

ROUTINE

TB 1-1520-248-20-29

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

INSTALLATION AND REMOVAL INSTRUCTIONS FOR THE TRIMBLE
TRIMPACK GLOBAL POSITIONING SYSTEM (GPS) SPECIAL
MISSION KITS ON OH-58D HELICOPTERS

Headquarters, Department of the Army, Washington, D.C.
17 February 1995

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NOTE

THIS PUBLICATION IS EFFECTIVE INDEFINITELY UNLESS SOONER
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1. PURPOSE. To add provisions for the temporary installation of a GPS Trimpack receiver on the upper surface of the main instrument panel in the cockpit and a remote antenna on the upper surface of the tail rotor drive shaft cover so that when installed, will provide the copilot/observer with position information to manually update the navigation system.

2. PRIORITY. This technical bulletin is classified **ROUTINE**.

3. APPLICABLE END ITEM(S) OR SYSTEM(S).

System(s) affected.

NOMENCLATURE	NSN	PART NO.	CAGE	TYPE/ MODEL	SERIAL NO. RANGE
Helicopter, Observation	1520-01-125-5476	OH-58D	97499	OH-58D	Requires Air Worthiness Release by tail number for each installation

NOTE

Each installation of the Trimble Trimpack GPS requires prior approval of unit's MACOM and an Air Worthiness release by individual tail number from ATCOM Directorate for Engineering (AMSAT-R-EIO).

4. KIT(S)/PART(S) AND THEIR DISPOSITION.

NOTE

Before starting application do a complete inventory of both kits.

a. Kit(s)/part(s) needed for this application:

Nomenclature	NSN	CAGE	Part Number	Security	Weight
Kit A	5895-01-340-5495	20309	90209224-501	Normal	7.0 lbs.
Kit B				Normal	
Antenna, GPS		65457	12038-00 or 16248-40		0.3 lbs.
Receiver, Trimble Trimpack		65457	16768-10 or 16768-20		4.2 lbs.
ANVIS Modification Kit	5895-01-340-5502	80063	A3154590-2		

b. Contents of Kit A:

NOMENCLATURE	NSN	CAGE	PART NO.	QTY
Cable, Power	*	20309	90209183-505	1
Cable, Antenna, Aft	*	20309	90209182-511	1
Cable, Antenna, Fwd	*	20309	90209182-512	1
Circuit Breaker	5925-00-929-7716	96906	MS26574-1	1
Cable, Clamp	5340-00-291-5322	96906	MS21919WDG-3	5
Cable, Clamp	5340-00-291-5323	96906	MS21919WDG-4	1
Connector, RF	5935-01-043-0648	81349	M39012/28-0101	1
Doubler	*	20309	90209254-1	1
Doubler	*	20309	90209258-3	2
Jumper	*	20309	90209258-1	1
Mount, GPS Antenna	*	20309	90209255-501	1
Panel, Antenna Blankoff	*	20309	90209175-501	1
Nut, Self Lock	5310-00-680-4892	96906	NAS679A3W	3
Placard	*	20309	90209258-2	1
Rivet	5320-01-151-1061	96906	M7885/2-4-03	12
Rivet	5320-01-138-4239	96906	M7885/2-4-02	4
Screw, Mach	5305-00-984-6196	96906	MS35206-248	4
Screw, Mach	5305-00-990-6444	96906	MS35207-261	4
Screw, Mach	5305-00-989-7434	96906	MS35207-263	4
Sleeve Assembly, Receiver	*	20309	90209178-501	1
Sleeve Adapter, Bracket	*	20309	90209257-501	1
Terminal Lug	5940-00-143-4771	96906	MS25036-103	1
Terminal Lug	5940-00-557-1629	96906	MS25036-149	1
Tywraps	5975-00-984-6582	96906	MS3367-1-0	65
Washer, Flat	5310-00-558-6207	88044	AN960C8	4
Washer, Flat	5310-00-167-0812	88044	AN960C10	11

* NSN to be assigned

b. Contents of Kit B:

NOMENCLATURE	NSN	CAGE	PART NO.	QTY
Antenna, GPS		65457	12038-00 or 16248-40	1
Receiver, Trimble Trimpack		65457	16768-10 or 16768-20	1
ANVIS Modification Kit	5895-01-340-5502	80063	A3154590-2	1

5. APPLICATION.

a. Category of Maintenance: Aircraft downtime will be charged to AVUM Maintenance.

(1) AVIM for Kit A installation.

(2) AVUM for Kit A removal and Kit B installation/removal.

b. Requirements: Work force and man-hour requirements for Kit A application of this technical bulletin to single unit, end item, or system is as follows:

REQUIREMENTS

WORK FORCE/SKILLS	MAN-HOURS
Aircraft Electrician (1)	6
Sheet Metal Repairer (1)	2

Total man-hours required for single application of this technical bulletin is 8 hours.

c. TB/MWO(s) to be applied prior to or concurrently this technical bulletin. Not Applicable.

6. Publications which require change as a result of this Technical Bulletin. Not Applicable.

NOTE

Operator and Maintenance Guide will be provided with GPS Trimpack Receiver.

7. Supply/Parts and their Disposition.

Bulk and expendable material.

NOMENCLATURE	NSN	CAGE	PART NO.	QTY
Chemical Conversion	8030-01-018-2838	80244	MIL-C-81706, CI 3,	KT
Coating (Alodine 600)			FM 2	
Primer Coating Kit, Epoxy	8010-01-314-6076	81349	M23377-21-0012	KT
Sealant	8030-00-723-2746	81205	BAC5010	KT
Tape, Pressure Sensitive	7510-00-283-0612	99742	P-705 1 IN	YD
Coating, Aliphatic Polyurethane	8010-01-316-2221	81349	MIL-C-46168	KT

8. SPECIAL TOOLS; TOOL KITS; JIGS; TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE); AND FIXTURES REQUIRED.

NOMENCLATURE	NSN	CAGE	PART NO.	QTY
Multimeter	6625-00-999-7465	80058	AN/USM-223	1
			(or equivalent)	

9. INSTALLATION PROCEDURES FOR KIT A. The following procedures contain instructions for installing/removing the GPS Trimpack and provisions on OH-58D helicopters.

CAUTION

- To prevent damage or loss, items removed to gain access to work areas shall be tagged for identification and protected from damage before reinstallation. Retain all attaching hardware and identification markers unless otherwise directed.
- Ensure that a foreign object damage (FOD) prevention program is implemented during application of this TB in accordance with AR 385-95, Chapter 4.
- When maintaining, repairing or replacing wires, it is necessary to maintain the original wire clamping and routing design in order not to induce EMI into the sensitive avionics system circuits. Route and clamp replacement wires by category through original clamps (TM 55-1520-248-23, appendix F).

NOTE

- Refer to TM 55-1520-248-23 and TM 11-1520-248-23 for detailed removal and installation instructions not contained herein and TM 55-1520-24823P for detailed parts location.
- Refer to TM 55-1500-323-24 and TM 55-1520-248-23 for detailed instructions concerning aircraft electrical and electronic wiring installation practices.
- Refer to TM 1-1500-204-23 for detailed instructions concerning aircraft sheet metal practices.
- Refer to TM 55-1500-345-23 for painting and marking practices.

a. Aircraft preparation.

