

This Service Bulletin has been produced in accordance with approved Alternative Procedures to DOA EASA.AP356.

☐ INFORMATION

☒ **OPTIONAL/RECOMMENDED**
☐ MANDATORY

A. **SUBJECT:**

Modification of traffic information system from TRX-1500 to AT-1.

B. **AFFECTED AIRPLANES:**

All S/N equipped with TRX-1500.

C. **REASON:**

The production of traffic information system TRX-1500 was terminated by the manufacturer. The traffic information system AT-1 is suitable improved substitution.

D. **REQUIRED ACTION:**

Perform modification of traffic information system from TRX-1500 to AT-1 as follows:

1. Set the **MASTER SWITCH** to OFF position.
2. Remove the pedestal panel (Chapter 27) and the right seat (Chapter 25) according to AMM, latest revision.
3. Release the instrument panel cover (1, Fig. 1) by unscrewing the screws (2), remove the old TRX ADS-B and TRX FLARM antennas (1; 3, Fig. 2) from the cover's holders (5, 6) and remove the instrument panel cover (1, Fig. 1).

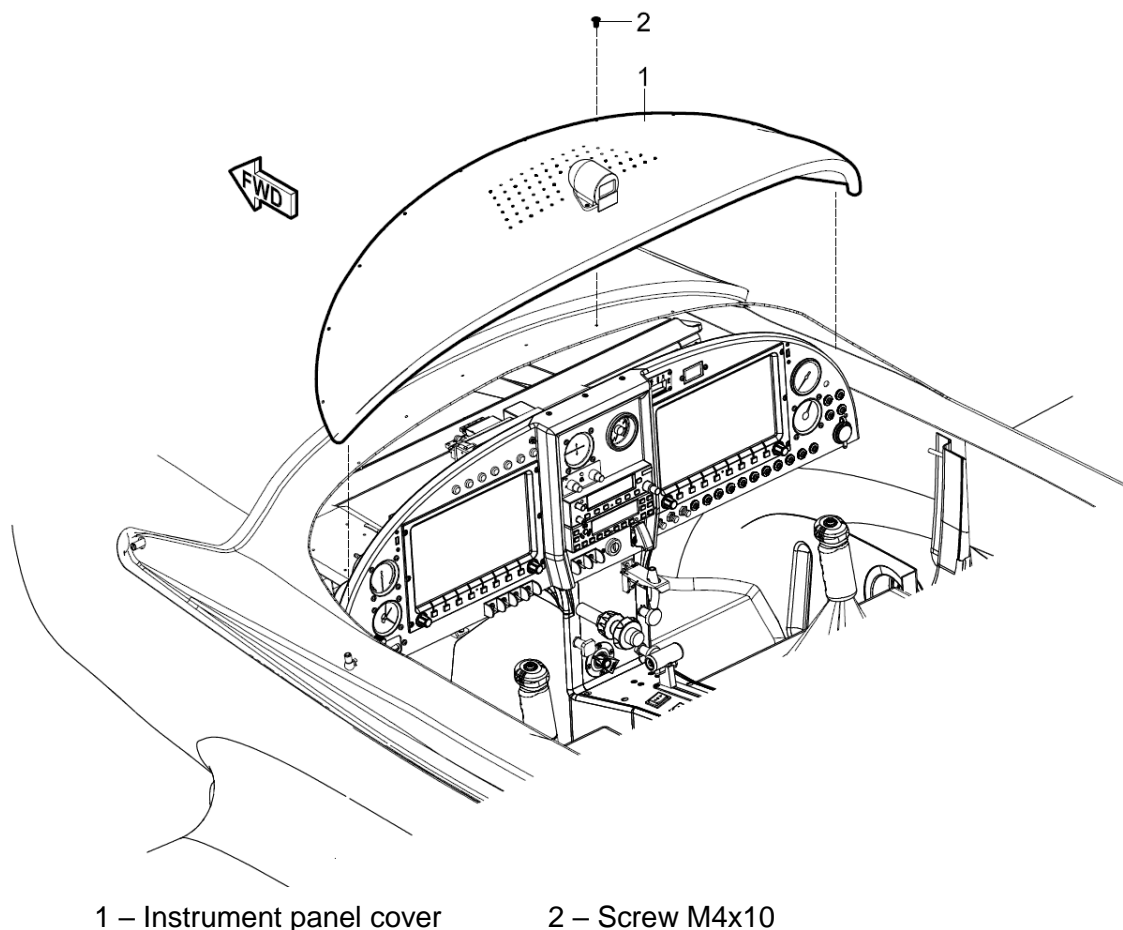


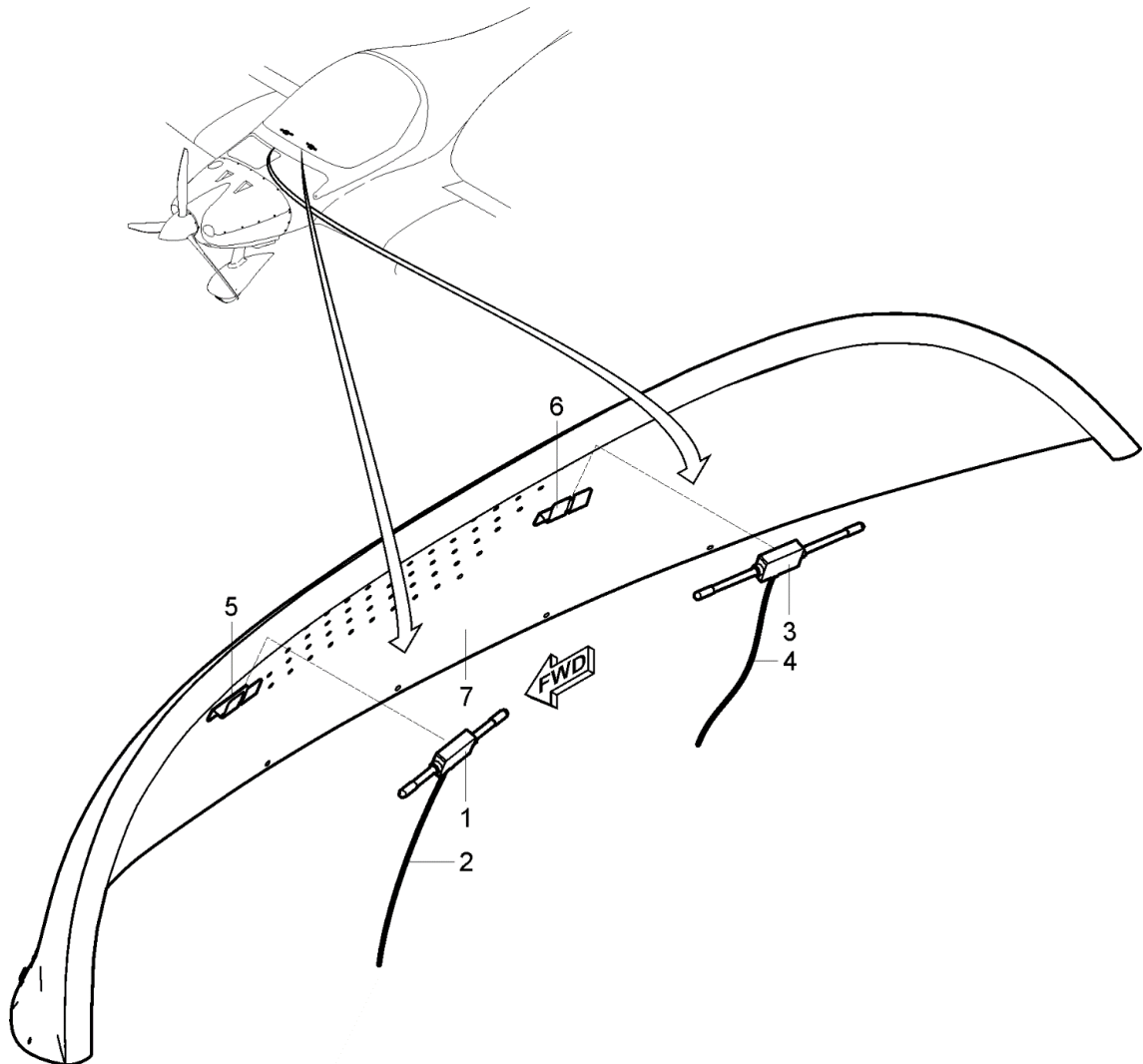
Fig. 1 Instrument Panel Cover Removal

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1 – TRX ADS-B antenna

2 – Cable

3 – TRX FLARM antenna

4 – Cable

5 – Bracket

6 – Bracket

7 – Instrument panel cover

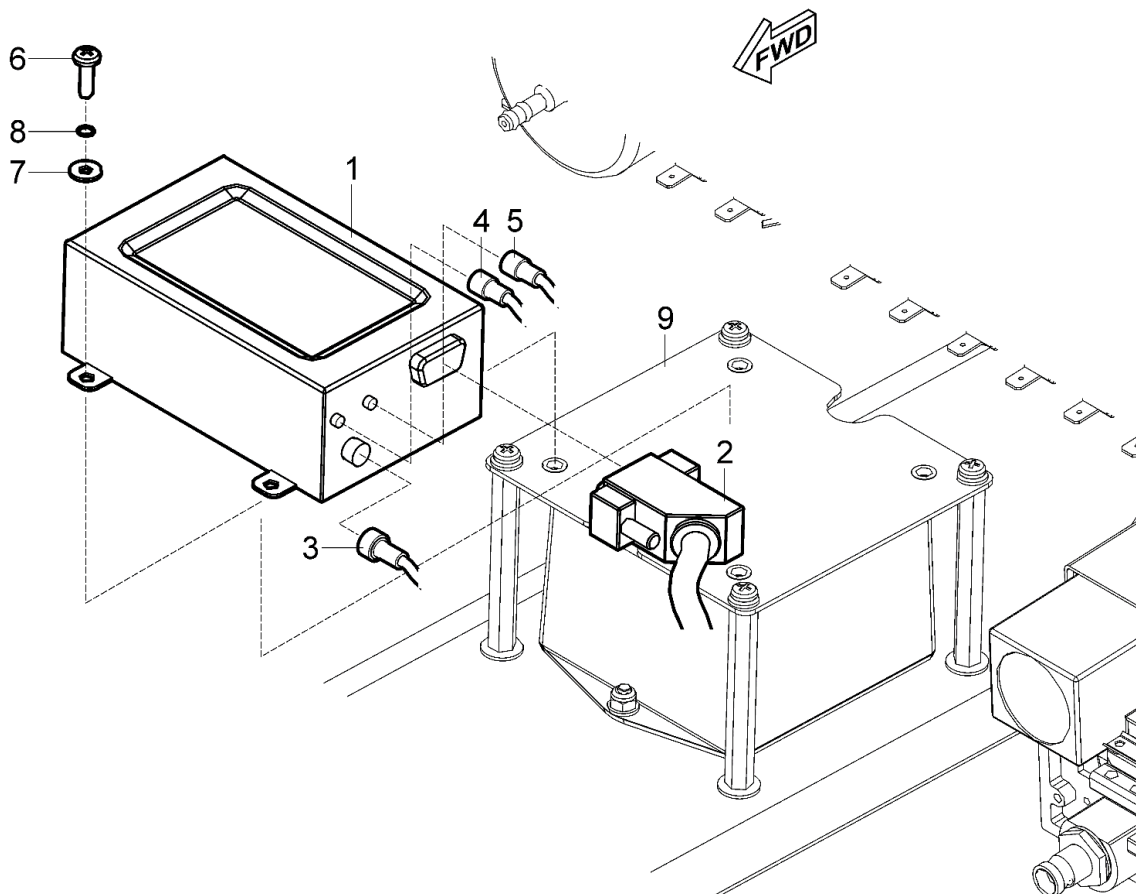
Fig. 2 TRX FLARM, TRX ADS-B Antennas Removal

