TECHNICAL MANUAL

OPERATOR'S MANUAL

FOR

MULTIPLE INTEGRATED LASER

ENGAGEMENT SYSTEM

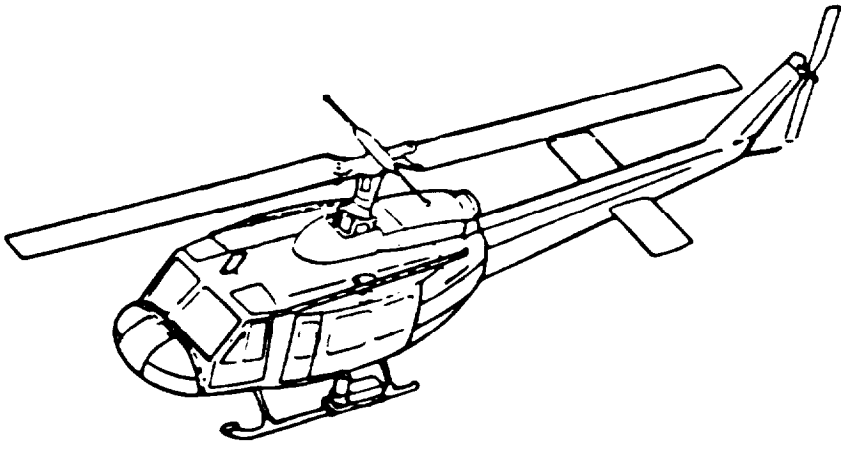
(MILES)

SIMULATOR SYSTEM, FIRING, LASER: M79

NSN 1270-01-159-0481

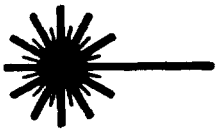
FOR

UH-1H UTILITY HELICOPTER



HEADQUARTERS, DEPARTMENT OF THE ARMY

OCTOBER 1984



WARNING

Although the laser light emitted by MILES laser transmitters is considered eye safe by the Bureau of Radiological Health, suitable precautions must be taken to avoid possible eye damage from overexposure to this radiated energy. Precautionary measures include the following:

- Avoid viewing the laser emitter at close range (less than 12 meters). Increasing the eye-to-laser distance greatly reduces the risks of overexposure.
- Avoid viewing the laser emitter directly along the optical axis of the radiated beam.
- Especially avoid viewing the laser emitter through magnifying optics at engagement ranges of less than 75 meters for STINGER, VULCAN, and TOW, and 110 meters for the CHAPARRAL.
- Avoid allowing personnel with optics of higher transmission or magnifying power than normal tank optics to view STINGER, Vulcan, or TOW within 150 meters or the CHAPARRAL within 330 meters.

Primer is highly inflammable. Do not spray near Heat. Sparks. or Open Flame No Smoking. Use only in well-ventilated area.

M18 Smoke Canisters are the ONLY canisters authorited for use with the AKI Smoke Assembly. Care should be taken when handling expended canisters as they are initially hot to the touch. Failure to comply may result in injury to Personnel.

Make sure a grenade is NOT installed in Smoke indicator.

Do not preflight until all safety switches are set to their SAFE positions.

In inclement weather shut off AKI strobe to prevent experiencing vertigo during flight. AKI strobe is extinguished with circuit breakers for HEATED BLANKET.

For information on FIRST AID, see FM 21-11.

TECHNICAL MANUAL
No. 9-1270-224-10

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C.,

19 October 1984

OPERATOR'S MANUAL
FOR
MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM
(MILES)
SIMULATOR SYSTEM, FIRING, LASER: M79
NSN 1270-01-159-0481
FOR
UH-1H UTILITY HELICOPTER

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

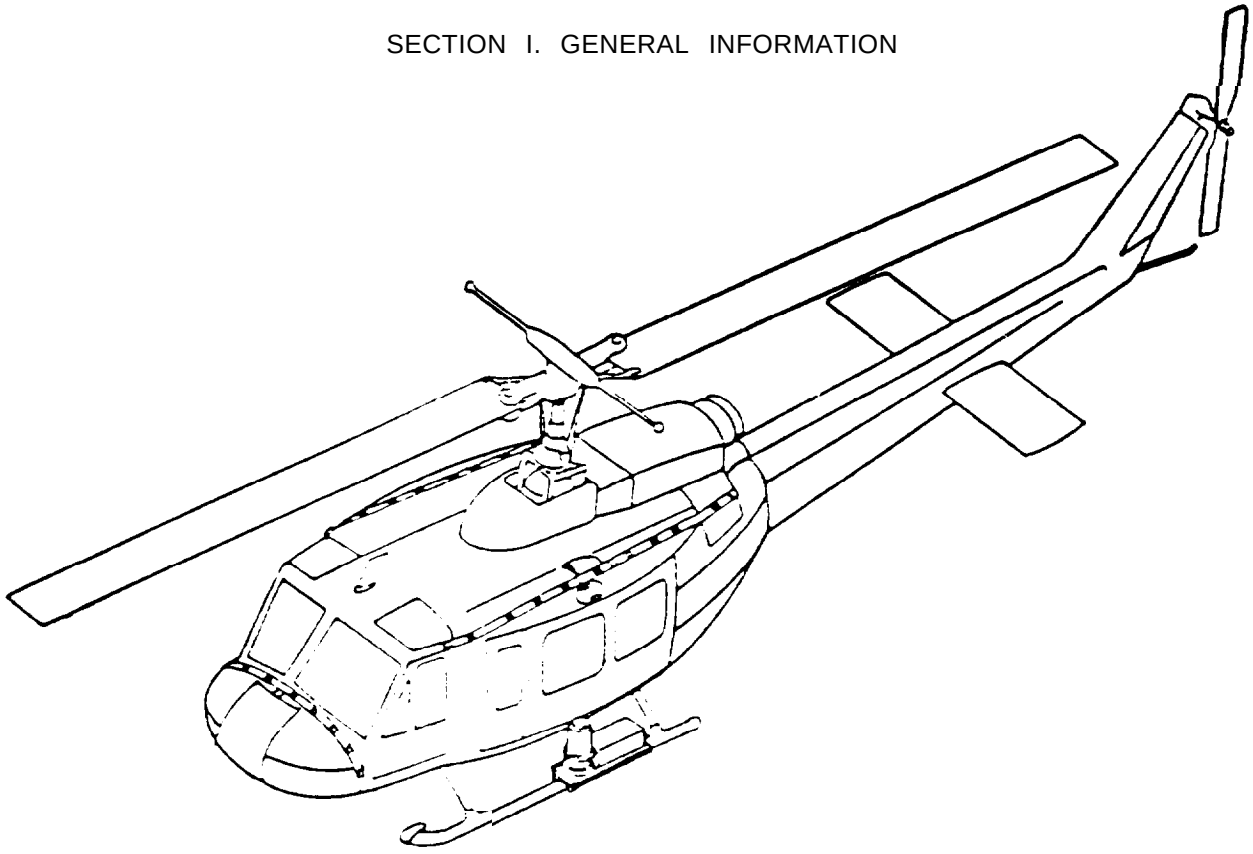
You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander U.S. Army Simulation, Training, and Instrumentation Command (STRICOM), ATTN: AMSTI-LSM, 12350 Research Parkway, Orlando, FL 32826-3276. A reply will be furnished to you.

TABLE OF CONTENTS

CHAPTER 1

INTRODUCTION

SECTION I. GENERAL INFORMATION



SCOPE

TYPE OF MANUAL. This manual shows you how to install checkout, align, operate, and maintain the Multiple Integrated Laser Engagement System (MILES) Air-to-Ground Engagement System/Air Defense (AGES/AD) for the UH-1H Utility Helicopter System.

This manual covers only authorized Operator Maintenance. Any maintenance problems not covered should be referred to Organizational Maintenance personnel.

NOTE

To use this manual you should be able to.

Energize and Maintain the UH-1H Utility Helicopter (See TM 55-1520-210-10) and the M60 machine gun (See TM 9-1005-224.10).

Complete DA Form 2402 and 2404.

If you cannot do these tasks ask your NCOIC or Instructor to show you how. When you can do all these tasks go on with this manual

PURPOSE OF EQUIPMENT. MILES AGES/AD equipment for the UH-1H Utility Helicopter consists of a Laser Detector and Warning system. It permits realistic combat training without the hazards of using live ammunition.

LIMITATION ON EQUIPMENT. Miles-equipped weapons have the same range and operational capabilities as the normal weapons, but a dirty laser transmitter lens may reduce the effective range of the transmitters.

MAINTENANCE FORMS AND RECORDS. Department of the Army forms and procedures used for equipment maintenance are those as prescribed in DA PAM 738-750. The Army Maintenance Management System (TAMMS).

HAND RECEIPT MANUAL. This manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt). The TM 9-1270-224-10-HR consists of preprinted hand receipts (DA Form 2062) that list end item related equipment (i.e., COEI, Bll and AAL) you must account for. As an aid to property accountabilty, additional - HR manuals may be requisitioned from the following source in accordance with procedures in Chapter 3 AR 310-2:

Commander
The U S Army Adjutant General Publications Center
2800 Eastern Boulevard
Baltimore MD 21220

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIRS). If your MILES equipment for the UH-1H Utility Helicopter needs improvement let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail the Quality Deficiency Report to us at Commander U S Army Armament. Munitions and Chemical Command. ATTN: DRSMC-MAO(R). Rock Island. IL 61299 We'll send you a reply.

REFERENCE INFORMATION

Nomenclature Cross Reference List

Common Name	Official Nomenclature
Adapter Set	Adapter Set, Simulator System, Laser: UH-1H Helicopter
Aircraft Control Indicator	Adapter Assembly, Simulator System, Laser: Console
Aircraft Kill Indicator (AKI)	Indicator, Simulator System, Laser: Aircraft Kill
Battery Box	Battery Box Assembly
Cockpit Kill Indicator (CKI)	Adapter Assembly. Cockpit Kill Indicator
Detector Belt	Detector Belt Assembly, Aircraft Segments No. 2, 3, and 4
M60 Transmitter	Transmitter Assembly, Simulator System, Laser: For M60 Machine Gun
Smoke Indicator	Indicator Simulator System Laser: Smoke
UH-1H Simulator	Simulator System. Firing Laser M79 for UH-1H Helicopter

List of Abbreviations

AGES/AC	Air-to-Ground Engagement System/Air Defense
ACIA	Aircraft Control lndicator Assembly
AKI	Aircraft Kill lndicator
CKI	Cockpit Kill lndicator
IR	Infrared
MILES	Multiple Integrated Laser Engagement System
PMCS	Preventive Maintenance Checks and Services

Glossary

Aircraft Control Indicator Assembly (ACIA)	Receives detected laser pulse signals from externally-mounted detector belts Decodes these signals and activates appropriate audio and visual alarms associated with the AKI/Smoke Assembly and intercom. Displays information on attacking weaponry.
Aircraft Kill Indicator (AKI)	Provides external flashing signal light which indicates that helicopter is under opposing fire ("NEAR MISS"). has been “HIT” or “KILLED” Attaches to left skid.

Glossary (Continued)

Cockpit Kill Indicator (CKI)	Contains electronic circuitry that actuates AKI and intercom warning signals. Also contains a key receptacle for testing and activating system for an emergency system OFF switch. Located in cockpit.
Controller	Umpire or referer in a MILES training exercise
Controller Gun	Device used to test MILES Detector Systems. Also used to disqualify soldiers or UH-1H.
Controller Key	Green Key used by Controller to reset MILES transmitters and control console.
Detector Belt	Device that senses laser beams directed at it.
Fastener Tape	Hook and pile tape used to hold vehicle detector belts and other MILES equpiment in place
HIT	Simulated contact with opposing fire insufficient to disable vehicle or cause a fatality.
KILL	Simulated contact with opposing fire sufficient to disable vehicle or cause a fatality.
Laser	Light Amplification by Stimulated Emission of Radiation.
Laser Beam	Invisible beam of light which simulates weapon fire
Laser Detector Assembly	Device that senses laser beams directed at it.
Laser Transmitter	Device that sends a laser beam
NEAR MISS	Simulated closeness to contact with opposing fire.
Simulator	Training device which takes the place of real equipment and which has many of its characteristics.
Smoke Indicator	Contains a smoke grenade that is ignited when the UH-1H has been “KILLED.” Attaches to left skid adjacent to the AKI.

SECTION II. EQUIPMENT DESCRIPTION

EQUIPMENT CHARACTERISTICS CAPABILITIES, AND FEATURES

PURPOSE OF MILES SIMULATOR SYSTEM, LASER: UH-1H UTILITY HELICOPTER

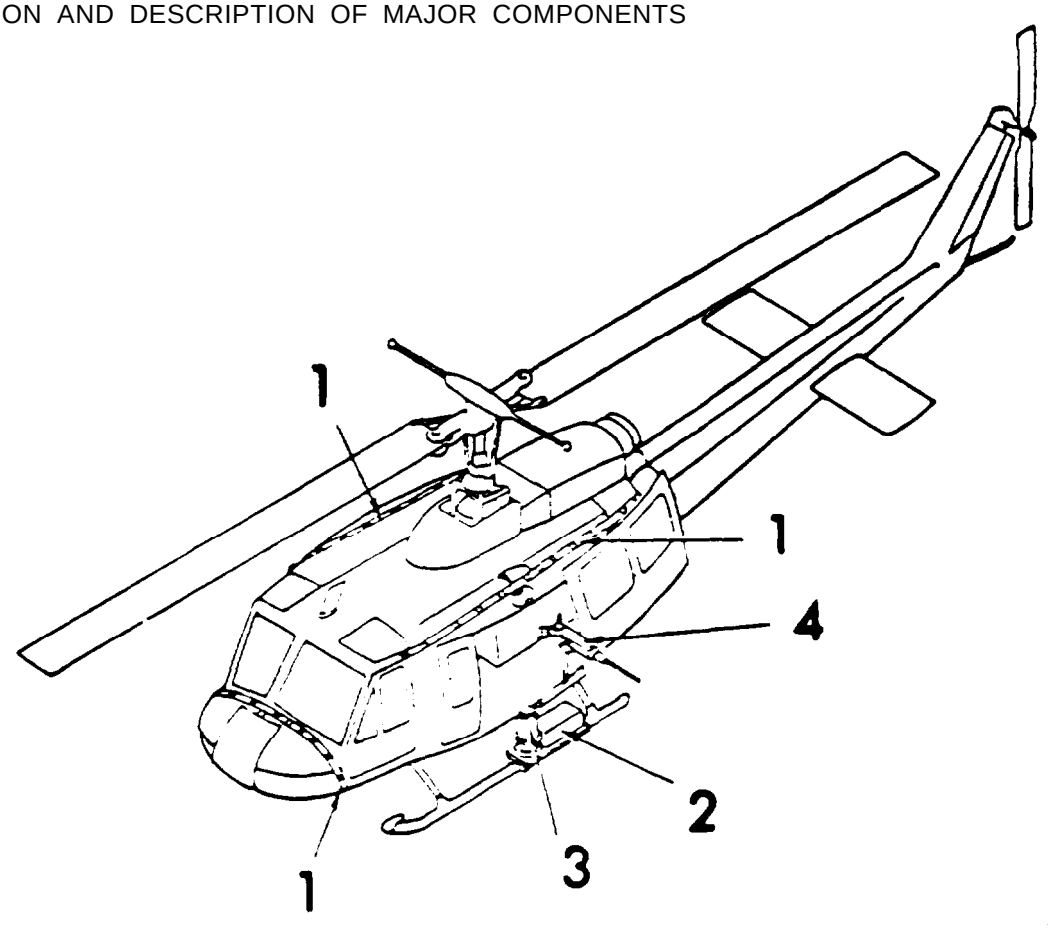
The MILES Simulator System, Laser UH-1H Utility Helicopter, permits the helicopter and aircrew to take part in realistic combat training exercises.

Laser detectors mounted on the helicopter exterior sense enemy fire. MILES system electronics determines the accuracy and simulated damage of enemy fire. The system also detects the type of weapon directing enemy fire against the UH-1H. A Smoke Indicator Device adds to the system's realism.

FEATURES AND CAPABILITIES

- Easily installed and removed.
- Smoke indicator device adds realism
- Detects all opposing fire
    1. Attacking weapon accuracy
        a "NEAR MISS"
        b "HIT"
        c "KILL"
    2. Attacking weapon identification
- Uses eye safe battery powered laser transmitters
- Operates in temperatures from - 35°C (-31°F) to 62°C (144°F).
- Compatible with all other MILES training devices
- High visibility CVKI strobe light signals vehicle "NEAR MISS", "HIT" or "KILL."

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

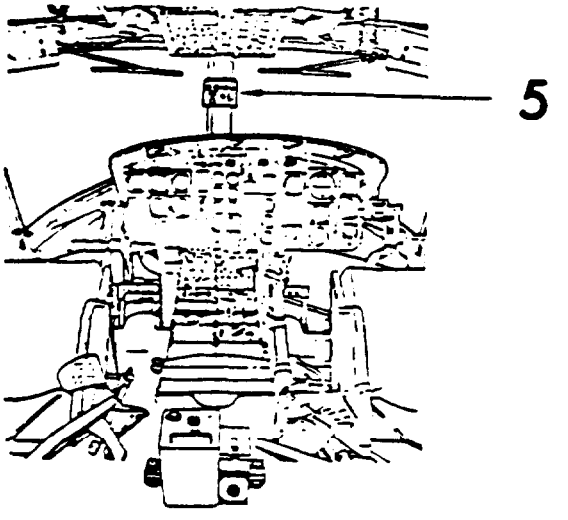


Defection Bell System (1). Receives laser pulses from AGES/AD and MILES-equipped opposing weapons. Generates amplifies and routes electrical signals to Aircraft Control Indicator Assembly (ACIA) for determining whether signal was a “NEAR MISS” “HIT” or “KILL”. Mount on sides, top, bottom, and nose of UH-1H fuselage.

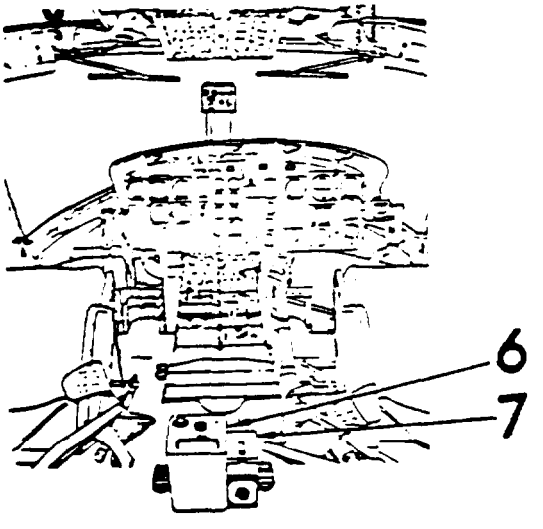
Smoke Indicator (2). Contains a smoke grenade that is ignited when the UH-1H has been “KILLED.” Mounts on the left skid adjacent to Aircraft Kill Indicator (AKI). Operates on 28 V dc aircraft power.

Aircraft Kill Indicator [AKI] (3). Provides a flashing light to indicate to other aircraft vehicles, and ground troops that the UH-1H has received a “NEAR MISS”, “HIT” or “KILL.” The AKI bolts to the left skid, arid operates on 28 V dc aircraft power.

M60 Laser Transmitter (4). Simulates the firing of the M60 Machine Guns by transmitting a special coded laser signal each time a blank round is fired. Clamps on machine gun barrel. Mounts only on UH-1H helicopter equipped with M60 machine guns. Transmitter is a separately issued item and not part of the MILES/UH-1H system.



Cockpit Kill Indicator [CKI] (5) Contains lights to indicate “ENGAGE” or “KILL” a system ON/OFF switch volume control for adjusting tone in intercom receptacle to accept Controller’s Reset Key and a switch to dim indicator lights Mounts on cockpit windshield frame.



Aircraft Control Indicator Assembly [ACIA] (6). Receives laser pulse signals from detector belts. Decodes these signals, and actuates appropriate audio and visual alarms. Has key receptacle for initializing and resetting system. In case of a “HIT” or “KILL”, displays a number that identifies attacking weapon type. Mounts behind helicopter’s center console.

Battery Box (7). Contains two 6 V batteries for operating the CKI. ACIA, detection System. and AKI. Mounts against ACIA.

EQUIPMENT DATA

Table 1-1. MILES UH-1H Helicopter Technical Characteristics

Item	System Requirements
Power	12 V dc (ACIA and detection system) 28 V dc (AKI)
Reset/Initialization	Controller Key

Table 1-2. MILES UH-1H Helicopter Major Components Weights and Dimensions

Item	Weigh (pounds)	Dimensions (inches)	Number of Detectors
ACIA Battery Box and Battery	15.7	8 x 5 x 5.5	
AKI/Smoke	23	21 x 12 x 7	
CKI	2	4 X 4 X 3	
Detector Belt Segment (No 2)	4.7	139 x 2 (approx.)	8
Detector Belt Segment (No. 3)	3.8	137 x 2 (approx.)	8
Detector belt Segment (No. 4)	3.6	180 x 2 (approx.)	6

Table 1-3. MILES UH-1H Helicopter System Information for Weights and Balances

MILES AGES/AD Equipment	Weight (Pounds)	MOM x loo
Top Right Detector Belt #3	3.8	4.7
Bottom Right Detector Belt #2	4.7	5.9
Top Left Detector Belt # 3	3.8	4.7
Bottom Left Detector Belt # 2	4.7	5.9
Nose Detector Belt # 4	3.6	.7
CKI	2	.6
ACIA and Battery Box and Batter)	15.7	11.6
Cables	10	7.4
AKI/Smoke	23	34.5
Totals	71.3	76

SECTION III. TECHNICAL PRINCIPLES OF OPERATION

BASIC PRINCIPLES OF OPERATION

The MILES system uses semiconductor laser beams to simulate actual weapon fire. An eye-safe invisible laser beam is sent out by each weapon's transmitter when it is tired. The laser beam is coded and simulates all of the weapon's capabilities including range, accuracy and destructive capability.

Laser detection systems are used to sense opposing fire. The detection systems detect opposing laser beams and determine whether they have scored a "NEAR MISS", "HIT" or "KILL." The systems activate alarms indicating the presence and damage of opposing fire.

The MILES system of laser beam transmitters and detectors allows safe realistic training exercises with a complete range of weaponry and vehicles.

UH-1H HELICOPTER CONFIGURATION

The UH-1H helicopter exterior has special detector belts attached that sense opposing fire. An Aircraft Control Indicator Assembly (ACIA) mounted inside the helicopter determines the extent of fire and its effect. An Aircraft Kill Indicator (AKI) mounted on the helicopter's left skid is activated by the AOIA when opposing fire is detected. A Smoke indicator is actuated when the opposing fire scores a "KILL"

UH-1H helicopters equipped with M60 machine guns can utilize a separately issued MILES laser transmitter that simulates the firing range accuracy and power of that gun. This equipment is compatible with but separately issued from the MILES UH-1H system.

HELICOPTER DETECTION SYSTEM

Five detector belt segments containing 38 detectors are mounted on the nose. sides. top and bottom of the UH-1H fuselage. Opposing fire is sensed by the detectors. They generate electrical signals that are routed to a decoder in the ACIA.

The decoder identifies the type of weapon that fired the opposing laser beam. It determines whether the laser shot was accurate enough to cause an "ENGAGE" situation. An "ENGAGE" lamp on the Cockpit Kill Indicator (CKI) is lit for either a "HIT" or "NEAR MISS."

The decoder determines if the weapon was capable of causing damage to the target, (an M16 rifle. for example, cannot disable a tank) and the probability of "KILL" for that weapon. The probability of "KILLING" a target is different for each attacking weapon, A "KILL" lamp on the CKI is lit for a "KILL."

If a detector on the UH-1H is “HIT” by laser fire one of three things will happen

1. Two tones will sound in the helicopter’s intercom and AKI light mounted on the left skid will flash two times. The CKI “ENGAGE” lamp will light This means a “NEAR MISS” occurred.

2. Four to six tones will sound in the intercom and AKI light will flash four or six times The CKI “ENGAGE” lamp will light. This means a “HIT” but not a “KILL” occurred.

3. The intercom tone will sound continuously and AKI light will flash continuously. An M18 smoke grenade located in the smoke indicator assembly mounted on the left skid will be set off. The CKI “KILL” lamp will light. This means a “KILL” occurred.

The helicopter crew can determine what type of weapon has fired on them by setting the switch on the MILES Aircraft Control Indicator Assembly (AOIA) to HIT/KILL and pressing the PRESS TO READ button, A code number indicating the attacking weapon will appear on, the display following a “HIT” or “KILL". No code number appears for a “NEAR MISS."

The intercom tone may be silenced by turning the VOLUME knob on the CKI. The AKI light continues to flash until reset by a Controller.

CHAPTER 2

OPERATING INSTRUCTIONS

SCOPE. This Chapter provides those instructions needed by the Aircraft Crew to install, test, operate, and remove the MILES UH-1H equipment.

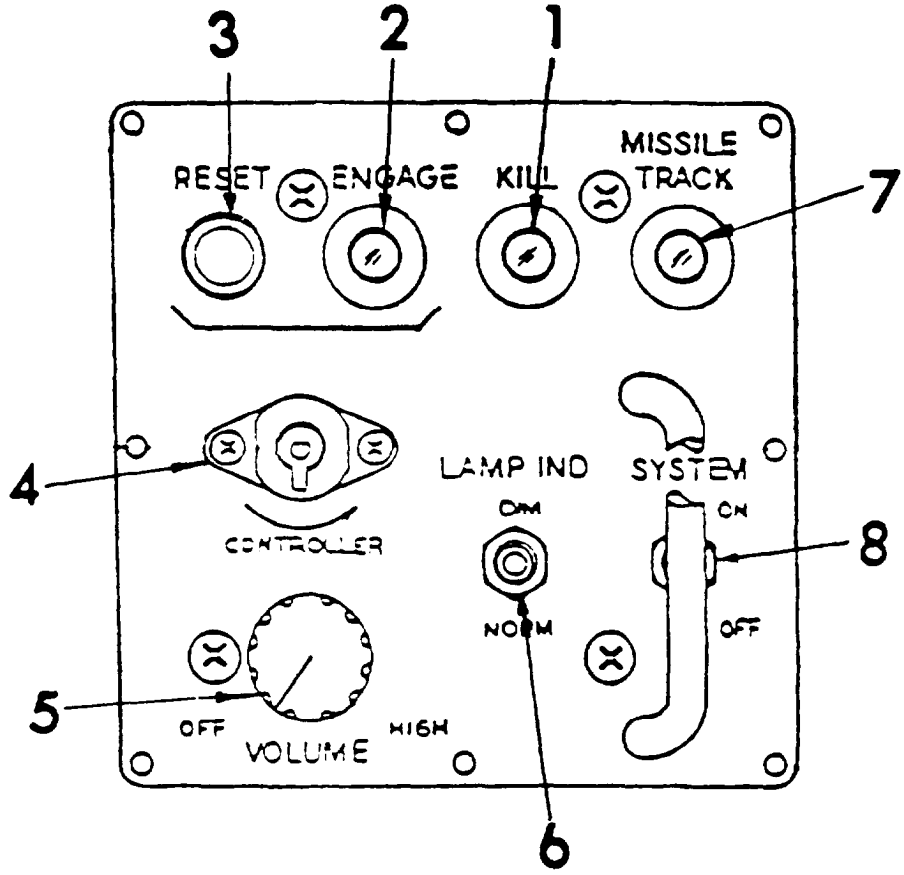
SECTION I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

MILES UH-1H CONTROLS AND INDICATORS. The MILES UH-1H Controls and Indicators are only those associated with the Aircraft Control Indicator Assembly (ACIA) and Cockpit Kill Indicator Assembly (OKU) All other Controls and Indicators are those actually associated with the UH-1H Utility Helicopter.