- (1) Prepare aircraft for safe ground maintenance.
- (2) Open engine cowl side panel (left and right).
- (3) Open avionics compartment door.
- (4) Remove left hand rear door.

- (5) Remove horizontal stabilizer.
- (6) Remove yaw trim brake access door assembly (P/N406-961-037-125).
- (7) Gain access to center post circuit breaker panel (for access to circuit breaker wiring).
- (8) Unfasten forward and aft tail rotor drive shaft access covers.
- (9) Remove right hand tail rotor access panel (for installation of GPS Trimpack mount).

b. Install GPS Trimpack remote antenna mount (P/N 90209255-501) on forward tail rotor drive shaft cover. Antenna mount will be located between second and third fasteners from aft end of cover (approximately 25 inches aft of horizontal stabilizer support) (Figure 1, view A-A).

- (1) Position mount on cover.
- (2) Using mount as template, locate and drill six 0.12 holes in cover (Figure 1, view A-A and view C).
- (3) Secure mount to cover with cleco fasteners and drill four 0.12 holes (Figure 1, view B-B).
- (4) Remove mount from cover.
- (5) Clean and deburr holes.

WARNING

Chemical conversion coating is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. Wear gloves, goggles, apron, and respirator. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

CAUTION

Chemical conversion coating is highly corrosive. Do not allow chemical conversion coating or rinse water to run into cracks, crevices, seams, or joints.

- (6) Surface treat antenna mount holes with Chemical Conversion Coating (MIL-C-81706).

WARNING

Epoxy primer coating and Aliphatic Polyurethane Coating are flammable and toxic. They can irritate skin and cause burns. Use only in well ventilated area away from heat and open flame. Wear approved respirator, apron solvent resistant rubber gloves and chemical splash goggles. Thoroughly wash skin area with soap and water. Flush eyes with water for 15 minutes. Get immediate medical attention for eyes.

- (7) Prime antenna mount holes with epoxy primer coating (MIL-P-23377).
- (8) Install antenna mount on drive shaft cover with the two 902092583 doublers on inside of cover (Figure 1) (match drill doublers to mount if required).

(9) Secure mount and doublers to drive shaft cover with six M7885/2-4-03 and four M7885/2-4-02 rivets (Figure 1).

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(10) Touchup paint antenna mount surface with Polyurethane (MIL-C-46168).

c. Install Trimpack Receiver Cockpit Mount (Figure 2).

(1) Remove five existing screws from glareshield center cover (Figure 2, view B). Retain screws.

(2) Install sleeve adapter bracket (P/N 90209257-501) on glareshield with screws removed in step (1) above.

(3) Install receiver sleeve assembly (P/N 90209178-501) (Trimpack receiver mount) on sleeve adapter bracket (PIN 90209257-501) (Figure 2, view A-A).

(4) Secure to sleeve adapter bracket (P/N 90209257-501) with four screws (PIN MS35207-261) and four washers (PIN AN960C10) (Figure 2, view A-A).

d. Install aircraft wiring for Trimpack GPS.

(1) Install circuit breaker (PIN MS26574-1) in center post circuit breaker panel (Figure 3, view A).

(2) install GPS circuit breaker placard (P/N 9020925-2) to identify GPS circuit breaker.

CAUTION

In order not to induce EMI into the sensitive avionics system circuits route and clamp replacement wires by category through original clamps (TM 55-1520-24823, appendix F).

(3) Starting at sleeve adapter bracket (PIN 90209257-501) on glareshield route GPS power cable (P/N 90209183-505) up windshield center post along DC Power Cable Assembly and along cabin overhead DC Power Cable Assembly to center post circuit breaker panel (Figure 3, view A and Figure 4, view B).

NOTE

Secure power cable to DC Power Cable Assembly with tywraps as necessary.

(4) Install terminal lug (PIN MS25036-149) on GPS power cable (P/N 90209183-505).

(5) Connect terminal lug (P/N MS25036149) to load side of GPS circuit breaker (Figure 3, view A).

(6) Install jumper (P/N 90209258-1) from line side of COMPT-BLWR circuit breaker to line side of GPS circuit breaker (Figure 3, view A).

(7) Starting at sleeve adapter bracket (P/N 90209257-501) on glareshield route GPS power cable ground wire (P/N 90209183-505) to local ground on left under side of main instrument panel (Figure 4, view B).

(8) Terminate ground wire with terminal lug (P/N MS25036-103).

(9) Connect terminal lug (P/N MS25036-103) to ground.

NOTE

Secure fwd antenna cable to DC Power Cable Assembly and existing wire bundles with tywraps as necessary.

(10) Starting at sleeve adapter bracket (P/N 90209257-501), route fwd antenna cable (P/N 90209182-512) up windshield center post along DC Power Cable Assembly and along cabin overhead DC Power Cable Assembly to aft end of crew compartment.

(11) Continue routing fwd antenna cable (P/N 90209182-512) through avionics compartment and down through tailboom structure to left stabilizer lower support following existing wire bundles (Figure 4).

(12) Remove third and fourth screws (Figure 5, view C) from aft edge of stabilizer lower support. Retain screws.

(13) Install doubler (P/N 90209254-1) on left stabilizer lower support with two screws retained in step (12) above (Figure 5, view B).

(14) Drill six 0.12 inch holes in doubler (P/N 90209254-1) (Figure 5, view B).

(15) Drill one 0.50 inch hole in doubler (P/N 90209254-1) for RF connector (P/N M39012/28-01) for antenna (Figure 5, view B).

(16) Remove doubler (P/N 90209254-1).

(17) Clean and deburr holes.

WARNING

Chemical conversion coating is flammable and toxic. It can irritate skin and cause burns. Use only in well-ventilated area, away from heat and open flame. Wear gloves, goggles, apron, and respirator. In case of contact, immediately flush skin or eyes with water for at least 15 minutes. Get medical attention for eyes.

CAUTION

Chemical conversion coating is highly corrosive. Do not allow chemical conversion coating or rinse water to run into cracks, crevices, seams, or joints.

(18) Surface treat holes with Chemical Conversion Coating (MIL-C-81706).

