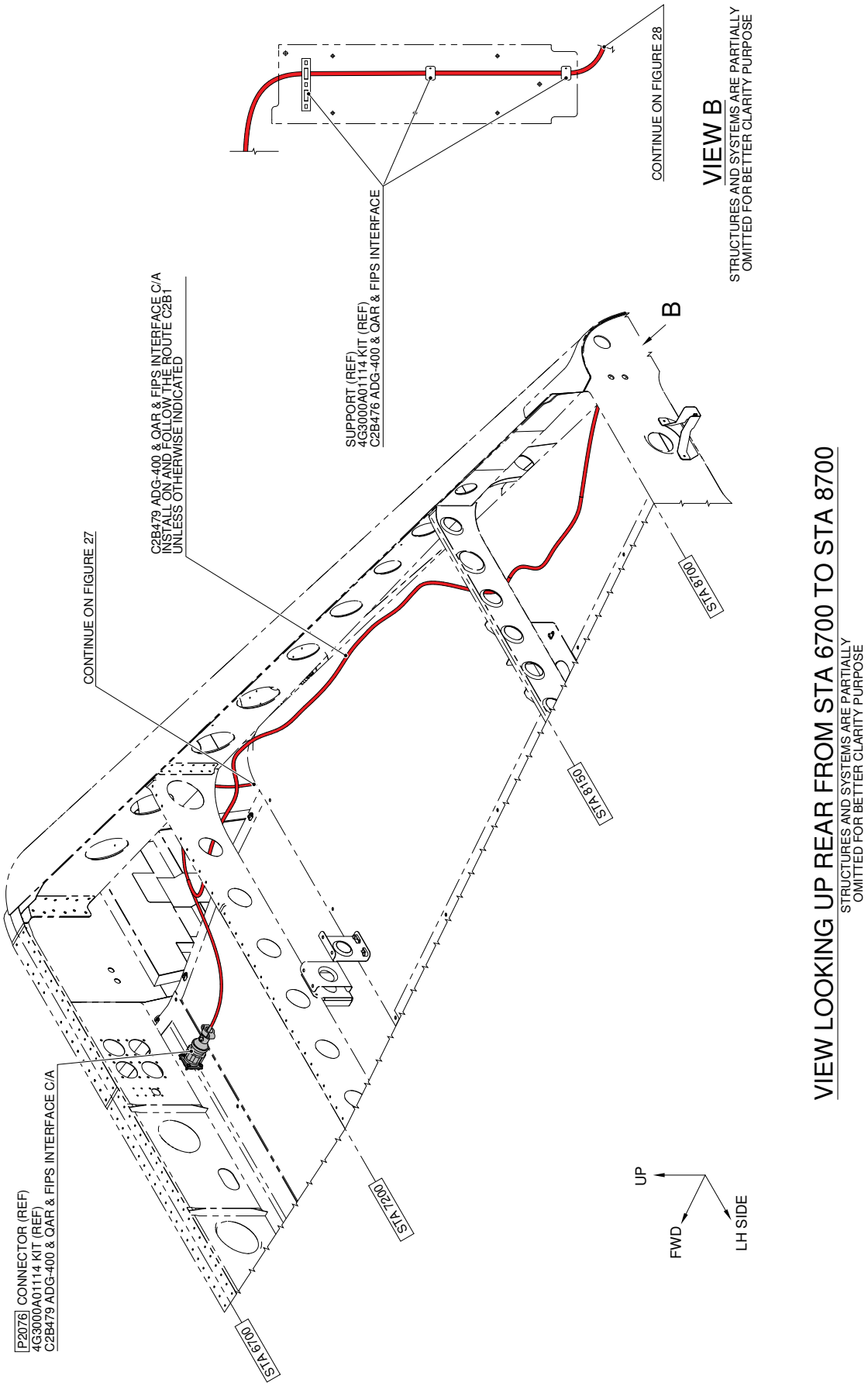
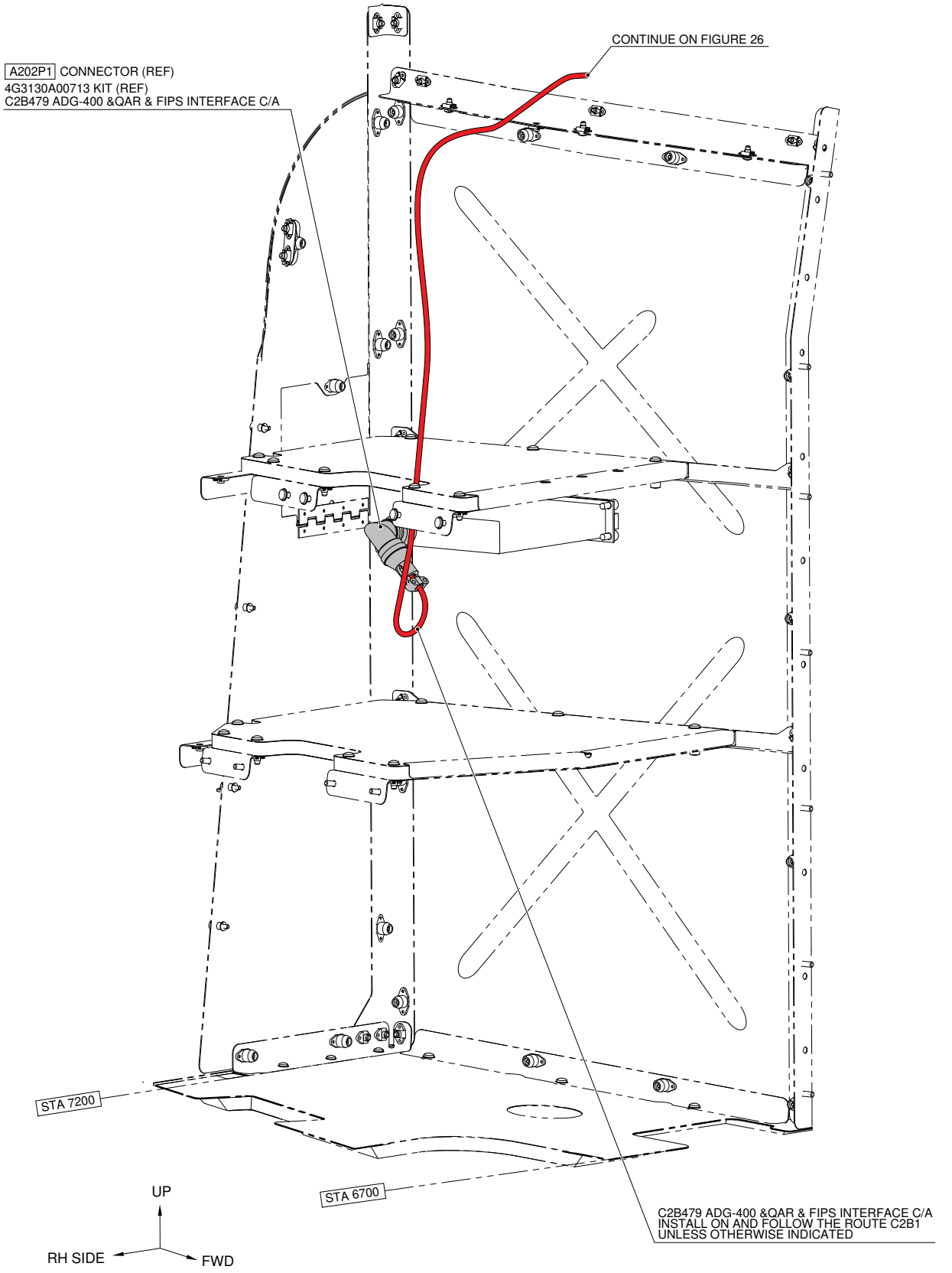

VIEW LOOKING UP REAR FROM STA 6700 TO STA 8700
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
VIEW B
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
CONTINUE ON FIGURE 28
SUPPORT (REF)
4G3000A01114 KIT (REF)
C2B476 ADG-400 & QAR & FIPS INTERFACE
C2B479 ADG-400 & QAR & FIPS INTERFACE C/A
INSTALL ON AND FOLLOW THE ROUTE C2B1
UNLESS OTHERWISE INDICATED
CONTINUE ON FIGURE 27
P2076 CONNECTOR (REF)
4G3000A01114 KIT (REF)
C2B479 ADG-400 & QAR & FIPS INTERFACE C/A
STA 6700
STA 7400
STA 8150
STA 8700
B
UP
FWD
LH SIDE

Figure 26



VIEW LOOKING AVIONIC BAY RH SIDE

STRUCTURES AND SYSTEMS ARE PARTIALLY
OMITTED FOR BETTER CLARITY PURPOSE

Figure 27

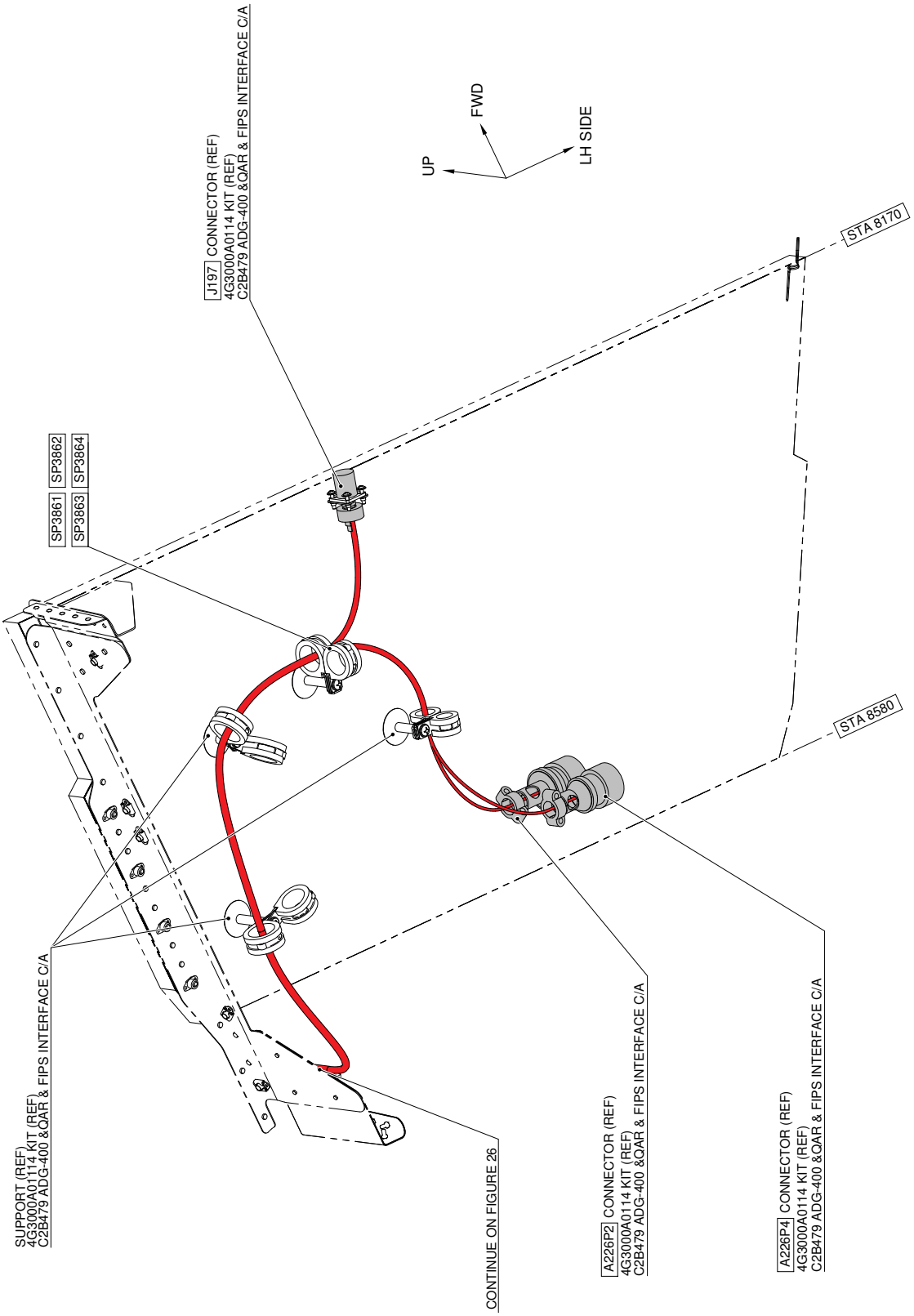

VIEW LOOKING DOWN 2ND AUX AVIONIC BAY
STRUCTURES AND SYSTEMS ARE PARTIALLY OMITTED FOR BETTER CLARITY PURPOSE
UP
FWD
LH SIDE
STA 8170
STA 8580
J197 CONNECTOR (REF)
4G3000A0114 KIT (REF)
C2B479 ADG-400 &QAR & FIPS INTERFACE C/A
SP3861
SP3862
SP3863
SP3864
SUPPORT (REF)
4G3000A01114 KIT (REF)
C2B479 ADG-400 &QAR & FIPS INTERFACE C/A
CONTINUE ON FIGURE 26
A226P2 CONNECTOR (REF)
4G3000A0114 KIT (REF)
C2B479 ADG-400 &QAR & FIPS INTERFACE C/A
A226P4 CONNECTOR (REF)
4G3000A0114 KIT (REF)
C2B479 ADG-400 &QAR & FIPS INTERFACE C/A