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4. Disconnect the connectors (2; 3; 4; 5, Fig. 3) from the TRX-1500 unit (1). Remove the bolts (6) and washers (7; 8). Remove the TRX-1500 unit (1) from the bracket (9).



1 – TRX-1500 unit

2 – Main connector

3 – TRX ADS-B antenna connector

4 – TRX FLARM antenna connector

5 – TRX GPS antenna connector

6 – Bolt (4 pc)

7 – Washer (4 pc)

8 – Washer (4 pc)

For information:

9 – Bracket

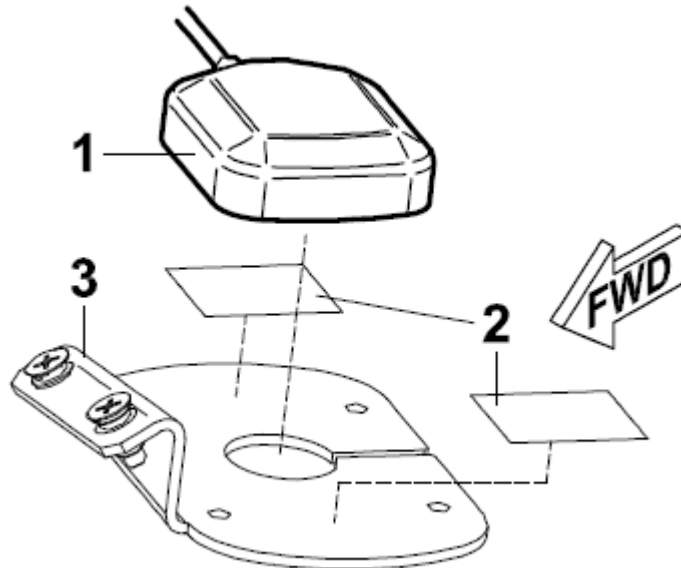
Fig. 3 TRX-1500 Traffic Sensor Removal

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5. Using a knife, carefully cut the tape (2, Fig. 4) to release the TRX GPS antenna (1) from the bracket (3). Remove all residual tape (2) from the bracket (3).



- | | |
|---------------------|-------------|
| 1 – TRX GPS antenna | 3 – Bracket |
| 2 – Cable | 4 – Tape |