WARNING

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- (19) Prime surface with epoxy primer coating (MIL-P-23377).
- (20) Secure doubler (P/N 90209254-1) on left stabilizer lower support with two screws retained in step (12) above (Figure 5, view B).
- (21) Install six rivets (P/N MS7885/2-4-03) in doubler (P/N 90209254-1) (Figure 5, view B).
- (22) Touch up Paint support and doubler with Polyurethane (MIL-C-46168).
- (23) Connect fwd antenna cable (P/N 90209182-512) to RF connector (P/N M39012/28-0101) (Figure 5, view B, Section F-F).
- (24) Install RF connector (P/N M39012/28-0101) in doubler (P/N 90209254-1) (Figure 5, view B).
- (25) Secure power cable (P/N 90209183-505) and fwd antenna cable (P/N 90209182-512) to sleeve adapter bracket (P/N 90209257-501) with cable clamp (P/N MS21919WDG-4), screw (P/N MS35207-263) and washer (P/N AN960C10) (Figure 4, views B and D-D).
- (26) Connect aft antenna cable (P/N 90209182-511) to RF connector (P/N M39012/28-0101) (Figure 5, view B, Section F-F).
- (27) Route aft antenna cable (P/N 90209182-511) externally to GPS antenna mount (Figure 5, view C).
- (28) Connect aft antenna cable (P/N 90209182-511) to antenna Blankoff panel (PIN 90209175-501).
- (29) Install antenna Blankoff panel (P/N 90209175-501) on GPS antenna mount with four screws (PIN MS35206-248) and washers (P/N AN960C8) (Figure 5).
- (30) Secure aft antenna cable (P/N 90209182-511) to stabilizer lower support with two clamps (P/N MS21919WDG-3) (Figure 5).
- (31) Remove three rivets from drive shaft cover hinge and ream holes to 0.204 inches (figure 5, section D-D).
- (32) Secure aft antenna cable (P/N 90209182-511) to drive shaft cover hinge with three clamps (P/N MS21919WDG-3), three screws (P/N MS35207-263), six washers (PIN AN960C10) and three nuts (P/N NAS679A3W) (Figure 5, section D-D).

WARNING

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(33) Prime clamps with epoxy primer coating (MIL-P-23377).

(34) Paint clamps with Polyurethane (MIL-C-46168).

e. Final procedures.

(1) Perform continuity check on coax cable for Trimpack remote antenna.

(2) Perform continuity check on GPS power wire from GPS mount to circuit breaker.

(3) Secure fasteners on forward and aft tail rotor drive shaft access covers.

(4) Install right hand tail rotor access panel.

(5) Secure center post circuit breaker panel.

(6) Install yaw trim brake access door assembly (P/N406-961-037-125) (TM 55-1520-248-23).

(7) Install Horizontal Stabilizer (TM 55-1520-248-23).

(8) Close engine cowl side panel (left and right) (TM 55-1520-248-23).

(9) Close avionics compartment door (TM 55-1520-248-23).

(10) Install left hand rear door (TM 55-1520-248-23).

(11) Install pilot and copilot crew doors (TM 55-1520-248-23).

(12) Connect aircraft battery (TM 55-1520-248-23).

(13) Battery power on (to provide 28 VDC to GPS circuit breaker).

(14) Verify pin B of GPS five pin audio connector is common with airframe ground.

(15) Verify pin D has 28 VDC present (Figure 4).

f. Kit B Installation procedures.

(1) Remove GPS antenna Blankoff panel (if installed) from GPS antenna mount (Figure 5, view C).

(2) Connect GPS antenna cable to connector on GPS antenna (P/N 12038-00).

(3) Install GPS antenna on mount and secure with four screws (PIN MS35206-248) and four washer (P/N AN960C8) (Figure 8).

NOTE

Only Trimble Trimpack GPS receiver P/N's 16768-10 and 16768-20 are allowed for this installation. These receivers have software that compensates for the effects of rotor modulation and have green lighting. All other Trimble Trimpack receivers cannot be used. The P/N is located on a nameplate located between the receiver and battery pack. The battery pack must be moved to see the name plate. An ANVIS (Aviator's Night Vision Imaging System) filter modification kit (NSN 5895-01-340-5502) has been developed and when used with either GPS receiver will provide an acceptable display. Installation instructions for this ANVIS filter modification are contained in document, ILS 91-ANV0002, dated March 1991 provided with the ANVIS kit.

(4) Remove caps from GPS Trimpack receiver power connector and external antenna cable connector. Tape caps to side of receiver with tape (PPP-T-42) to prevent chafing

(5) Install GPS Trimpack receiver in mount and secure with clamp assemblies (Figure 7).

(6) Connect power and antenna cables (Figure 4).

g. GPS checkout procedures.

(1) Move aircraft to ramp area with good satellite visibility.

(2) Apply aircraft power.

(3) Apply power to Trimpack. Check that it acquires satellites visible at time of test. If GPS powers up and acquires satellites check is complete.

NOTE

If Trimpack receiver is removed from aircraft and operated on internal batteries external power connector cap must be installed.

(4) If GPS does not power up and aircraft power is present:

(a) Check GPS circuit in.

(b) Check power connections to Trimpack receiver.

(c) Check power cable routing and connection to circuit breaker.

(5) If GPS does not acquire satellites:

(a) Check antenna cable connection to Trimpack receiver.

(b) Check antenna cable connection to stabilizer lower support.

(c) Check antenna cable connection to GPS antenna.

(d) Recheck antenna installation.

(4) Aircraft power off.

10. Kit B removal procedure.

- (1) Remove GPS antenna from mount.
- (2) Disconnect GPS antenna cable.
- (3) Connect GPS antenna cable to Blankoff panel (P/N 90209175-501).
- (4) Install antenna Blankoff panel (P/N 90209175-501) on GPS antenna mount with four screws (P/N MS35206-247) and washers (P/N AN960C8) (Figure 5).
- (5) Remove Trimpack receiver from mount.
- (6) Disconnect antenna and power cables.
- (7) Install caps on Trimpack connectors.

11. Kit A removal procedure.

- (1) Prepare aircraft for safe ground maintenance (TM 55-1520-248-23).
 - (2) Open engine cowl side panel (left and right) (TM 55-1520-248-23).
 - (3) Open avionics compartment door (TM 55-1520-248-23).
 - (4) Remove left hand rear door (TM 55-1520-24823).
 - (5) Remove horizontal stabilizer (TM 55-1520-248-23).
 - (6) Remove yaw trim brake access door assembly (P/N406-961-037-125) (TM 55-1520-248-23).
 - (7) Gain access to (open) center post circuit breaker panel (for access to circuit breaker wiring).
 - (8) Unfasten forward and aft tail rotor drive shaft access covers.
 - (9) Remove right hand tail rotor access panel (for installation of GPS Trimpack mount).
- a. Trimpack remote antenna mount removal.
- (1) Remove antenna Blankoff panel from mount.
 - (2) Disconnect antenna cable from Blankoff panel connector.
 - (3) Drill out ten rivets securing antenna mount to forward tail rotor drive shaft cover.
 - (4) Remove Trimpack antenna mount.
 - (5) Replace the ten rivets on forward tail rotor drive shaft cover (TM 1-1500-204-23).
- b. Trimpack (GPS) receiver cockpit mount removal.
- (1) Remove receiver sleeve assembly (P/N 90209178-501) (Trimpack receiver mount) from sleeve adapter bracket (P/N 90209257-501) (Figure 2, view A-A).

(2) Remove sleeve adapter bracket (P/N 90209257-501) (Figure 2, view A-A).

(3) Install screws in glareshield.

c. GPS Trimpack aircraft wiring removal.

(1) Remove GPS circuit breaker in center post circuit breaker panel (Figure 3).

(2) Remove GPS placard from circuit breaker panel.

(3) Remove tywraps from GPS power cable.

(4) Disconnect ground wire.

(5) Remove power cable.

(6) Remove jumper wire from line side of COMPT-BLWR circuit breaker to line side of GPS circuit breaker (Figure 3).