COCKPIT KILL INDICATOR (OKI) CONTROLS AND INDICATORS. Controls and Indicators for the OKI are listed in Table 2-1.

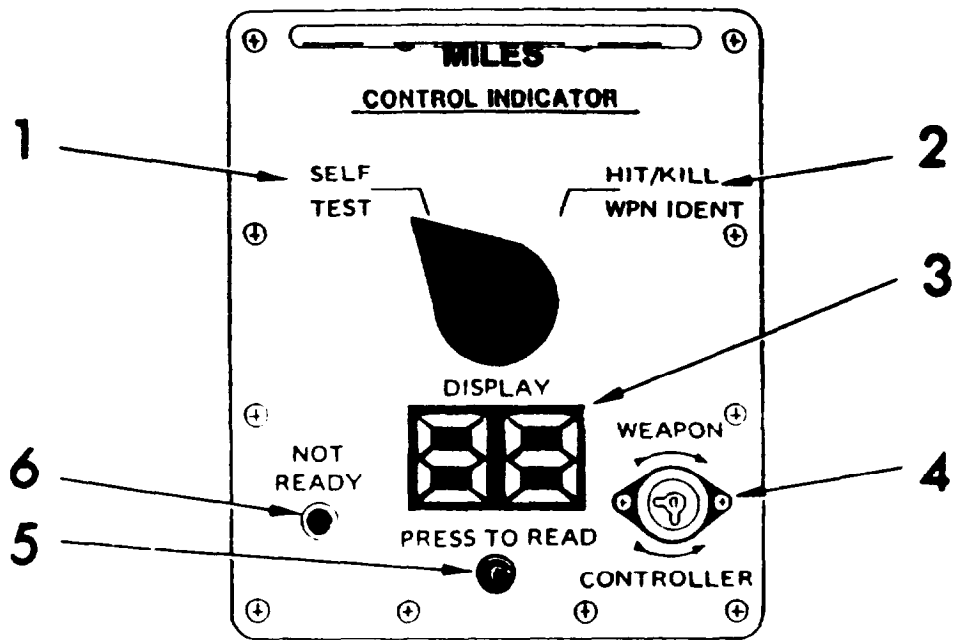
Table 2-1. Cockpit Kill Indicator Controls and Indicators

Key	Description	Function	Operating Position
1	KILL	Lights blue when detection system receives a "KILL".	Adjustable iris normally open. DIM when using night vision goggles.
2	ENGAGE	Lights amber when detection system receives a "HIT" or "NEAR MISS."	Adjustable iris normally open. DIM when using night vision goggles
3	RESET	Resets ENGAGE light.	
4	CONTROLLER	Resets/Initializes system.	Controller key to CONTROLLER resets system,
5	VOLUME	Adjusts loudness of MILES tone in intercom.	As required
6	LAMP IND	Changes brightness of OKI lamps	NORM - during daylight operations. DIM - during night operations
7	MISSILE TRACK	Not used.	
8	SYSTEM	Turns MILES system off in case of emergency.	ON



OKI Controls and Indicators

AIRCRAFT CONTROL INDICATOR ASSEMBLY (ACIA) CONTROLS AND INDICATORS. Contro and indicators for the ACIA are listed in Table 2-2.



ACIA Controls and Indicators

Table 2-2. Aircraft Control Indicator Assembly Controls and Indicators

Key	Description	Function	Operating Position
1	SELF TEST	Performs Self Test.	Turn to SELF TEST. Press PRESS TO READ Display should read 88.
2	HIT/KILL WPN IDENT	Identifies weapon firing on you	Turn to HIT/KILL. Press PRESS TO READ. Display will show a number.
3	DISPLAY	Displays numbers.	
4	WEAPON CONTROLLER	Resets system.	Turn controller key to CONTROLLER position to reset system. (Performed only by Controller.)
5	PRESS TO READ	Activates display.	Press to activate display.
6	NOT READY	Lights when not ready or “KILLED.”	

SECTION II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

GENERAL. Preventive Maintenance Checks and Services will ensure that the MILES equipment will always be ready for operation and perform satisfactorily throughout its mission. Preventive maintenance checks consist of performing a systematic inspection to discover defects before they result in operational failure of the equipment. Defects or malfunctions discovered by the crew during use of the MILES equipment, or as a result of performing maintenance checks and services. will be reported using the proper forms (refer to DA PAM 738.750).

(1) Before you operate. Always keep in mind the CAUTIONS and WARNINGS. Perform your Before (B) PMCS.

(2) While you, operate. Always keep in mind the CAUTIONS and WARNINGS Perform your During (D) PMCS.

(3) After you operate. Be sure to perform your After (A) PMCS.

(4) If your equipment fails to operate. troubleshoot with proper equipment Ask your Controller to check your equipment.

Report any deficiencies using the proper forms.

Table 2-3. Operator/Crew Preventive Maintenance Checks and Services

B - Before Operation D - During Operation A - After Operation W - Weekly Operation M - Monthly Operation

Item No.	Interval					Item to be Inspected	Procedures - Check for and have repaired or adjusted as necessary	Equipment is Not Ready/ Available if:
	B	D	A	W	M			
1	•					Batteries	Inspect for acid leaks	Acid to present.
2	•					Battery Box	Inspect for damaged connectors Check that connectors and interior battery contacts are serviceable	Damage would prevent normal operation
3	•					Cable Assemblies (6)	Check for broken connecters and cut worn or bare wiring	Connectors are broken or wire is cut or bare
4	•					ACIA	Inspect for cracks in Display Window	Display Window is cracked
							Check that Controller's key turns freely in MODE SELECT receptacle	Controller's key. does not turn freely
							Inspect for evidence of switch damage	Switch is damaged
5	•		•			Detector Belt Segments (5)	Look for loose or cracked detector or damaged connectors	Detectors are loose or cracked. connectors are damaged
6	•					AKI/Smoke	Inspect for cracks in plastic lens	Lens is cracked.
							Inspect for damaged receptacle	Receptacle is damaged.
							Inspect for stripped mounting bracket threads	AKI cannot be securely mounted.
							Inspect for damaged hinge and latch	Hinge binds or latch will not engage
7	•		•				Inspect for presence of grenade.	Grenade is present.

B - Before Operation	D - During Operation	A - After Operation	W - Weekly Operation	M - Monthly Operation

Item No.	Interval					Item to be Inspected	Procedures - Check for and have repaired or adjusted as necessary	Equipment is Not Ready/ Available if:
	B	D	A	W	M			
7	●					CKI	Inspect for evidence of switch damage.	Switch is damaged.
							Inspect lamps for proper operation.	Lamps operate incorrectly.
							(If lamps fail to illuminate, unscrew Iris Assembly, clean unit out, and retest.)	
							Check that Controller Key turns freely in key receptacle.	Controller Key does not turn freely.

SECTION III. OPERATION UNDER USUAL CONDITIONS

GENERAL. Before the MILES equipment can be used, it must be properly installed on the UH-1H. To speed up procedures. work is organized into various tasks. While some crew members are performing one set of tasks. others can be performing another set.

Before you begin, READ ALL STEPS IN THE TASK AND LOOK AT EACH ILLUSTRATION CAREFULLY. To help perform a task, most steps have reference numbers to illustrations. Do each step just the way you are instructed and in the order in which it occurs in this manual.

NOTE

Don't jump ahead. Don't skip any steps.

If your MILES equipment has a problem you can't fix using this manual report it on DA Form 2404 To get a replacement turn in the faulty equipment and the completed form.

TASK ASSIGNMENT. The Crew Chief assigns crewmen to tasks. The crewman turns to the appropriate Section in this manual and performs the required steps IN ORDER. Occasionally the manual may tell a crewman to wait until he has made sure that another crewman has completed an earlier task. On some tasks. two crewmen may have to work together.

START AT TASK 1 AFTER READING THE TASK ASSIGNMENT

Certain steps must be done with the Controller present. A Controller Key carried only by the Controller. is required to reset the system. The Crew Chief Will determine when to call the Controller.

Those tasks involving the Controller must be done in this order

1. Test Tasks (See page 2-76)
2. Operational Tasks 2 (Initialize MILES System), 4 (Install Smoke Grenade). 7 (Recognizing Enemy Fire). and 8 (Resetting System After a "KILL") (See pages 2-85, 2-87, 2-89, 2.91)

The Crew Chief should coordinate the tasks. give assistance to any crewman who needs it, and check to make sure everything gets done

NOTE

Unless otherwise indicated, references in this manual to right and left sides of the UH-1H Utility Helicoper use the seated Pilot as a standard point of reference.

LIST OF TASKS

NOTE

Minimum vehicle temperature for cleaning and priming is approximately 32°F.

ASSEMBLY AND PREPARATION FOR USE

Preinstallation Task: Obtain Equipment.

Obtain all equipment needed to install and operate MILES UH-1H Utility Helicopter system from your NCOIC. Unpack transit case. Verify that all equipment is present and not visibly damaged. Check against illustrations in Appendix B, Components of End Item and Basic Issue Item List.

Obtain all Support Equipment (Appendix C) and all Expendable/Durable Supplies and Materials (Appendix D).

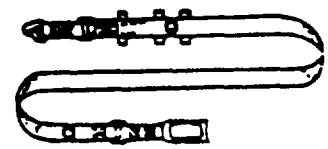
OUTSIDE INSTALLATION TASKS - LIST

NOTE

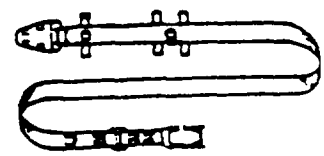
Some tasks may require the replacement of aircraft screws with MILES supplied screws. Do not lose the helicopter screws. They must be replaced upon removal of the MILES equipment.

Outside Installation Task 1: Obtain Equipment. Completion of outside installation tasks requires equipment listed and illustrated below. Locate and set aside this equipment.

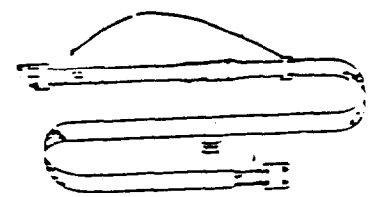
2 Detector Belt Segments No. 2



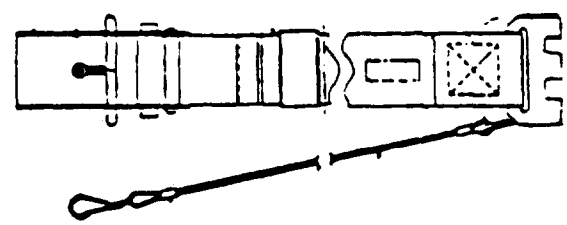
2 Detector Belt Segments No. 3



1 Detector Belt Segment No. 4



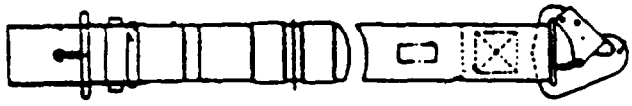
2 Belt End Assemblies



1 Belt End Assembly

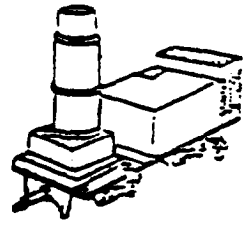
Outside Installation Task 1: Obtain Equipment (Cont).

2 Belt End Assemblies

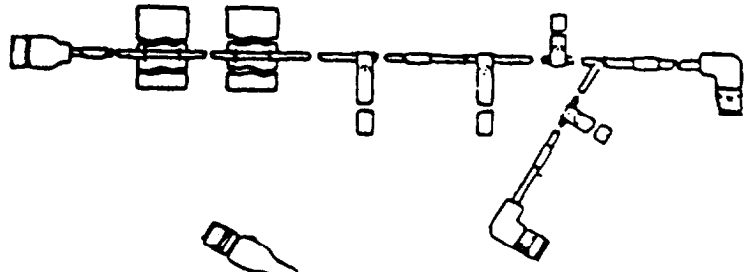


1 Installation Kit - 1 can of Primer and 1 roll of Fastener Tape (For resupply of either item, see Appendix D)

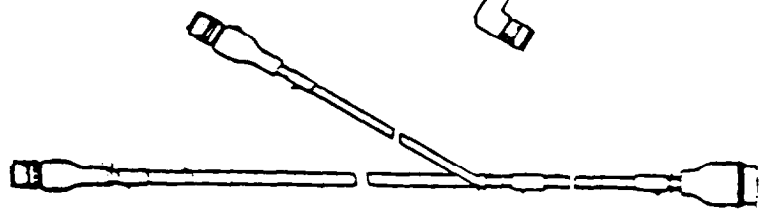
1 AKI/Smoke Indicator Assembly



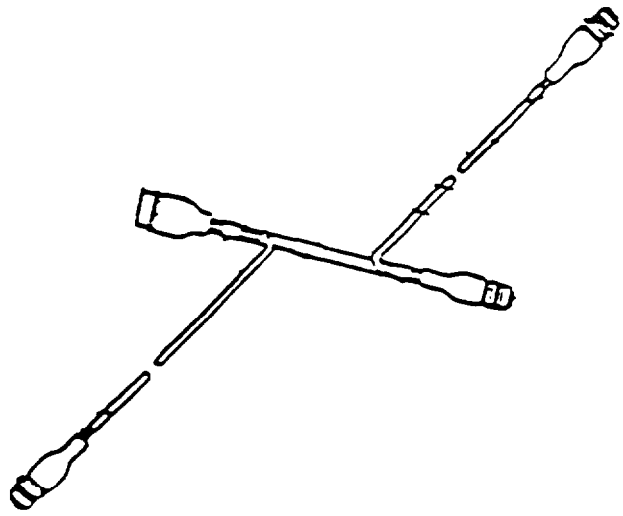
1 AKI/Smoke-ACIA Cable Assembly (W2)



1 Belt Harness Right Cable Assembly (W4)



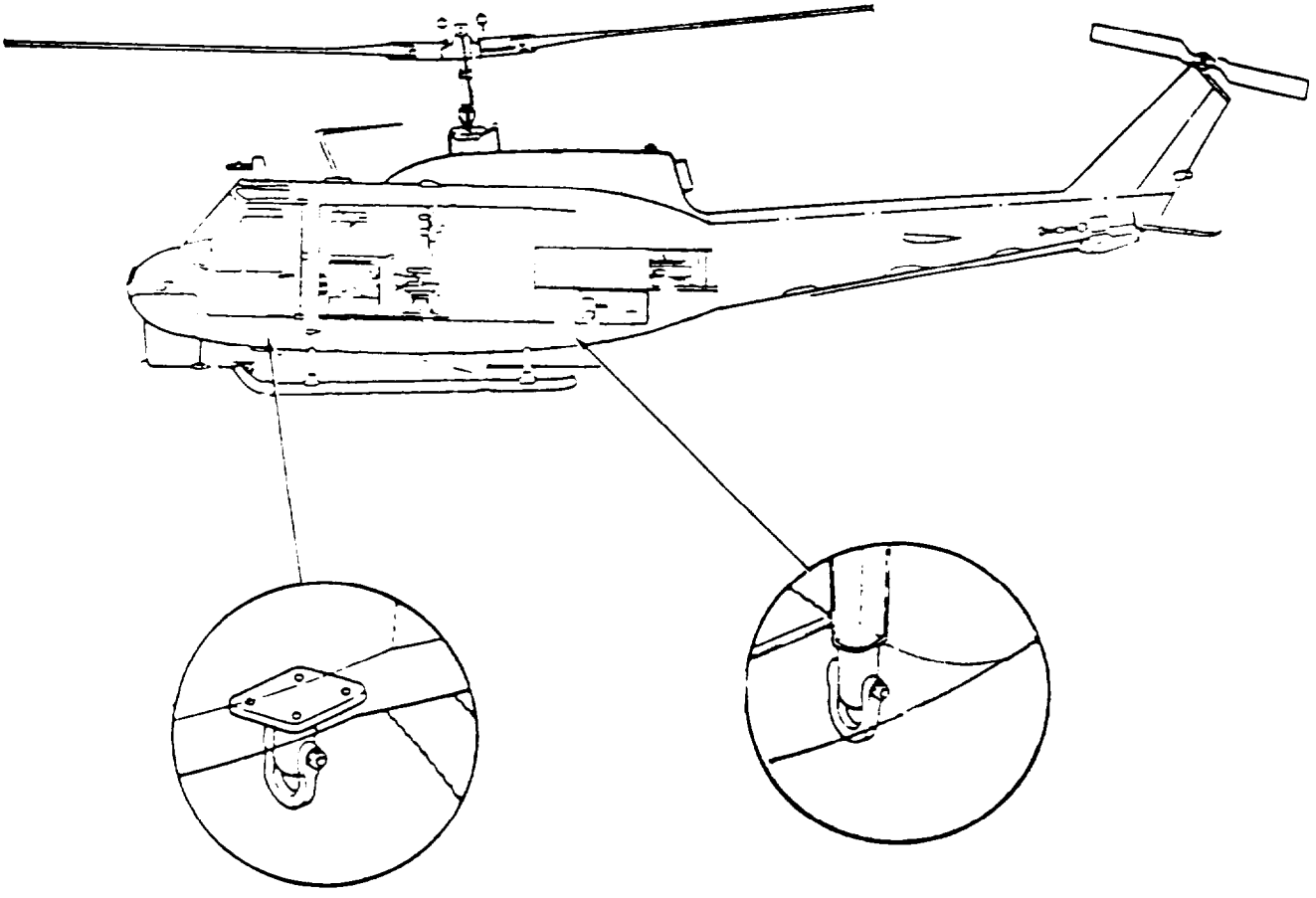
1 Belt Harness Left Cable Assembly (W5)



1 Cable Loop Clamp

4 MILES Pan Head Screws

Outside Installation Task 2: Inspect and Install Aircraft Shackles



Shackles must be installed on rear hard points and forward ground handling rings to accommodate MILES equipment. Inspect aircraft and ensure four shackles are installed and are not cracked or damaged. Install shackles where necessary

Outside Installation Task 3: Inspect and Service Detector Belt Segments. All five detector belt segments must be checked.

Look for any damage that would prevent normal operation of the belt segments (1).

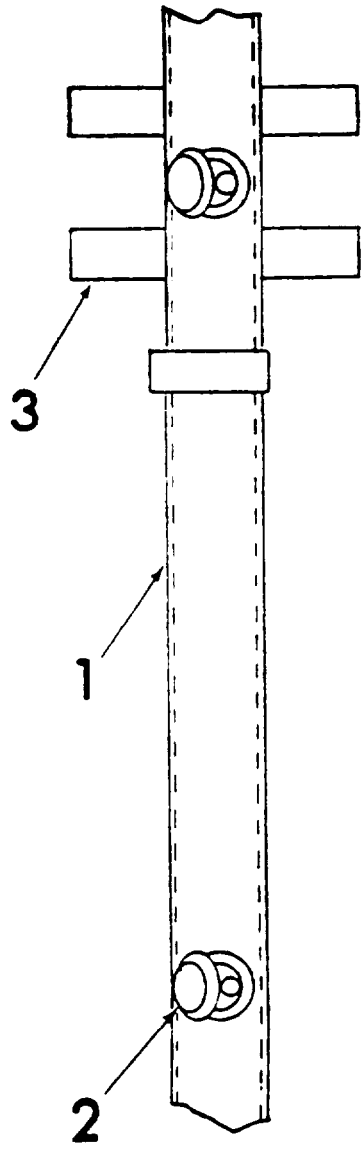
Wipe detectors (2) clean. (Clean all detectors.)

Unfasten and spread out all fastener tabs (3).

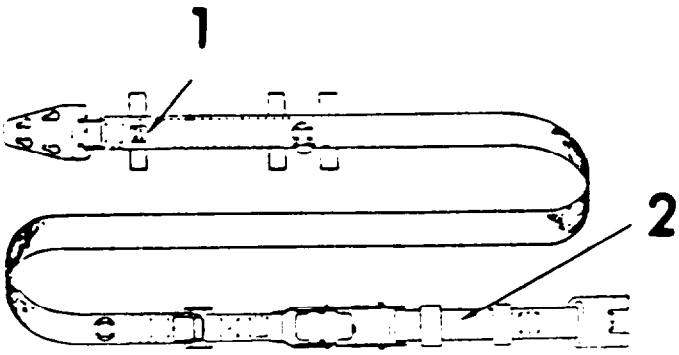
Report any damage on DA Form 2404.

NOTE

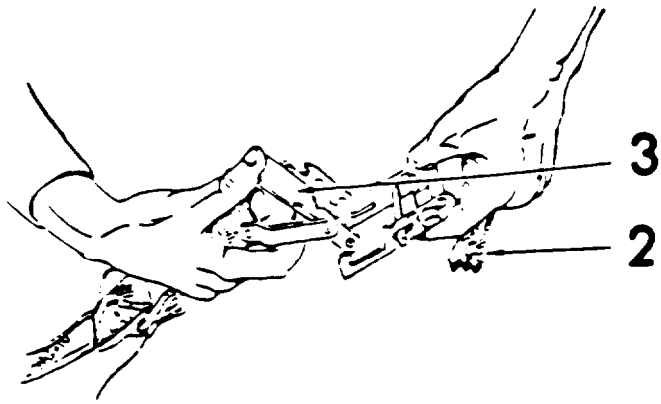
Replace belt segments only if not usable



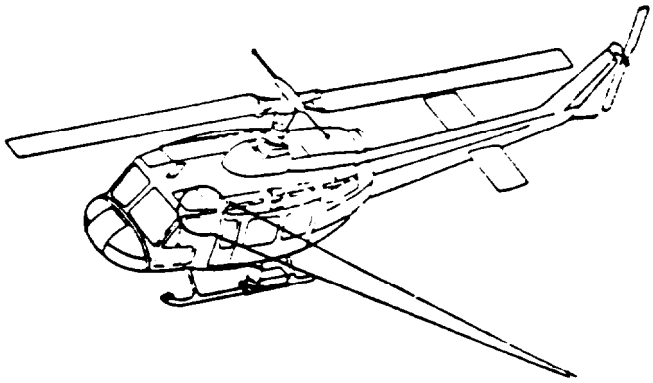
Outside Installation Task 4: Install Top Left Detector Belt. The top left detector belt is installed on the left side of the fuselage above the cabin windows. The belt begins just to the rear of the copilot's access door and runs to the end of the engine access cover.



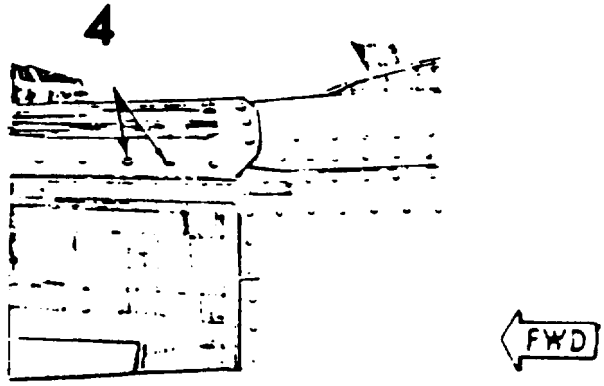
Locate a detector belt labeled Aircraft Segment No. 3 (1).



Locate a belt end assembly part number 9340083 (2) (there are two of them) Attach it to detector belt. Close and latch buckle (3).



Remove lower second and third screws from rear on window frame above copilot's door (4). use No. 2 Phillips screwdriver from vehicle tool kit. Store screws for replacement following MILES exercises.

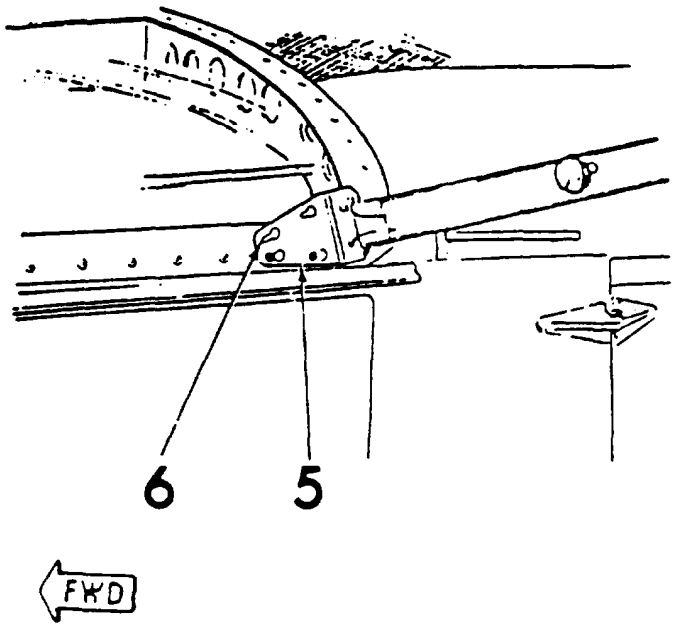


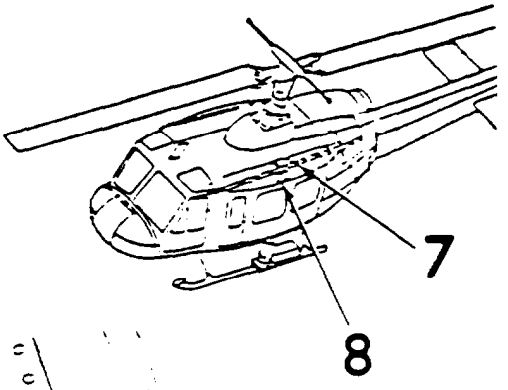
Install two MILES supplied pan head screws in empty window frame holes. Do not tighten.

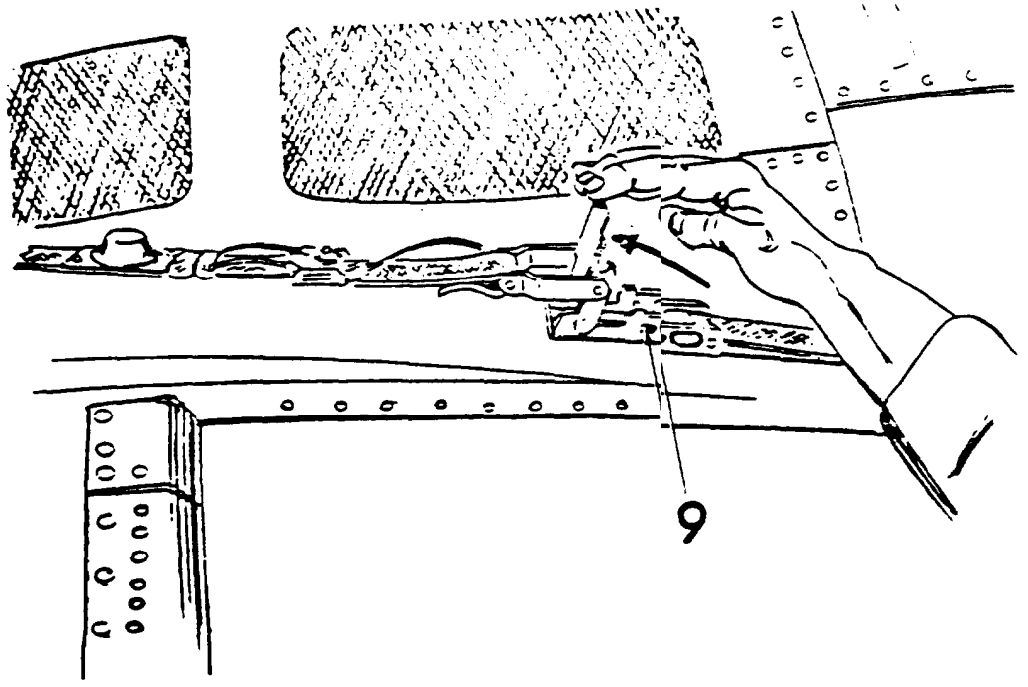
Slide two lower holes on belt end plate (5) over screw heads. Pull plate aft until screws reach the back of slot (6). Tighten screws securely.