Fig. 4 TRX GPS Antenna Removal

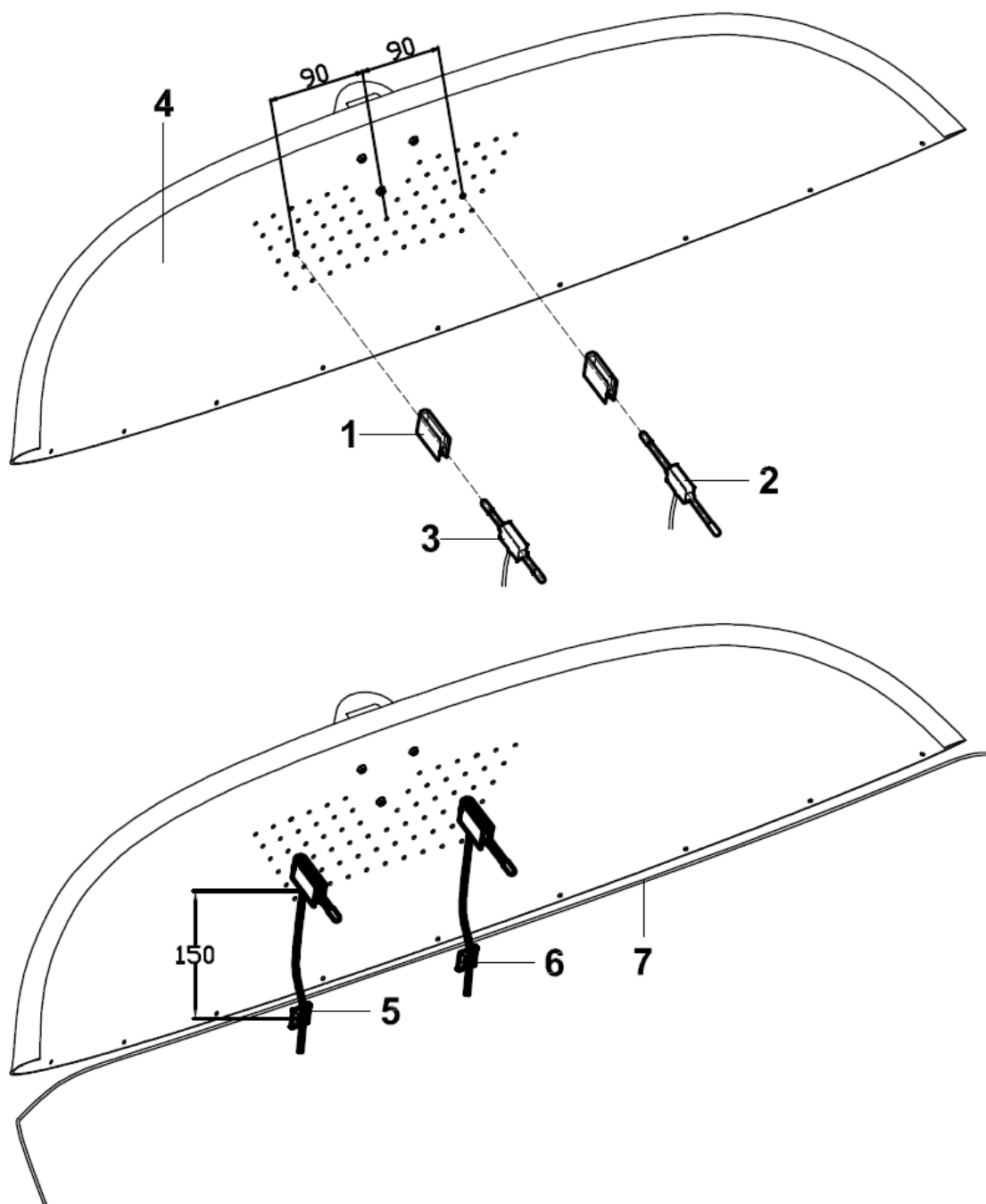
6. Release the cables of TRX FLARM, TRX ADS-B and TRX GPS antennas.
7. Remove TRX FLARM, TRX ADSB and TRX GPS antennas with cables from the aircraft.
8. Bond the holders (1, Fig. 5) on inner side of instrument panel cover (4) by epoxy resin thickened with cotton flocks. Let it to harden.
9. Enlarge the holes in the cover to Ø8 mm. Insert the new AT-1 ADS-B and AT-1 FLARM antennas (2; 3) to the holders (1) on the instrument panel cover (4).
10. Bond the adhesive cable tie mounts (5) to the fuselage edge (7) from the lower side. Attach the cables of AT-1 ADS-B and AT-1 FLARM antennas to the cable tie mounts (5) by means of cable tie (6). The antenna's cables must be routed away from the antennas in an orthogonal way in the first 150 mm.

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1 – Holder

2 – AT-1 FLARM 1 antenna

3 – AT-1 ADS-B antenna

4 – Instrument panel cover

5 – Cable tie mount

6 – Cable tie

For information:

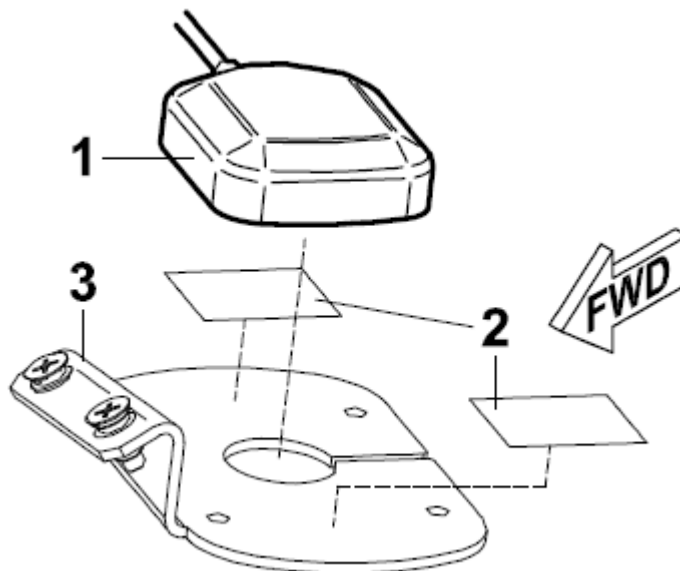
7 – Fuselage edge

Fig. 5 AT-1 ADS-B / AT-1 FLARM Antennas Installation

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11. Stick the new tape (2, Fig. 6) on the antenna (1) and bond it on the bracket (3).