(7) Disconnect antenna cables from RF connector in doubler on lower stabilizer support (Figure 5, view B).

(8) Remove RF connector from doubler on lower stabilizer support (Figure 5, view B).

(9) Remove tywraps and forward antenna cable (P/N 90209182-512) from aircraft.

(10) Remove two screws from clamps holding aft antenna cable (P/N 90209182-511) to stabilizer support (Figure 5, view B).

(11) Reinstall the two screws in stabilizer support.

(12) Remove three screws, washers and nuts from clamps holding aft antenna cable (P/N 90209182-511) to tail rotor drive shaft cover hinge (Figure 5, view C).

(13) Remove clamps from aft antenna cable (P/N 90209182-511).

(14) Remove aft antenna cable (P/N 90209182-511) from aircraft.

(15) Replace three rivets on forward tail rotor drive shaft cover hinge (TM 1-1500-204-23).

(16) Repair RF connector hole in lower stabilizer support (TM 1-1500-204-23).

(17) Secure fasteners on forward and aft tail rotor drive shaft access covers.

(18) Secure center post circuit breaker panel.

(19) Install yaw trim brake access door assembly (P/N406961-037-125) (TM 55-1520-248-23).

(20) Install horizontal stabilizer (TM 55-1520-248-23).

(21) Close engine cowl side panel (left and right) (TM 55-1520-248-23).

(22) Close avionics compartment door (TM 55-1520-248-23).

(23) Install left hand rear door (TM 55-1520-248-23).

12. WEIGHT AND BALANCE DATA. Make entries on DD Form 365-1 (Chart A) and DD Form 365-3 (Chart C) in accordance with TM 55-1520-248-23 and TM55-1500-342-23, as indicated below:

a. Chart A. Make the following entry:

ITEM NO.	DESCRIPTION	WEIGHT (lbs.)	ARM (In.)	Moment/100 (in)
A-	GPS Receiver Mount/ Adapter Bracket	2.0	38.0	0.76
E-	GPS Antenna	0.3	292.0	0.88
A-	GPS Receiver, Trimpack	4.2	38	1.60

b. Chart C. Make the following entry:

ITEM NO		DESCRIPTION	ADDED (+)			REMOVED (-)		
IN	OUT		WT.	ARM	MOM/100	WT.	ARM	MOM/100
		TB 1-1520-248-20-29						
A-		GPS Receiver Mount /Adapter Bracket	2.0	38.0	0.76			
X		Wiring	2.0	130.0	2.6			
E-		GPS Antenna Mount	1.0	292.0	2.9			
E-		GPS Antenna	0.3	292.0	0.88			
A-		GPS Receiver, Trimpack	4.2	38.0	1.60			
		Total for TB 1-1520-248-20-29	9.5	--	8.74			

13. Recording and reporting requirements.

Records and Reports.

The following forms are applicable and are to be completed in accordance with DA PAM 738-751, TAMMS-A.

- (1) DA Form 2408-5, Aircraft Equipment Modification Record.
- (2) DA Form 2408-13, Aircraft Status Information Record.
- (3) DA Form 2408-13-1, Aircraft Inspection and Maintenance Record.
- (4) DA Form 2408-13-2, Related Maintenance Action Record.
- (5) DA Form 2408-13-3, Technical Inspector Worksheet.

(6) DA Form 2408-15, Historical Record for Aircraft.

14. Points of Contact for this Technical Bulletin.

(1) Technical is Mr. Peter Nyquist, DSN 995-3542 or commercial (908) 544-3542 or Mr. Jeff Dworkin, DSN 624-2119 or Commercial (908) 323-2119.

(2) Logistical is Ms. Vellna Mentel, SAVAA-ILS, DSN 9954175 or Commercial (908) 544-4175 or Ms. Evelyn Thomas DSN 693-5568 or Commercial (314) 263-5568.

(3) Forms and Records is Mrs. Ann Waldeck, AMSAT-I-MDM, DSN 693-1821 or commercial (314) 263-1821.