Pull detector belt out along top of fuselage between air scoop (7) and navigation light fairings (8).

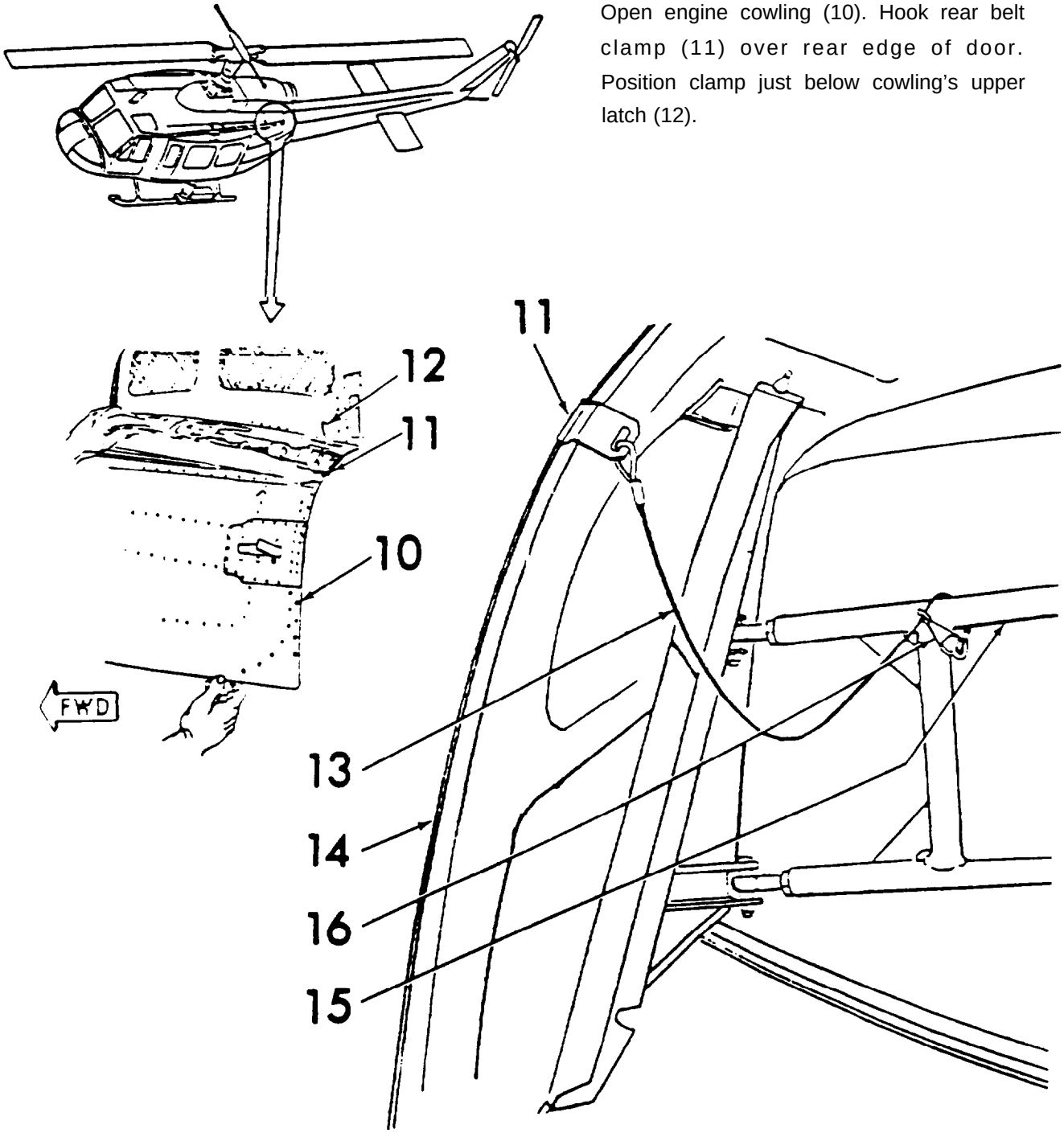
Unlatch buckle (9).





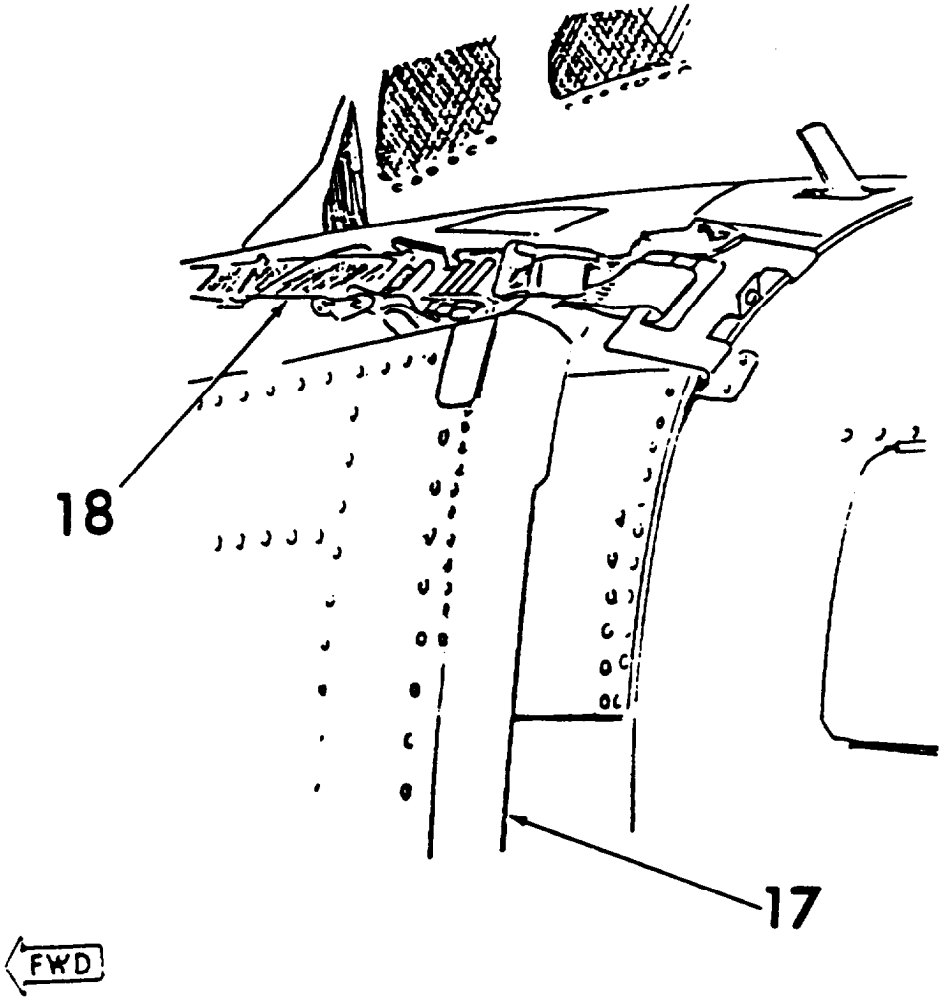


Outside Installation Task 4: Install Top Left Detector Belt (Cont).



Open engine cowling (10). Hook rear belt clamp (11) over rear edge of door. Position clamp just below cowling's upper latch (12).

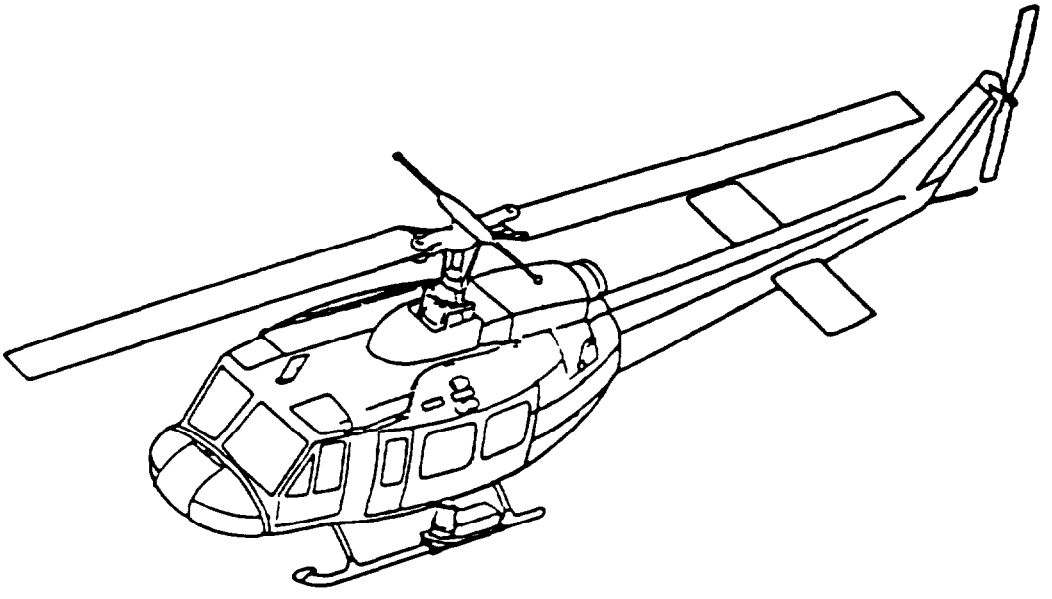
Route safety lanyard (13) behind rear of engine access door (14). Wrap lanyard around the door hinge support (15). Secure with the lanyard clamp hook (16) to lanyard cable. Secure engine cowling. Position lanyard to prevent difficulty in opening and closing cargo door.



Slide open cargo door (17) and verify that door clears detector belt (18). If not, slide detector belt clamp up until door clears.

Ensure that engine cowling is securely latched.

Outside Installation Task 4: Install Top Left Detector Belt (Cont).



WARNING

Primer is highly inflammable Do not spray near Heat, Sparks, or Open Flame. No Smoking. Use only in well-ventilated area.

Fastener tape must be applied to the left fuselage side in two places:

Under the third detector from the front of the belt

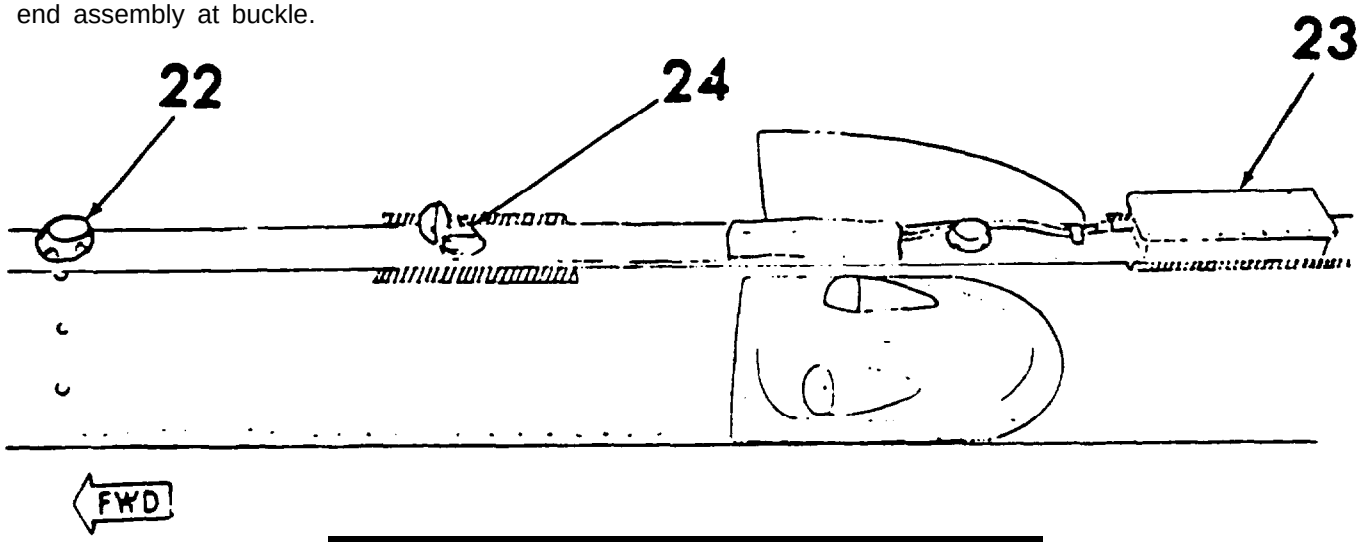
Under the detector belt electronics box.

NOTE

Fastener tape may already be in place from a previous MILES installation. If so, make certain tape is securely fastened to fuselage. If tape is loose or damaged. replace with new tape.

Before starting to mount fastener tape, study all of the steps in this procedure. Before spraying the tape primer be sure you know where to mount the tape. Clean all the areas where tape is to be mounted with water. brush. and rags (Items 4 and 6. Section II, Appendix D). The tape will not stick to dirt and grease.

Position belt so that second detector (22) from front is over third rivet head above horizontal rivet line. Mark a 6-inch long area under detector belt electronics box (23) and another 6-inch long area under third detector (24) from front of belt. Move the belt aside by loosening or disconnecting detector belt from belt end assembly at buckle.



WARNING

Primer is highly inflammable. Do not spray near Heat, Sparks, or Open Flame. No Smoking. Use only in well-ventilated area.

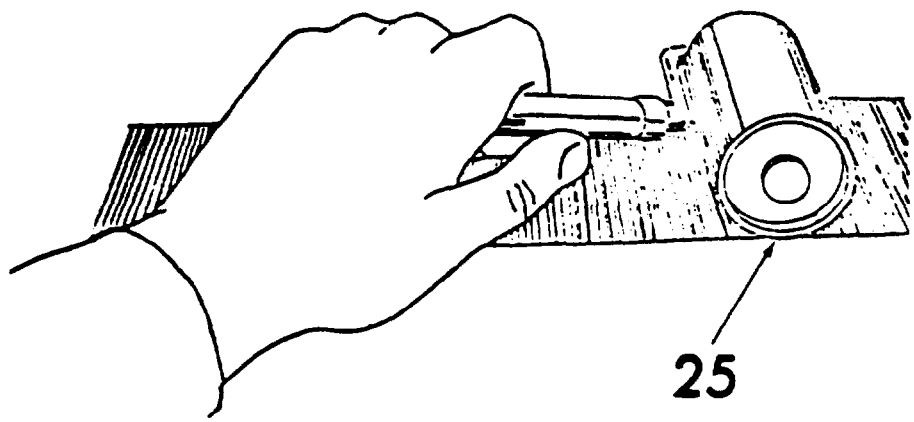
Spray tape primer on marked areas (23, 24). These are locations where tape will be mounted. Wait until the primer is completely dry (tacky) before applying tape.

The tape has a protective paper backing which must be removed before mounting. Retain paper backing.

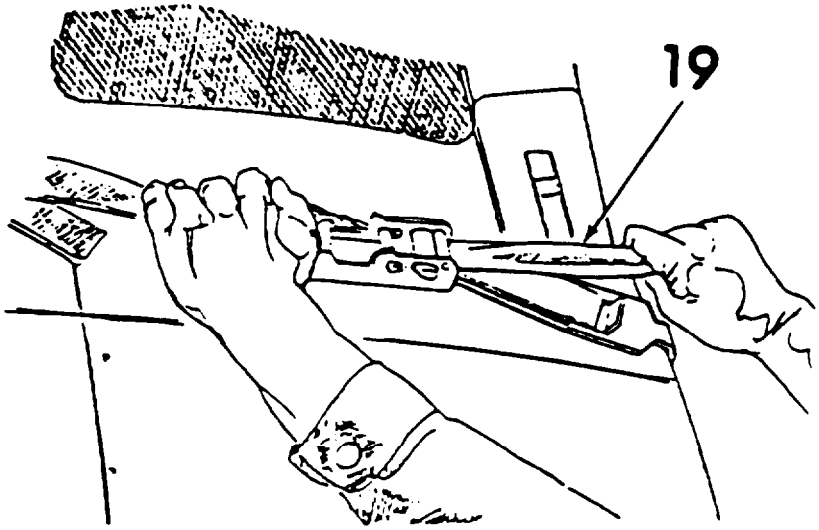
NOTE

Ensure belt is positioned between air scoop and navigation lights before marking.

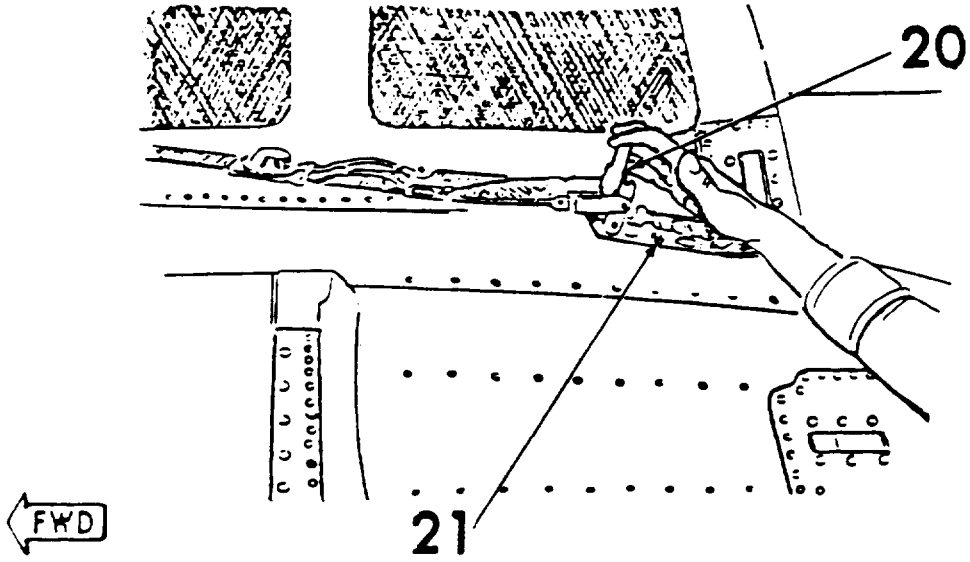
Cut two 6-inch long strips of fastener tape and apply to the primed areas. After you put the tape in place. press it very hard with the hand roller (25) (Item 3. Appendix C).



Outside Installation Task 4: Install Top Left Detector Belt (Cont).



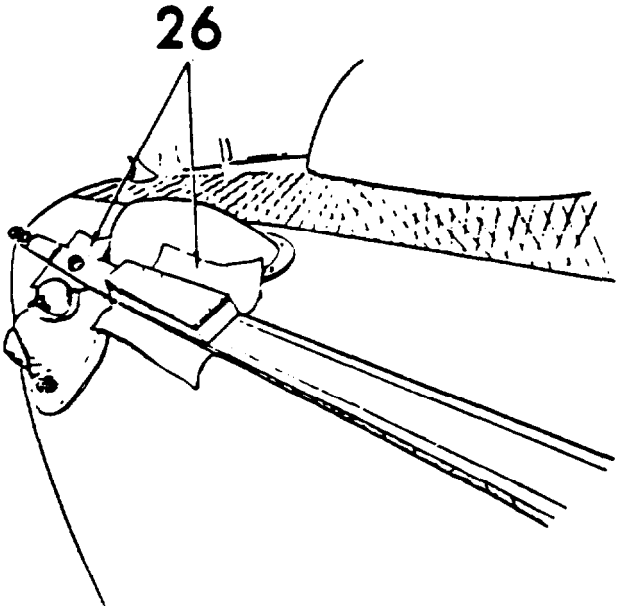
Position buckle (20) at right angle and take out most of slack in detector belt by pulling on loose end of belt (19).

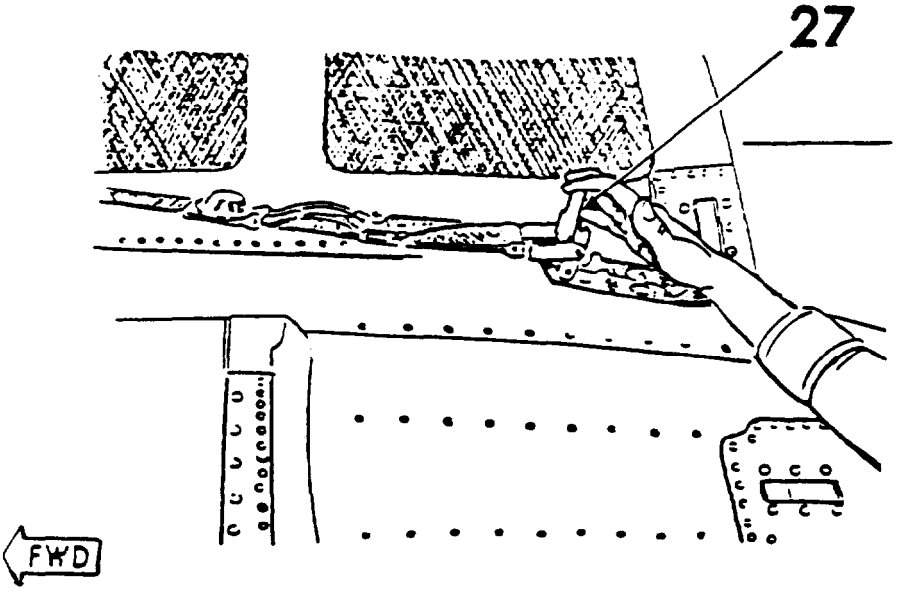


To tighten belt pull running end (19) of belt. To loosen belt, push belt tension release (21)

Tension is correct when resistance is encountered with buckle at right angle (20) to belt.

Secure paper backing (26) to hook side of both pieces of fastener tape using small pieces of masking tape (Item 7, Section II, Appendix D, or equivalent). This prevents fastener tape from being sheared when detector belt tension is adjusted.

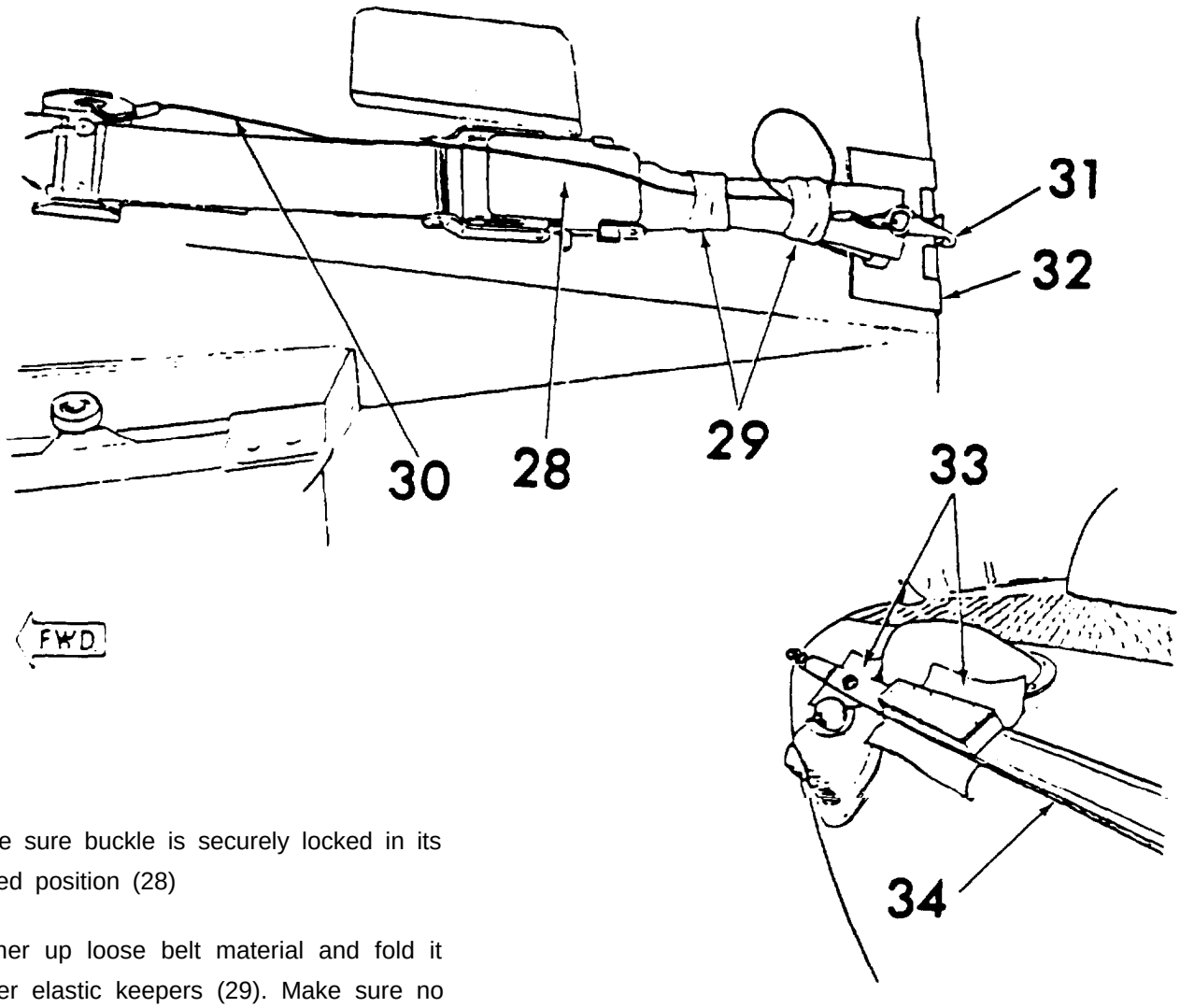




Move detector belt back into position.

Latch buckle (27) and readjust belt as necessary.

Outside Installation Task 4: Install Top Left Detector Belt (Cont).



Make sure buckle is securely locked in its closed position (28)

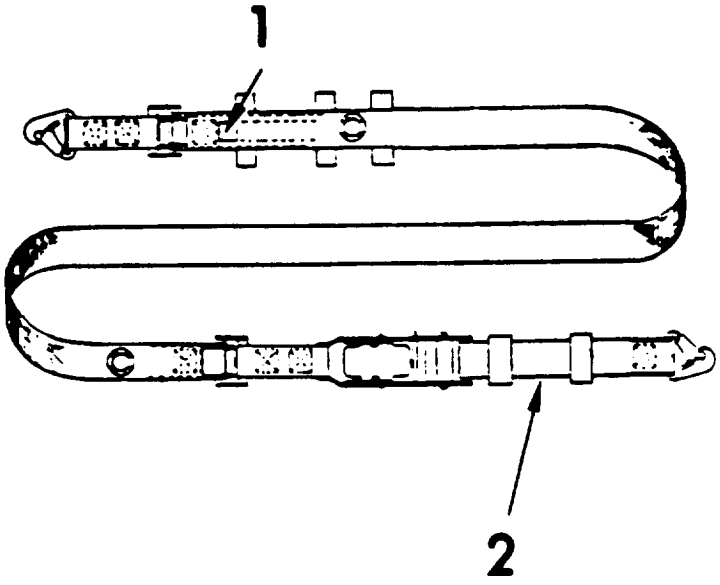
Gather up loose belt material and fold it under elastic keepers (29). Make sure no loose ends are allowed to flap in the wind.