1 – AT-1 GPS antenna

3 – Bracket

2 – Cable

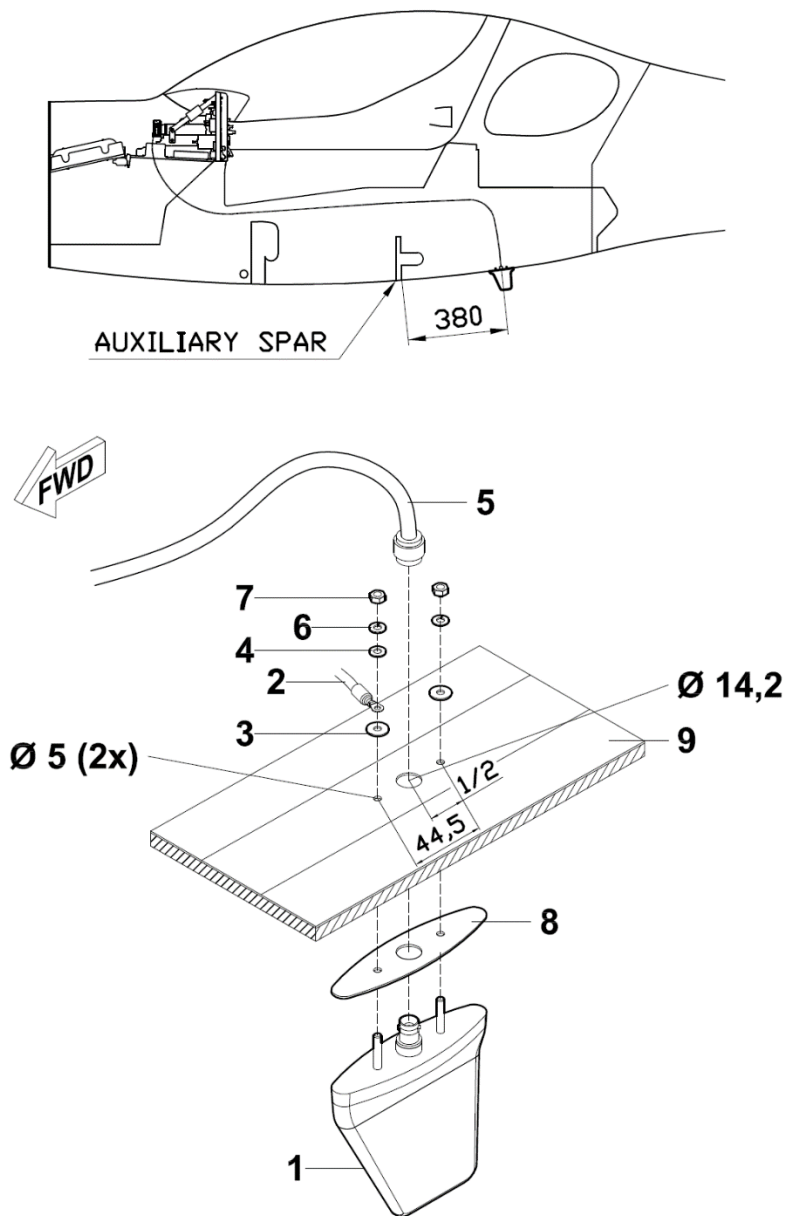
4 – Tape

Fig. 6 AT-1 GPS Antenna Removal

12. Apply area 110 x 200 mm from the aluminium tape (9, Fig. 7) on the fuselage skin around the antenna installation position inside of central tunnel. Drill the holes to fuselage inside of central tunnel according to Fig. 7. Remove the protective cover from the antenna connector. Insert the antenna (1) with the rubber pad (8) to the hole in the fuselage and attach it using washers (3; 4; 6), ground wire (2) and tighten the nuts (7). Connect the coaxial cable (5) to antenna (1).

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|---------------------------|---------------------|
| 1 – AV-75 antenna | 6 – Spring washer 5 |
| 2 – Ground wire | 7 – Nut 8-32 |
| 3 – Washer 5,3 x 15 x 1,2 | 8 – Rubber pad |
| 4 – Washer 4,3 x 9 x 0.7 | 9 – Aluminium tape |
| 5 – Coaxial cable | |

Fig. 7 AV-75 Antenna Installation

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13. Remove the bolts (12, Fig. 10), washers (7; 13), bracket (11) from the aircraft and drill the holes into the bracket according to Fig. 8.

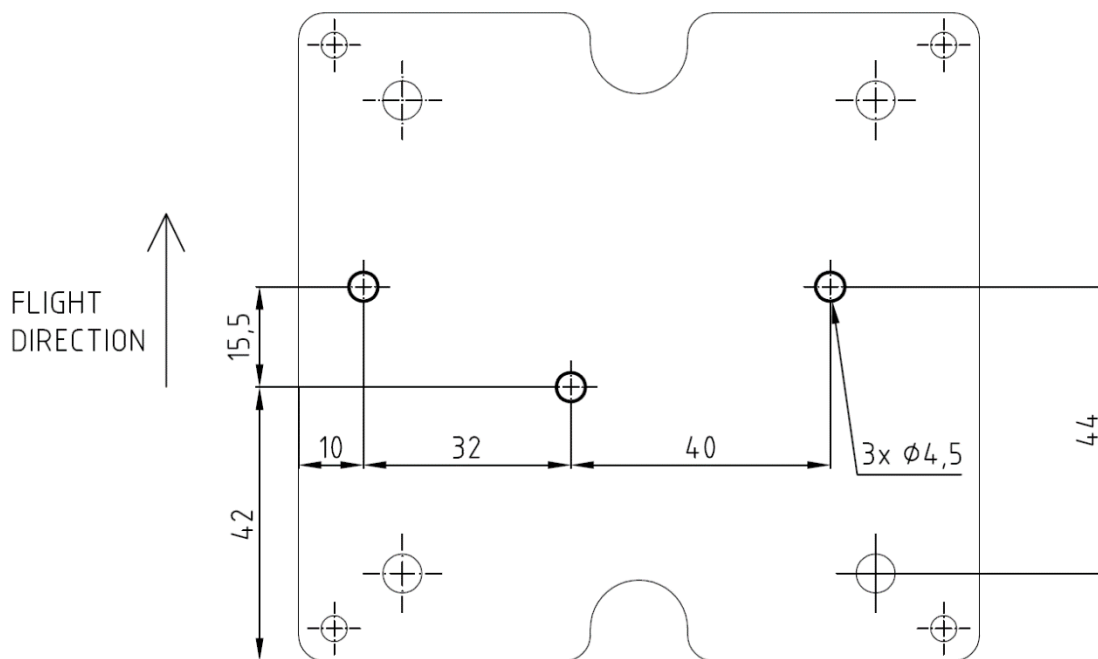


Fig. 8 Bracket modification

14. Attach the mounting tray (9, Fig. 10) to the bracket (11) using bolts (6), washers (7) and nuts (8). Attach the bracket (11) to the aircraft using bolts (12) and washers (7; 13). Insert the AT-1 unit (1) to the mounting tray (9) in correct position.