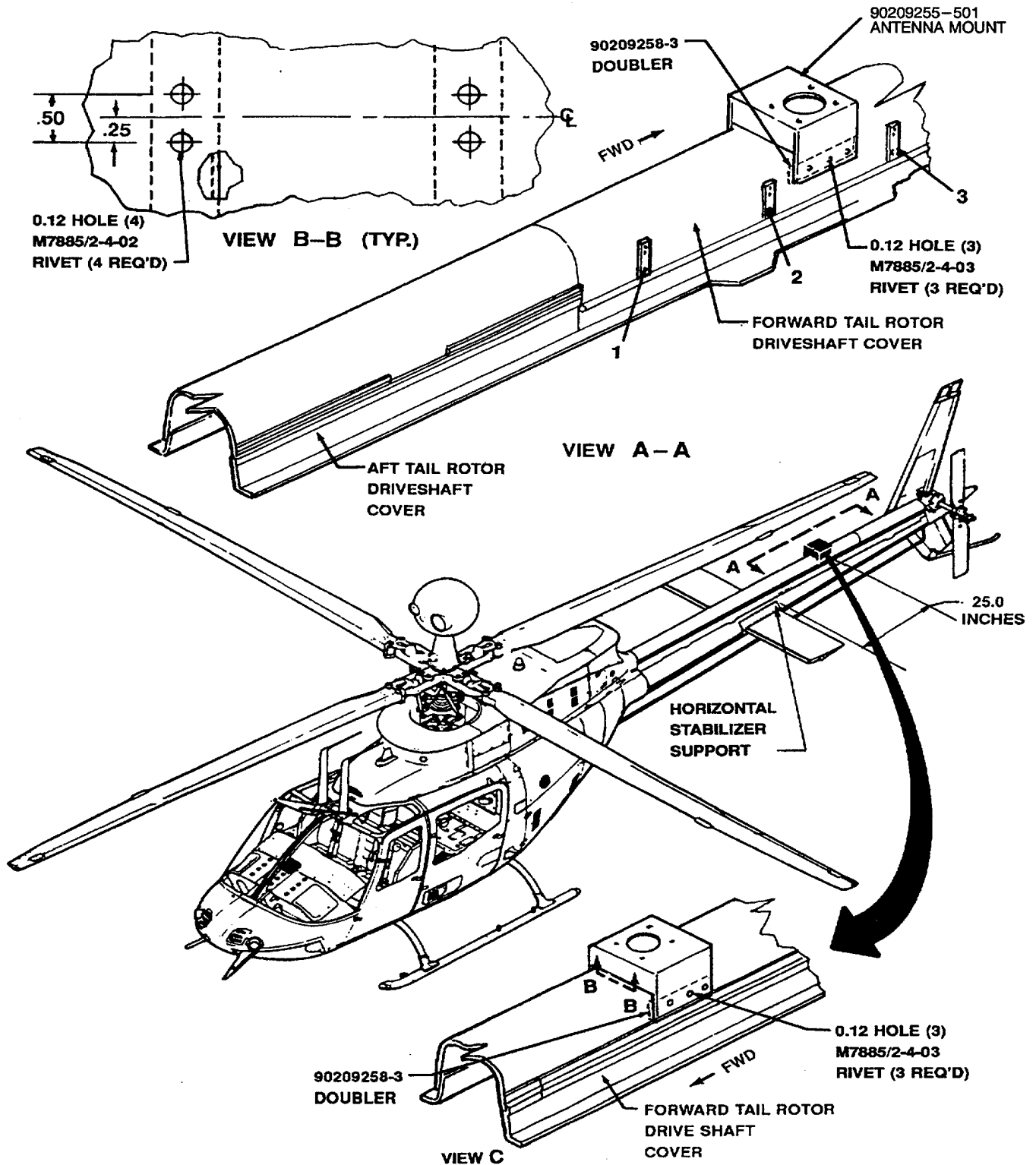


Figure 1. GPS Antenna Mount Installation

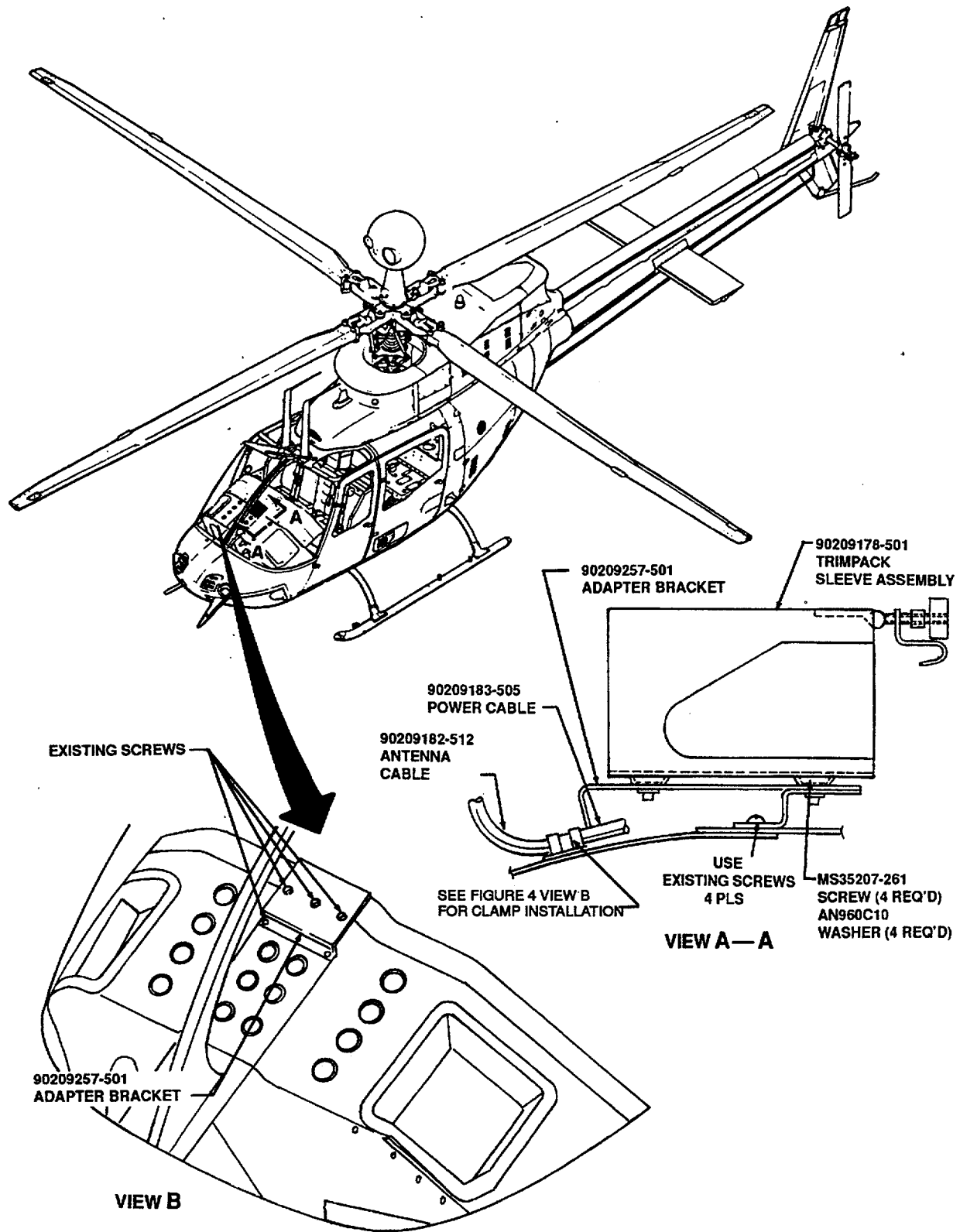
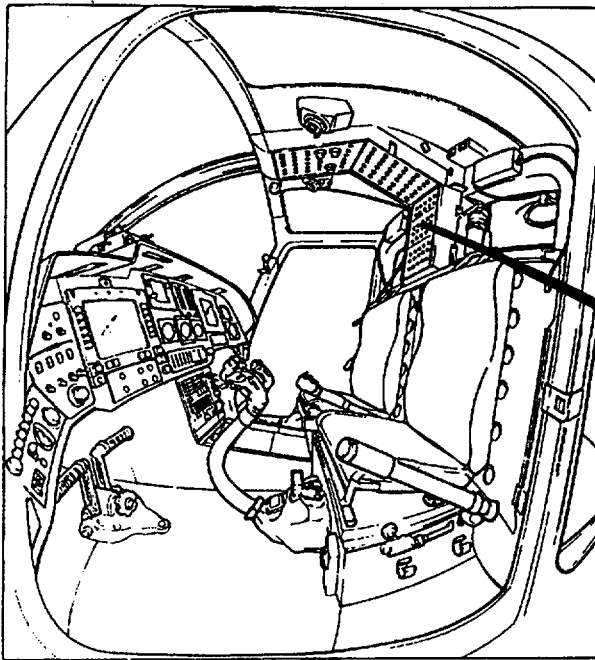
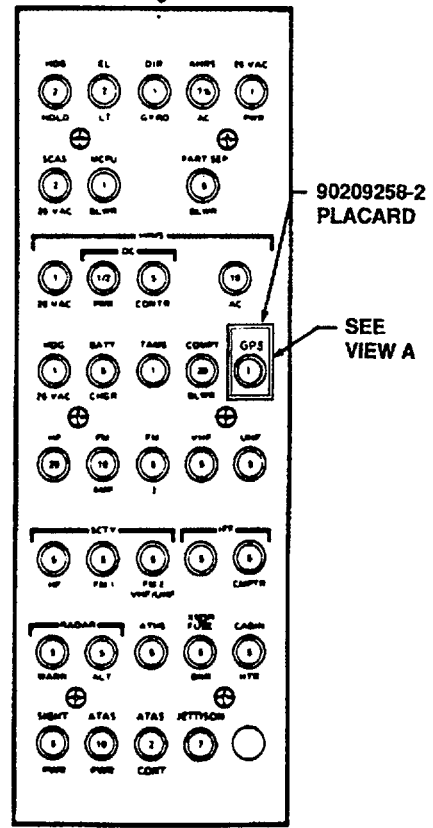
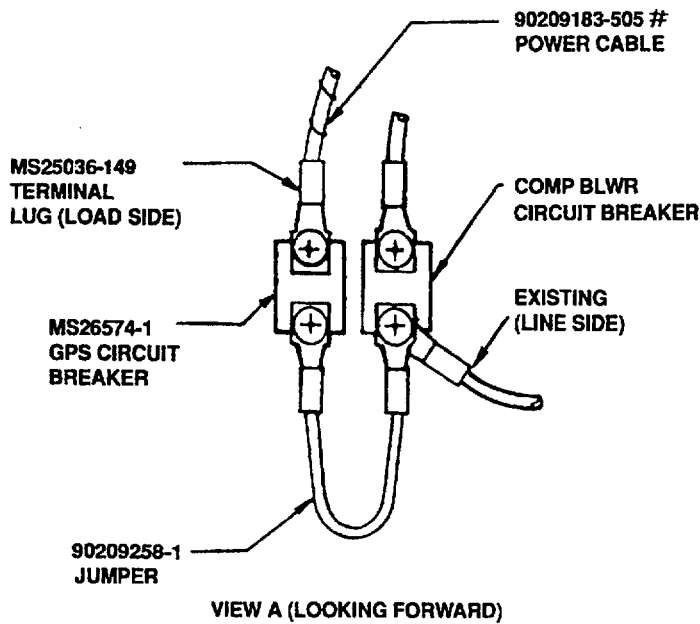