Thread the safety lanyard (30) through the elastic keepers. If necessary, loop lanyard through elastic keepers to remove any slack. Attach lanyard end (31) to belt end clamp (32). A hole in belt end clamp is provided for attaching lanyard.

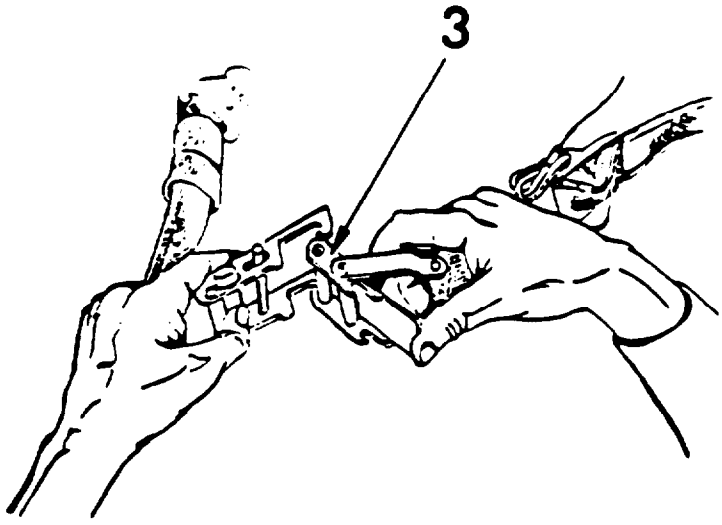
When detector belt is firmly in position, remove paper backing (33) under detector belt and firmly press belt (34) against fastener tape.

Outside Installation Task 5: Install Bottom Left Detector Belt. The bottom left detector belt is installed below the access doors. The belt begins just aft of the copilot's door at the forward fuselage hard point and runs to the rear fuselage hard point.

Locate a detector belt labeled Aircraft Segment No. 2 (1).



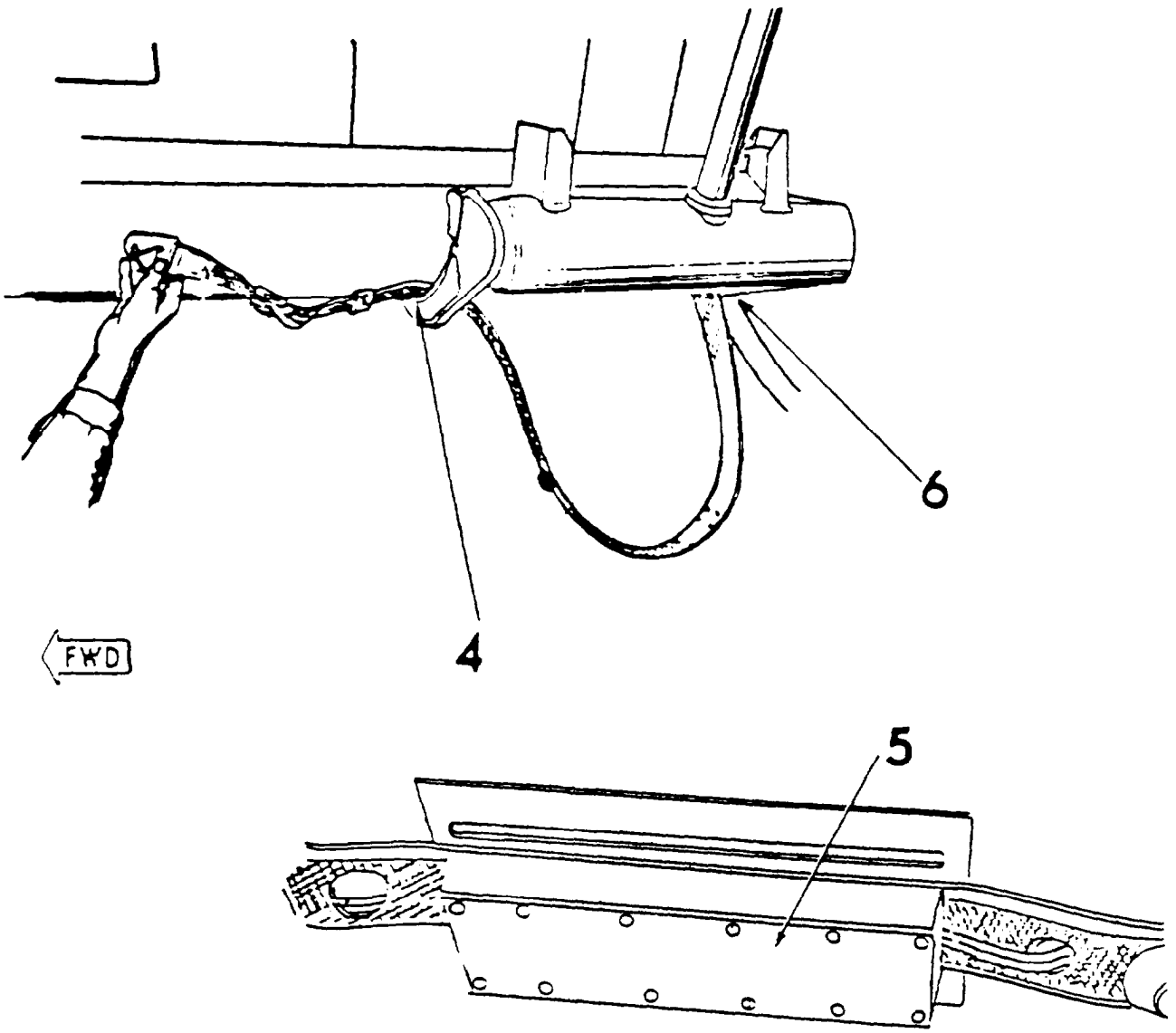
Locate a belt end assembly (2) (there are two). Attach it to detector belt. Close and latch buckle (3)



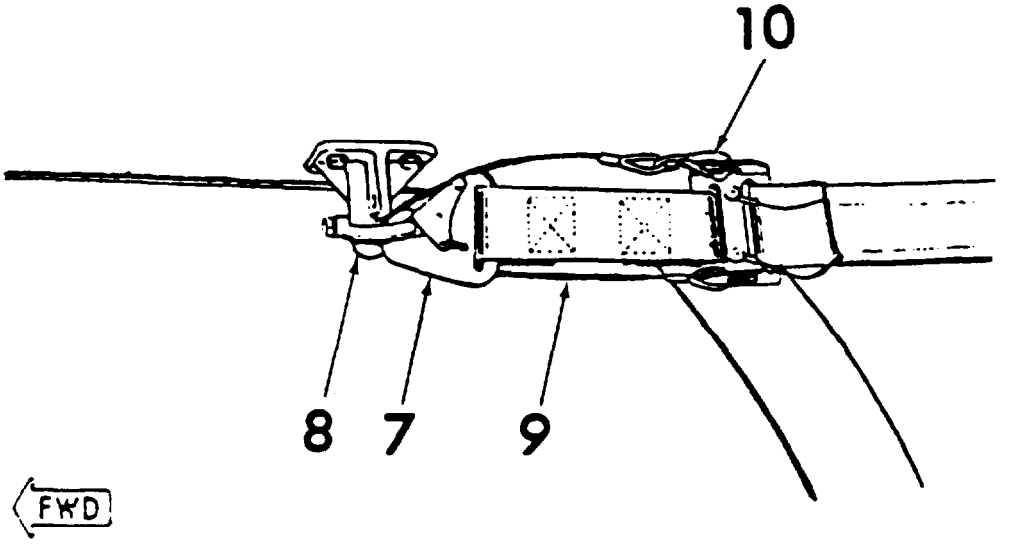
Outside Installation Task 5: Install Bottom Left Detector Belt (Cont).

Perform Steps On This Page ONLY if Your Helicopter is Equipped With a Pintle Mount.

If Not, Equipped With A Pintle, Go Directly to Page 2-27.



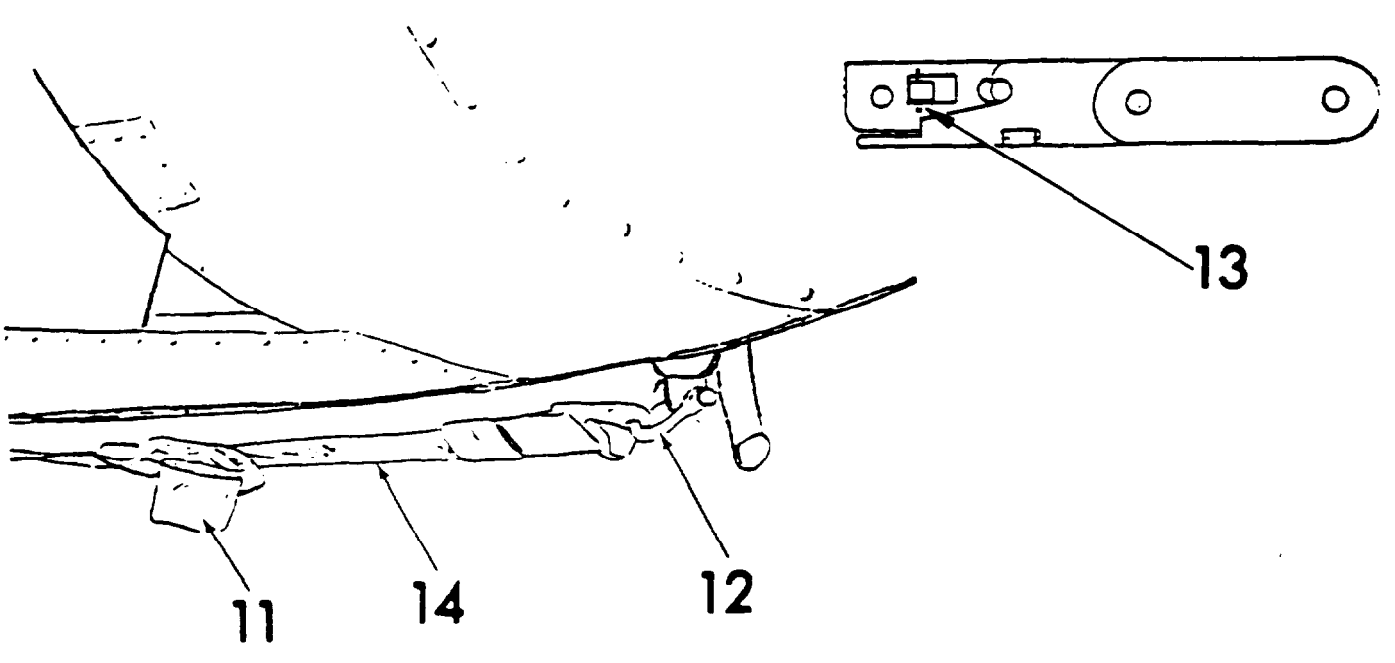
Begin at left side rear pintle mount. Thread left end of belt behind the forward pintle mount (4). When belt is pulled tight the electronics box (5) will be located behind rear mount. Thread remainder of belt behind aft pintle mount (6) and towards aircraft rear.



Pull belt forward Attach belt clamp (7) to forward hardpoint clevis (8). Make sure clevis is parallel to ground. Thread safety lanyard (9) through clevis and attach snap hook (10) to opposite side of bracket.

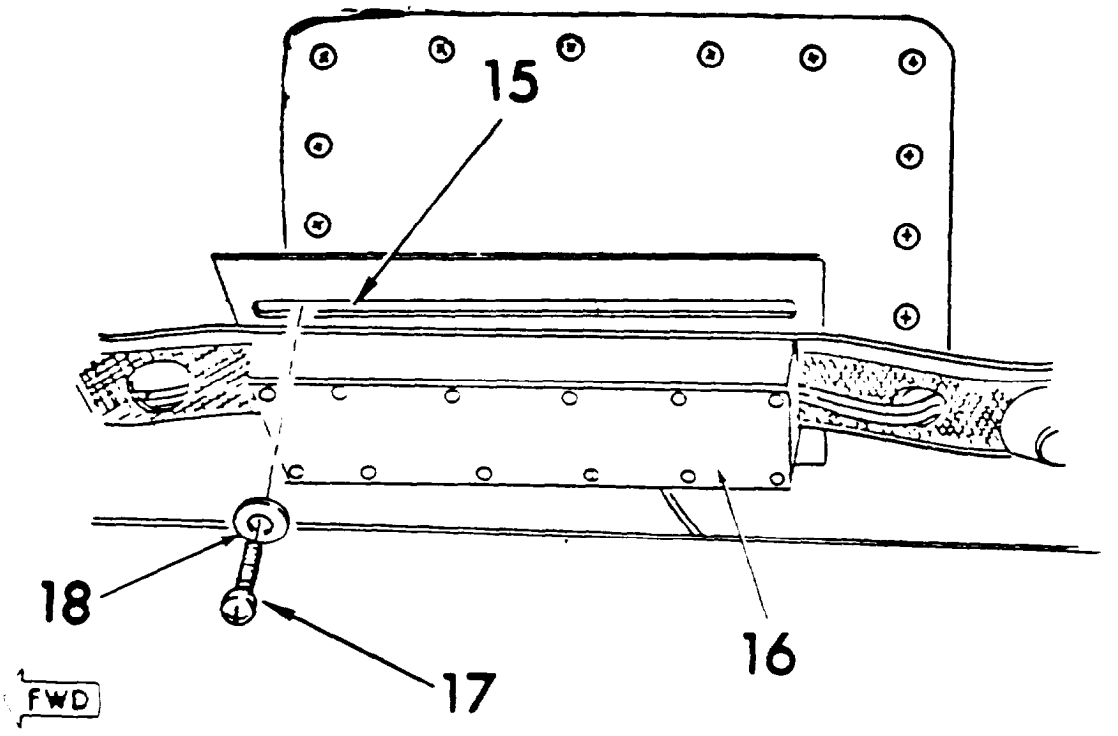
NOTE

If necessary. thread lanyards through clevis twice and take up slack.



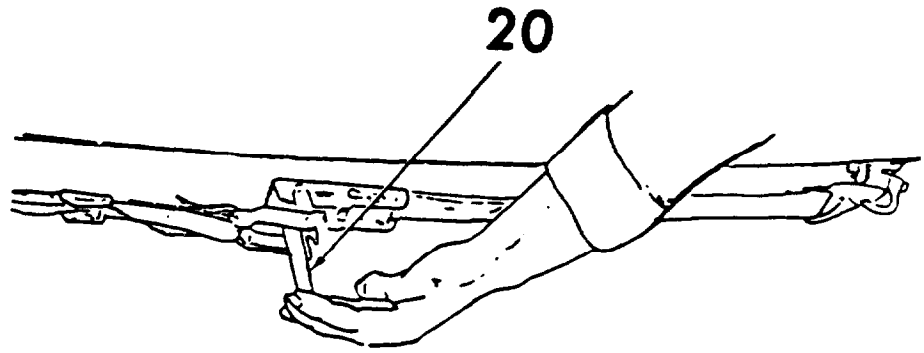
Attach belt end assembly (11) to rear hard point (12). Make sure clevis is parallel with ground. Push belt release (13) and loosen strap (14) if necessary. Do not tighten belt.

Outside Installation Task 5: Install Bottom Left Detector Belt (Cont).



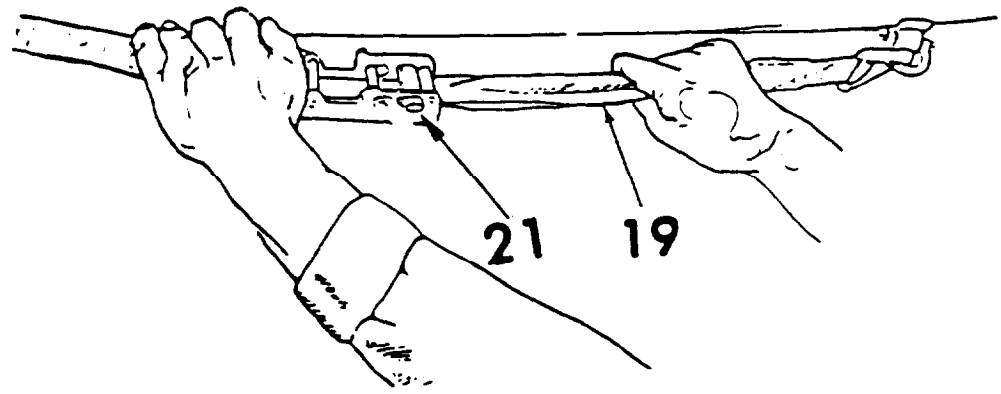
Line up slot (15) in plate attached to electronics box (16) with fourth screw (17) from top of fuselage access plate Access plate is located toward rear and below cargo door and aft of rear pintle mount if so equipped Remove screw. Install MILES screw (17) with washer (18) through slot (15) and insert back into its hole. DO NOT TIGHTEN THE SCREW YET

Retain aircraft screw for reinstallation after MILES exercises



Position buckle (20) at right angle.

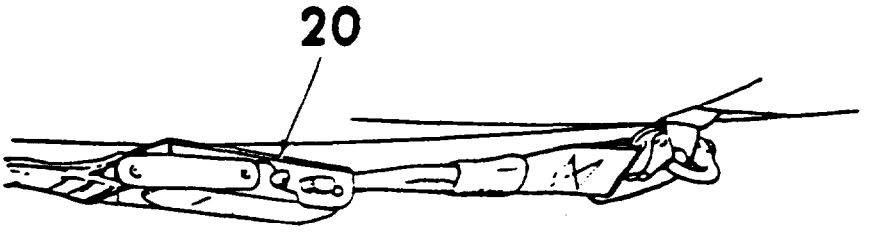
Take all slack out of detector belt by pulling on belt end strap.



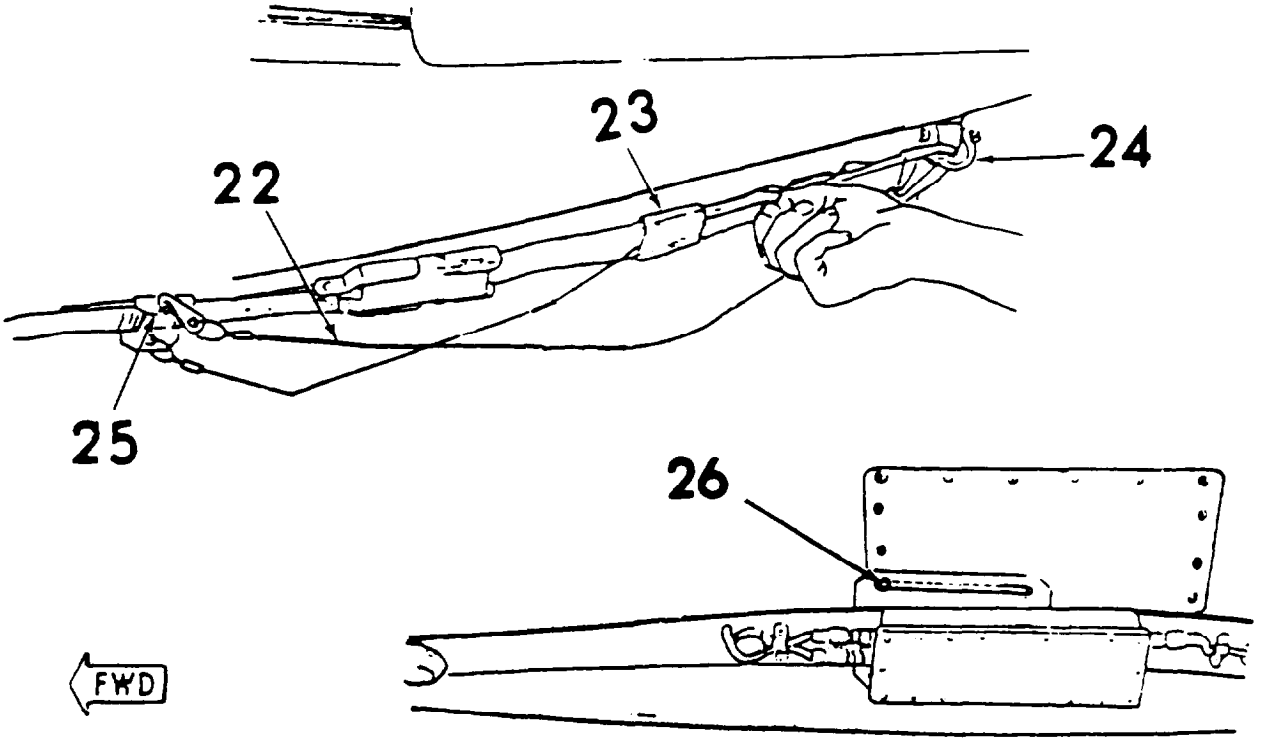
To tighten belt, pull running end (19) of belt. To loosen belt, push belt tension release (21).

Tension is correct when resistance is encountered with buckle at right angle (20) to belt

Outside Installation Task 5: Install Bottom Left Detector. Belt (Cont).



Make sure buckle (20) is securely locked in its closed position.

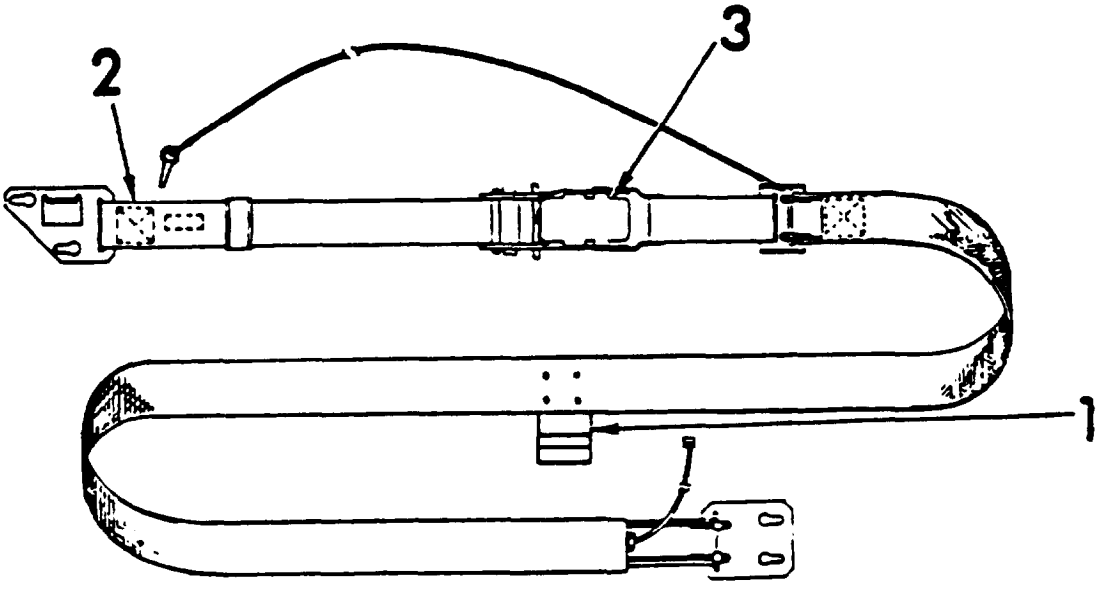


Run safety lanyard (22) through elastic keepers (23). If necessary, loop lanyard through keepers to remove any slack. Route lanyard through rear hard point clevis (24) and back through elastic keepers. Attach lanyard clamp to slot in belt reducer (25).

Gather up loose belt material and fold it under elastic keepers (24). Make sure no loose ends are allowed to flap in the wind.

Securely tighten screw (26) holding detector belt electronics box to fuselage

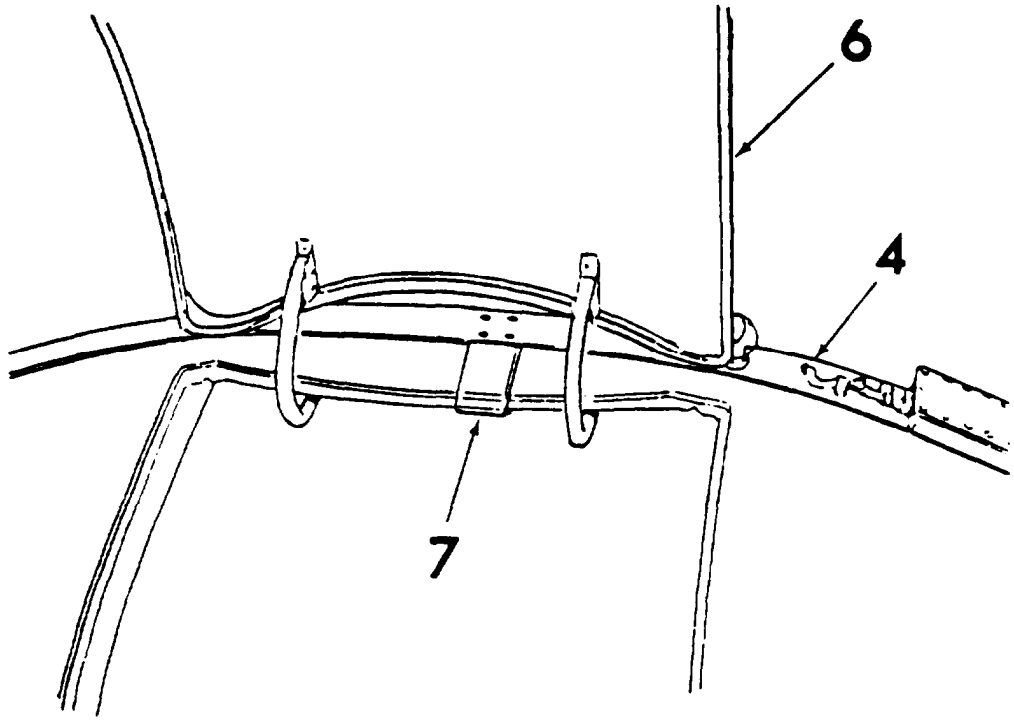
Outside Installation Task 6: Install Front Detector Belt.



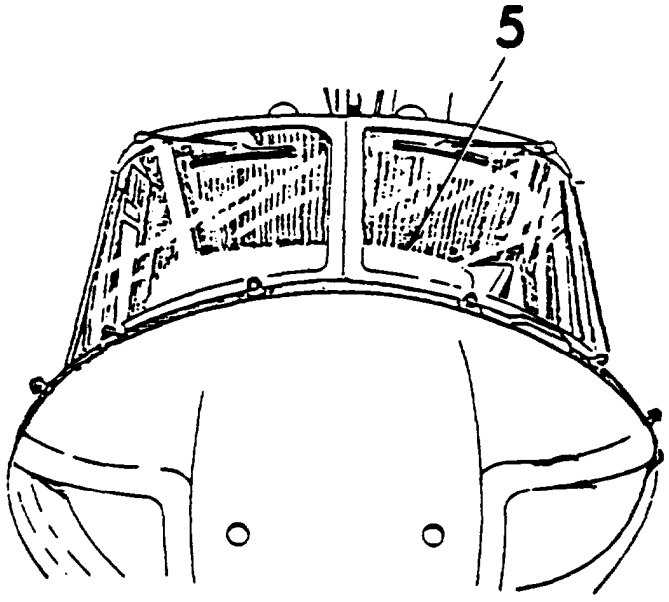
Locate detector belt labeled Aircraft Segment No. 4. Arrange the belt so that the center bracket (1) is pointing toward you.