Note: Record or take a picture of AT-1 unit serial number (printed below the bar code on the sticker of device), necessary for unit adjustment.

15. Route the coaxial cable (5, Fig. 9) to AT-1 unit and ground wire (2) to the grounding point under the right seat. according to Fig. 9. Connect the ground wire (2) to the grounding point under the right seat.
16. Replace the TRX-1500 connector (2, Fig. 3) with the AT-1 connector (2; Fig. 10) and modify the wire harnesses according to the wiring diagram (D90108011D). Attach the cables by means of cable ties.
17. Connect the connectors (2; 3; 4; 5; 10) to the AT-1 unit (1).

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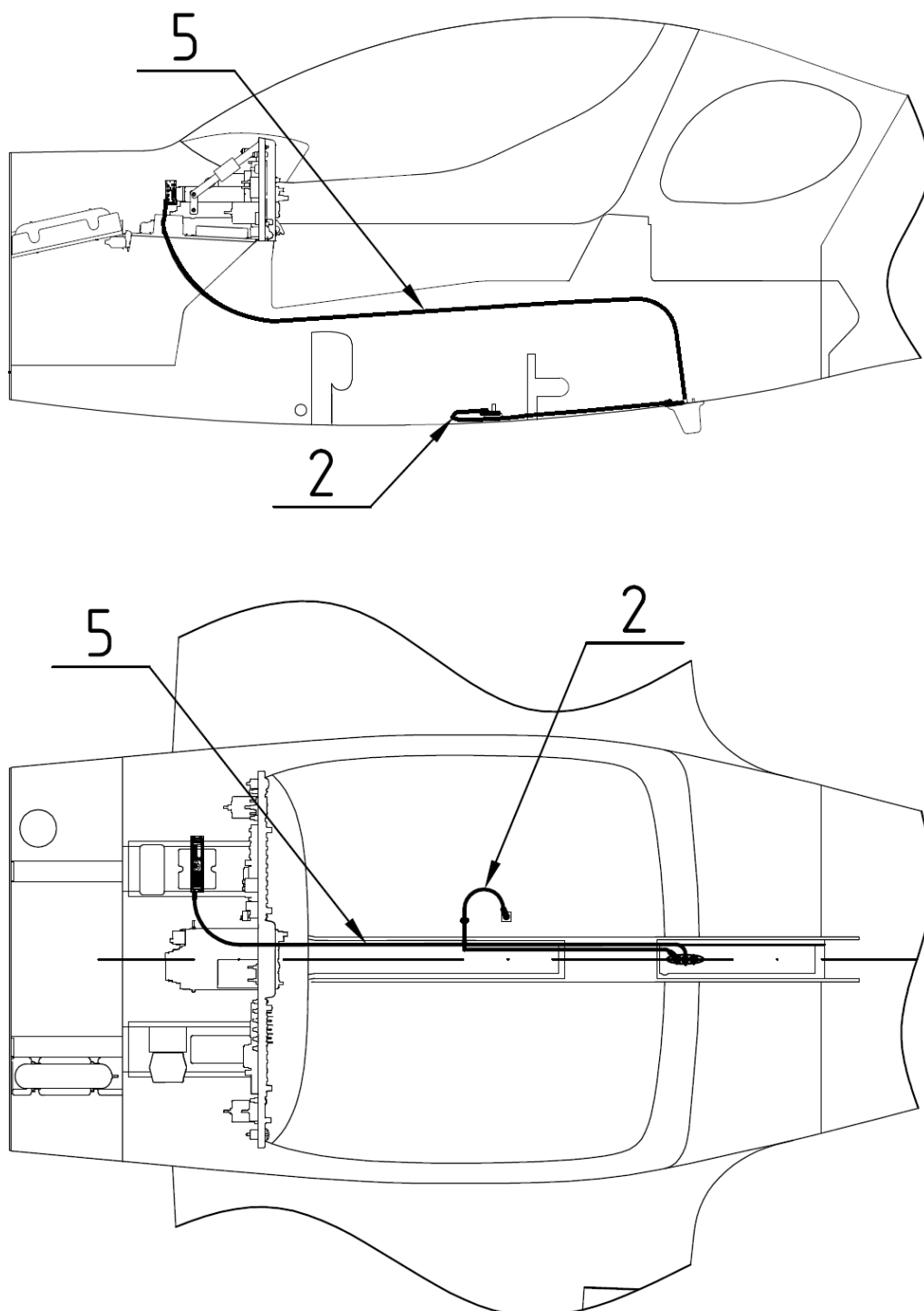
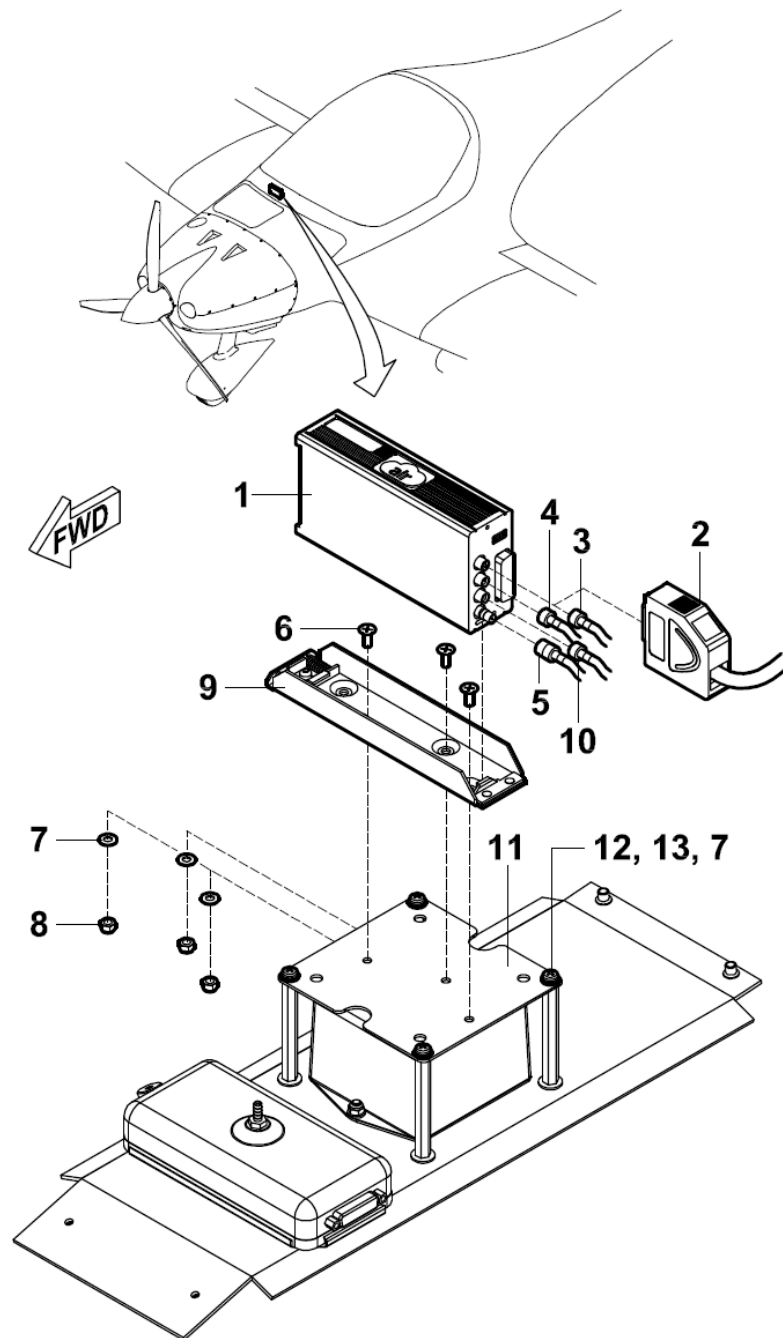