Figure 28

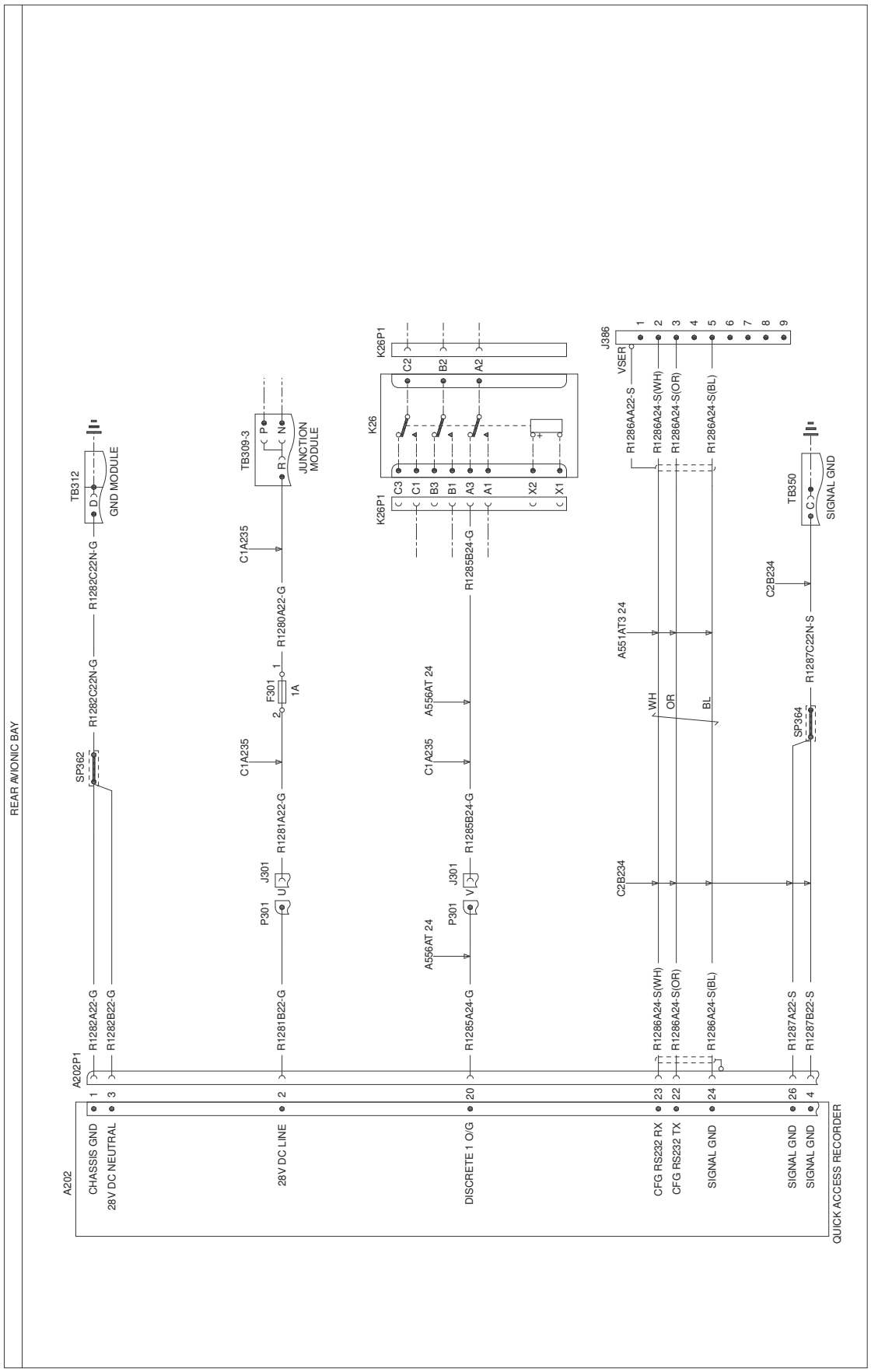
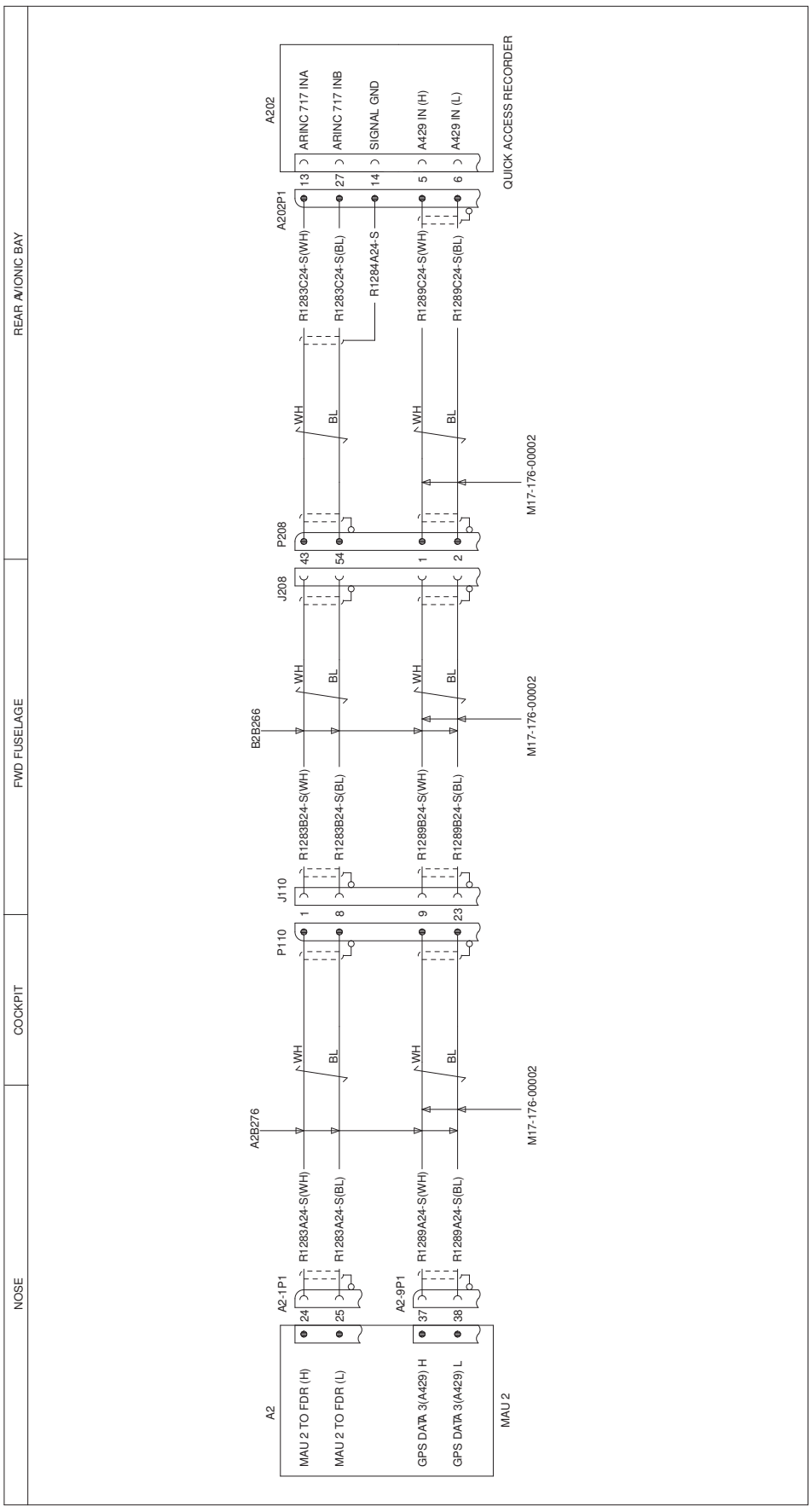

3G3130W00521
WIRING DIAGRAM QUICK ACCESS RECORDER
SHEET 1
REAR AVIONIC BAY
A202
CHASSIS GND
28V DC NEUTRAL
28V DC LINE
DISCRETE 1 O/G
CFG RS232 RX
CFG RS232 TX
SIGNAL GND
SIGNAL GND
SIGNAL GND
QUICK ACCESS RECORDER
A202P1
R1282A22-G
R1282B22-G
R1281B22-G
R1285A24-G
R1286A24-S(WH)
R1286A24-S(OR)
R1286A24-S(BL)
R1287A22-S
R1287B22-S
SP362
R1282C22N-G
TB312
GND MODULE
C1A235
F301
1A
R1280A22-G
R1281A22-G
P301
J301
TB309-3
JUNCTION MODULE
K26P1
K26
C2
B2
A2
C3
C1
B3
B1
A3
A1
X2
X1
R1285B24-G
A556AT 24
J386
VSER
R1286AA22-S
A551AT3 24
WH
OR
BL
C2B234
TB350
SIGNAL GND
R1287C22N-S
SP364
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM C1B232 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556AT 22 UNLESS SPECIFIED

Figure 29



3G3130W00521

WIRING DIAGRAM QUICK ACCESS RECORDER

SHEET 2

FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM C2B234 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A561AT2 24 UNLESS SPECIFIED

Figure 30

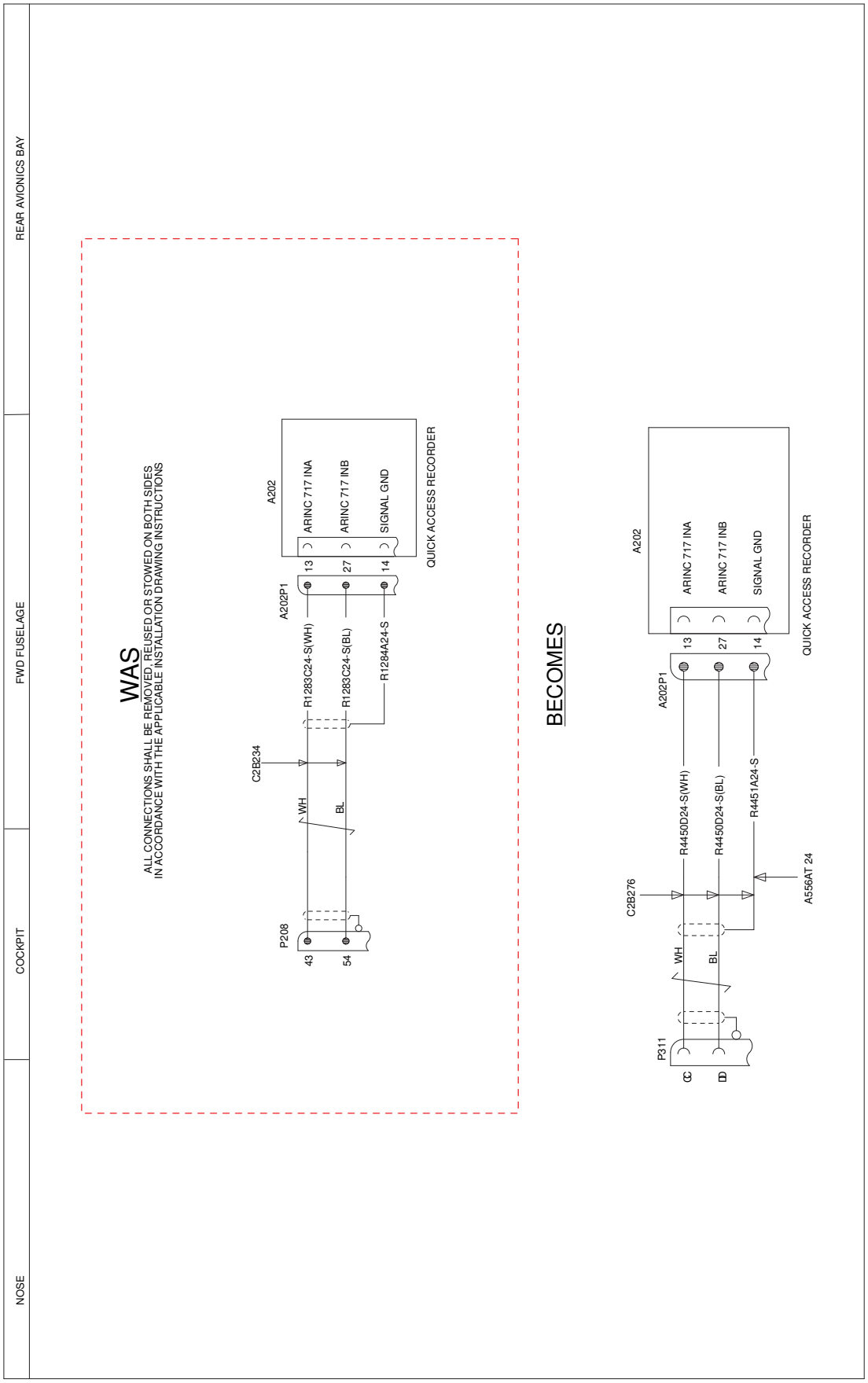

NOSE
COCKPIT
FWD FUSELAGE
REAR AVIONICS BAY
WAS
ALL CONNECTIONS SHALL BE REMOVED, REUSED OR STOWED ON BOTH SIDES
IN ACCORDANCE WITH THE APPLICABLE INSTALLATION DRAWING INSTRUCTIONS
C2B234
P208
43
54
WH
BL
A202P1
13
27
14
R1283C24-S(WH)
R1283C24-S(BL)
R1284A24-S
A202
ARINC 717 INA
ARINC 717 INB
SIGNAL GND
QUICK ACCESS RECORDER
BECOMES
C2B276
P311
CC
DD
WH
BL
A202P1
13
27
14
R4450D24-S(WH)
R4450D24-S(BL)
R4451A24-S
A556AT 24
A202
ARINC 717 INA
ARINC 717 INB
SIGNAL GND
QUICK ACCESS RECORDER
3G3130W00921
WIRING DIAGRAM QUICK ACCESS RECORDER (FDR VARIANT
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM A2A355 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A561AT2 24 UNLESS SPECIFIED

Figure 31

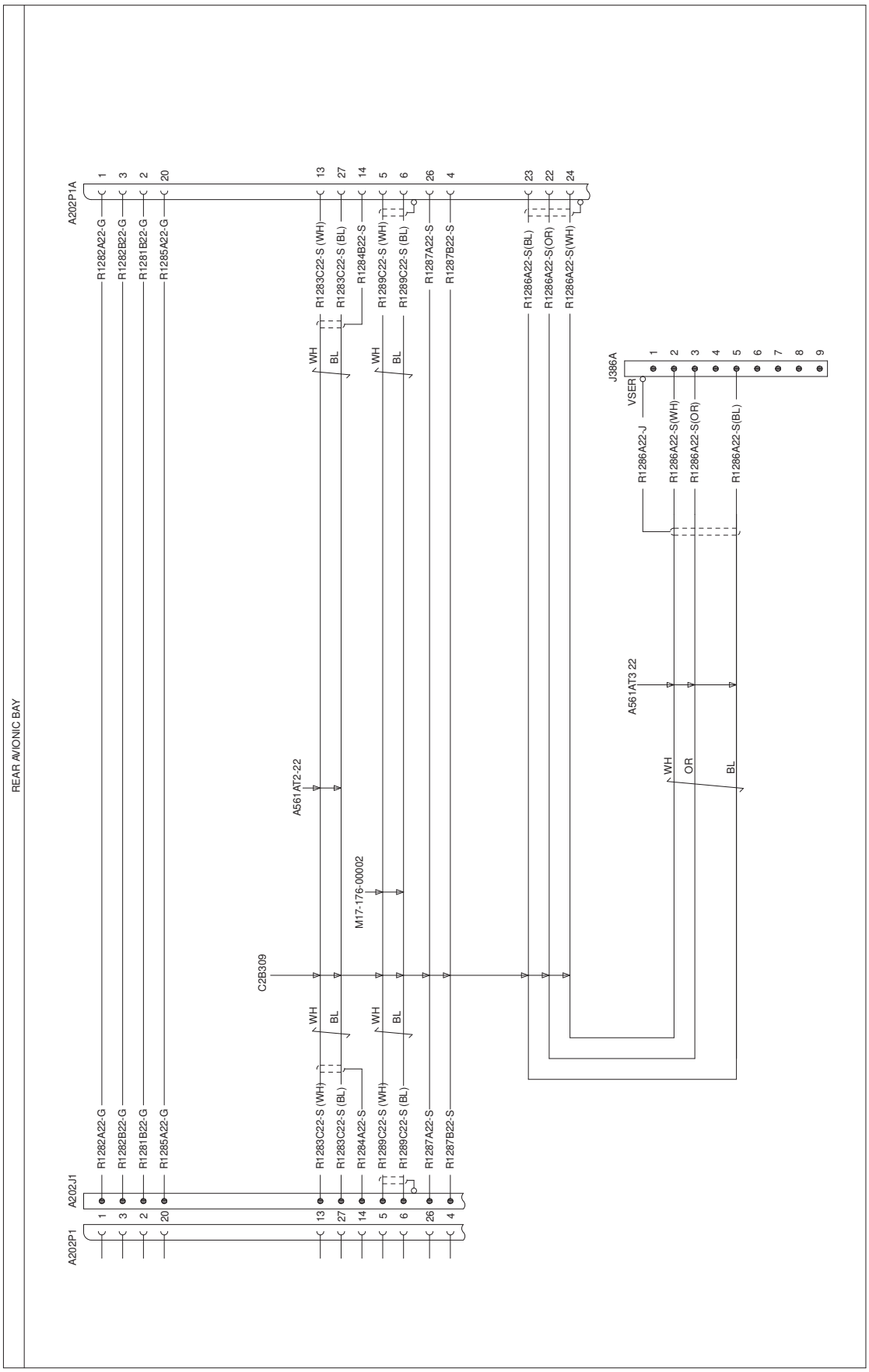

3G3130W01211
WIRING DIAGRAM QUICK ACCESS RECORDER EXTENSION
REAR AVIONIC BAY
A202P1A
A202J1
A202P1
J386A
VSER
C2B309
M17-176-00002
A561AT2-22
A561AT3 22
R1282A22-G
R1282B22-G
R1281B22-G
R1285A22-G
R1283C22-S (WH)
R1283C22-S (BL)
R1284A22-S
R1289C22-S (WH)
R1289C22-S (BL)
R1287A22-S
R1287B22-S
R1286A22-S(BL)
R1286A22-S(OR)
R1286A22-S(WH)
R1286A22-J
WH
BL
OR
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM C1B291 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A556AT 22 UNLESS SPECIFIED