Locate belt end assembly (2). Attach it to detector belt. Close and latch buckle (3)

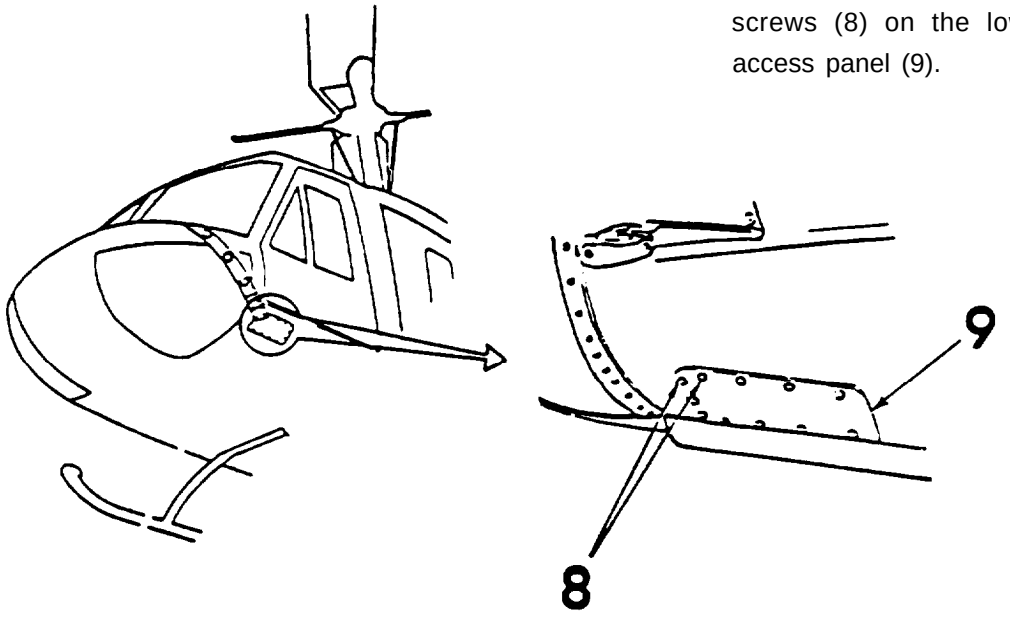
Outside Installation Task 6: Install Front Detector Belt (Cont).



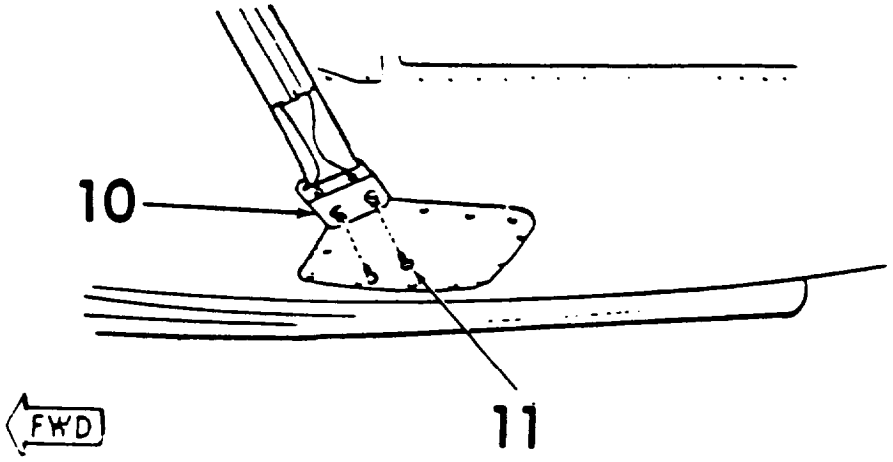
Drape front detector belt (4) across helicopter nose just below windshield (5). Open the nose access door (6) and slip the detector belt bracket (7) under the door in approximately the center of the nose. Close the door but do not lock it.



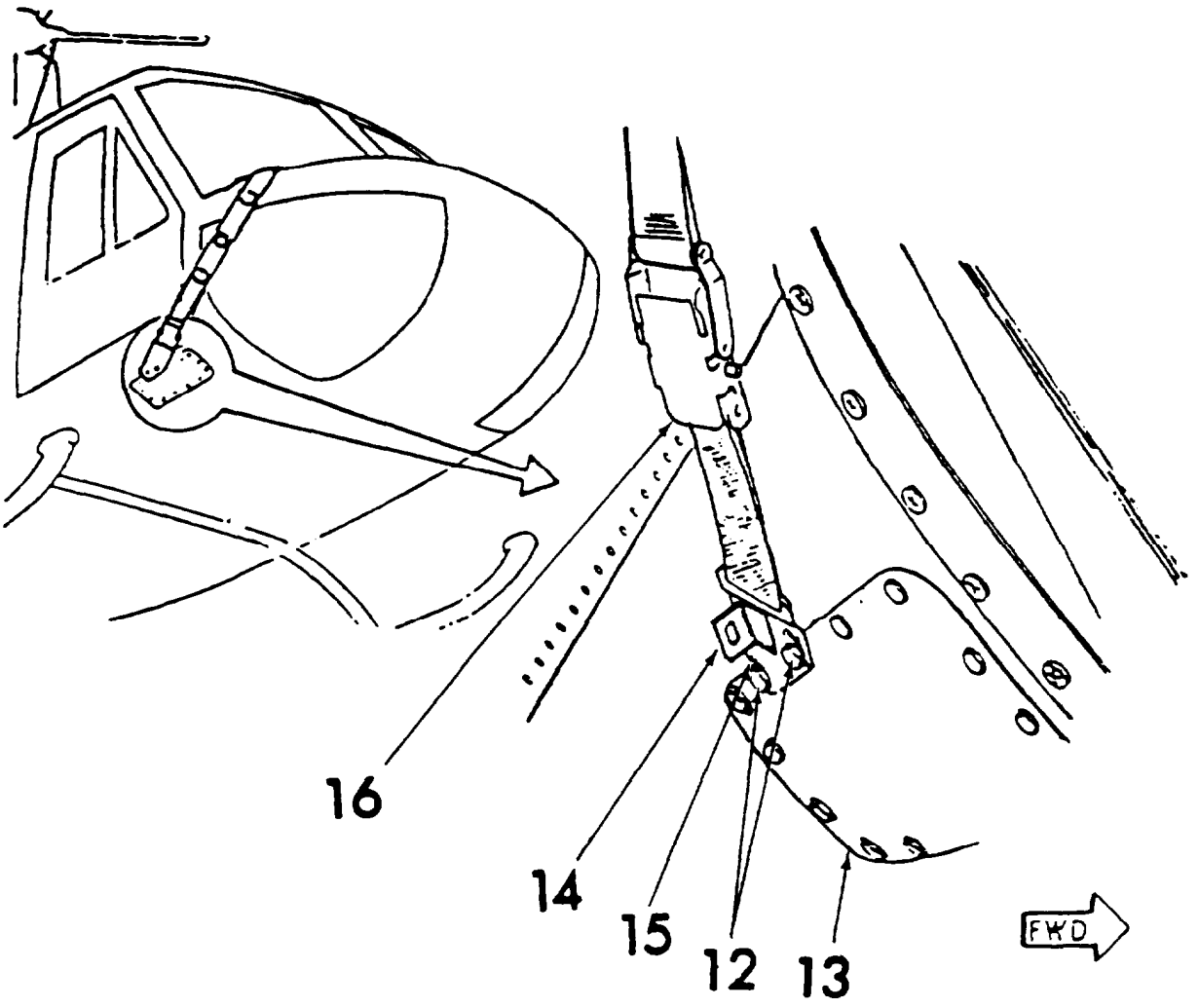
Loosen the two top front corner screws (8) on the lower front left access panel (9).



Slip the detector belt bracket (10) under the screws (11). Tighten the screws.

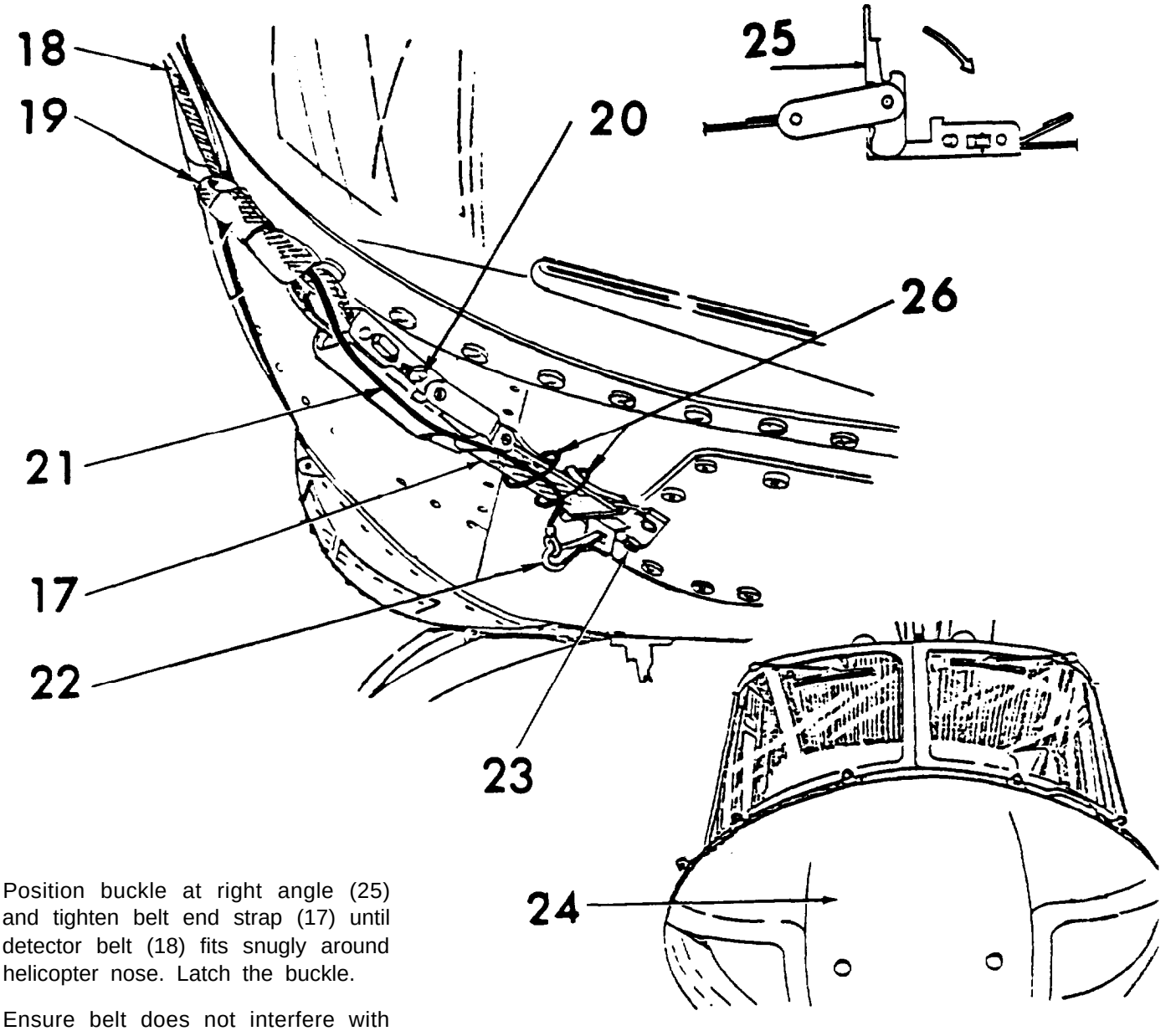


Outside Installation Task 6: Install Front Detector Belt (Cont).



Loosen second and third screws (12) from rear on top row of lower right front access panel (13).

Slip belt end bracket (14) over screws. Pull belt up until screws reach back of bracket slot (15). Loosen the belt end strap at buckle (16) if necessary. Tighten screws.



Position buckle at right angle (25) and tighten belt end strap (17) until detector belt (18) fits snugly around helicopter nose. Latch the buckle.

Ensure belt does not interfere with NOSE ACCESS DOOR.

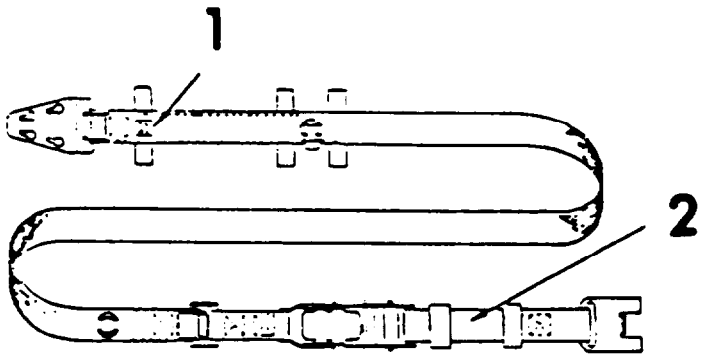
To tighten belt, pull running end (18) of belt. Tension is correct when resistance is encountered with buckle at right angle to belt. To loosen belt, push belt tension release (20).

Gather up excess strap material (19). Secure the material under two elastic keepers.

Run safety lanyard (21) under elastic keepers. If necessary, loop excess safety lanyard through elastic keepers (26) to remove slack. Attach safety lanyard clamp (22) to belt end bracket (23).

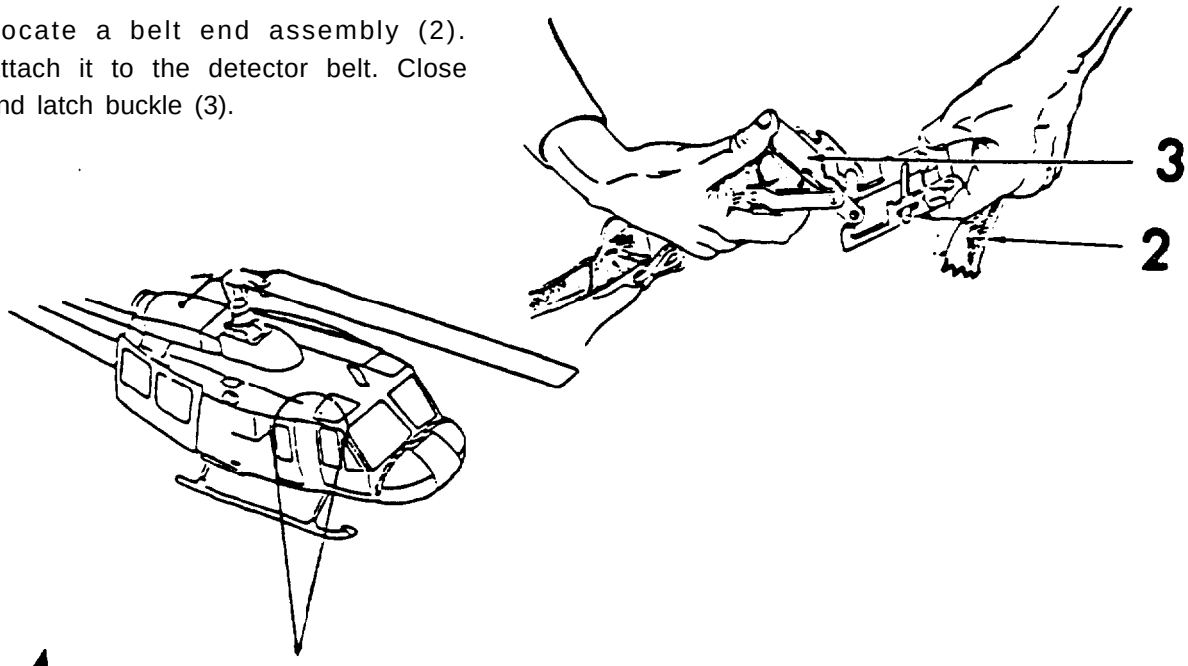
Lock NOSE ACCESS DOOR (24).

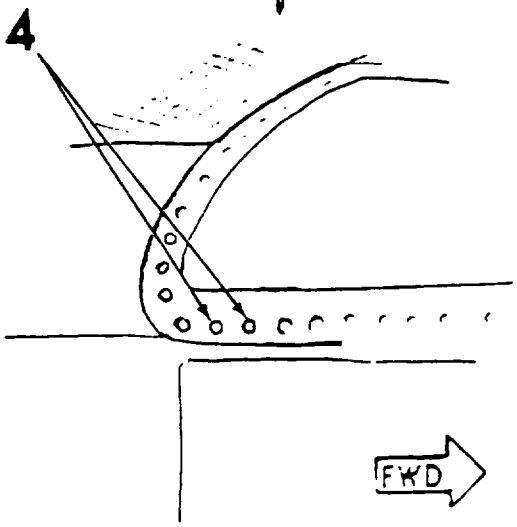
Outside Installation Task 7: Install Top Right Detector Belt. The top right detector belt is installed on the right side of the fuselage above the cabin windows. The belt begins just to the rear of the pilot's access door and runs to the end of the engine access cover.



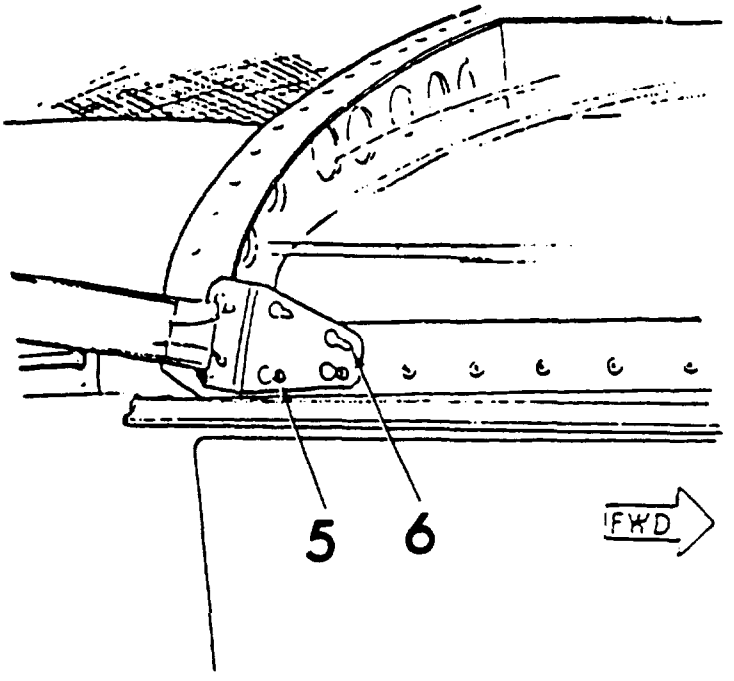
Locate a detector belt labeled Aircraft Segment No. 3 (1).

Locate a belt end assembly (2). Attach it to the detector belt. Close and latch buckle (3).



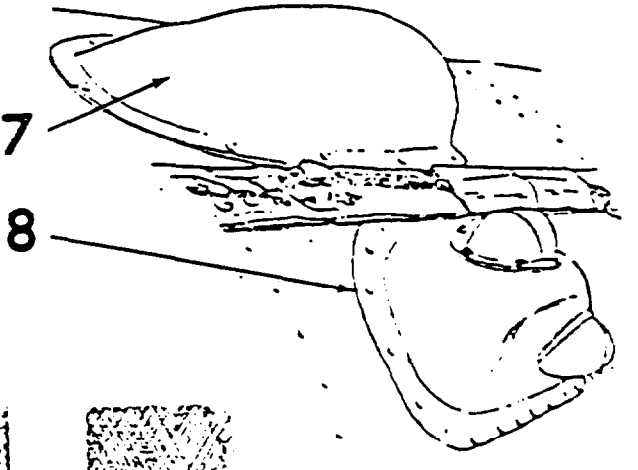


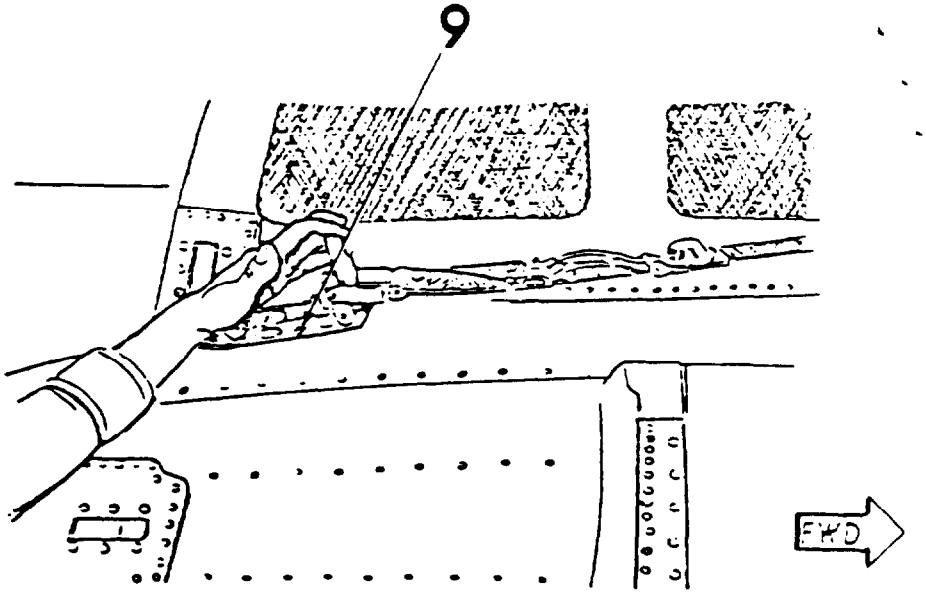
Remove lower second and third screws from rear on window frame above the pilots door (4). Use No. 2 Crosstip screwdriver. Store screws for replacement following MILES exercises.



Install two MILES supplied screws in empty window frame holes. Do not tighten. Slide two lower holes on the belt end plate (5) in position over screw heads. Pull plate aft until screws reach the back of slot (6). Tighten screws securely.

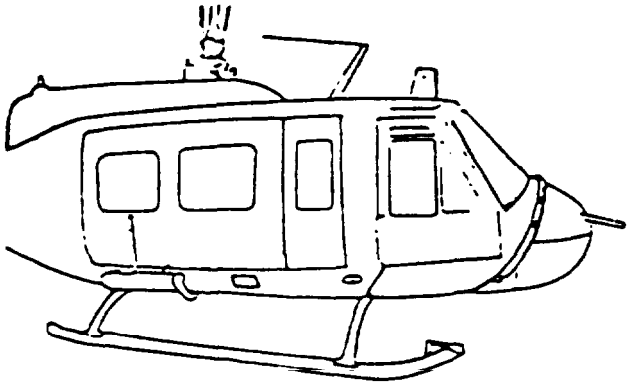
Pull detector belt out along top of fuselage between air scoop (7) and navigation light fairings (8).



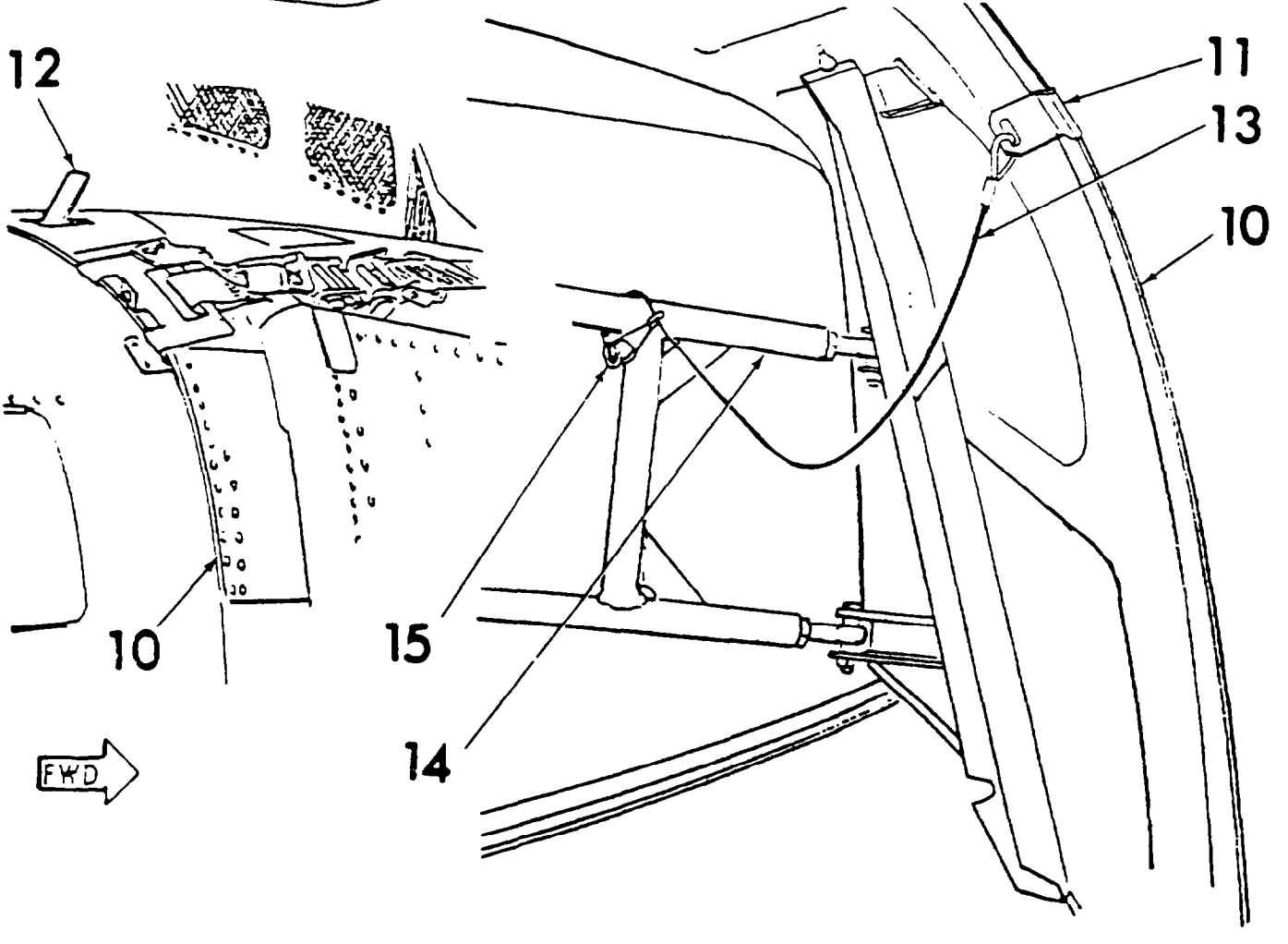


Push buckle release (9). Unlock the belt end tightening clamp.