Fig. 9 Cables Routing

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- | | |
|----------------------------------|------------------------------|
| 1 – AT-1 unit | 8 – Self-locking nut M4 |
| 2 – Main connector | 9 – Mounting tray |
| 3 – AT-1 ADS-B antenna connector | 10 – AV-75 antenna connector |
| 4 – AT-1 FLARM antenna connector | 11 – Bracket |
| 5 – AT-1 GPS antenna connector | 12 – Bolt M4 x 16 |
| 6 – Bolt M4 x 12 | 13 – Spring washer Ø4 |
| 7 – Washer 4.3 x 9 x 0.8 | |

Fig. 10 AT-1 Unit Installation

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18. Adjust the AT-1 Traffic Information System as follows:

Note: The setting of AT-1 is performed using the built-in WiFi interface and a PED (Portable Electronic Device - e. g. laptop or tablet). For detailed information see also AT-1 Installation Manual MAN0070A0001, Revision 4.0 or later issue. It is advisable to connect an external power source to the aircraft while configuring the AT-1 system.

18.1. Set the **MASTER SWITCH** to ON position.

18.2. Set the **AVIONICS** switch to ON position.

18.3. Connect the PED to the AT-1 WiFi as follows:

- a. Select the network name "AIR-Traffic-XX" ("XX" are the last two digits of the serial number of the device).
- b. Enter the network password. The password is the full serial number of the device (printed below the bar code on the sticker of device).

18.4. Open a web browser on the PED, enter the address <http://192.168.1.1> and press Enter.

18.5. Select "Advanced Configuration" mode.

18.6. Change the configuration parameters according to Tab. 1. All other configuration parameters must stay in the factory settings.

Parameter	Item value	Note
Own ICAO Address (HEX):	XXXXXX	Replace "XXXXXX" by the aircraft unique ICAO 24-bit address – hex code)
Own Aircraft Category:	MOTORPLANE	Select this option for version FG912
	TOWPLANE	Select this option for version FG912T (with tow equipment)
Protection Volume 1 Range [m]:	1000	
Protection Volume 1 Vertical Range [m]:	100	
Audio Output Source:	RS-232 DATA PORT 3	
Audio Output Volume:	100	
WiFi Interface Activation:	First 15 Minutes On	
RS-232 data port 3 Non-Bearing Range [m]:	25000	
RS-232 data port 3 Non-Bearing Vertical Range [m]:	1000	

Tab. 1 AT-1 Setting Parameters

18.7. Click "Save Settings" (the device will restart automatically).

18.8. Check the firmware version of the device and update to current version (if necessary).

18.9. Set the **AVIONICS** switch to OFF position.

18.10. Set the **MASTER SWITCH** to OFF position.

19. Install the instrument panel cover (1, Fig. 1) and attach it using screws (2).

20. Install the pedestal panel (Chapter 27) and the right seat (Chapter 25) according to AMM, latest revision.

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21. Perform an operational test according to AT-1 Installation Manual MAN0070A0001 and for EMC/EMI check according to point 22.
22. Perform EMC/EMI test according as follows:
 - 22.1. Place the aircraft to a clear space without outer sources of interference.