Figure 32

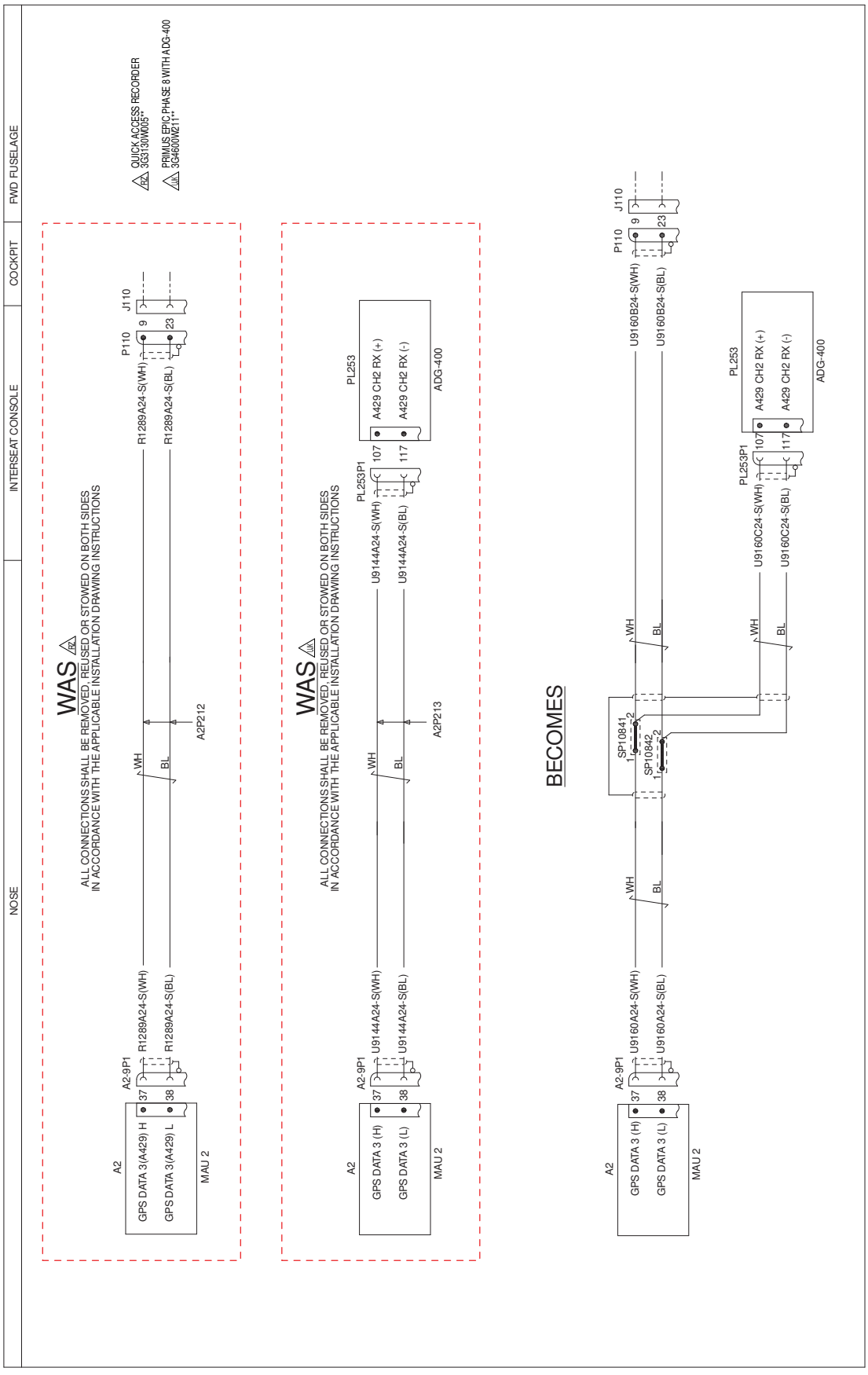

NOSE
INTERSEAT CONSOLE
COCKPIT
PWD FUSELAGE
WAS
ALL CONNECTIONS SHALL BE REMOVED, REUSED OR STOWED ON BOTH SIDES IN ACCORDANCE WITH THE APPLICABLE INSTALLATION DRAWING INSTRUCTIONS
QUICK ACCESS RECORDER 3G3130W0005*
PRIMUS EPIC PHASE 8 WITH ADG-400 3G4600W2111**
A2
A2-9P1
GPS DATA 3(A429) H
GPS DATA 3(A429) L
MAU 2
R1289A24-S(WH)
R1289A24-S(BL)
WH
BL
P110
J110
A2P212
A2P213
U9144A24-S(WH)
U9144A24-S(BL)
PL253
PL253P1
A429 CH2 RX (+)
A429 CH2 RX (-)
ADG-400
BECOMES
SP10841
SP10842
U9160A24-S(WH)
U9160A24-S(BL)
U9160B24-S(WH)
U9160B24-S(BL)
U9160C24-S(WH)
U9160C24-S(BL)
3G4600W21311
WIRING DIAGRAM ADG-400 AND QUICK ACCESS REC. I/F
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM A2B672 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE M17/176-00002 UNLESS SPECIFIED

Figure 33

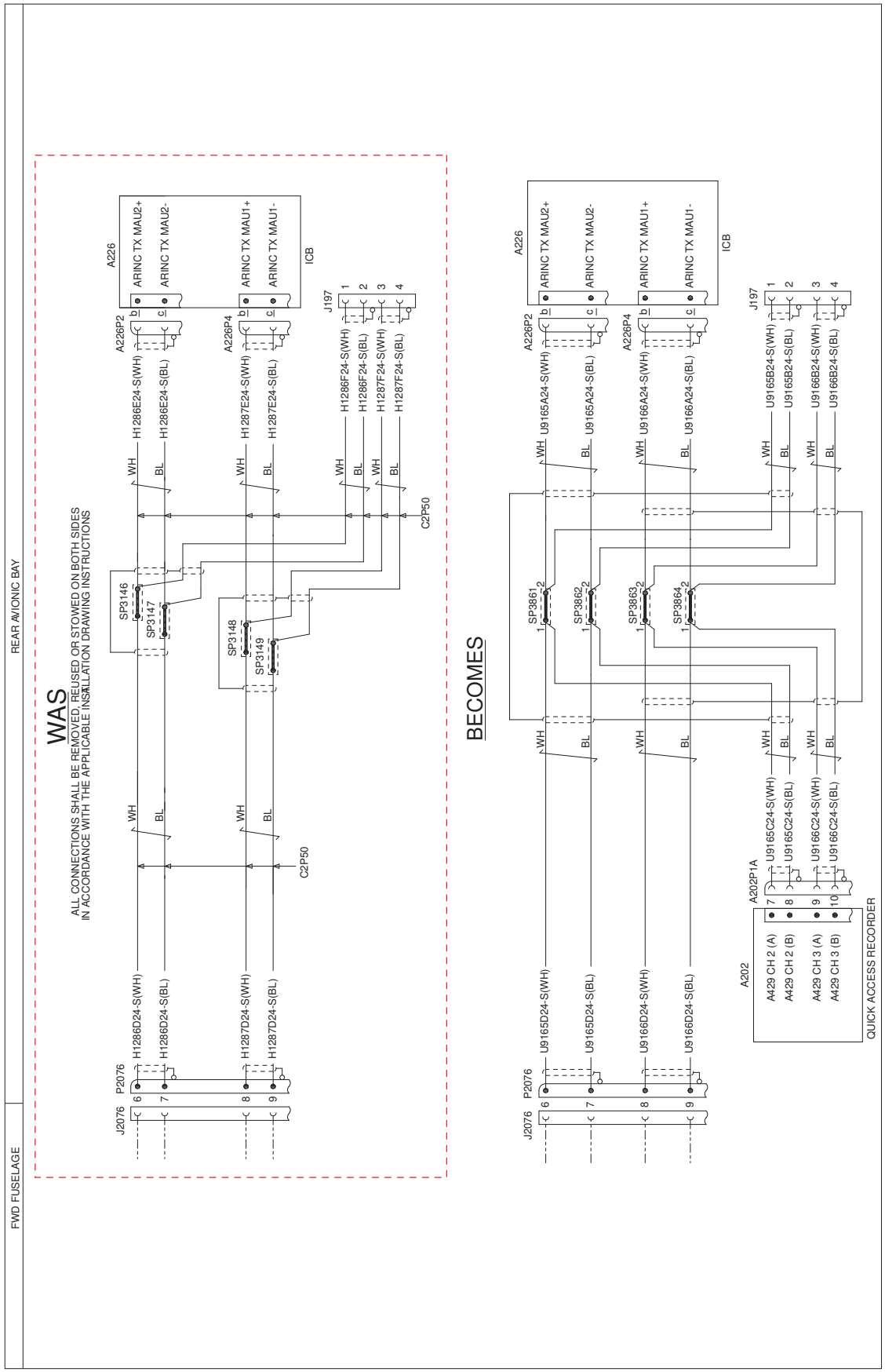

WIRING DIAGRAM QUICK ACCESSADG-400 AND QAR AND FIPS INTERFACE
3G4600W21411
SHEET 1
FWD FUSELAGE
REAR AVIONIC BAY
WAS
ALL CONNECTIONS SHALL BE REMOVED, REUSED OR STOWED ON BOTH SIDES IN ACCORDANCE WITH THE APPLICABLE INSTALLATION DRAWING INSTRUCTIONS
BECOMES
A226
ARINC TX MAU2+
ARINC TX MAU2-
ARINC TX MAU1+
ARINC TX MAU1-
ICB
A226P2
A226P4
J197
H1286E24-S(WH)
H1286E24-S(BL)
H1287E24-S(WH)
H1287E24-S(BL)
H1286F24-S(WH)
H1286F24-S(BL)
H1287F24-S(WH)
H1287F24-S(BL)
C2P50
SP3146
SP3147
SP3148
SP3149
J2076
P2076
H1286D24-S(WH)
H1286D24-S(BL)
H1287D24-S(WH)
H1287D24-S(BL)
SP3861
SP3862
SP3863
SP3864
U9165A24-S(WH)
U9165A24-S(BL)
U9166A24-S(WH)
U9166A24-S(BL)
U9165B24-S(WH)
U9165B24-S(BL)
U9166B24-S(WH)
U9166B24-S(BL)
U9165D24-S(WH)
U9165D24-S(BL)
U9166D24-S(WH)
U9166D24-S(BL)
A202P1A
A202
U9165C24-S(WH)
U9165C24-S(BL)
U9166C24-S(WH)
U9166C24-S(BL)
A429 CH 2 (A)
A429 CH 2 (B)
A429 CH 3 (A)
A429 CH 3 (B)
QUICK ACCESS RECORDER
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM C2B479 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE A561AT2 24 UNLESS SPECIFIED