Figure 2. GPS Trimpack Adapter Bracket and Sleeve Assembly Installation.



NOTE
FOR CONTINUATION SEE
FIGURE 4 VIEW B



CENTER POST CIRCUIT BREAKER PANEL

Figure 3. GPS Power Cable and Circuit Breaker Installation.

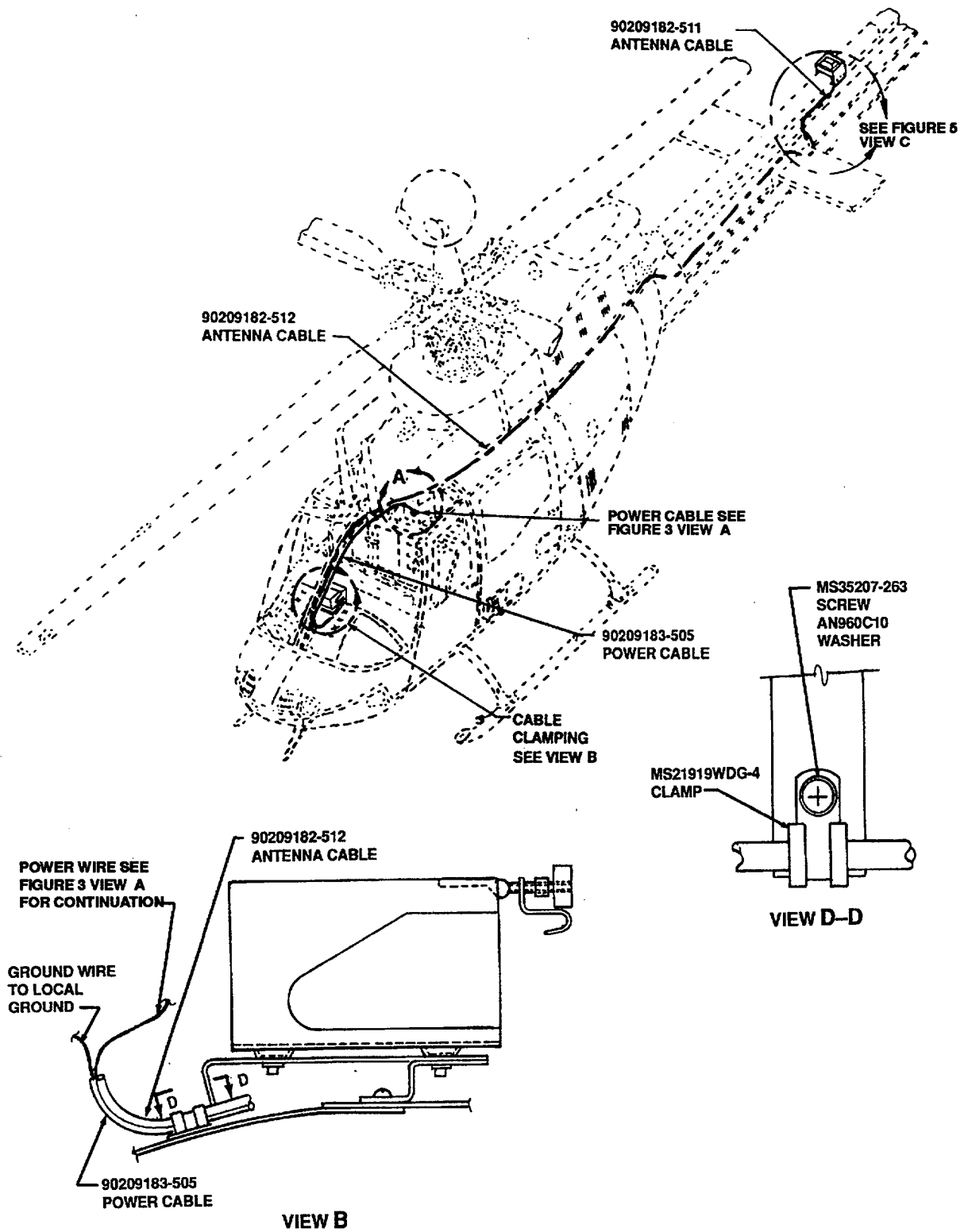


Figure 4. GPS Power Cable and Antenna Cable Installation.