Note: The battery voltage must be min. 13,0 V. Do not use external power during the test.

- 22.2. Put the brake lever to position **MAX**.
- 22.3. Secure the aircraft using wheel chocks.
- 22.4. Prepare the form DO-FORM6-901.1.

Note: EMC/EMI test is divided into ground check (engine stopped), ground check (engine running), flight check.

- 22.5. Set the parameters of instruments and switches according to the first step in the form DO-FORM6-901.1
- 22.6. Perform the checks of the parameters listed in column "Inspection". Record the performance of check with the result „Pass“ or „Fail“ in the particular column according to the criteria in Tab. 2.

Inspection	Parameter	Pass criterion
GPS	HDOP	From 0 to 10
	VDOP	From 0 to 10
	Number of satellites	6 and more
Com. (Communication)	ATC	Safe (evaluated by pilot / technician)
	Local information	Safe (evaluated by pilot / technician)
Equip. (Equipment)	Failure of any instrument	Without failure
	Error indication any instrument	Without error indication
HDG (Compass heading)	Course of magnetic compass	Without deviation
	Course of electric compass	Without deviation
Audio (Audio interference)	Interference in the headset	No audible interference
Res. (Result)	Particular inspections in a row	All inspections in the row with result "passed".

Tab. 2 EMC/EMI Pass Criteria

- 22.7. Repeat the points 22.5 and 22.6 for all steps in the form DO-FORM6-901.1.
- 22.8. Check of EMC/EMI passed if all inspection steps comply with the pass criteria.
23. Update weight and balance data in the POH and POH Supplement No. 001.
24. Record the compliance with this bulletin into aircraft documentation.

E. COMPLIANCE:

When replacement of traffic information system TRX-1500 by AT-1 is required.

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F. WEIGHT AND BALANCE:

Weight change: Increase +0.45 kg

Moment change: Increase +1.51 kg.m

G. ACTION CARRIED OUT BY:

Approved Maintenance Organization.

H. COSTS COVERED BY:

Costs covered by aircraft owner.

I. NECESSARY MATERIAL:

Necessary material will be supplied on request by aircraft manufacturer Aerospool, spol. s r. o. For material purchase contact the airplane manufacturer's directly at spareparts@aerospool.sk.

Item	Part Name	Part Number	Quantity
1	SBRTC-2020-7 KIT	SBRTC-2020-7	1 pc

Item SBRTC-2020-7 contains:

Item	Part Name	Part Number	Quantity
1	TRAFFIC AVIODANCE SYS., AT-1	N7330-102	1 pc
2	MOUNTING TRAY FOR AT-1	N7330-103	1 pc
3	USB CABLE	N2948-020	1 pc
4	CONNECTOR KIT AT-1	N2926-029	1 pc
5	WASHER 4,3 Zn	N3250-004	4 pcs
6	SCREW M4x10 Zn	N3135-018	3 pcs
7	SELF-LOCKING NUT M4 Zn	N3222-002	3 pcs
8	ANTENNA FLARM, RAMI AV-75	N7355-004	1 pc
9	WASHER 5,3 Zn	N3254-004	2 pcs
10	SPRING WASHER 5 Zn	N3263-005	2 pcs
11	ANTENNA HOLDER, ADS-B FLARM	D344002010	2 pcs
12	ANTENNA AV-75 GROUND WIRE	D90300025A	1 pc
13	ANTENNA AV-75 COAXIAL CABLE	D34400500A-K1	1 pc
14	ANTENNA ADS-B	D34400200B-K1	1 pc
15	ANTENNA FLARM	D34400300B-K1	1 pc
16	ANTENNA GPS	D34500500B-K1	1 pc
17	ALUMINIUM TAPE 50,8 mm	030027	0.6 m
18	CABLE TIE 2,5x135	1-225	100 pcs
19	CABLE TIE MOUNT 20x20	233	2 pcs

Note: Epoxy resin and cotton flocks are not contained in the kit.

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AS-AMM-01-000 Aircraft Maintenance Manual, Rev. 4 or later approved revision.
AS-AWM-01-000 Aircraft Wiring Manual, Rev. 4 or later approved revision.
AS-POH-01-000 Pilot's Operating Handbook, Rev. 4 or later approved revision.
AS-POH-01-001 Supplement No. 001 - Equipment List 1, Rev. 4 or later approved revision.
MAN0070A0001 Air Traffic Installation Manual Traffic Avoidance System actual valid revision.
DO-FORM6-901.1 Check of EMC/EMI

K. ENCLOSURES:

D90108011D Schematic: Traffic Avoidance System /AT-1/
DO-FORM6-901.1 Check of EMC/EMI

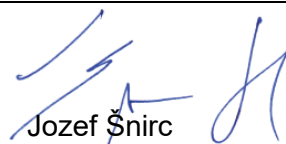
L. APPROVAL:

This Service Bulletin was issued on the base of Minor Change Approval No. 10074200.



Vladimír Martinák
Head of Design Organisation

Position, Name, Signature



Jozef Šnirc
Technical Director

Position, Name, Signature