Figure 34

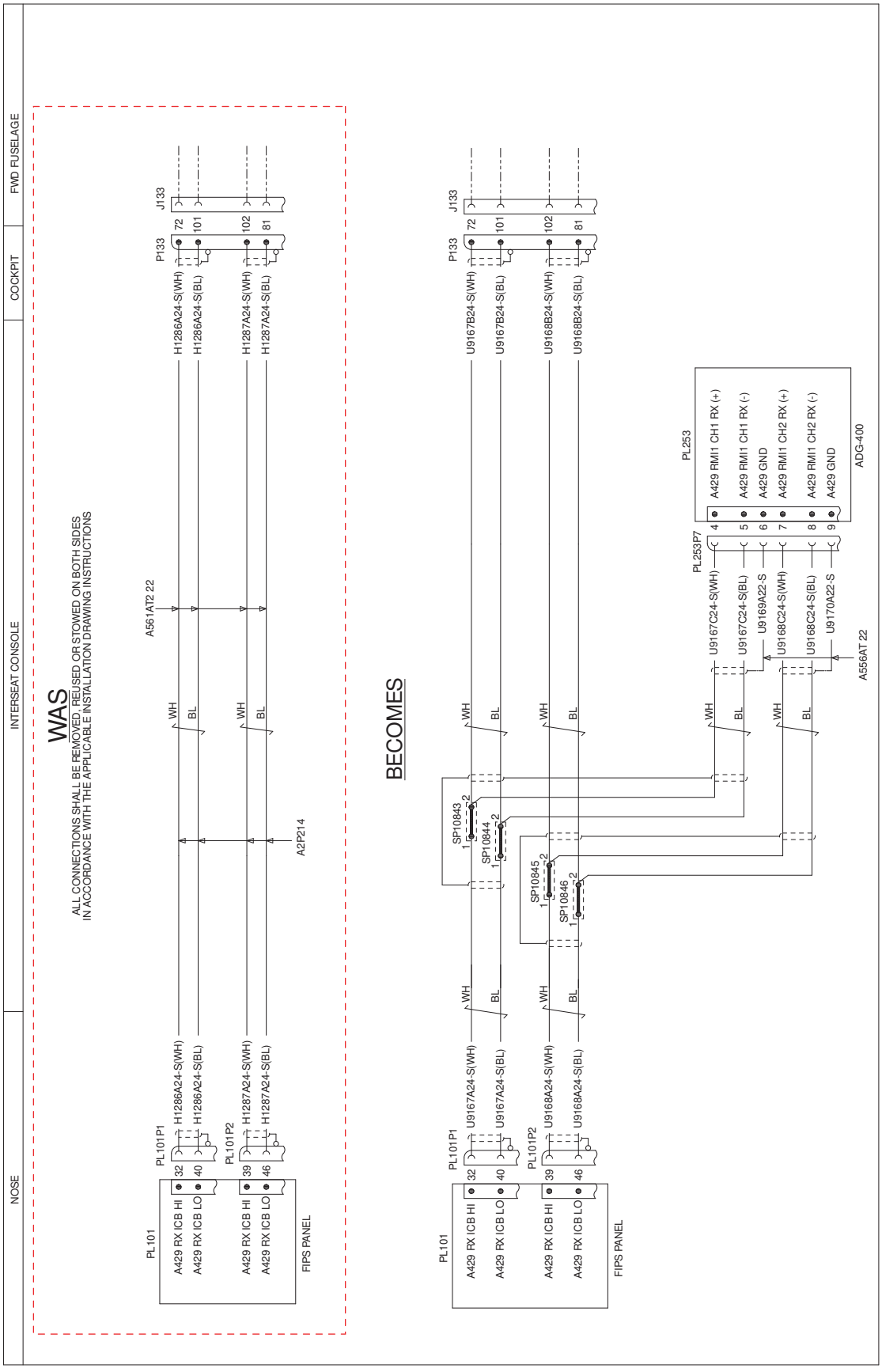

NOSE
INTERSEAT CONSOLE
COCKPIT
FWD FUSELAGE
WAS
ALL CONNECTIONS SHALL BE REMOVED, REUSED OR STOWED ON BOTH SIDES IN ACCORDANCE WITH THE APPLICABLE INSTALLATION DRAWING INSTRUCTIONS
BECOMES
3G4600W21411
WIRING DIAGRAM QUICK ACCESS ADG-400 AND QAR AND FIPS INTERFACE
SHEET 2
FUNCTIONAL NOTES
ALL CABLES ARE IN LOOM A2A739 UNLESS SPECIFIED
ALL CABLES ARE OF TYPE M17/176-00002 UNLESS SPECIFIED
PL101
FIPS PANEL
A429 RX ICB HI
A429 RX ICB LO
PL101P1
PL101P2
H1286A24-S(WH)
H1286A24-S(BL)
H1287A24-S(WH)
H1287A24-S(BL)
A561AT2 22
A2P214
P133
J133
U9167A24-S(WH)
U9167A24-S(BL)
U9168A24-S(WH)
U9168A24-S(BL)
U9167B24-S(WH)
U9167B24-S(BL)
U9168B24-S(WH)
U9168B24-S(BL)
SP10843
SP10844
SP10845
SP10846
PL253
PL253P7
A429 RMI1 CH1 RX (+)
A429 RMI1 CH1 RX (-)
A429 GND
A429 RMI1 CH2 RX (+)
A429 RMI1 CH2 RX (-)
A429 GND
U9167C24-S(WH)
U9167C24-S(BL)
U9169A22-S
U9168C24-S(WH)
U9168C24-S(BL)
U9170A22-S
A556AT 22
ADG-400
WH
BL

Figure 35

3G3130P00111 QUICK ACCESS RECORDER ELECTRICAL C/A VARIANT									
Cable Assy	Wire			From Ref Des	Pin From	Electrical Contact	To Ref Des	Pin To	Electrical Contact
	P/N	ID	Col.						
3G9C01B29102 (C1B291)	A556A-T22	R1282A22-G		A202J1	1	M39029/58-360	A202P1A	1	M39029/57-354
	A556A-T22	R1285A22-G		A202J1	20	M39029/58-360	A202P1A	20	M39029/57-354
	A556A-T22	R1281B22-G		A202P1A	2	M39029/57-354	A202J1	2	M39029/58-360
	A556A-T22	R1282B22-G		A202P1A	3	M39029/57-354	A202J1	3	M39029/58-360
3G9C02B30902 (C2B309)	A556A-T22	R1284A22-S		A202J1	14	M39029/58-360	A202J1	°	N.A.
	A556A-T22	R1287A22-S		A202J1	26	M39029/58-360	A202P1A	26	M39029/57-354
	M17/176-00002	R1289C22-S	WH	A202J1	5	M39029/58-360	A202P1A	5	M39029/57-354
			BL	A202J1	6	M39029/58-360	A202P1A	6	M39029/57-354
	A561A-T2-22	R1283C22-S	WH	A202P1A	13	M39029/57-354	A202J1	13	M39029/58-360
			BL	A202P1A	27	M39029/57-354	A202J1	27	M39029/58-360
	A556A-T22	R1284B22-S		A202P1A	14	M39029/57-354	A202P1A	°	N.A.
	A561A-T3-22	R1286A22-S	WH	A202P1A	24	M39029/57-354	J386A	2	M39029/63-368
			OR	A202P1A	22	M39029/57-354	J386A	3	M39029/63-368
			BL	A202P1A	23	M39029/57-354	J386A	5	M39029/63-368
	A556A-T22	R1287B22-S		A202P1A	4	M39029/57-354	A202J1	4	M39029/58-360
	A556A-T22	R1286A22-S		J386A	*	N.A.	J386A	VSER	MS25036-148

3G4600A21511 PHASE 8 ADG400 AND QUICK ACCESS REC. I/F									
Cable Assy	Wire			From Ref Des	Pin From	Electrical Contact	To Ref Des	Pin To	Electrical Contact
	P/N	ID	Col.						
3G9A02B67201 (A2B672)	M17/176-00002	U9160A24-S	WH	A2-9P1	37	M39029/57-354	SP10841	1	N.A.
			BL	A2-9P1	38	M39029/57-354	SP10842	1	N.A.
	M17/176-00002	U9160B24-S	WH	SP10841	2	N.A.	P110	9	M39029/58-360
			BL	SP10842	2	N.A.	P110	23	M39029/58-360
	M17/176-00002	U9160C24-S	WH	SP10841	2	N.A.	PL253P1	107	809-001
			BL	SP10842	2	N.A.	PL253P1	117	809-001

Figure 36

3G4600A21711 PHASE 8 ADG400 AND QAR AND FIPS I/F									
Cable Assy	Wire			From Ref Des	Pin From	Electrical Contact	To Ref Des	Pin To	Electrical Contact
	P/N	ID	Col.						
3G9A02A73901 (A2A739)	M17/176-00002	U9167B24-S	WH	P133	72	M39029/58-360	SP10843	2	N.A.
			BL	P133	101	M39029/58-360	SP10844	2	N.A.
	A556A-T22	U9169A22-S		PL253P7	6	N.A.	PL253P7	°	N.A.
	A556A-T22	U9170A22-S		PL253P7	9	N.A.	PL253P7	°	N.A.
	M17/176-00002	U9167A24-S	WH	SP10843	1	N.A.	PL101P1	32	M39029/56-348
			BL	SP10844	1	N.A.	PL101P1	40	M39029/56-348
	M17/176-00002	U9167C24-S	WH	SP10843	2	N.A.	PL253P7	4	N.A.
			BL	SP10844	2	N.A.	PL253P7	5	N.A.
	M17/176-00002	U9168A24-S	WH	SP10845	1	N.A.	PL101P2	39	M39029/56-348
			BL	SP10846	1	N.A.	PL101P2	46	M39029/56-348
	M17/176-00002	U9168B24-S	WH	SP10845	2	N.A.	P133	102	M39029/58-360
			BL	SP10846	2	N.A.	P133	81	M39029/58-360
	M17/176-00002	U9168C24-S	WH	SP10845	2	N.A.	PL253P7	7	N.A.
			BL	SP10846	2	N.A.	PL253P7	8	N.A.
3G9C02B47901 (C2B479)	A561A-T2-24	U9165C24-S	WH	A202P1A	7	M39029/57-354	SP3861	1	N.A.
			BL	A202P1A	8	M39029/57-354	SP3862	1	N.A.
	A561A-T2-24	U9166C24-S	WH	A202P1A	9	M39029/57-354	SP3863	1	N.A.
			BL	A202P1A	10	M39029/57-354	SP3864	1	N.A.
	A561A-T2-24	U9165A24-S	WH	A226P2	b	M39029/56-351	SP3861	2	N.A.
			BL	A226P2	c	M39029/56-351	SP3862	2	N.A.
	A561A-T2-24	U9166A24-S	WH	A226P4	b	M39029/56-351	SP3863	2	N.A.
			BL	A226P4	c	M39029/56-351	SP3864	2	N.A.
	A561A-T2-24	U9165B24-S	WH	SP3861	2	N.A.	J197	1	M39029/56-348
			BL	SP3862	2	N.A.	J197	2	M39029/56-348
	A561A-T2-24	U9165D24-S	WH	SP3861	1	N.A.	P2076	6	M39029/58-360
			BL	SP3862	1	N.A.	P2076	7	M39029/58-360
	A561A-T2-24	U9166B24-S	WH	SP3863	2	N.A.	J197	3	M39029/56-348
			BL	SP3864	2	N.A.	J197	4	M39029/56-348
	A561A-T2-24	U9166D24-S	WH	SP3863	1	N.A.	P2076	8	M39029/58-360
			BL	SP3864	1	N.A.	P2076	9	M39029/58-360

Figure 37

ANNEX A

QUICK ACCESS RECORDER FUNCTIONAL TESTS

6.2 TOOLS REQUIRED

- DC external power bench (28Vdc-3KW min.);
- DC voltmeter (range 0 ÷ 32 Vdc);
- A DB9 serial cable used for monitoring the messages that the CPQAR echoes (see APPENDIX A chapter 1);
- A laptop with the following SWs (see APPENDIX A chapter 2 and 3 for QAR configuration and monitoring):
  - ✓ The Windows software "HyperTerminal" or equivalent;
  - ✓ The Penny and Giles SW "CPQAR Config.exe" (a CD ROM is provided by the supplier) that affords the operator to setup the recording requirements (Configuration Program):
    - ➢ CD p/n W107896 for SSQAR CONFIG V 1.3.3
    - ➢ CD p/n W107897 for SSQAR CONFIG V 2.2
  - ✓ Two different PGS sw releases could be used related to which CPQAR type is installed:
    - ➢ PGS Vision **SW release 4**, with AW-139 Database (.arb) installed (see [10], [11], [12] and [13]) to analyze the recorded data, if **CPQAR type D51640 MOD 1, 2** is installed on the aircraft;
    - ➢ PGS Vision **SW release 5.1.1** or following, with AW-139 Database (.arb) installed (see [10], [11], [12] and [13]) to analyze the recorded data, if **CPQAR type D51640 MOD 1, 2, 4 and following** is installed on the aircraft

  Two different PGS software could be used to read the data recorded by CPQAR:
  - ➢ PGS DISCOVERY
  - ➢ PGS VISION

  The tests described in par 6.5.2 will be performed assuming that PGS VISION will be installed on the laptop.
- A PCMCIA Card to upload the new Configuration Program and to record flight data;
- A "dummy object in order to simulate the panel closure.

INSTRUMENT PRECISION: ± 2% MIN

6.3 ELECTRICAL CIRCUIT BREAKERS CONFIGURATION

1	Verify that the Electrical Distribution System Circuit Breakers are pushed in.	❒
2	Verify that all the Avionic Devices Circuit Breakers are pushed in	❒
3	The helicopter external power port shall be connected to the External Power Bench set to 28 VDC output. Power up the External Power Bench before starting with the test procedure.	❒

6.4 PRELIMINARY CHECKS

6.4.1 POWER SUPPLY AND BONDING CHECKS

6.4.1.1 BONDING VERIFICATION

1 Verify the FDR system circuit breaker (overhead panel) is pulled out and disconnect the connector A202P1. ❒

Measure the ohmic value between the QAR (connector or dedicated pad) and the preference point as described in Table below. Record the measured value

2 ❒

REF-DES	DESCRIPTION	PROBE B	LIMIT VALUE	MEASURED VALUE
A202	QAR Equipment	Local Structure	5 milliOhm	

6.4.1.2 POWER SUPPLY CHECKS

1	With the helicopter electrically powered, push the FDR circuit breaker in.	❒
2	Verify that the voltage between the pins A202P1-2 (+) and A202P1-3 (-) is 28VDC.	❒
3	Pull the FDR circuit breaker out and reconnect the connector A202P1.	❒

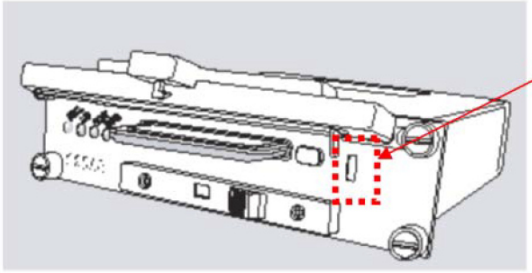
6.4.2 QAR CONFIGURATION SETTINGS LOADING

NOTE: if HYPERTERMINAL, or equivalent, is not available, jump steps: 4,5 and 7.