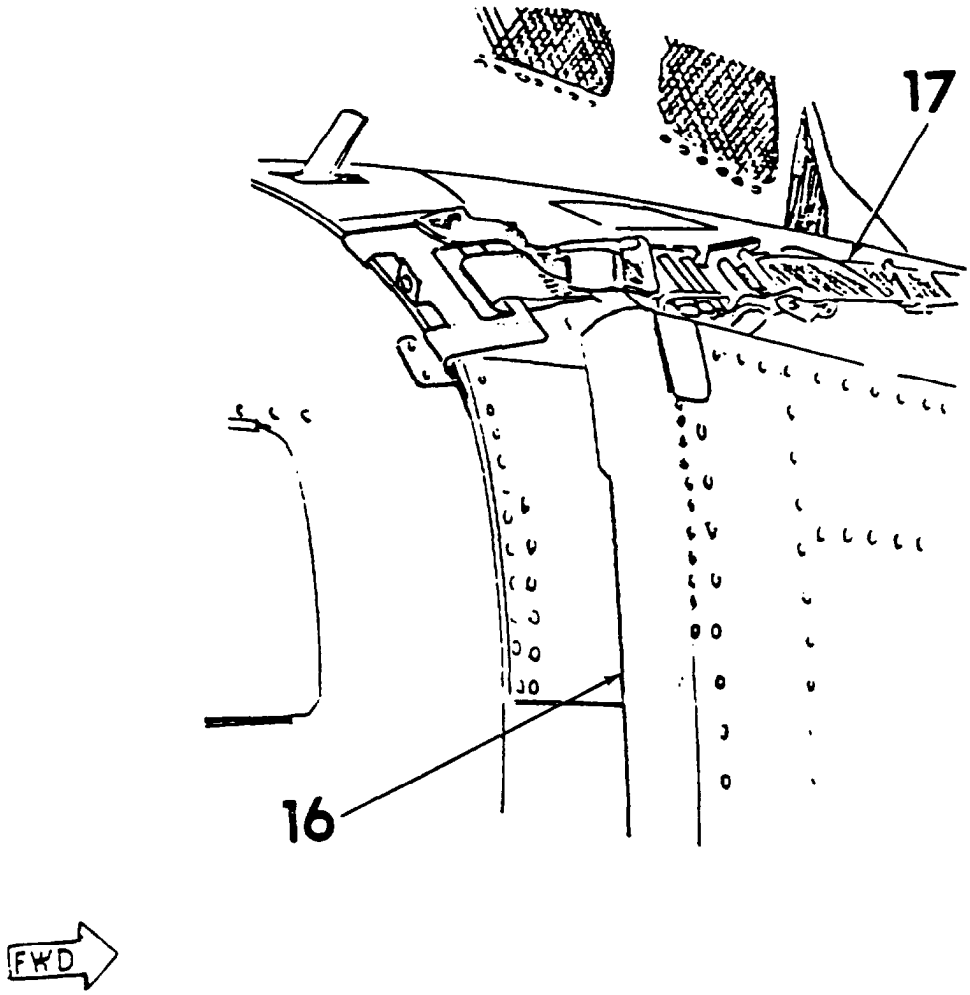
Outside Installation Task 7: Install Top Right Detector Belt (Cont).



Open engine cowling (10) and hook rear belt clamp (11) over rear edge of door. Position clamp just below door's upper latch (12).



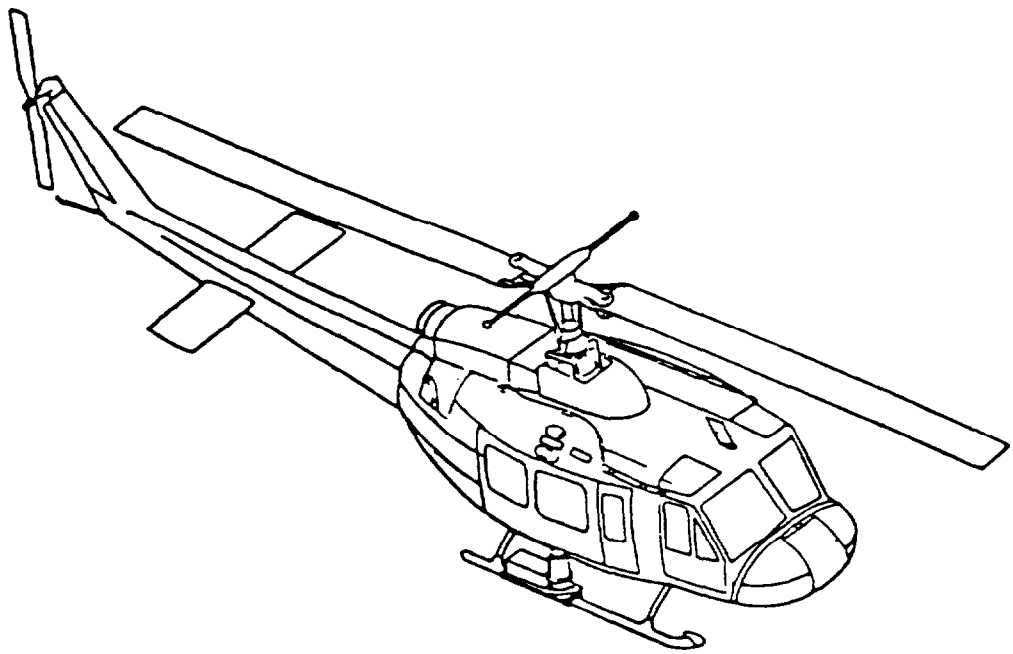
Route safety lanyard (13) behind rear of engine cowling door (10). Wrap lanyard around cowling hinge support (14). Secure with lanyard clamp hook (15) to lanyard cable. Secure engine cowling. Position lanyard to prevent difficulty in opening and closing cargo door.



Slide open cargo door (16) and verify that door clears detector belt (17). If not, slide detector belt clamp up until door clears.

Ensure that engine cowling is securely latched.

Outside Installation Task 7: Install Top Right Detector Belt (Cont).



Fastener tape must be applied to the right fuselage side in two places:

Under the third detector from the front of the belt

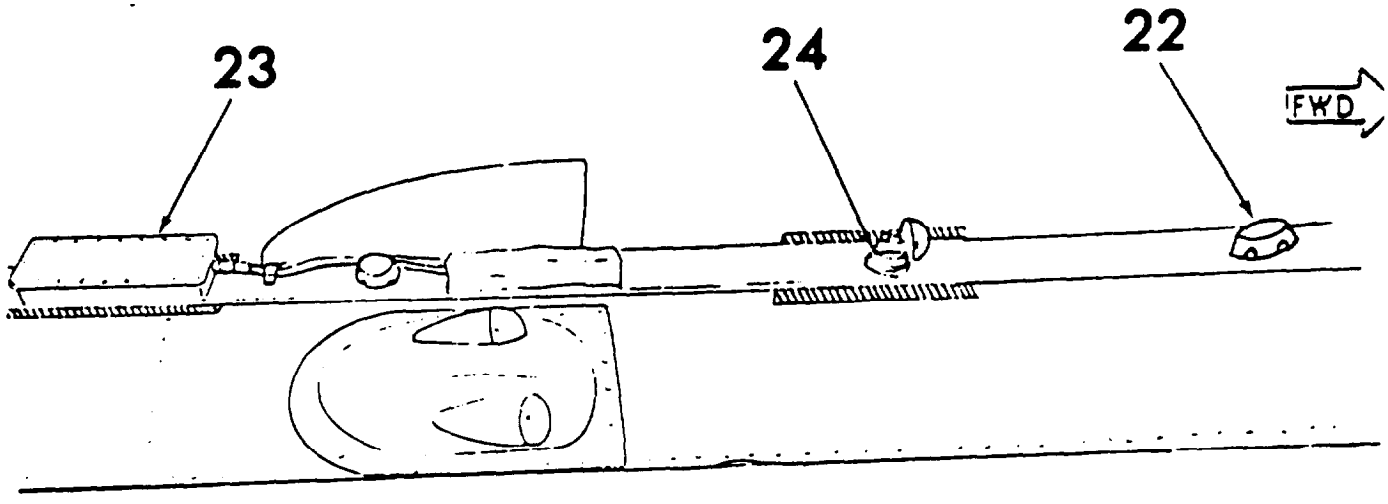
Under the detector belt electronics box.

NOTE

Fastener tape may already be in place from a previous MILES installation. If so, make certain tape is securely fastened to fuselage. If tape is loose or damaged, replace with new tape.

Before starting to mount fastener tape, study all of the steps in this procedure. Before spraying the tape primer be sure you know where to mount the tape. Clean all the areas where tape is to be mounted with water, brush. and rags. The tape will not stick to dirt and grease.

Position belt so that second detector (22) from front is over third rivet head above horizontal rivet line. Mark a 6-inch long area under detector belt electronics box (23) and another 6-inch long area under third detector (24) from front of belt, Move the belt aside by loosening or disconnecting detector from belt end assembly at buckle.



WARNING

Primer is highly inflammable. Do not spray near Heat. Sparks, or Open Flame. No Smoking. Use only in well-ventilated area.

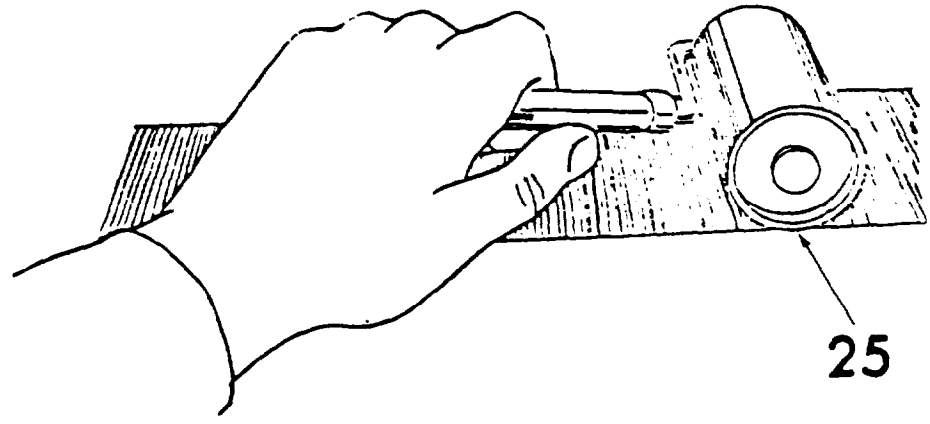
Spray tape primer on marked areas (23, 24). These are locations where tape will be mounted. Wait until the primer is completely dry before applying tape.

The tape has a protective paper backing which must be removed before mounting

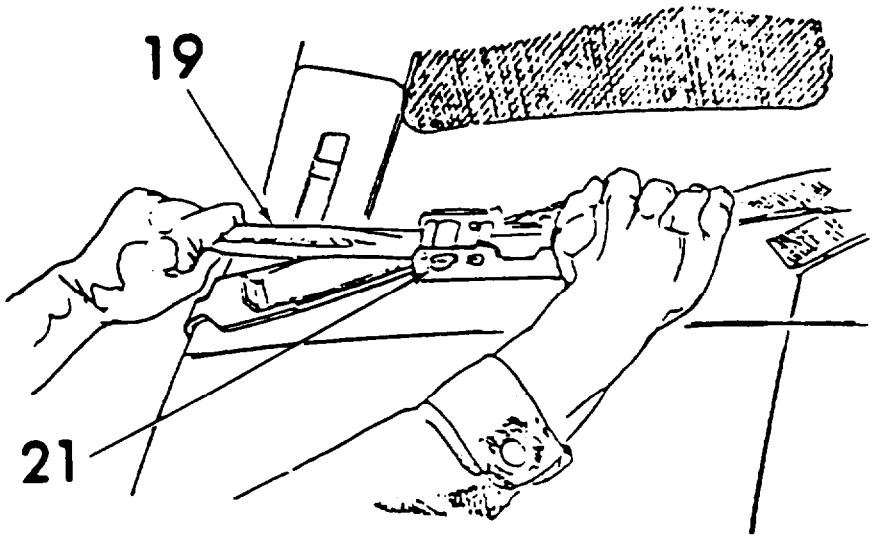
NOTE

Ensure belt is positioned between air scoop and navigation lights before marking.

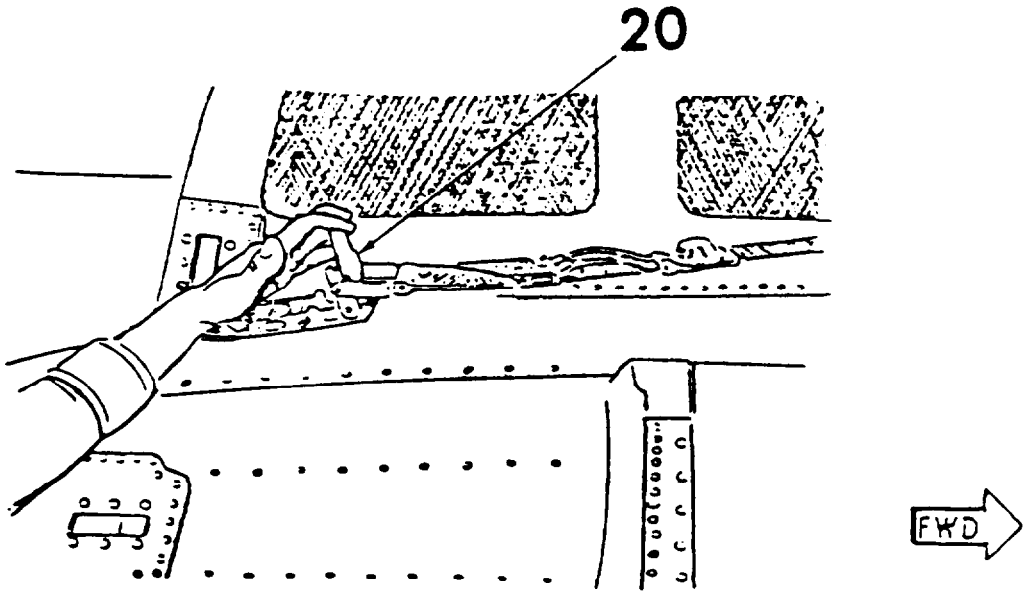
Cut two 6-inch long strips of fastener tape and apply to the primed areas. After you put the tape in place, press it very hard with the roller (25) (Item 3, Appendix C).



Outside Installation Task 7: Install Top Right Detector Belt (Cont).



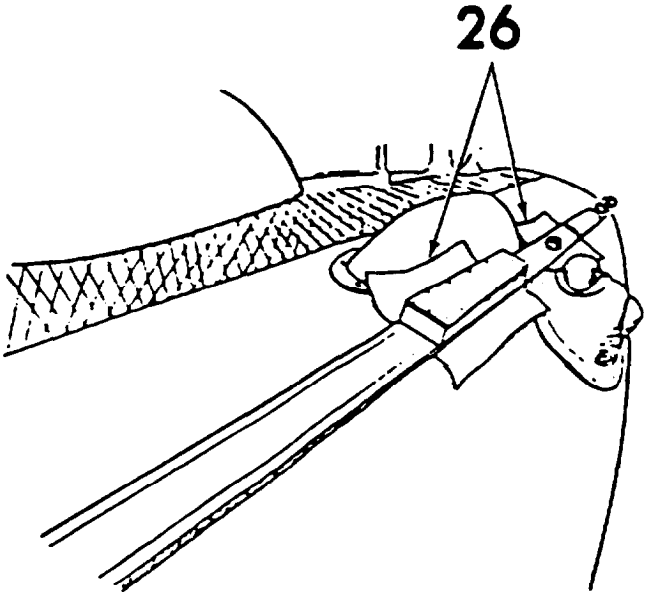
Position buckle (20) at right angle and take out most of slack in detector belt by pulling on loose end of belt (19).

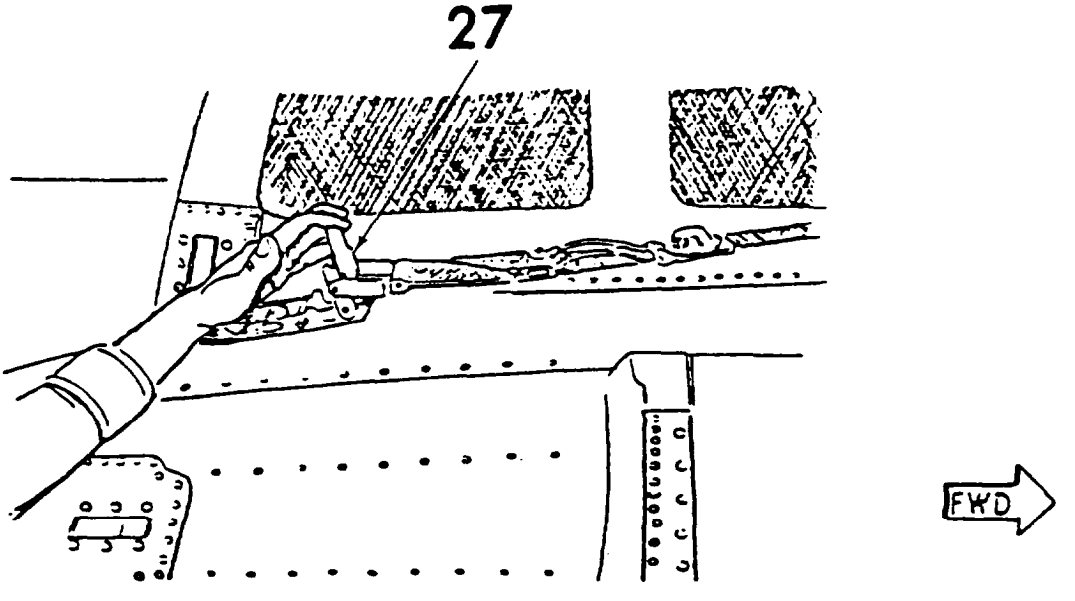


To tighten belt, pull running end (19) of belt. To loosen belt. push belt tension release (21).

Tension is correct when resistance is encountered with buckle at right angle (20) to belt.

Secure paper backing (26) to hook side of both pieces of fastener tape using small pieces of masking tape (Item 7, Section II, Appendix D. or equivalent), This prevents fastener tape from being sheared when detector belt tension is adjusted.

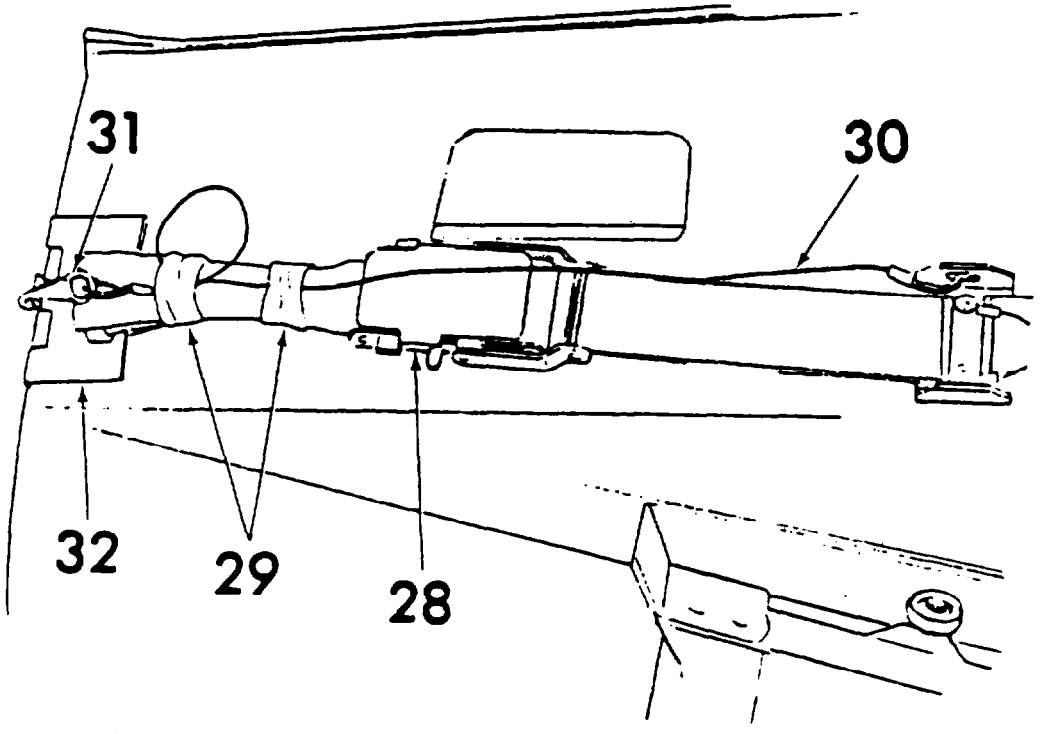


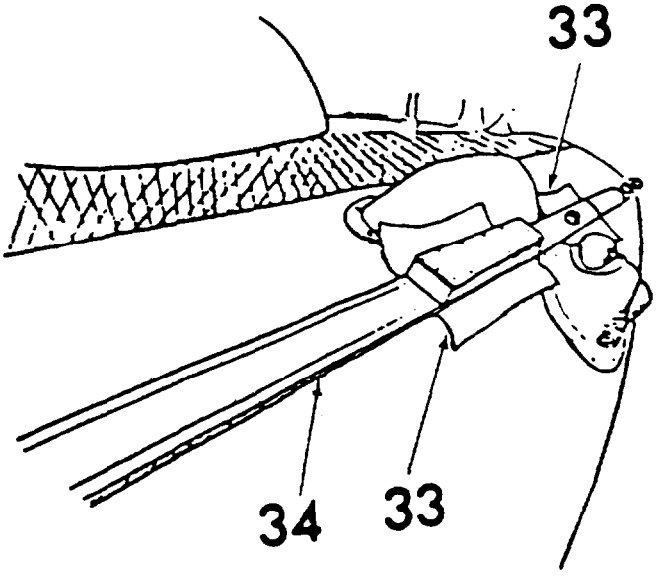


Move detector belt back into position.

Latch buckle (27) and readjust belt as necessary.

Outside Installation Task 7: Install Top Right Detector Belt (Cont).





Make sure buckle is securely locked in its closed position (28).

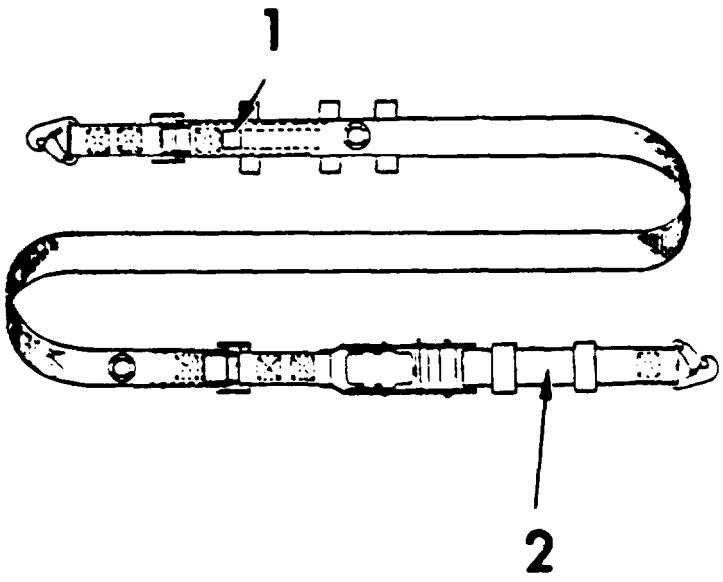
Gather up loose belt material and fold it under elastic keepers (29). Make sure no loose ends are allowed to flap in the wind.

Thread the safety lanyard (30) through the elastic keepers. If necessary, loop lanyard through elastic keepers to remove any slack. Attach lanyard end (31) to belt end clamp (32). A hole in belt end clamp is provided for attaching lanyard.

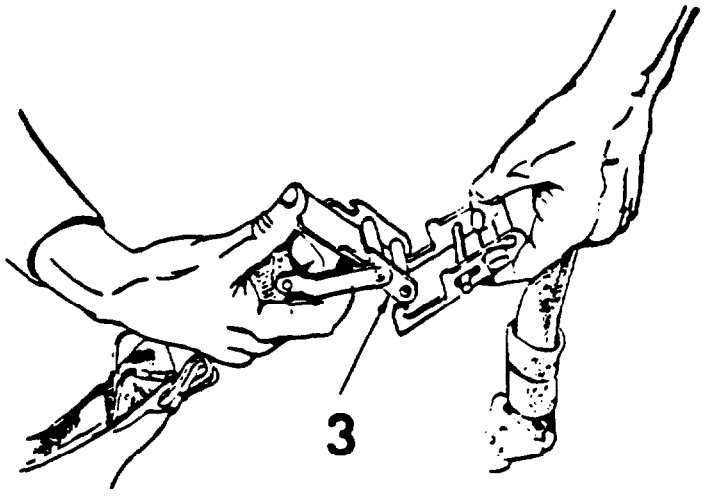
When detector belt is firmly in position, remove paper backing (33) under detector belt and firmly press belt (34) against fastener tape.

Outside Installation Task 8: Install Bottom Right Detector Belt. The bottom right detector belt is installed below the access doors. The belt begins just aft of the pilot's door at the forward fuselage hard point and runs to the rear fuselage hard point.

Locate detector belt labeled Aircraft Segment No. 2 (1).



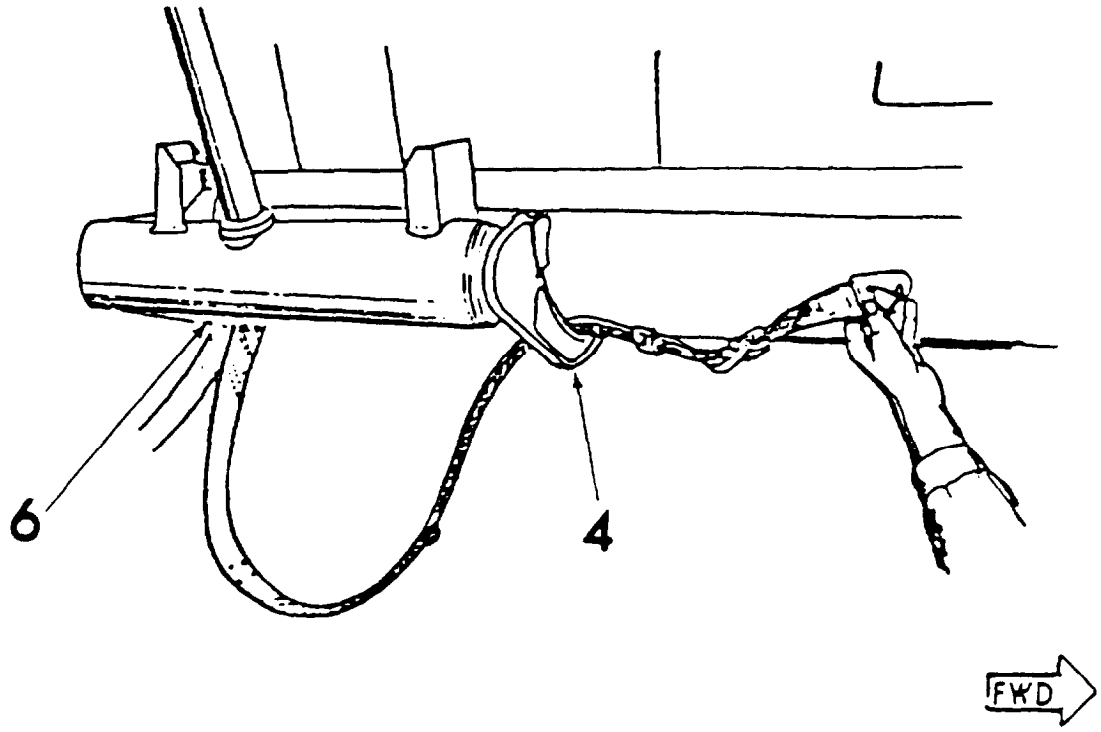
Locate a belt end assembly (2). Attach it to the detector belt. Close and latch buckle (3).



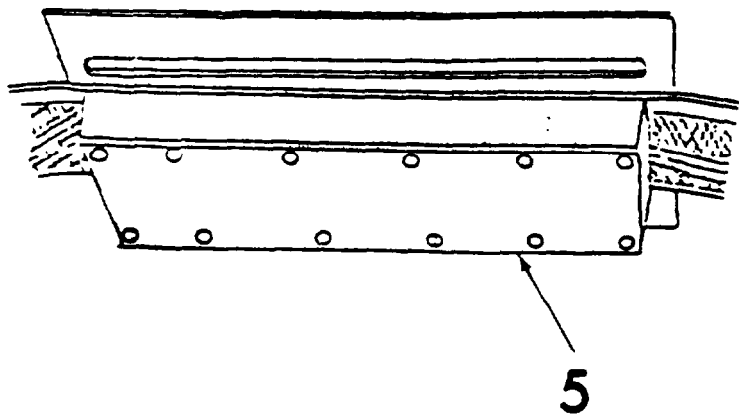
Outside Installation Task 8: Install Bottom Detector Belt (Cont).