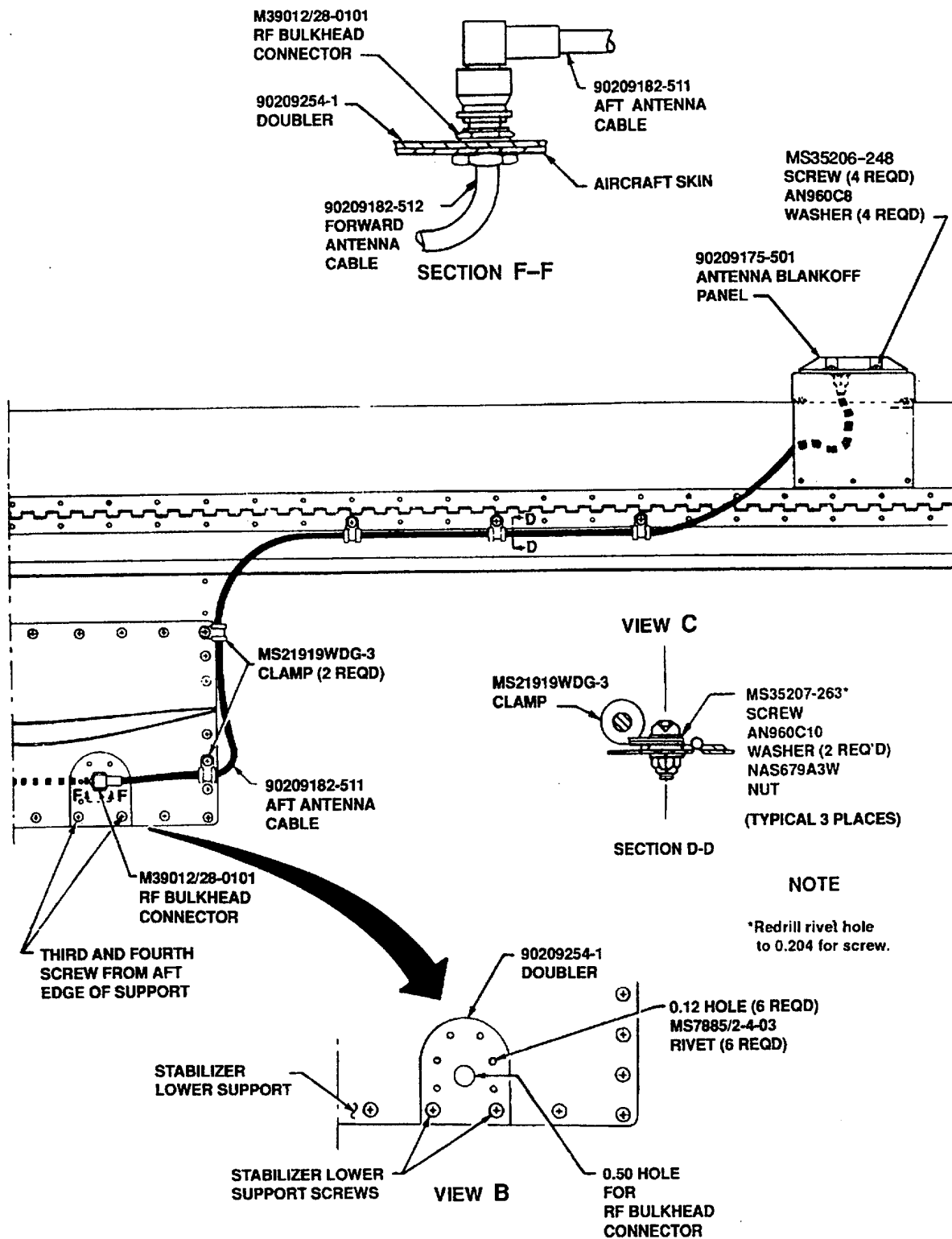


Figure 5. GPS Antenna Cable Routing and Clamping.

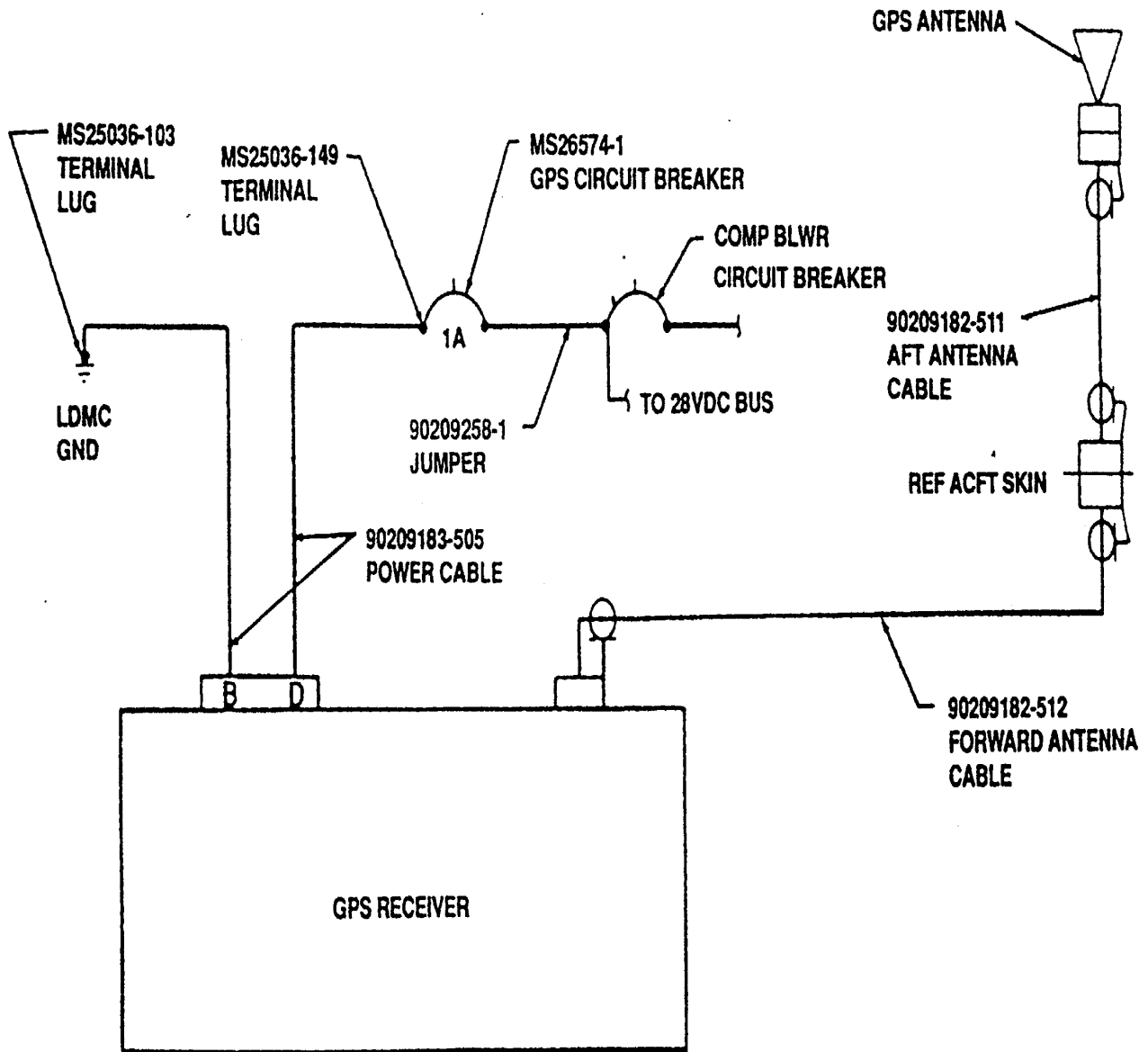


Figure 6. GPS Wiring Diagram.