1 Create a CONFIG.CFG setting file. (see APPENDIX A § A2 for configuration file SET-UP) ❒

The different SSQAR type (mod 1, mod 2, mod 4 or following) shall be configured using the SSQAR CONFING V1.3.3 or V2.2 in accordance with the following table

CONFIGURATION SOFTWARE	SSQAR TYPE	REF TO SECTION	
		IF 3G3106P02011 QAR - FIPS ELECT PROV IS NOT INSTALLED	IF 3G3106P02011 QAR - FIPS ELECT PROV IS INSTALLED
SSQAR CONFIG V1.3.3	D51640-0001 MOD1	A.2.1.1	A.2.1.2
	D51640-0001 MOD 2	A.2.1.1	A.2.1.2
SSQAR CONFIG V2.2	D51640-0001 MOD1	A.2.2.1	A.2.2.2
	D51640-0001 MOD 2	A.2.2.1	A.2.2.2
	D51640-0001 MOD 4 (OR FOLLOWING)	A.2.3.1	A.2.3.2

2	Be sure that the FDR CB is pulled out;	❒
3	Copy the file CONFIG.CFG to an empty PCMCIA card and insert the card in the QAR slot.  Insert a dummy object in the slot highlighted in order to simulate the door closure	❒
4	Connect the QAR maintenance port to the laptop with the DB9 serial cable (see appendix A § A1);	❒
5	Launch HyperTerminal SW after configuring COM1 serial port (see APPENDIX A § A3);	❒
6	Push in the FDR CB	❒
7	The following sequence displays on screen:	❒

If CPQAR type D51640 MOD 1, 2 is installed

Text echoed to Hyperterminal	*Comments*
SSQAR3 - operating from 'FLASH program' region 0 (Bank 1 & bank 2) INI State -> START_TICK_ISR Software version : 1.10 INI State -> CHECK_DOOR INI State -> CHECK_DEVICE ATA-IDE Device present RLS State -> DETECT_RLS_FILES No release program files detected on this disk CFG State -> DETECT_CFG_FILE The configuration file has been detected on this disk CFG State -> CHECK_CFG_FILE This file content has been checked as a valid configuration data file CFG State -> BACKUP_CONFIG New configuration successfully stored in EEPROM Disk free space : 244 MBytes No previous feedback configuration file <FBCONFIG.CFG> present on disk. Feedback configuration file <FBCONFIG.CFG> successfully created and open CFG State -> WAIT_FOR_DOOR_OPEN	*The unit has detected the CONFIG.CFG file on the PCMCIA and uploads the new configuration.* *For checking purposes, the unit reads the new configuration from its non volatile memory and write it to the PCMCIA card to the FBCONFIG.CFG file.*

If CPQAR type D51640 MOD 4 (or following) is installed

Text echoed to HyperTerminal	Comments
---------- STARTING SSQAR ---------- PN: D51640-XXXX SN: 0000 CPU SW: 00.92 FPGA SW: 02.00 Checking ATA-IDE Device...ATA-IDE Device found Starting MICP upgrade process No MICP file detected on this disk Starting OICP upgrade process Configuration file detected on this disk : MYCONF01.CFG Configuration file opened & read Configuration file is valid Configuration file backed-up in flash New settings loaded Feedback file written in memory card OICP upgrade is successful ******* OICP UPGRADE HAS SUCCESSFULLY COMPLETED ******* ******* REMOVE THE MEMORY CARD NOW AND CYCLE POWER *******	*The unit has detected the MYCONF01.CFG file on the PCMCIA, checks file and uploads the new configuration.* *For checking purposes, the unit reads the new configuration from its non volatile memory and write it to the PCMCIA card to the FEEDBACK.CFG file.*

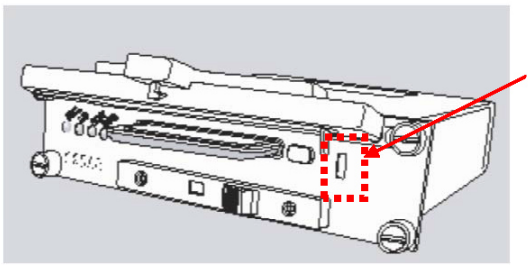
8	During these operations, the sequence of the front panel leds is as follows:		
	If CPQAR type D51640 MOD 1, 2 is installed:		
	● ● ● ●	The four leds are lighted during the init of the unit (POST)	❒
	○ ○ ○ ◐	The config LED flickers while the unit uploads the new configuration	
	○ ○ ● ●	The ready and config leds are lighted when the operation is completed	
	If CPQAR type D51640 MOD 4 (or following) is installed:		
	● ● ● ●	The four leds are lighted during the init of the unit (POST)	
	○ ○ ○ ●	The config LED illuminates while the unit uploads the new configuration	❒
	○ ○ ● ●	Check the Ready/Record and config LEDs illuminates when the operation is complete	
9	Pull out the FDR CB		❒

6.5 QUICK ACCESS RECORDER FUNCTIONAL TESTS

6.5.1 RECORDING LOGIC CHECK

Preliminary note:

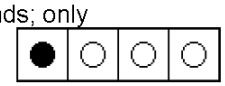
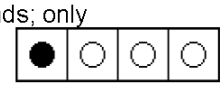
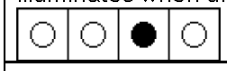
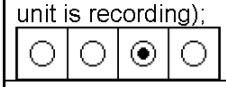
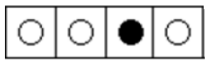
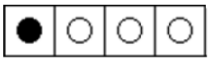
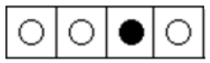
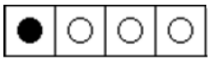
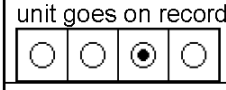
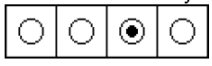
- Exec the following steps by using a blank to simulate closing of the door



Insert a dummy object in the slot highlighted in order to simulate the door closure

- On MCDU press NAV button, select POS SENSOR and POS INIT then load the GPS position (GPS1 POS or GPS2 POS)

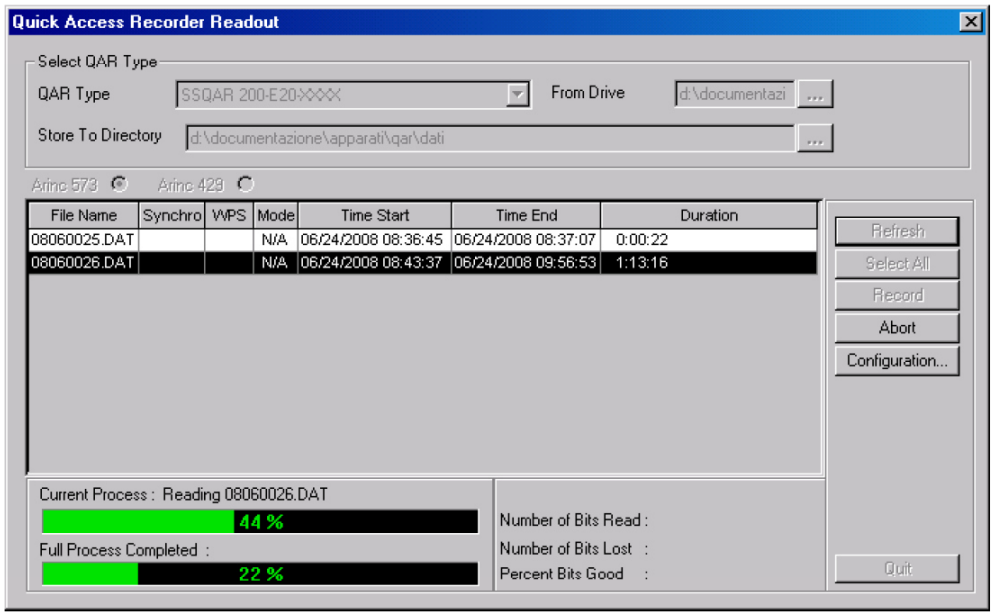
1	Insert a recording PCMCIA card **NOTE**: A Recording PCMCIA Card is a card used for every day record of flight data. A Recording PCMCIA Card **must not** contain any Configuration Program or Software Release: the CPQAR never records any flight data on a card that would contain a Configuration Program or Software Release.	❒
2	**Check that 1&2 "START" and "IGN" CBs are pulled OUT**. Set both Engine control Knobs to GROUND	❒
3	Push in the FDR CB	❒
4	In front of unit: check all LED are illuminated for 3 seconds; ● ● ● ●	❒
5	Check all LED flash in sequence once during POST (Power On Self Test); ◉ ◉ ◉ ◉ (See APPENDIX A § A4)	❒

<table>
<tr><td>6</td><td>If CPQAR type D51640 MOD 1, 2 is installed:<table><tr><th>IF 3G3106P02011 QAR - FIPS ELECT PROV IS NOT INSTALLED</th><th>IF 3G3106P02011 QAR - FIPS ELECT PROV IS INSTALLED</th></tr><tr><td>Check the Failure LED illuminates for few seconds; only
  </td><td>Check the Failure LED illuminates for few seconds; only
  </td></tr><tr><td>Then Check the Ready/Record LED illuminates when unit is ready to record
  </td><td>Then Check the Ready/Record LED illuminates when unit is ready to record
  </td></tr><tr><td>Go to step 8</td><td>Check the Ready/Record LED flickers (the unit is recording);
 
Go to step 13</td></tr></table></td><td>❒</td></tr>
<tr><td>7</td><td>If CPQAR type D51640 MOD 4 (or following) is installed:<table><tr><th>IF 3G3106P02011 QAR - FIPS ELECT PROV IS NOT INSTALLED</th><th>IF 3G3106P02011 QAR - FIPS ELECT PROV IS INSTALLED</th></tr><tr><td>Check the Ready/Record LED or FAIL LED illuminates when the operation is complete and the system is unit is ready to record
 
OR
  </td><td>Check the Ready/Record LED or FAIL LED illuminates when the operation is complete and the system is unit is ready to record
 
OR
  </td></tr><tr><td>Go to step 8</td><td>Check the Ready/Record LED flickers (the unit goes on record);
 
Go to step 13</td></tr></table></td><td>❒</td></tr>
<tr><td>8</td><td>Set at least one Engine control Knob to IDLE</td><td>❒</td></tr>
<tr><td>9</td><td>Check the Ready/Record LED flickers (the unit is recording);
  </td><td>❒</td></tr>
</table>

10	Wait some minute in order to allow QAR to record	❒
11	Set the Engine control Knob to OFF	❒
12	Check the Ready/Record LED flickers (the unit goes on record); ○ ○ ◉ ○	❒
13	Pull out the FDR CB	❒
14	Check the LED are off (the unit is OFF); ○ ○ ○ ○	❒

6.5.2 FLIGHT DATA PARAMETERS RECORDING CHECK

1	Exec a flight data recording (as indicated at § 6.5.1) then extract the PCMCIA card from QAR	❒
2	Save recorded data (file .dat) on PC	❒
3	Launch the PGS VISION software and load the appropriate database (.arb) (for details see § 6.2)	❒
4	On a Menu Bar click on 'ReadOut' button and select 'Maintenance Recorders...'. The following windows should appear:	❒



5	Set 'SSQAR 200-E20-XXXX' as QAR Type if CPQAR type D51640 MOD 1, 2 is installed Set 'D51640-0001' as QAR Type if CPQAR type D51640 MOD 4 (or following) is installed	❒
6	Select the file which intend to analyze and press the 'Record' button	❒
7	In the same folder where '.dat' file has been saved a new file (.xff) with the same name should be created;	❒
8	On PGS menu bar click on 'Flight' e and select 'Open Flight...'. Open '.xff' file just created;	❒
9	Verify the recorded data correctness and validity (A573/717 and A429): see App. B and D	❒

7 TEST RESULTS

139G3130D003 AW139 - QUICK ACCESS RECORDER ATP				
REF.	***DESCRIPTION***	***OPERATOR***	***DATE***	***REMARKS***
6.1	*TEST PREREQUISITES AND SAFETY PROVISION*			
6.2	*TOOL REQUIRED*			
6.3	*ELECTRICAL CIRQUIT BREAKERS CONFIGURATION*			
6.4.1	*POWER SUPPLY AND BONDING CHECK*			
6.4.2	*QAR CONFIGURATION SETTINGS LOADING*			
6.5.1	*RECORDING LOGIC CHECK*			
6.5.2	*FLIGHT DATA PARAMETERS RECORDING CHECK*			
Engineering dpt signature (if required):				
Quality dpt approval:				

APPENDIX A

TITOLO

TITLE **LAPTOP-QAR CABLE ASSEMBLY and SETTINGS**

A1 CABLE ASSEMBLY

Prepare the RS-232 cable extension (required to interface the computer port to the QAR) as ❒ described in the Figure A3.

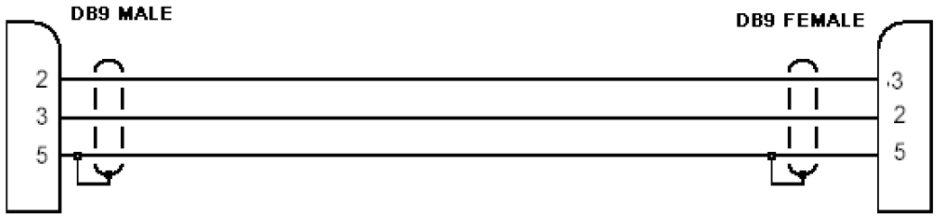


Figure A3 – RS-232 QAR-Laptop connection

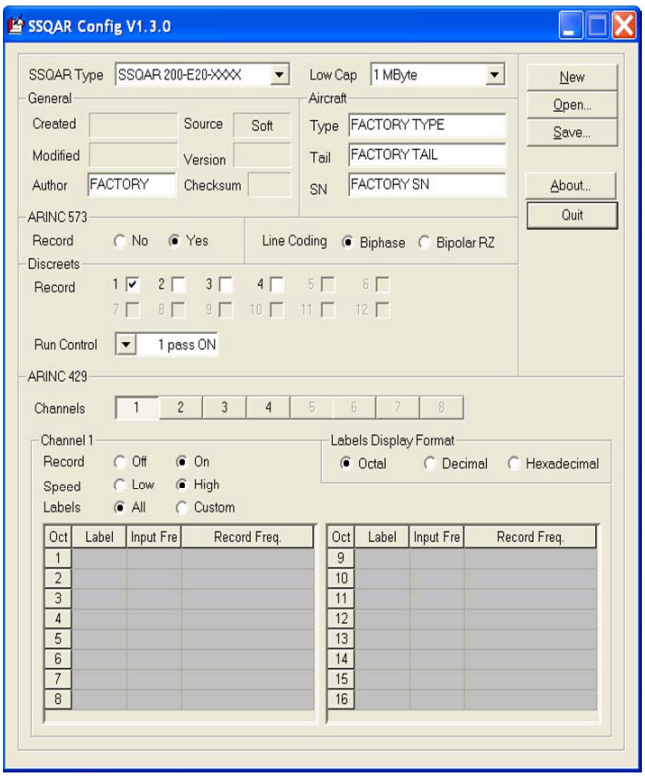
NOTE: The connectors are standard DB9 sub-D min type.