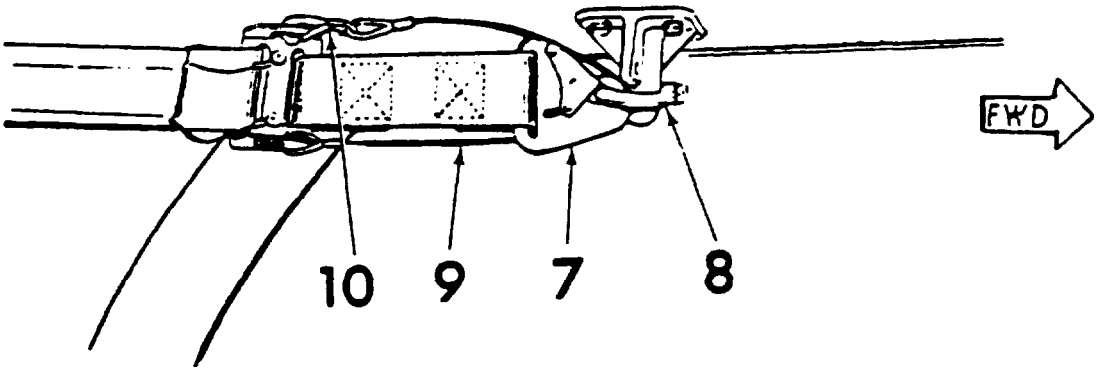
Perform Steps On this Page ONLY If Your Helicopter Is Equipped With A Pintle Mount.

If Not, Equipped With A Pintle, Go Directly to Page 2-47.



Begin at left side rear pintle mount. Thread left end of belt behind the forward pintle mount (4). When belt is pulled tight. the electronics box (5) will be located behind rear mount. Thread remainder of belt behind aft pintle mount (6) and towards aircraft rear.

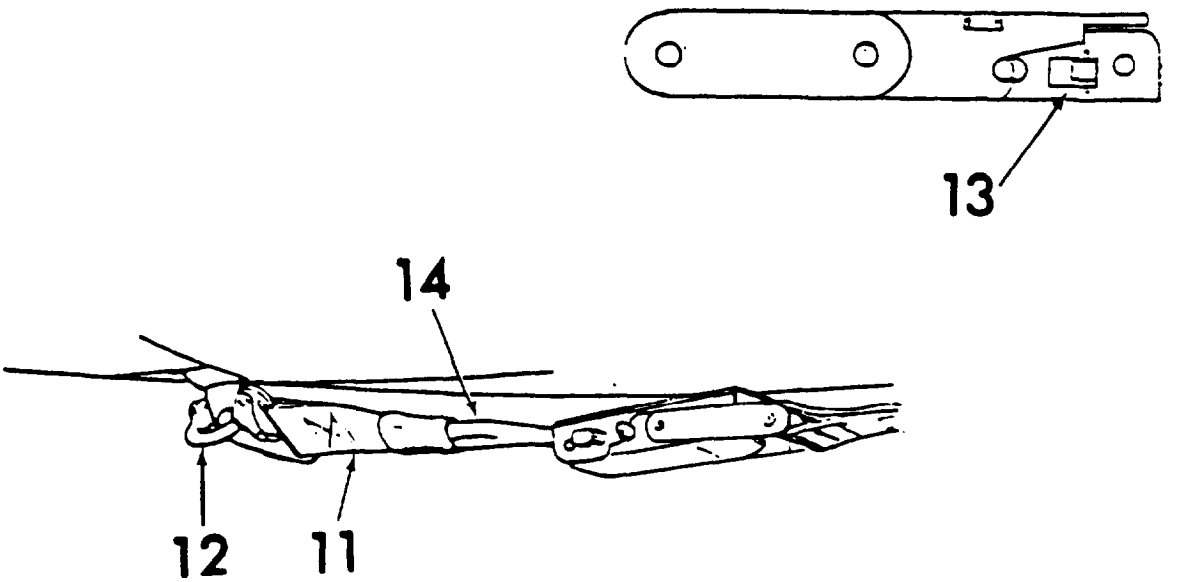




Pull belt forward. Attach belt clamp (7) to forward hardpoint clevis (8). Make sure clevis is paraliel to ground. Thread safety lanyard (9) through clevis and attach snap hook (10) to opposite side of bracket.

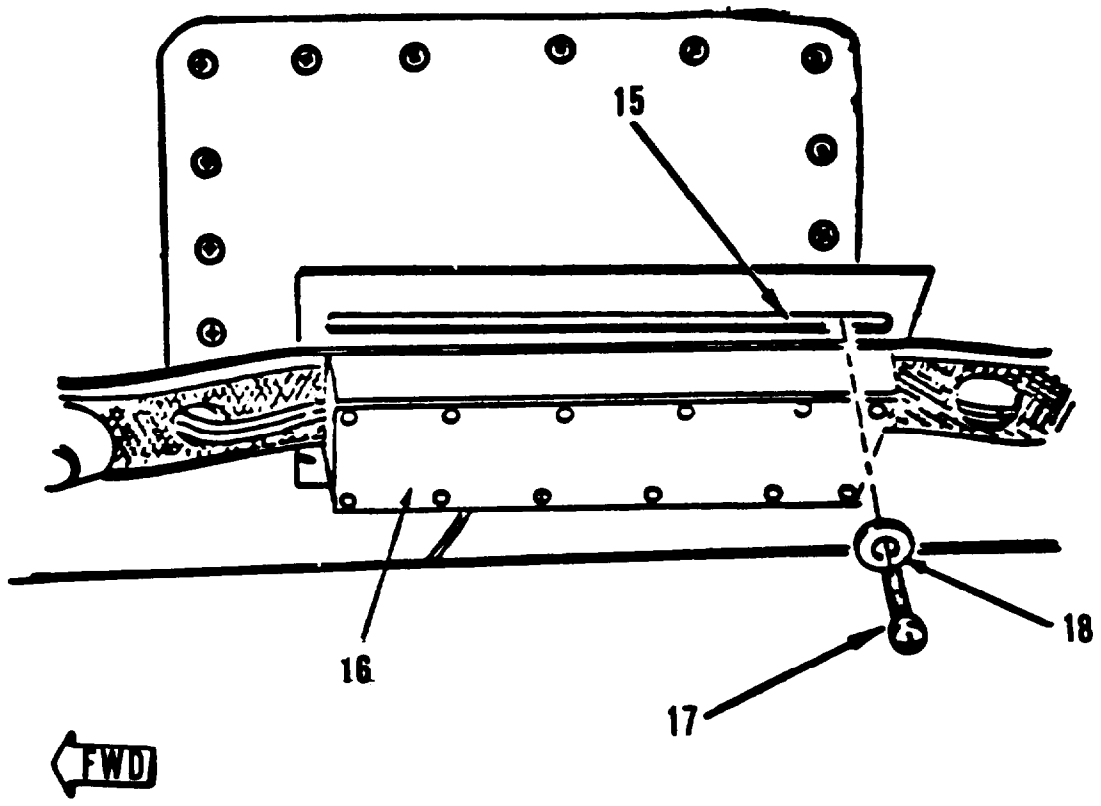
NOTE

If necessary. thread lanyards through clevis twice and take up slack.



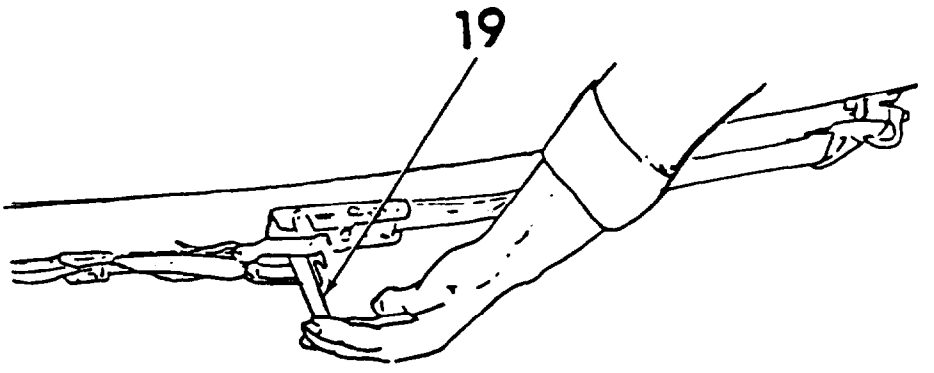
Attach belt end assembly (11) to rear hard point (12). Make sure clevis is parallel with ground. Push belt release (13) and loosen strap (14) if necessary. Do not tighten belt.

Outside Installation Task 8: Install Bottom Right Detector Belt (Cont).



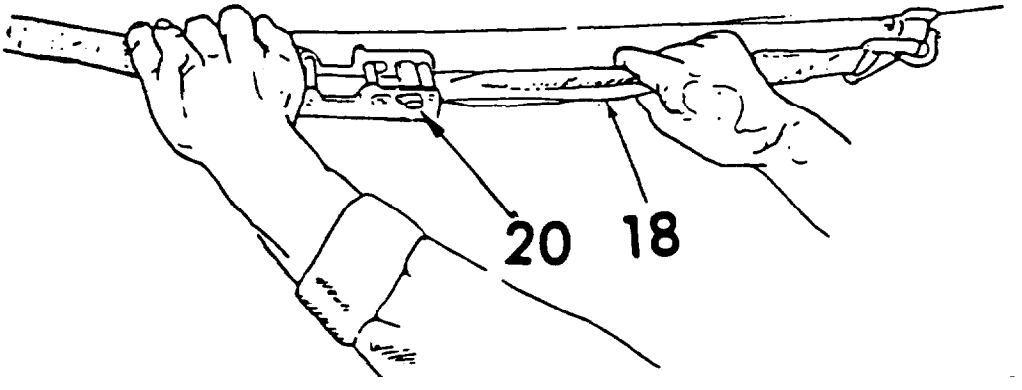
Line up slot (15) in plate attached to electronics box (16) with fourth screw (17) from top of fuselage access plate. Access plate is located toward rear and below cargo door and aft of rear pintle mount if so equipped. Remove screw. Install MILES screw (17) with washer (18) through slot (15) and insert back into its hole. DO NOT TIGHTEN THE SCREW YET.

Retain aircraft screw for reinstallation after MILES exercises.



Position buckle at right angle (19).

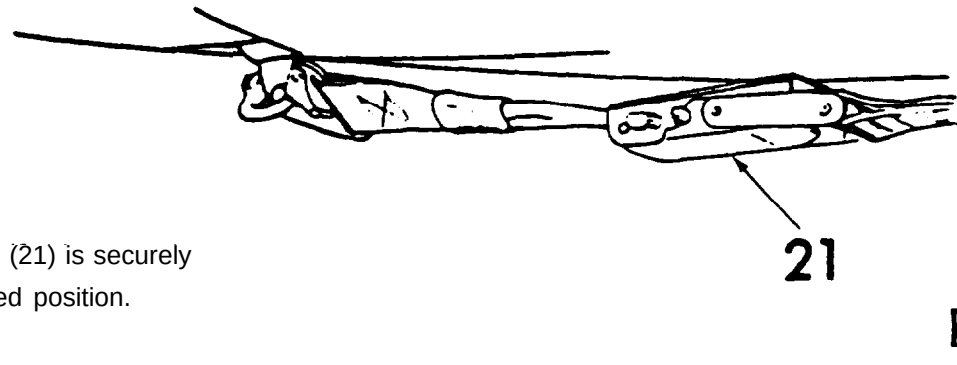
Take all slack out of detector belt by pulling on belt end strap.



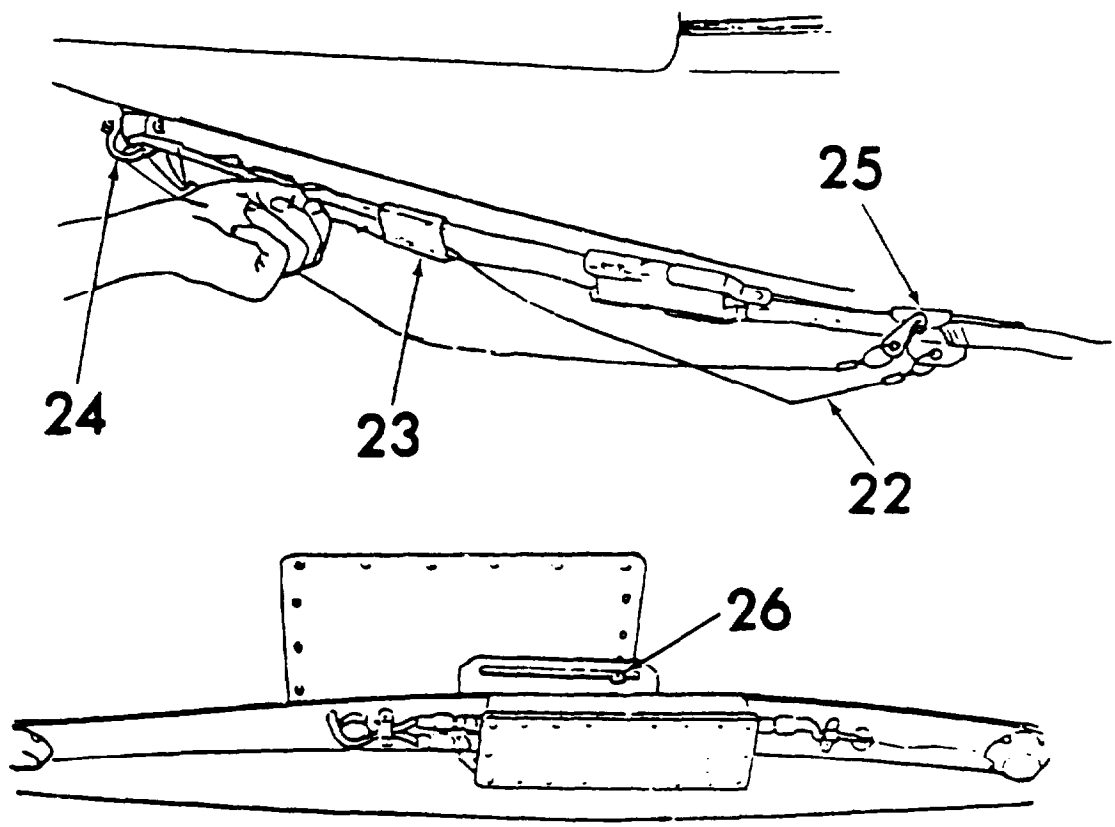
To tighten belt, pull running end (18) of belt. To loosen, push belt tension release (20).

Tension is correct when resistance is encountered with buckle at right angle (19) to belt.

Outside Installation Task 8: Install Bottom Right Detector Belt (Cont).



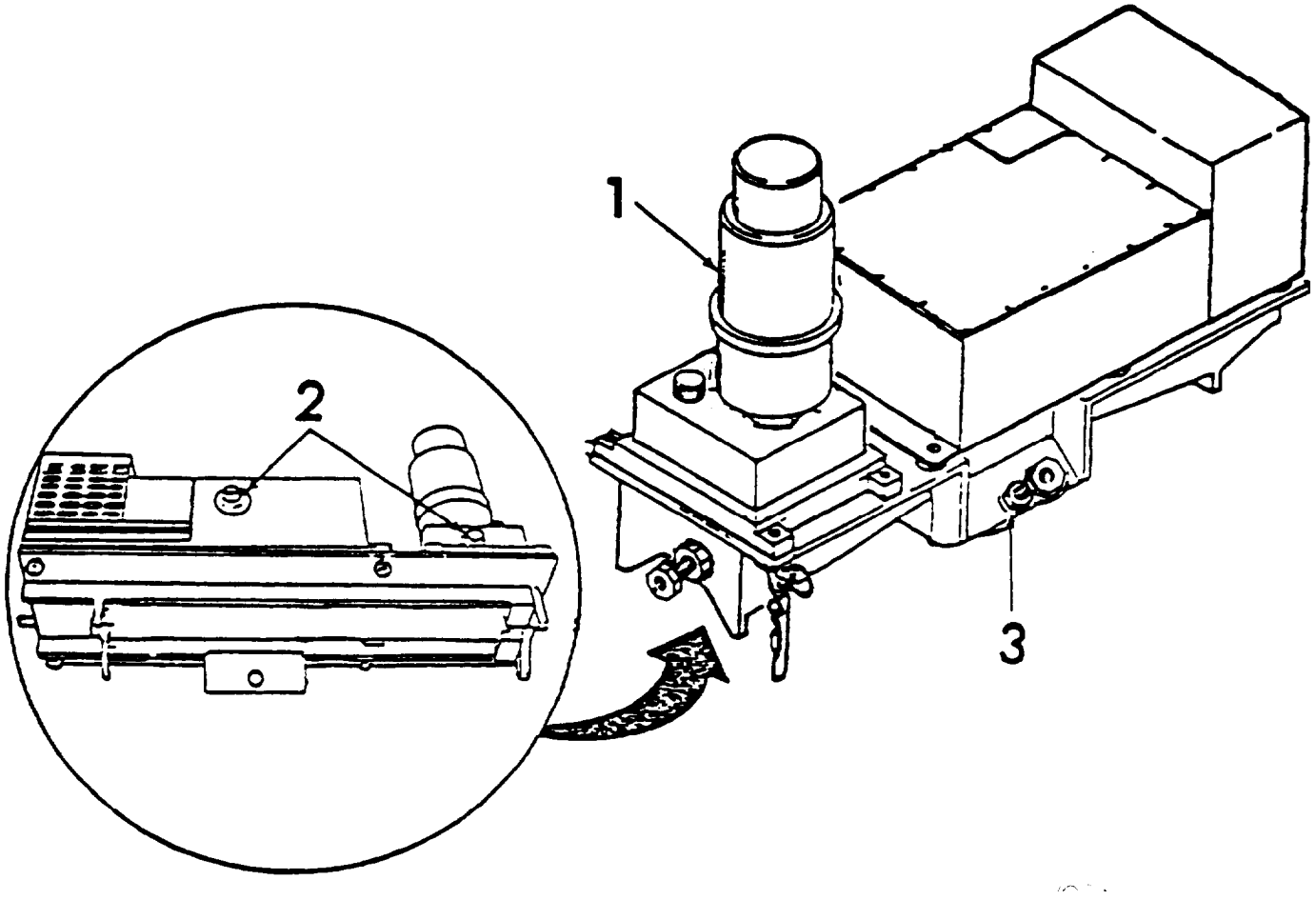
Make sure buckle (21) is securely locked in its closed position.



Run safety lanyard (22) through elastic keepers (23). If necessary. loop lanyard through keepers to remove any slack. Route lanyard through rear hard point clevis (24). and back through elastic keepers. Attach lanyard clamp to slot in belt reducer (25).

Securely tighten screw (26) holding detector belt electronics box to fuselage.

Outside Installation Task 9: Inspect AKI/Smoke Indicator Assembly.



Inspect Aircraft Kill Indicator (AKI)/Smoke Indicator Assembly for any damage that would prevent installation or operation.

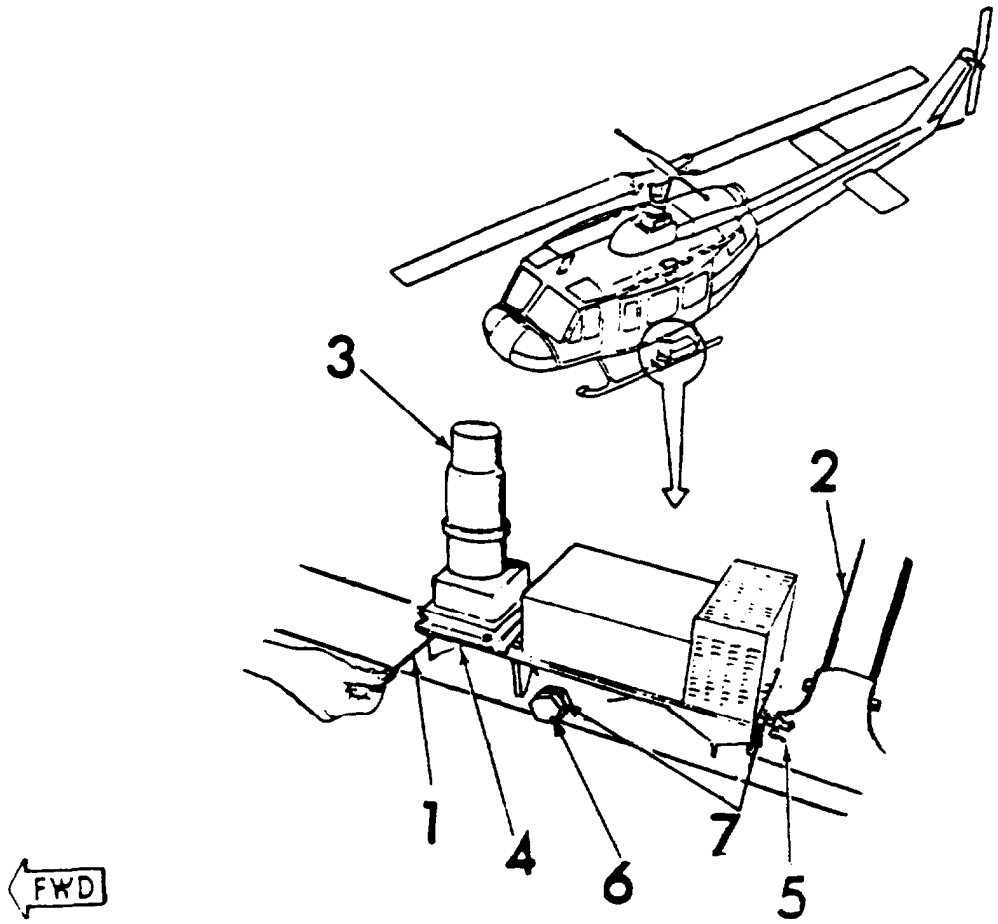
Check for cracks in AKI plastic lens (1).

Check for damaged receptacles (2).

Check for damage to mounting bracket threads (3).

Report any damage on DA Form 2404. Replace assembly only if not operable.

Outside Installation Task 10: Install AKI/Smoke. Indicator Assembly. AKI/Smoke Indicator Assembly is bolted to helicopter's left skid.



Depress quick release pin (1) center plunger. Grasp pin assembly head and remove pin

Loosen securing bolt (5) to full extended position.

Set AKI/Smoke Assembly on left skid just in front of the rear skid cross tube (2). Make sure AKI (3) is toward front of helicopter.

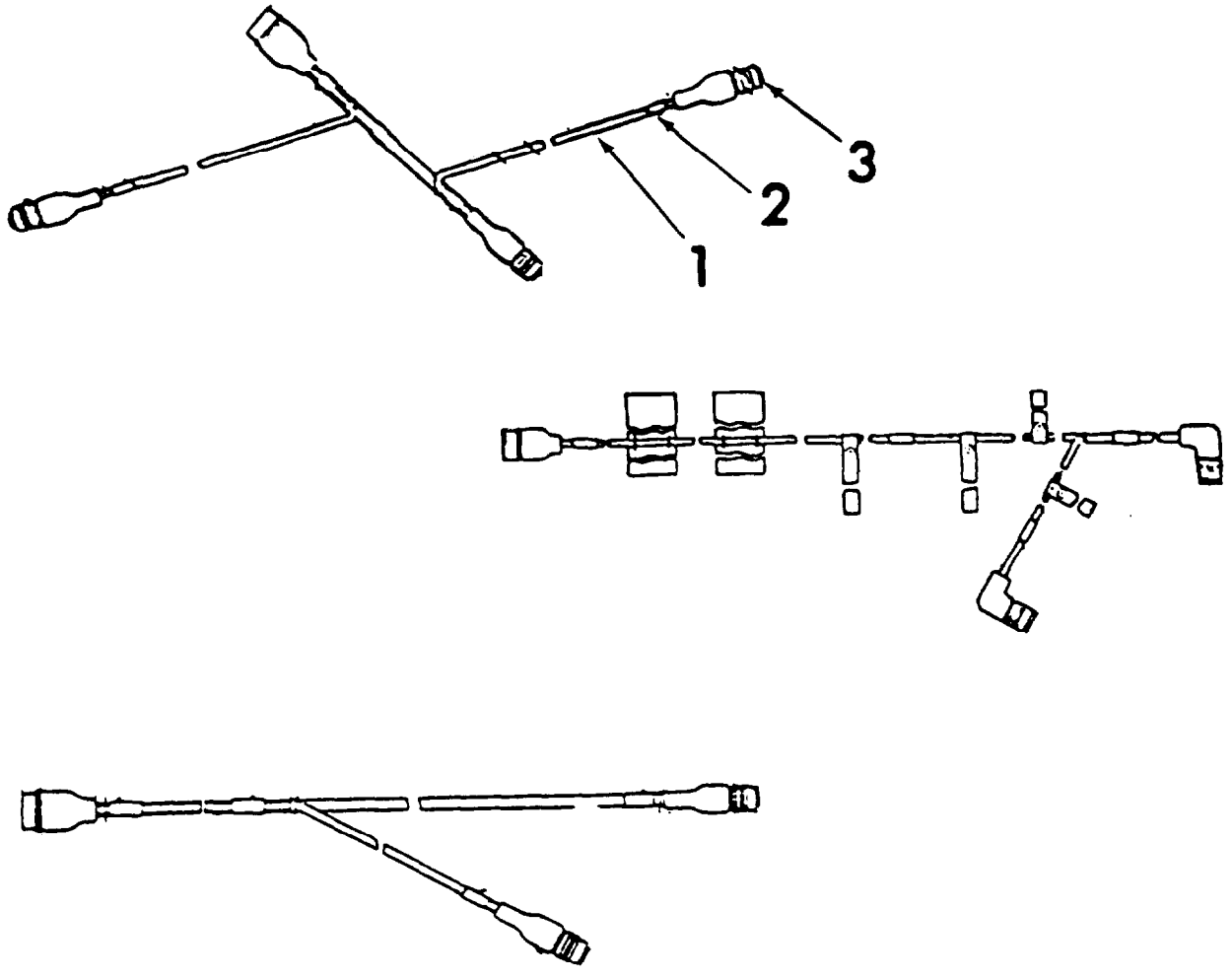
Rotate AKI/Smoke Assembly around skid and slide toward aircraft rear to position its pins into the ground handling rings (4). Ensure both pins are seated.

Hand tighten the securing bolt (5) and sway bar bolt (6).

Tighten two jam nuts (7) securely.

Install quick release pin (1). Ensure that pin is completely seated.

Outside Installation Task 1: Inspect Outside Cable Assemblies.



Inspect cable assemblies labeled UH-1H BELT HARNESS LEFT (W5). AKI/SMOKE-ACIA (W2) and UH-1H BELT HARNESS RIGHT (W4).

Each cable segment (1) should have a label (2) showing where it goes.

Check all connectors (3) for obvious damage.

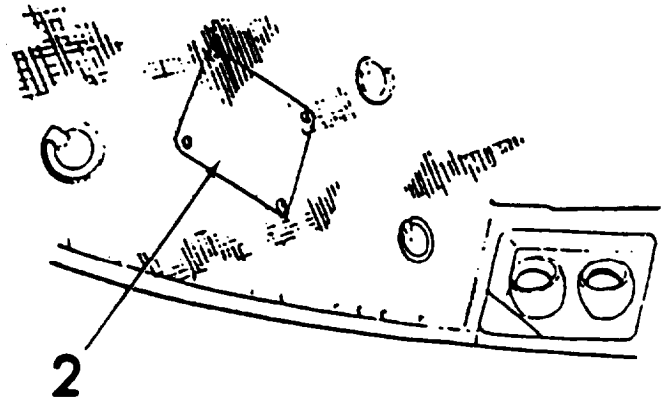
Check for worn or bare wires.