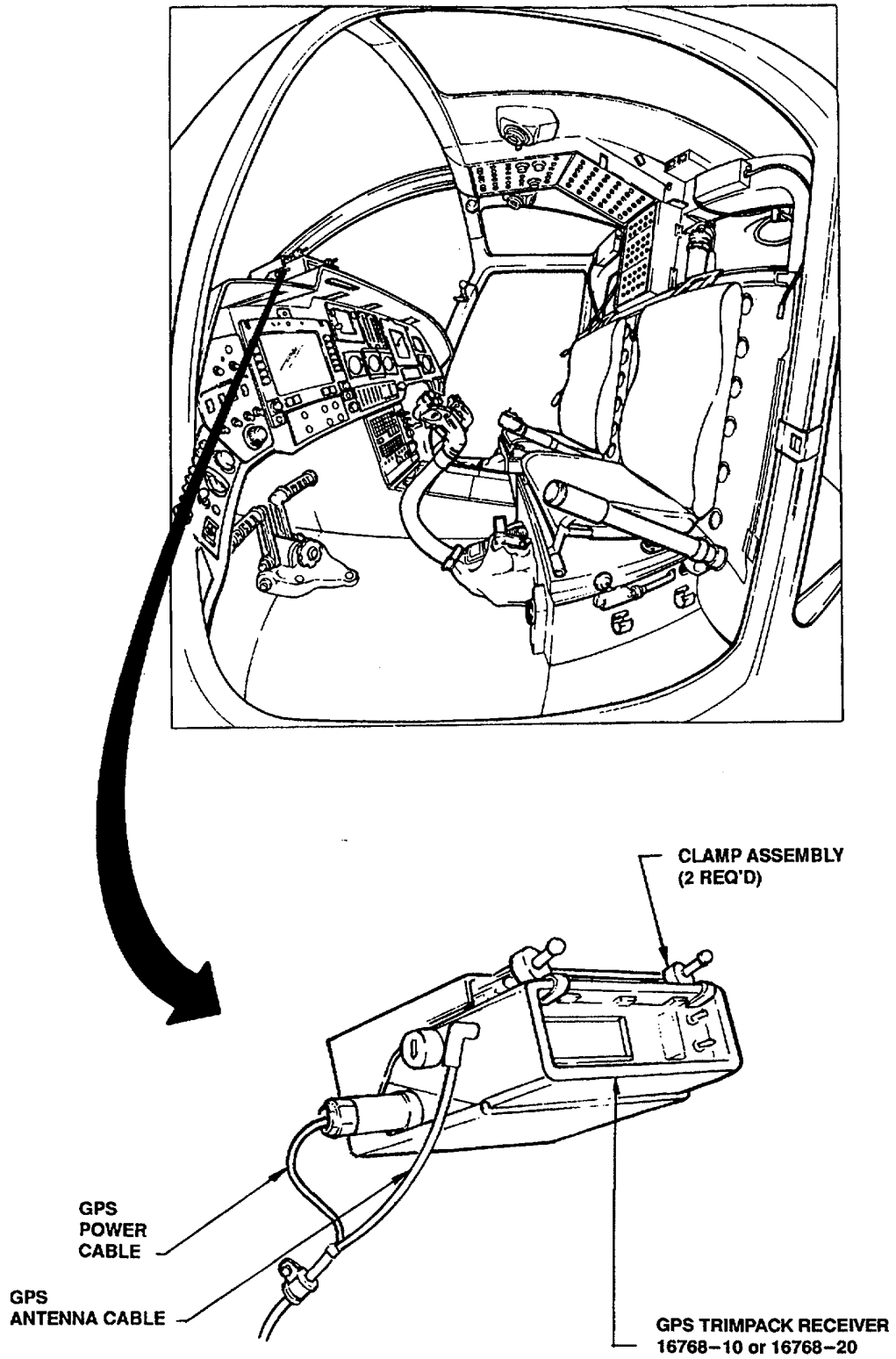


Figure 7. GPS Trimpack Receiver Installation.

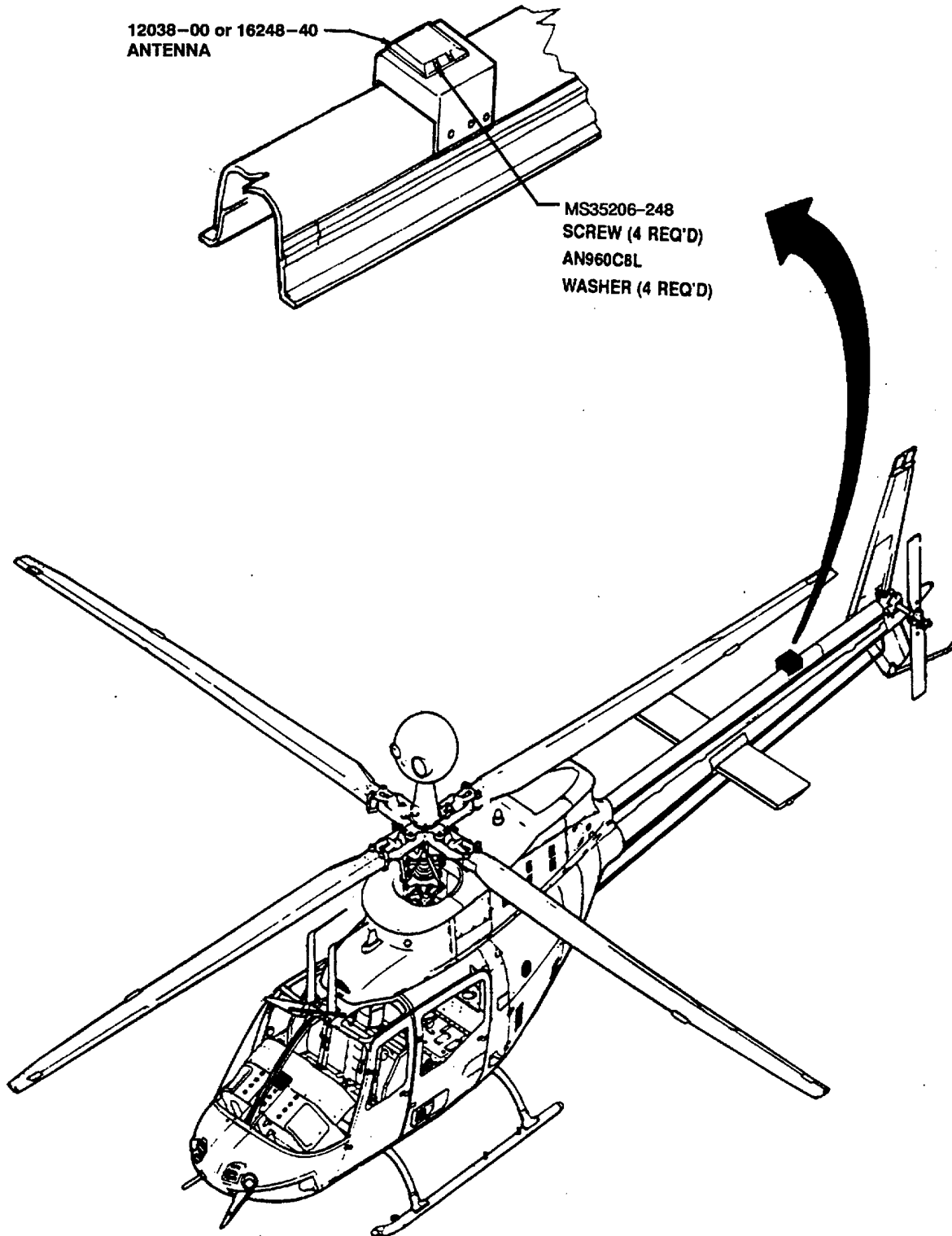



Figure 8. GPS Antenna Installation.

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Chief of Staff


MILTON H. HAMILTON
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