A2 CONFIGURATION FILE SET-UP

A2.1 SSQAR Type D51640-0001 - MOD 1 or MOD 2 using SSQAR Config Ver 1.3.3

A2.1.1 STANDAR CONFIGURATION

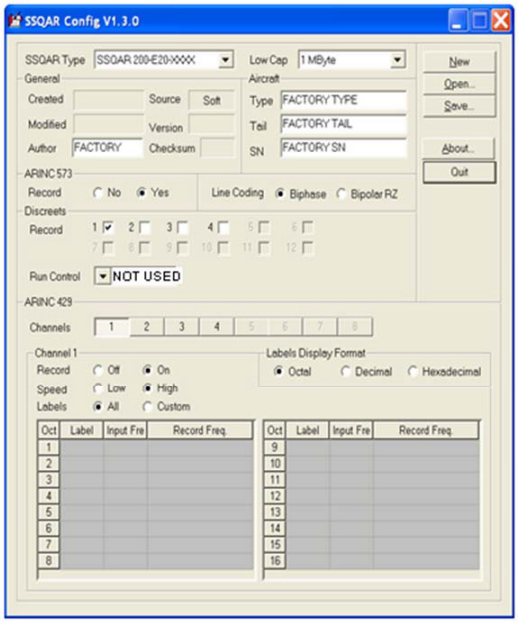
Power on the computer and executes the SW "SSQAR Config.exe" (Ver 1.3.3);	❒
Set SSQAR Type to SSQAR 200-E20-XXXX;	❒
Set Low Cap to 1 Mbyte;	❒
Set the Author in the GENERAL window and Type, Tail and SN in the AIRCRAFT window;	❒
Set ARINC 573 record to YES and Biphase Line Coding;	❒
Select only Discretes record n°1 and Run Control to 1 PASS ON;	❒
Select only ARINC 429 channel 1 with the following settings: Record: ON Speed: HIGH Labels: ALL: to select all incoming ARINC 429 labels CUSTOM: to select only the labels identified in the list. Type the label number (OCTAL VALUE) and set the Input Frequency and Record Frequency to the value of 16. Labels Display Format: OCTAL	❒
Click on SAVE button. The software records the configuration program into a file named **CONFIG.CFG**; **NOTE**: Unless for backup purposes, the name must not be changed as this is the name that is recognized by the SSQAR.	❒
Save the file and verify that the configuration file is created;	❒



A2.1.2 FIPS VARIANT

Power on the computer and executes the SW "SSQAR Config.exe" (Ver 1.3.3);	❒
Set SSQAR Type to SSQAR 200-E20-XXXX;	❒
Set Low Cap to 1 Mbyte;	❒
Set the Author in the GENERAL window and Type, Tail and SN in the AIRCRAFT window;	❒
Set ARINC 573 record to YES and Biphase Line Coding;	❒
Select only Discretes record n°1 and Run Control to NOT USED	❒
Select ARINC 429 channel 1 with the following settings: Record: ON Speed: HIGH Labels: ALL: to select all incoming ARINC 429 labels CUSTOM: to select only the labels identified in the list. Type the label number (OCTAL VALUE) and set the Input Frequency and Record Frequency to the value of 16. Labels Display Format: OCTAL	❒

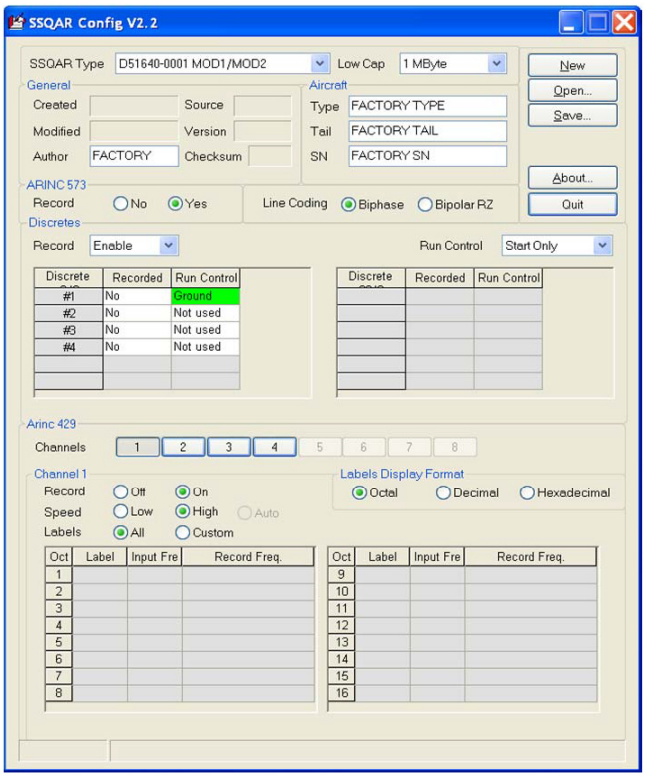
Select ARINC 429 channel 2 with the following settings: Record: ON Speed: HIGH Labels: ALL: to select all incoming ARINC 429 labels Labels Display Format: OCTAL	❒
Select ARINC 429 channel 3 with the following settings: Record: ON Speed: HIGH Labels: ALL: to select all incoming ARINC 429 labels Labels Display Format: OCTAL	❒
Click on SAVE button. The software records the configuration program into a file named **CONFIG.CFG**; **NOTE**: Unless for backup purposes, the name must not be changed as this is the name that is recognized by the SSQAR.	❒
Save the file and verify that the configuration file is created;	❒



A2.2 SSQAR Type D51640-0001 - MOD 1 or MOD 2 using SSQAR Config Ver 2.2

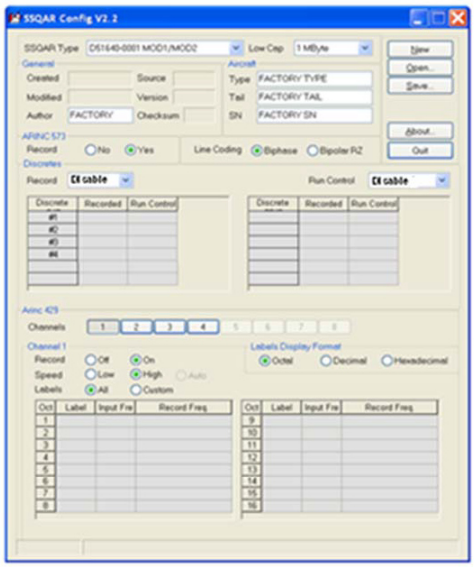
A2.2.1 STANDARD CONFIGUATION

Power on the computer and executes the SW "SSQAR Config.exe" (Ver 2.2);	❒
Set SSQAR Type to D51640-0001 MOD1/MOD2	❒
Set Low Cap to 1 Mbyte;	❒
Set the Author in the GENERAL window and Type, Tail and SN in the AIRCRAFT window;	❒
Set ARINC 573 RECORD to YES and Biphase Line Coding;	❒
Under "Discretes" section: • RECORD: Enable • RUN CONTROL: Start Only Select only "Discretes O/G" record n°: #1 • RECORDED: No • RUN CONTROL: Ground	❒
Select only ARINC 429 channel 1 with the following settings: Record: ON Speed: HIGH Labels: ALL: to select all incoming ARINC 429 labels CUSTOM: to select only the labels identified in the list. Type the label number (OCTAL VALUE) and set the Input Frequency and Record Frequency to the value of 16. Labels Display Format: OCTAL	❒
Click on SAVE button. The software records the configuration program into a file named **CONFIG.CFG**; **NOTE**: Unless for backup purposes, the name must not be changed as this is the name that is recognized by the SSQAR.	❒
Save the file and verify that the configuration file is created;	❒


SSQAR Config V2.2
SSQAR Type
D51640-0001 MOD1/MOD2
Low Cap
1 MByte
New
Open...
Save...
About...
Quit
General
Created
Source
Modified
Version
Author
FACTORY
Checksum
Aircraft
Type
FACTORY TYPE
Tail
FACTORY TAIL
SN
FACTORY SN
ARINC 573
Record
No
Yes
Line Coding
Biphase
Bipolar RZ
Discretes
Record
Enable
Run Control
Start Only
Discrete
Recorded
Run Control
#1
No
Ground
#2
No
Not used
#3
No
Not used
#4
No
Not used
Arinc 429
Channels
1
2
3
4
5
6
7
8
Channel 1
Record
Off
On
Speed
Low
High
Auto
Labels
All
Custom
Labels Display Format
Octal
Decimal
Hexadecimal
Oct
Label
Input Fre
Record Freq.

A2.2.2 FIPS VARIANT

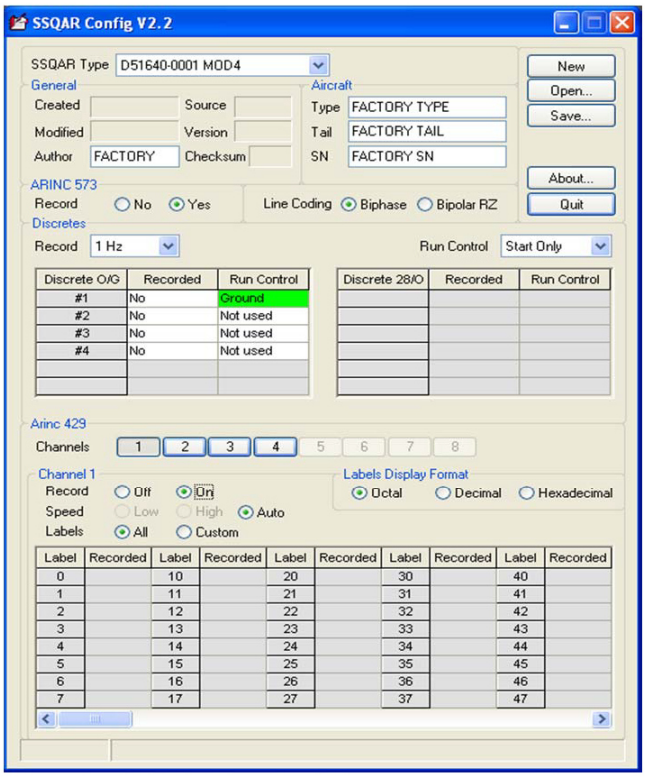
Power on the computer and executes the SW "SSQAR Config.exe" (Ver 2.2);	❒
Set SSQAR Type to D51640-0001 MOD1/MOD2	❒
Set Low Cap to 1 Mbyte;	❒
Set the Author in the GENERAL window and Type, Tail and SN in the AIRCRAFT window;	❒
Set ARINC 573 RECORD to YES and Biphase Line Coding;	❒
Under "Discretes" section: • RECORD: DISABLE • RUN CONTROL: DISABLE	❒
Select ARINC 429 channel 1 with the following settings: Record: ON Speed: HIGH Labels: ALL: to select all incoming ARINC 429 labels CUSTOM: to select only the labels identified in the list. Type the label number (OCTAL VALUE) and set the Input Frequency and Record Frequency to the value of 16. Labels Display Format: OCTAL	❒
Select ARINC 429 channel 2 with the following settings: Record: ON Speed: HIGH Labels: ALL: to select all incoming ARINC 429 labels Labels Display Format: OCTAL	❒
Select ARINC 429 channel 3 with the following settings: Record: ON Speed: HIGH Labels: ALL: to select all incoming ARINC 429 labels Labels Display Format: OCTAL	❒
Click on SAVE button. The software records the configuration program into a file named **CONFIG.CFG**; **NOTE**: Unless for backup purposes, the name must not be changed as this is the name that is recognized by the SSQAR.	❒
Save the file and verify that the configuration file is created;	❒


SSQAR Config V2.2
SSQAR Type
Low Cap
1 MByte
New
Open...
Save...
General
Created
Source
Modified
Version
Author
FACTORY
Checksum
Aircraft
Type
FACTORY TYPE
Tail
FACTORY TAIL
SN
FACTORY SN
About...
Quit
ARINC 573
Record
No
Yes
Line Coding
Biphase
Bipolar RZ
Discretes
Record
CX cable
Run Control
CX cable
Discrete
Recorded
Run Control
Arinc 429
Channels
1
2
3
4
5
6
7
8
Channel 1
Record
Off
On
Speed
Low
High
Auto
Labels
All
Custom
Labels Display Format
Octal
Decimal
Hexadecimal
Oct
Label
Input Fre
Record Freq

A2.3 SSQAR Type D51640-0001 - MOD 4 (or following) using SSQAR Config Ver 2.2

A2.3.1 STANDARD CONFIGURATION

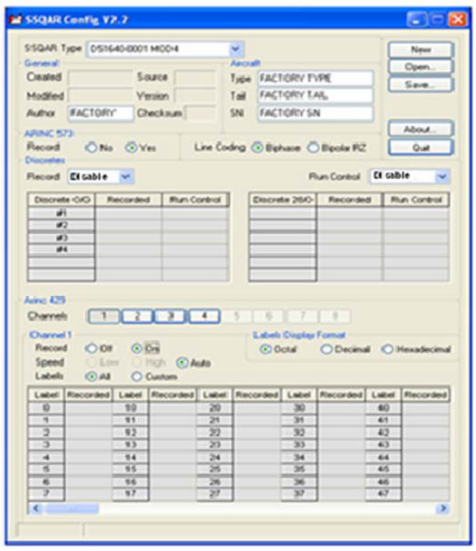
Power on the computer and executes the SW "SSQAR Config.exe" (Ver 2.2);	❒
Set SSQAR Type to D51640-0001 MOD4	❒
Set the Author in the GENERAL window and Type, Tail and SN in the AIRCRAFT window;	❒
Set ARINC 573 RECORD to YES and Biphase Line Coding;	❒
Under "Discretes" section: • RECORD: 1 Hz • RUN CONTROL: START ONLY Select only "Discretes O/G" record n°: #1 • RECORDED: No • RUN CONTROL: Ground	❒
Select only ARINC 429 channel 1 with the following settings: Record: ON Speed: AUTO Labels: ALL: to select all incoming ARINC 429 labels CUSTOM: to select only the labels identified in the list. Type the label number (OCTAL VALUE) and set the Input Frequency and Record Frequency to the value of 16. Labels Display Format: OCTAL	❒
Click on SAVE button. The software records the configuration program into a file named **CONFIG.CFG**; **NOTE**: Unless for backup purposes, the name must not be changed as this is the name that is recognized by the SSQAR.	❒
Save the file and verify that the configuration file is created;	❒



A2.3.2 FIPS VARIANT

Power on the computer and executes the SW "SSQAR Config.exe" (Ver 2.2);	❒
Set SSQAR Type to D51640-0001 MOD4	❒
Set the Author in the GENERAL window and Type, Tail and SN in the AIRCRAFT window;	❒
Set ARINC 573 RECORD to YES and Biphase Line Coding;	❒
Under "Discretes" section: • RECORD: DISABLE • RUN CONTROL: DISABLE	❒
Select only ARINC 429 channel 1 with the following settings: Record: ON Speed: AUTO Labels: ALL: to select all incoming ARINC 429 labels CUSTOM: to select only the labels identified in the list. Type the label number (OCTAL VALUE) and set the Input Frequency and Record Frequency to the value of 16. Labels Display Format: OCTAL	❒

Select ARINC 429 channel 2 with the following settings: Record: ON Speed: AUTO Labels: ALL: to select all incoming ARINC 429 labels Labels Display Format: OCTAL	❒
Select ARINC 429 channel 3 with the following settings: Record: ON Speed: AUTO Labels: ALL: to select all incoming ARINC 429 labels Labels Display Format: OCTAL	❒
Click on SAVE button. The software records the configuration program into a file named **CONFIG.CFG**; **NOTE**: Unless for backup purposes, the name must not be changed as this is the name that is recognized by the SSQAR.	❒
Save the file and verify that the configuration file is created;	❒



A3 CONFIGURING HYPERTERMINAL

The HyperTerminal software is part of Windows operating system and should be found in the Program > Accessories > Communication submenu of the computer.
Give a name to the connection and press OK. After select COM1 and to set up the communication port settings as depicted here:

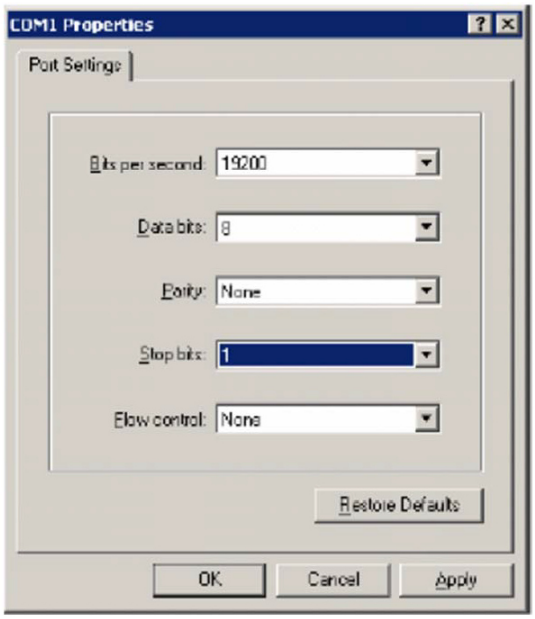


Figure A3 – HyperTerminal COM1 properties

A4 MONITORING CURRENT OPERATION

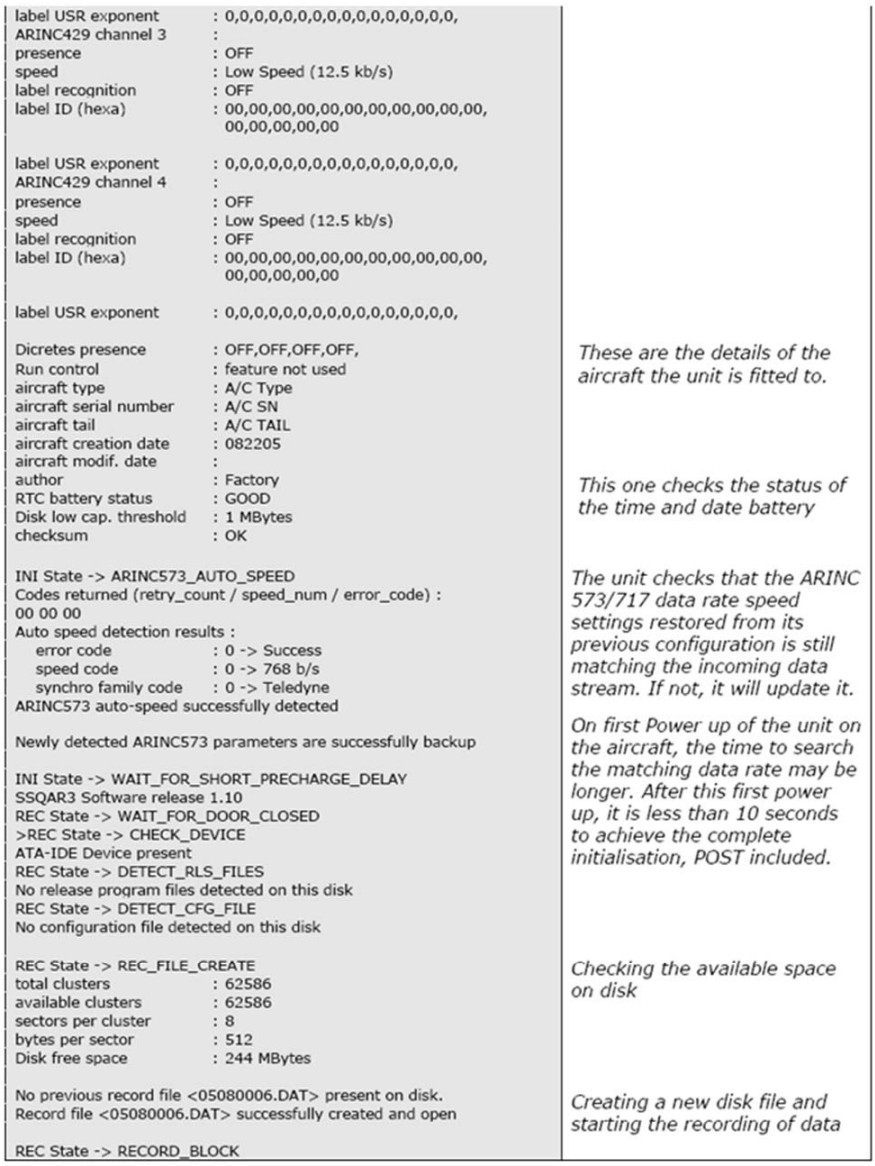
After the POST (Power On Self Test) is achieved (approximately 10 seconds), the following messages display into the HyperTerminal window:

A4.1 SSQAR Type SSQAR 200-E20-XXXX

Text echoed to HyperTerminal	*Comments*

SSQAR3 - operating from 'FLASH program' region 0 (Bank 1 & bank 2)	

INI State -> START_TICK_ISR Software version : 1.10 INI State -> CHECK_DOOR INI State -> CHECK_DEVICE ATA-IDE Device present RLS State -> DETECT_RLS_FILES No release program files detected on this disk CFG State -> DETECT_CFG_FILE No configuration file detected on this disk INI State -> RESTORE_CONFIG Previous configuration successfully restored	*The units checks that the door is closed and the status of the PCMCIA card inserted :* *The card is not a software release program one, nor a configuration one*
User configuration file parameters Signature : SSQAR3_CONFIG Version : 1.00 ARINC573 presence : ON ARINC573 line coding : Biphase Mark ARINC573 start speed : 768 b/s ARINC429 channel 1 : presence : OFF speed : Low Speed (12.5 kb/s) label recognition : OFF label ID (hexa) : 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00, label USR exponent : 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0, ARINC429 channel 2 : presence : OFF speed : Low Speed (12.5 kb/s) label recognition : OFF label ID (hexa) : 00,00,00,00,00,00,00,00,00,00,00,00,00,00,00,00	*The unit now starts the recording process : It first restores the previous configuration settings and echoes them to HyperTerminal. The operator can now check that these settings match its requirements.* *The settings displayed here are those that are programmed in factory before the unit is shipped: Only the ARINC 573/717 line is open. All ARINC 429 and Discrete lines are closed.*



NOTE1: If no Engine Control Knob is set to 'IDLE' position, the following message is displayed before 'REC state → RECORD_BLOCK':
'REC State → WAIT_FOR_RUN_CONTROL'
when one of Engine Control Knob is set to 'IDLE', the recording starts.
NOTE2: When the CPQAR has just been installed to the aircraft and is powered up for the first time, it may take some time before the unit achieves the POST (Power On Self Test). This is due

to the fact that the unit searches for the actual rate of incoming ARINC 573/717 data stream. This time to complete may be up to 2 minutes long. When the unit is powered down, it stores these actual settings to a non volatile memory. On next power up the unit restores these saved settings from its memory and only performs one check to ensure that they are still matching the aircraft characteristics. Assuming that these characteristics remained identical (i.e.: the unit has not been moved to another type of aircraft), the POST does not take more than 10 seconds.

A4.2 SSQAR Type D51640-0001 - MOD 4 (or following)

---------- **STARTING CPQAR** ---------- PN : D51640-XXXX SN : 0000	***Comments*** *On Power ON, the unit echoes its Part Number and Serial Number along with firmware versions.*
CPU SW : 00.92 FPGA SW : 02.00	
MAC ADDRESS : 00:00:00:00:00:00 IP ADDRESS : 0.0.0.0 SUBNET MASK : 0.0.0.0 DEFAULT GATEWAY : 0.0.0.0	*These are the Ethernet specifications of the unit.*
RTC BAT STATUS : GOOD RTC BAT INSTALL DATE : June 10 2011	*Battery Status and installation date.*
ARINC573 : ON Coding : Biphase Mark ARINC429 CH1 : OFF ARINC429 CH2 : OFF ARINC429 CH3 : OFF ARINC429 CH4 : OFF ARINC429 CH5 : OFF ARINC429 CH6 : OFF ARINC429 CH7 : OFF ARINC429 CH8 : OFF DISCRETES O/G : 1 2 3 4 5 6 DISCRETES 28/O : 1 2 3 4 5 6 (RECORDED=X) - - - - - - - - - - - -	*The current unit configuration displays here. This configuration may be changed and uploaded to the unit.*
RUN CONTROL : DISABLED	*Aircraft Type, SN & Tail number as set up in the configuration file.*
AC TYPE : FACTORY AC SN : 0123456789 AC TAIL : FACTORY AUTHOR : CTS	
Current Date : June 16 2011 Current Time: 13h03m28s	*Current internal Date & Time: Can be updated using Hyperterminal.*

Checking ATA-IDE Device...ATA-IDE Device found	*Checking the PC CARD and processing upgrades as necessary.*
Starting MICP upgrade process No MICP file detected on this disk	
Starting OICP upgrade process No OICP file detected on this disk	
Starting Bootloader upgrade process No Bootloader files detected on this disk	
Starting Firmware upgrade process No Firmware files detected on this disk	
WAITING ARINC 573/717 SIGNAL MEASURING ARINC 573/717 SPEED ARINC 573/717 DETECTED BAUD RATE = 256 WPS	*Detecting 573/717 input data stream presence and rate as necessary.*
** IDLE MODE ON ** ** IDLE MODE OFF **	
Checking ATA-IDE Device...ATA-IDE Device found No previous file present on disk. Analyzing Memory Card ... Disk Information Of ide: Total Clusters : 976848 Available Clusters : 976847 Sectors/Cluster : 8 Bytes/Sector : 512 Disk free space : 3907 MBytes Record File 11060019.DAT Created. / CPU USAGE : 8%	*These are the last checks before the unit starts recording.* *The CPU usage counter displays the processing capacity used.*

APPENDIX B

TITOLO

TITLE

LIST OF PARAMETERS

Table B1 must be used as reference for the decoding of the multi-status parameters such as caution messages. When the Table B2 is required to decode the status of a parameter, it is stated in the column "**Expected Value/Range/Label or Required Action**" of the checklist table.

Table B1 - General Failures Coding for QAR Database S/W Rel. 4

Binary Value						PGS Display		CAS Msg.
MSB (N/A)	(N/A)	SYS4	SYS3	SYS2	LSB SYS1	DEC. Value	DB Coding	Caution
0	0	0	0	0	0	0	Inactive	*No Caution*
0	0	0	0	0	1	1	Active Left	1 *SYSTEM*
0	0	0	0	1	0	2	Active Right	2 *SYSTEM*
0	0	0	1	0	0	4	Active Center	3 *SYSTEM*
0	0	1	0	0	0	8	Active Left/Right/Center	4 *SYSTEM*
0	0	0	0	1	1	3	Active Left/Right	1-2 *SYSTEM*
0	0	0	1	0	1	5	Not Defined	1-3 *SYSTEM*
0	0	1	0	0	1	9	Active Left/Right/Center	1-4 *SYSTEM*
0	0	0	1	1	0	6	Not Defined	2-3 *SYSTEM*
0	0	1	0	1	0	10	Active Left/Right/Center	2-4 *SYSTEM*
0	0	1	1	0	0	12	Active Left/Right/Center	3-4 *SYSTEM*
0	0	0	1	1	1	7	Active Left/Right/Center	1-2-3 *SYSTEM*
0	0	1	0	1	1	11	Active Left/Right/Center	1-2-4 *SYSTEM*
0	0	1	1	0	1	13	Active Left/Right/Center	1-3-4 *SYSTEM*
0	0	1	1	1	0	14	Active Left/Right/Center	2-3-4 *SYSTEM*
0	0	1	1	1	1	15	Active Left/Right/Center	1-2-3-4 *SYSTEM*

QAR PARAMETERS CHECK LIST

Checklist table contains all the parameters recorded by the QAR when the Primus Epic Software is installed on the helicopter. The "DB Parameter Name" column lists the name of the parameter contained the QAR Database, the "Expected Value/Range/Label" column indicates the expected value that the QAR should record for the relevant parameter or the action (note) to be taken to perform the tests.
All the values indicated are to be considered for Helicopter on Ground with Engines OFF and with tolerance of 5% on expected value.

NOTE on Table B1: In the Table above SYSTEM means the equipment that is in failure such as DU or PUMP etc. For a coding error the Rel. QAR database is correct for single or double installation system (1, 2, 1-2) but it is not fully exact when coding multi-installation equipment (1-2-3-4 etc.). In that case the numeric value of the recorded data, displayed in the plotted axis, must be checked.

Table B1 - QAR PARAMETERS CHECK LIST

	DB Parameter Name	Expected Value/Range/Label or Required Action	NOTE	RECORDS
1.	AC Code Ten Thousands	Note the "10000" unit of the AC S/N		
2.	AC Code Thousands	Note the "1000" unit of the AC S/N		
3.	AC Code Hundreds	Note the "100" unit of the AC S/N		
4.	AC Code Tens	Note the "10" unit of the AC S/N		
5.	AC Code Ones	Note the "1" unit of the AC S/N		
6.	AvionicCaution_1&2&3&4AudioFail	Note which is active		
7.	AvionicCaution_1&2&3&4DuDegrade	Note which is active		
8.	AvionicCaution_1&2&3&4DuOvht	Note which is active		
9.	AvionicCaution_1&2AdsFail	Note which is active		
10.	AvionicCaution_1&2AhrsFail	Note which is active		
11.	AvionicCaution_1&2ApFail	Note which is active		
12.	AvionicCaution_1&2ApOff	Note which is active		
13.	AvionicCaution_1&2CollFail	Note which is active		
14.	AvionicCaution_1&2FMS/GPS Mscp	Note which is active		
15.	AvionicCaution_1&2FmsFail	Note which is active		
16.	AvionicCaution_1&2GpsFail	Note if it's active		
17.	AvionicCaution_1&2IttMiscompare	Note if it's active		
18.	AvionicCaution_1&2MauOvht	Note which is active		
19.	AvionicCaution_1&2McduOvht	Note which is active		
20.	AvionicCaution_1&2MrcOvht	Note which is active		
21.	AvionicCaution_1&2NfMiscompare	Note if it's active		
22.	AvionicCaution_1&2NgMiscompare	Note if it's active		
23.	AvionicCaution_1&2PApFail	Note which is active		

	DB Parameter Name	Expected Value/Range/Label or Required Action	NOTE	RECORDS
24.	AvionicCaution_1&2PApOff	Note which is active		
25.	AvionicCaution_1&2PTrimFail	Note which is active		
26.	AvionicCaution_1&2RApFail	Note which is active		
27.	AvionicCaution_1&2RApOff	Note which is active		
28.	AvionicCaution_1&2RTrimFail	Note which is active		
29.	AvionicCaution_1&2SasDegraded	Note which is active		
30.	AvionicCaution_1&2TrimFail	Note which is active		
31.	AvionicCaution_1&2TqMiscompare	Note if it's active		
32.	AvionicCaution_1&2VHFComOvht	Note which is active		
33.	AvionicCaution_1&2YApFail	Note which is active		
34.	AvionicCaution_1&2YApOff	Note which is active		
35.	AvionicCaution_1&2YTrimFail	Note which is active		
36.	AvionicCaution_5&6&7&8AudioFail	Note which is active		
37.	AvionicCaution_AfcsDegraded	Note if it's active		
38.	AvionicCaution_AttOff	Note if it's active		
39.	AvionicCaution_AvionicFault	Note if it's active		
40.	AvionicCaution_AwgFail	Note if it's active		
41.	AvionicCaution_CvrFail	Note if it's active		
42.	AvionicCaution_EngAnalogFailure	Note if it's active		
43.	AvionicCaution_FdrFail	Note if it's active		
44.	AvionicCaution_FMS/GPSMscpUnavl	Note if it's active		
45.	AvionicCaution_Mistrim	Note if it's active		
46.	AvionicCaution_NrMiscompare	Note if it's active		
47.	AvionicCaution_SysConfigFail	Note if it's active		
48.	AvionicCaution_ValidateConfig	Note if it's active		
49.	AvionicCaution_VneMiscompare	Note if it's active		
50.	AvionicCaution_WxTransmitting	Note if it's active		
51.	Date Day	Day		
52.	Date Month	Month		
53.	Date Year	Year		
54.	ElecCaution_1&2AcGenBus	Note which is active		
55.	ElecCaution_1&2AcGen	Note which is active		
56.	ElecCaution_1&2AcGenHot	Note which is active		
57.	ElecCaution_1&2DcGen	Note which is active		
58.	ElecCaution_1&2DcGenHot	Note which is active		
59.	ElecCaution_1&2GenOvld	Note which is active		
60.	ElecCaution_1&2Inv	Note which is active		

	DB Parameter Name	Expected Value/Range/Label or Required Action	NOTE	RECORDS
61.	ElecCaution_1&2InvHot	Note which is active		
62.	ElecCaution_AuxBattOff	Note if it's active		
63.	ElecCaution_BattOffLine	Note if it's active		
64.	ElecCaution_BusTieOpen	Note if it's active		
65.	ElecCaution_DcBusFail	Note if it's active		
66.	ElecCaution_ExtPowerDoor	Note if it's active		
67.	ElecCaution_MainBattOff	Note if it's active		
68.	EngCaution_1&2DCU	Note which is active		
69.	EngCaution_1&2EapsPress	Note which is active		
70.	EngCaution_1&2EclFail	Note which is active		
71.	EngCaution_1&2EclPos	Note which is active		
72.	EngCaution_1&2EecData	Note which is active		
73.	EngCaution_1&2EngChip	Note which is active		
74.	EngCaution_1&2EngLimExpire	Note which is active		
75.	EngCaution_1&2EngModeSel	Note which is active		
76.	EngCaution_1&2EngOilTemp	Note which is active		
77.	EngCaution_1&2FireDet	Note which is active		
78.	EngCaution_1&2HotStart	Note which is active		
79.	EngCaution_1&2IttLimiter	Note which is active		
80.	EngCaution_1&2Ovspd	Note which is active		
81.	EngCaution_1&2OvspdDet	Note which is active		
82.	EngCaution_1&2TQLimiter	Note which is active		
83.	EngCaution_RPMSelect	Note if it's active		
84.	FuelCaution_1&2FcuFail	Note which is active		
85.	FuelCaution_1&2FcuTestFail	Note which is active		
86.	FuelCaution_1&2FuelFilter	Note which is active		
87.	FuelCaution_1&2FuelHeater	Note which is active		
88.	FuelCaution_1&2FuelIcing	Note which is active		
89.	FuelCaution_1&2FuelLow	Note which is active		
90.	FuelCaution_1&2FuelLowFail	Note which is active		
91.	FuelCaution_1&2FuelProbe	Note which is active		
92.	FuelCaution_1&2FuelPump	Note which is active		
93.	HydCaution_1&2&4Pump	Note the displayed caution, otherwise *Inactive*		
94.	HydCaution_1&2HydOilPress	Note which is active		
95.	HydCaution_1&2HydOilTemp	Note which is active		
96.	HydCaution_1&2Servo	Note which is active		

	DB Parameter Name	Expected Value/Range/Label or Required Action	NOTE	RECORDS
97.	HydCaution_EmerLdgPress	Note if it's active		
98.	HydCaution_HydMin	Note if it's active		
99.	HydCaution_HydUtilPress	Note if it's active		
100.	HydCaution_NoseWhlUnlk	Note if it's active		
101.	HydCaution_RotorBrkFail	Note if it's active		
102.	MiscCaution_1&2IceDetFail	Note which is active		
103.	MiscCaution_1&2IceDetOff	Note which is active		
104.	MiscCaution_1&2PitotFail	Note which is active		
105.	MiscCaution_1&2PitotHeatOff	Note which is active		
106.	MiscCaution_1&2WOW_Fail	Note which is active		
107.	MiscCaution_1&2WshldHtrDegr	Note which is active		
108.	MiscCaution_1&2WshldHtrFail	Note which is active		
109.	MiscCaution_BagDoor	Note if it's active		
110.	MiscCaution_CabinDoor	Note if it's active		
111.	MiscCaution_CockpitDoor	Note if it's active		
112.	MiscCaution_DeIce	Note if it's active		
113.	MiscCaution_FireBucketArm	Note if it's active		
114.	MiscCaution_FloatArm	Note if it's active		
115.	MiscCaution_AFT_FWDCondFail	Note if it's active		
116.	MiscCaution_HeaterFail	Note if it's active		
117.	MiscCaution_HoistCblFoul	Note if it's active		
118.	MiscCaution_HoistCutArm	Note if it's active		
119.	MiscCaution_HookArm	Note if it's active		
120.	MiscCaution_HookOpen	Note if it's active		
121.	MiscCaution_IceCondition	Note if it's active		
122.	MiscCaution_IceLimit	Note if it's active		
123.	MiscCaution_Icing	Note if it's active		
124.	MiscCaution_IPSFail	Note if it's active		
125.	MiscCaution_LandingGear	Note if it's active		
126.	MiscCaution_NoseDoor	Note if it's active		
127.	MiscCaution_ParkBrkOn	Note if it's active		
128.	MiscCaution_ParkBrkPress	Note if it's active		
129.	MiscCaution_SecHookArm	Note if it's active		
130.	MiscCaution_UtilDoor	Note if it's active		
131.	MiscCaution_VentFail	Note if it's active		
132.	OAT	Note displayed value (± 1°C)		
133.	Time-Hour	Note displayed value		

	DB Parameter Name	Expected Value/Range/Label or Required Action	NOTE	RECORDS
134.	Time-Minute	Note displayed value		
135.	Time-Second	Note displayed value (± 4 sec.)		
136.	Warn-1(2)EECFail	Note which is active		
137.	Warn-1(2)EngFire	Note which is active		
138.	Warn-1(2)EngIdle	Note which is active		
139.	Warn-1(2)EngOilPress	Note which is active		
140.	Warn-1(2)EngOut	Note which is active		
141.	Warn-1-2DCGen	Note which is active		
142.	Warn-AuxMainBattHot	Note which is active		
143.	Warn-BagFire	Note if it's active		
144.	Warn-MgbOilPress	Note if it's active		
145.	Warn-MgbOilTemp	Note if it's active		
146.	Warn-RotorHigh	Note if it's active		
147.	Warn-RotorLow	Note if it's active		
148.	WOW1	Note Status *ON* (Hel. On GND), *OFF* (Hel in Flt.)		
149.	WOW2	Note Status *ON* (Hel. On GND), *OFF* (Hel in Flt.)		
150.	XmsnCaution_1&2BrgTemp	Note which is active		
151.	XmsnCaution_1&2MgbOilPress	Note which is active		
152.	XmsnCaution_ChipDetTest	Note if it's active		
153.	XmsnCaution_ChipDetUnit	Note if it's active		
154.	XmsnCaution_ChipMastFail	Note if it's active		
155.	XmsnCaution_ChipSumpFail	Note if it's active		
156.	XmsnCaution_IgbChip	Note if it's active		
157.	XmsnCaution_IgbChipFail	Note if it's active		
158.	XmsnCaution_IgbOilLow	Note if it's active		
159.	XmsnCaution_IgbOilTemp	Note if it's active		
160.	XmsnCaution_MgbChipMast	Note if it's active		
161.	XmsnCaution_MgbChipSump	Note if it's active		
162.	XmsnCaution_MgbOilFilter	Note if it's active		
163.	XmsnCaution_MgbOilLow	Note if it's active		
164.	XmsnCaution_TgbChip	Note if it's active		
165.	XmsnCaution_TgbChipFail	Note if it's active		
166.	XmsnCaution_TgbOilLow	Note if it's active		
167.	XmsnCaution_TgbOilTemp	Note if it's active		
168.	XmsnCaution_XmnsOvtq	Note if it's active		
169.	GPSLatitude (A429)	Note present Lat position		
170.	GPSLongitude (A429)	Note present Long position		

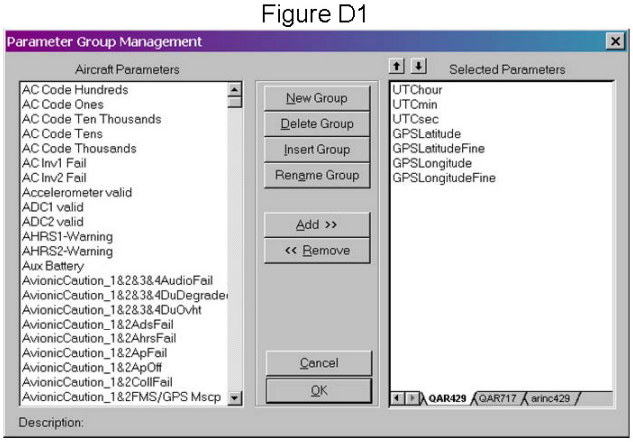
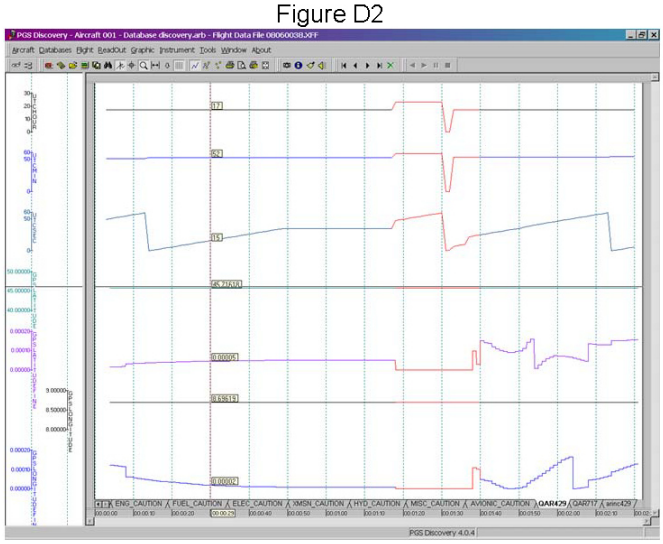
	DB Parameter Name	Expected Value/Range/Label or Required Action	NOTE	RECORDS
171.	UTChour (A429)	Note displayed value		
172.	UTCmin (A429)	Note displayed value		
173.	UTCsec (A429)	Note displayed value (± 4 sec.)		
IF3G3106P02011 QAR - FIPS ELECT PROV IS INSTALLED CHECK THE FOLLOWING PARAMETERS				
174.	Label 304 - Bit 13/28 - Ch 2	Note displayed value		
175.	Label 304 - Bit 13/28 - Ch 3	Note displayed value		
176.	Label 305 - Bit 13/28 - Ch 2	Note displayed value		
177.	Label 305 - Bit 13/28 - Ch 3	Note displayed value		

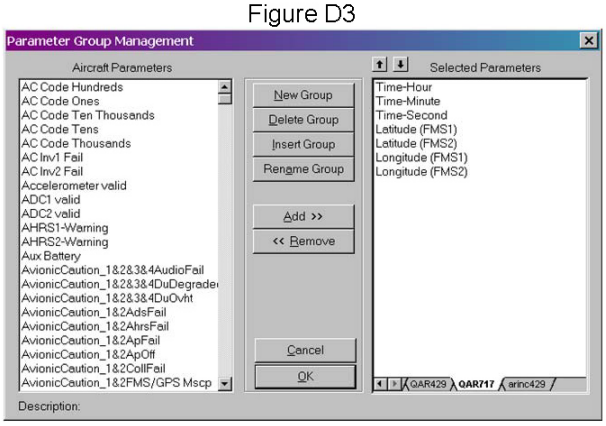
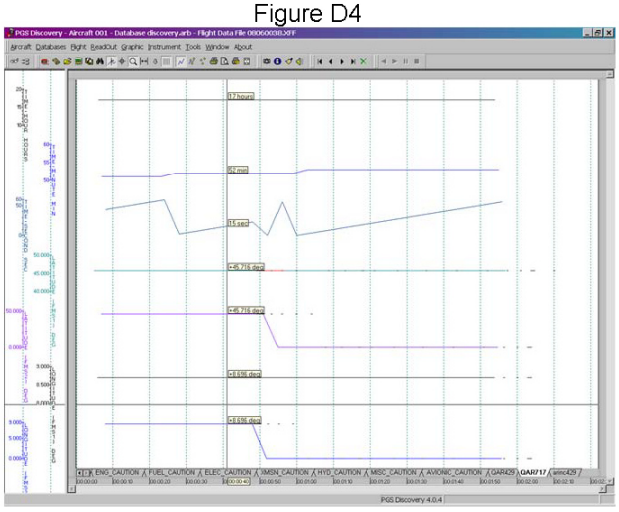
APPENDIX D

TITOLO

TITLE **ANALYSIS**

To verify that all the data Arinc 429 recorded by QAR are correct the following test should be performed:

1.	Create a group called QAR 429 then select the following parameter: Figure D1  	❒
2.	When the data are displayed on PGS SW, browse the graph and set a time tag (see Figure D2) Note the following values: > UTC TIME > UTC MIN > UTC SEC > GPS LATITUDE > GPS LONGITUDE Figure D2 	❒

3.	Create a new group labeled QAR 717, then select the following parameter (see Figure D3): Figure D3  	❒
4.	When the data are displayed on PGS SW, browse the graph until the following conditions are satisfied: TIME HOUR = UTC HOUR TIME MIN = UTC MIN TIME SEC = UTC SEC Then note the following values: > LATITUDE (FMS1) and LATITUDE (FMS2) > LONGITUDE (FMS1) and LONGITUDE (FMS2) Figure D4 	❒
5.	Verify that the LATITUDE and LONGITUDE values recorded in point 2 and 4 are the same	❒

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HELICOPTERS

AgustaWestland Products

Please send to the following address: **LEONARDO S.p.A.** **CUSTOMER SUPPORT & SERVICES - ITALY** **PRODUCT SUPPORT ENGINEERING & LICENSES DEPT.** Via Giovanni Agusta, 520 21017 Cascina Costa di Samarate (VA) - ITALY Tel.: +39 0331 225036 Fax: +39 0331 225988	**SERVICE BULLETIN COMPLIANCE FORM**	Date:
	Number:	
	Revision:	

Customer Name and Address:	Telephone:
	Fax:
	B.T. Compliance Date:

Helicopter Model	S/N	Total Number	Total Hours	T.S.O.

Remarks:

Information:

We request your cooperation in filling this form, in order to keep out statistical data relevant to aircraft configuration up-to-date. The form should be filled in all its parts and sent to the above address or you can communicate the application also via Technical Bulletin Application Communication Section placed in Leonardo AW Customer Portal - MyCommunications Area. We thank you beforehand for the information given.