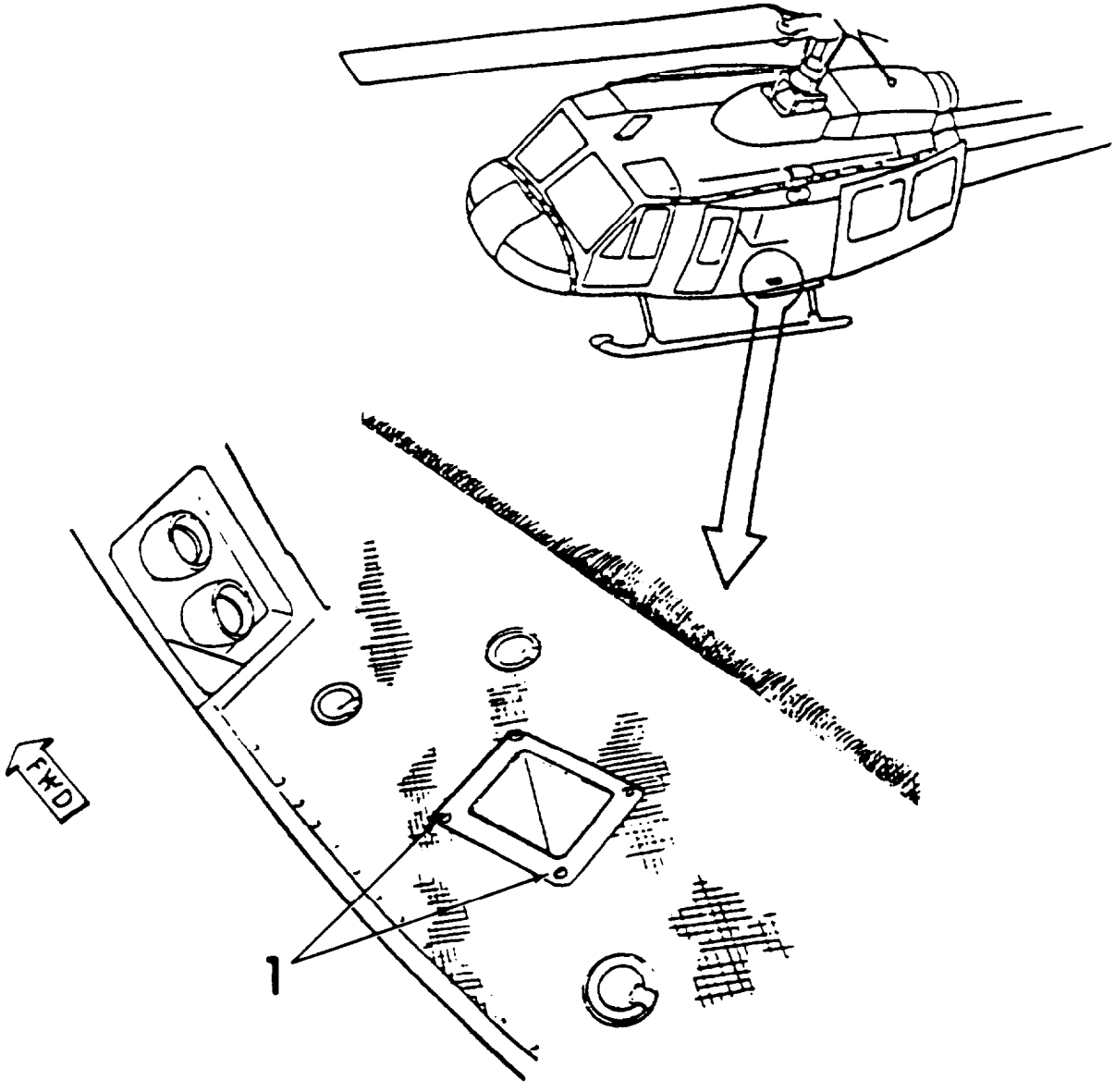
Report any damage on DA Form 2404. Replace cable assemblies only if not operable.

Outside Installation Task 12: Install Left Side Cable Assembly.

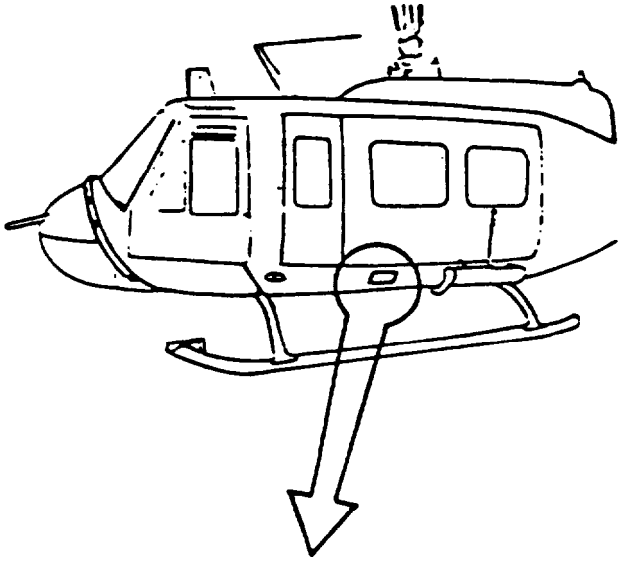
Remove 4 screws holding access cover (1) from cargo floor inside (near left jump door) of cockpit.

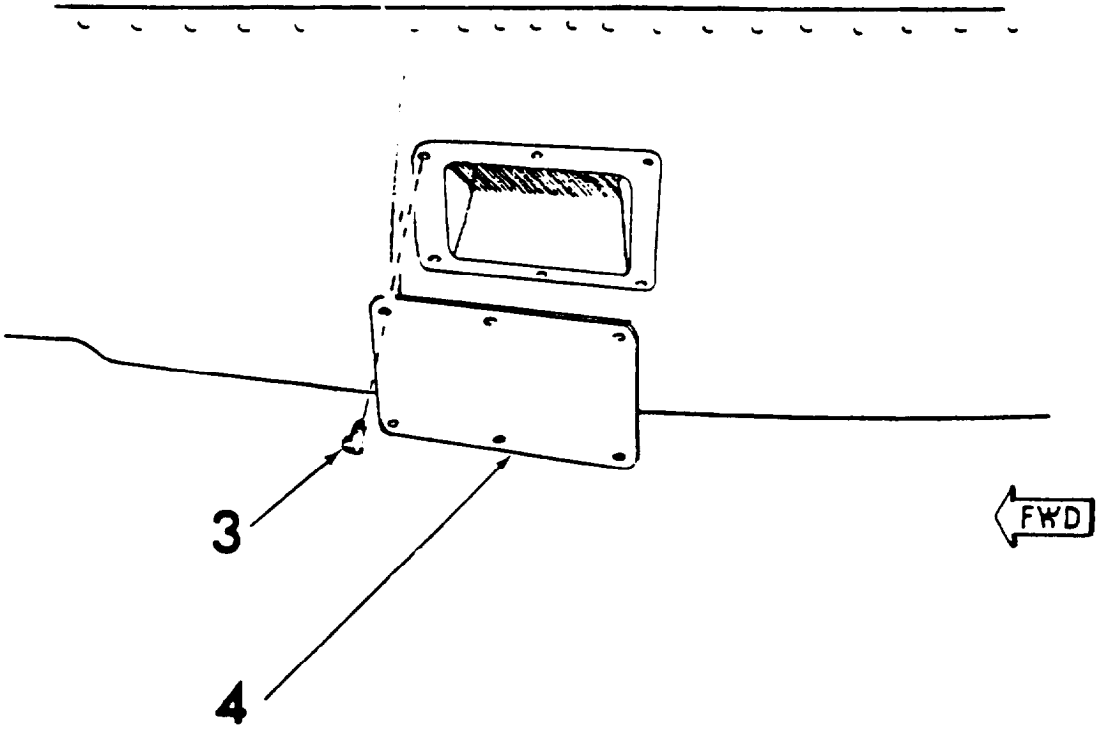
Remove cover and reinstall screws (2) in cargo floor. Save cover for replacement following MILES exercises.



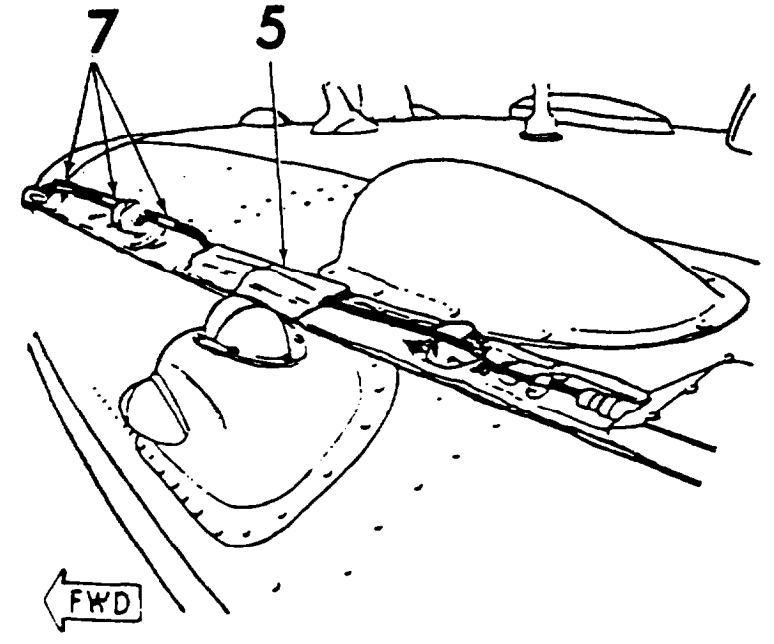


Remove 6 screws (3) holding outside access cover (4) from fuselage. Retain cover and screws for replacement following MILES exercises.

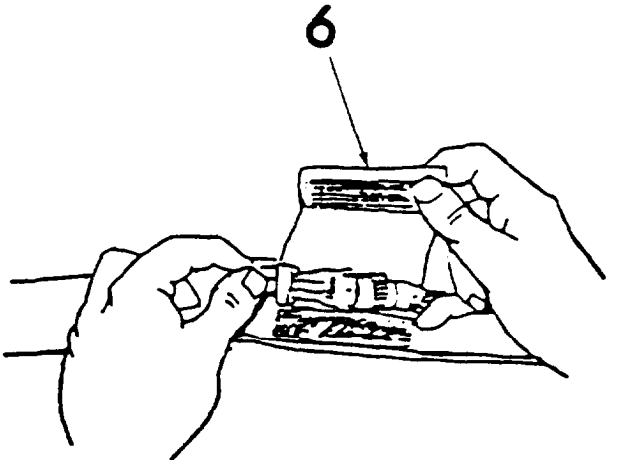




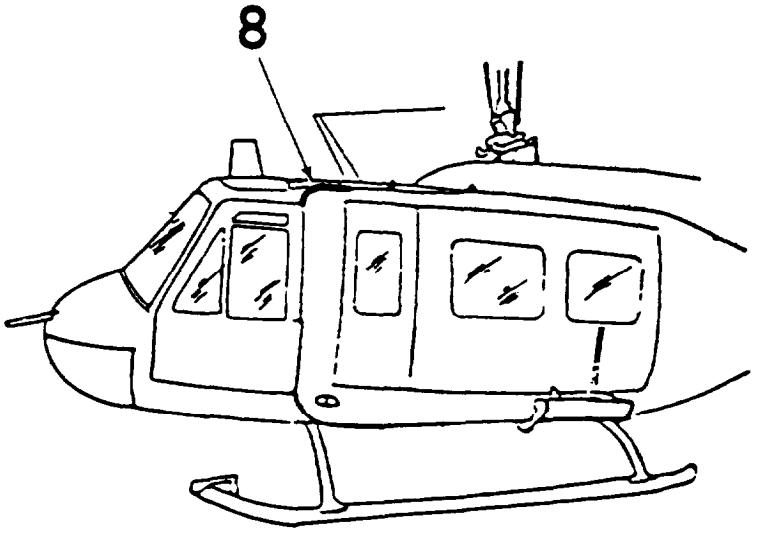
Outside Installation Task 12: Install Left Side Cable Assembly (Cont).



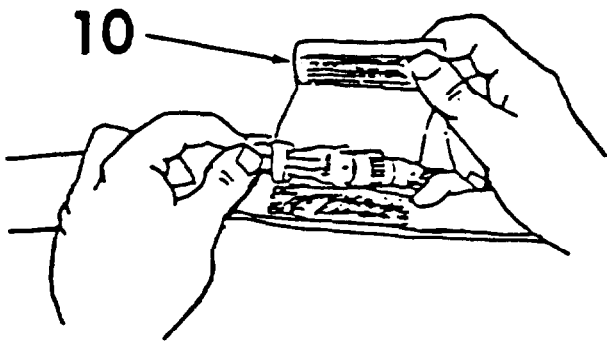
Locate the cable assembly labeled W-5 UH-1H BELT HARNESS LEFT. This cable has four connectors. Locate connector labeled, P3 BELT, TOP LEFT. Attach this connector to top left detector belt connector (5). Cover connection with flap (6).



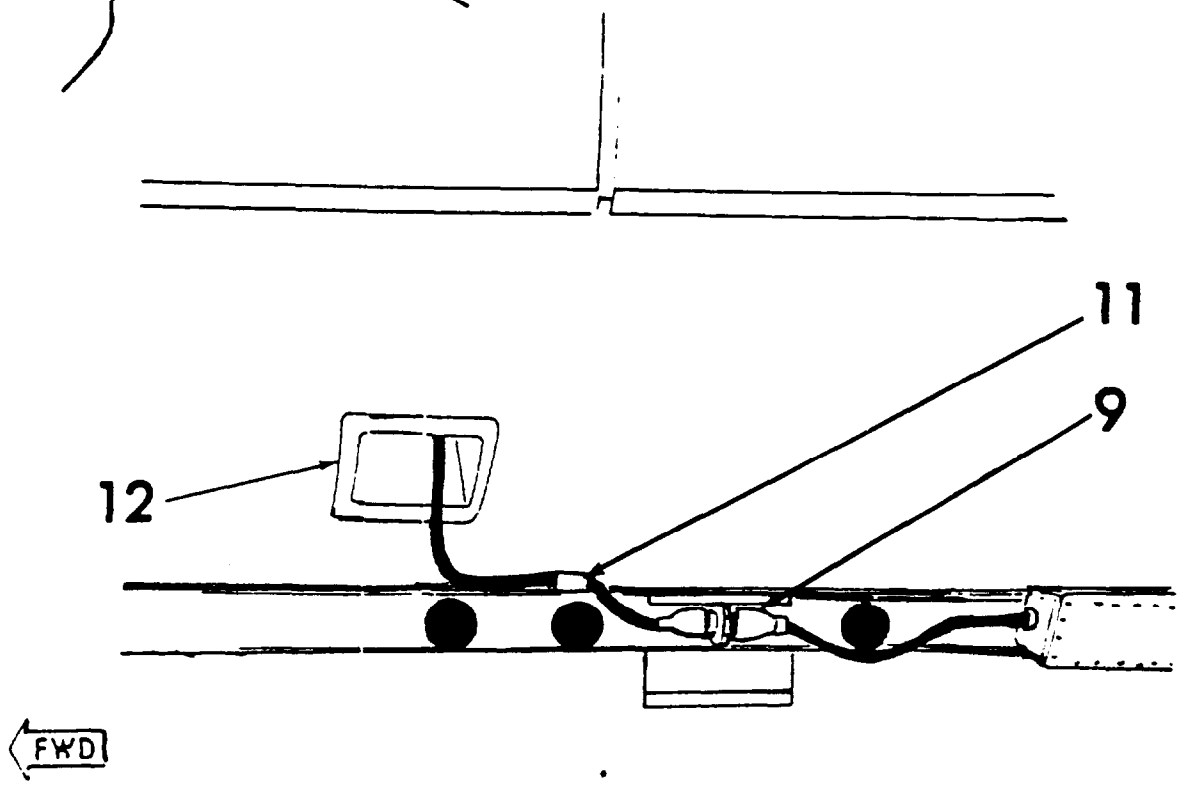
Secure cable to top edge of detector belt using small fastener tabs attached to belt (7). Make sure cable IS BESIDE but NOT UNDERNEATH belt.



Route cable into cockpit at top rear corner of copilot's door (8).



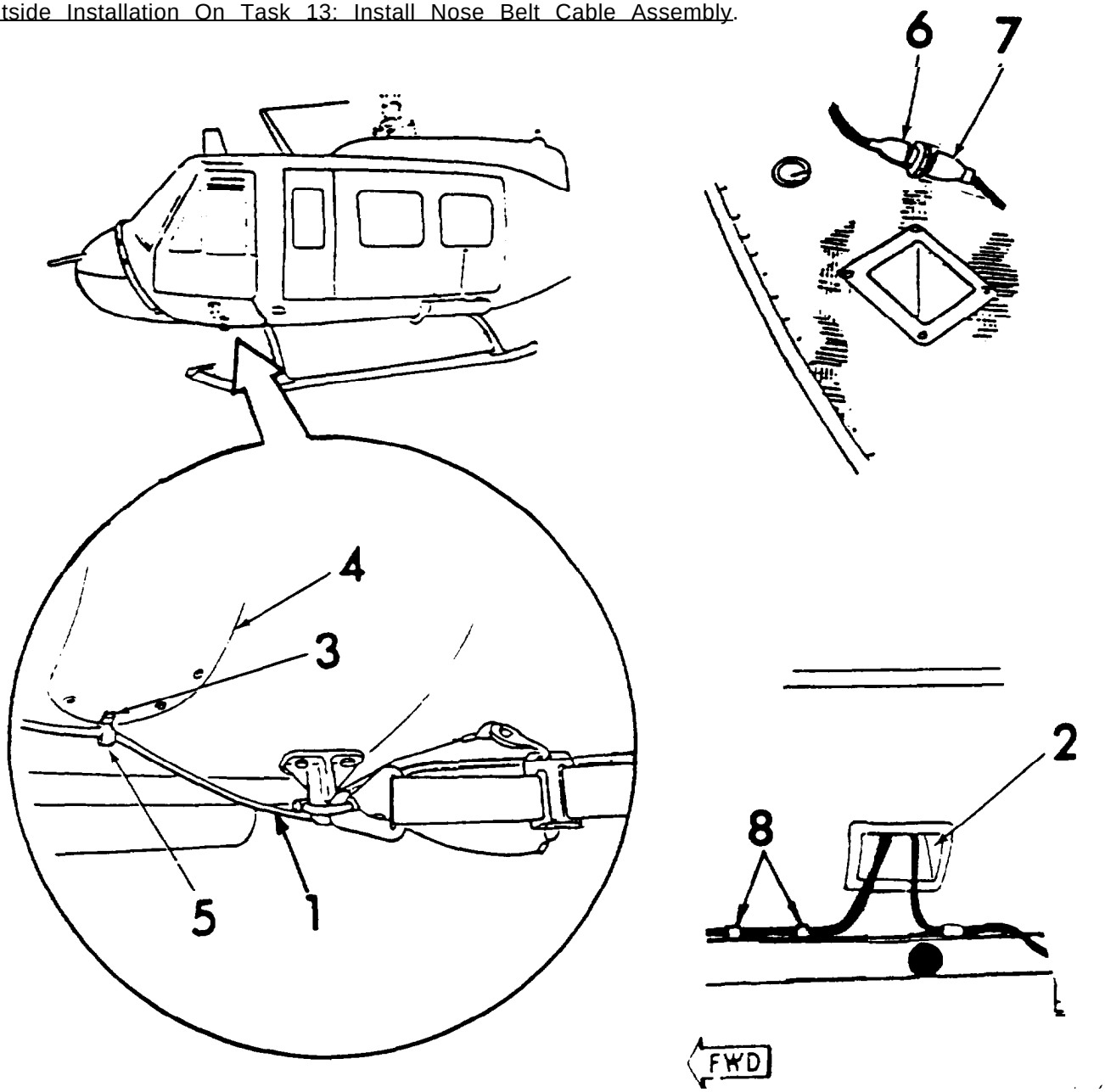
Locate another connector on same cable assembly labeled P4 BELT, BOTTOM LEFT. Route connector through inside and outside hole (12). Attach this connector to bottom left detector belt connector (9). Cover connection with protective flap (10).



Secure cable to top edge of bottom detector belt using small fastener tabs (11) attached to belt. Make sure cable is on TOP and NOT UNDER belt.

Temporarily leave remaining cable connectors on cockpit floor behind copilot's seat. Connectors labeled P1 ACIA and BELT, NOSE will be connected in subsequent steps.

Outside Installation On Task 13: Install Nose Belt Cable Assembly.



Route cable (1) from nose detector belt down to and along path of bottom detector belt. Route into access hole (2) on fuselage below cargo door.

Remove screw (3) at bottom of oval-shaped access panel (4).

Insert cable clamp (5) (MS 21919-WCG6) on cable. Attach cable clamp to access plate using original screw.

Connect nose detector belt P1 (6) to plug (7) labeled P2 BELT, NOSE. This is one of two plugs previously left on floor behind copilot's seat.

Attach nose detector cable on top of left side bottom belt using fastener tabs on bottom belt (8).

Outside Installation Task 14: Install AKI/Smoke Cable Assembly.

Locate cable assembly labeled W2, AKI/SMOKE-ACIA.

Attach plug labeled P1 SMOKE to connector (1) on rear of Smoke Assembly. Attach plug labeled P3 AKI to connector (2) on rear. of AKI assembly.

Position cable toward rear cross tube.

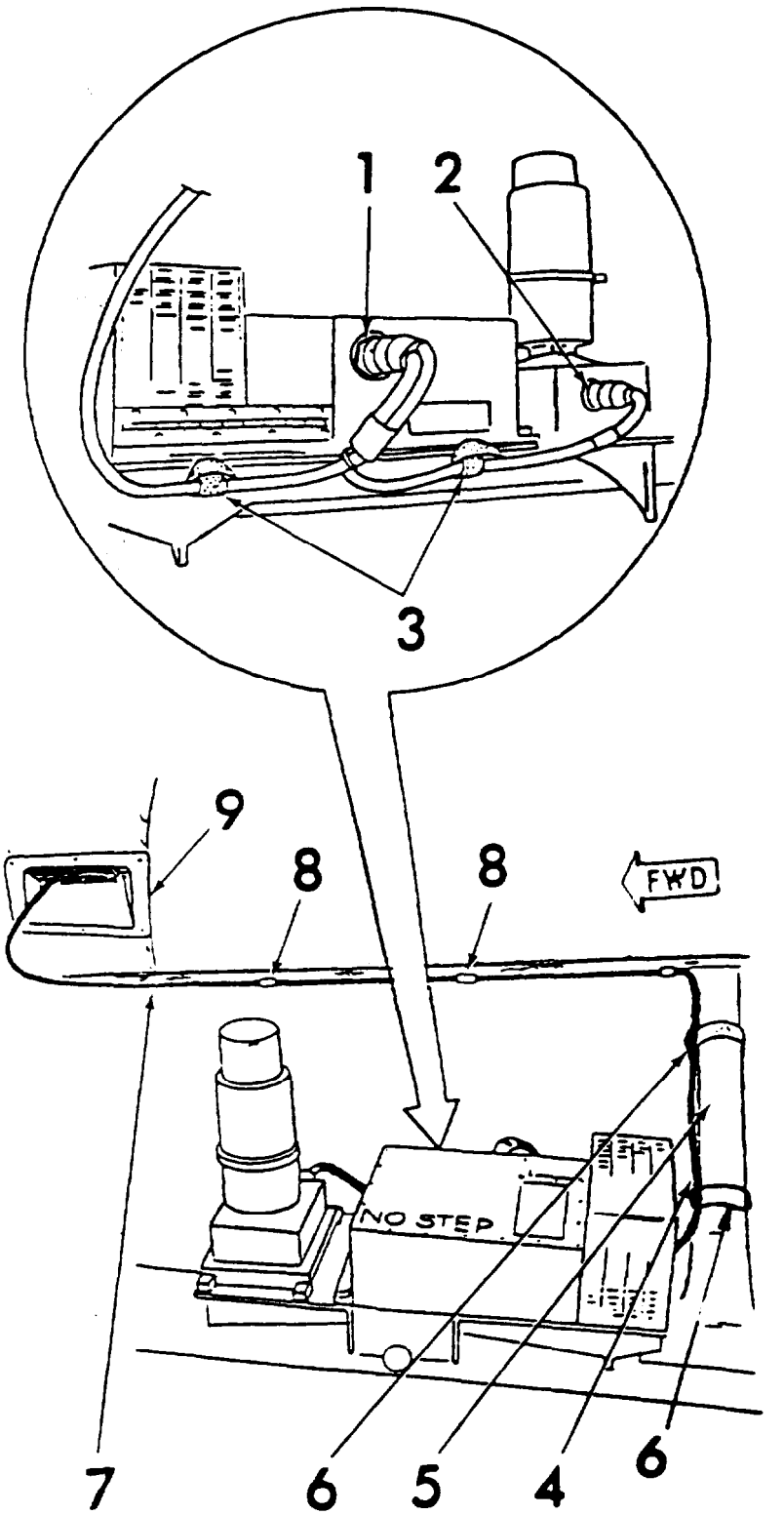
Secure cable by slipping fastener ties through slots (3) on inboard side of AKI/Smoke Assembly and wrap around cable.

Secure cable (4) to helicopter skid rear cross tube with two fastener straps (6) attached to cable.

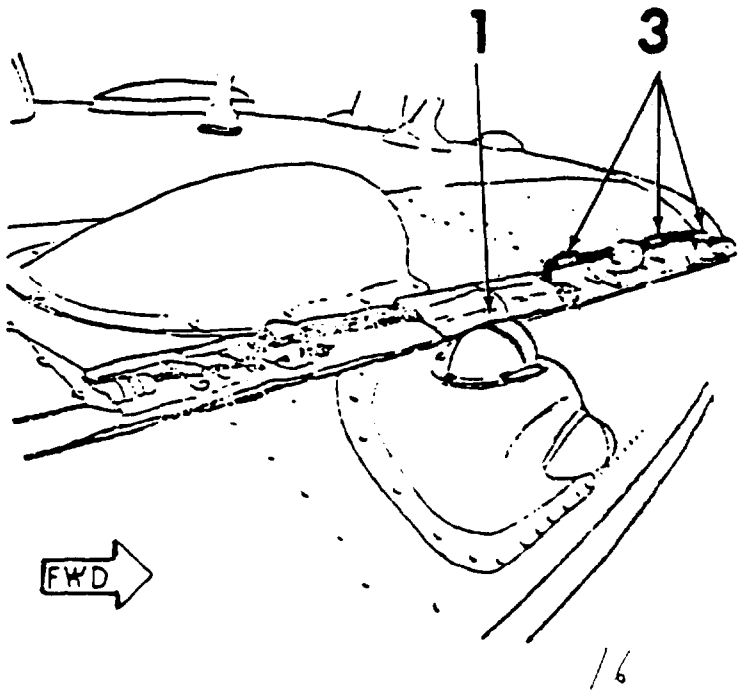
Route cable (7) along bottom of detector belt edge Secure cable to belt using small fastener tabs (8) attached to belt.

Make sure cable is beside and NOT underneath belt.

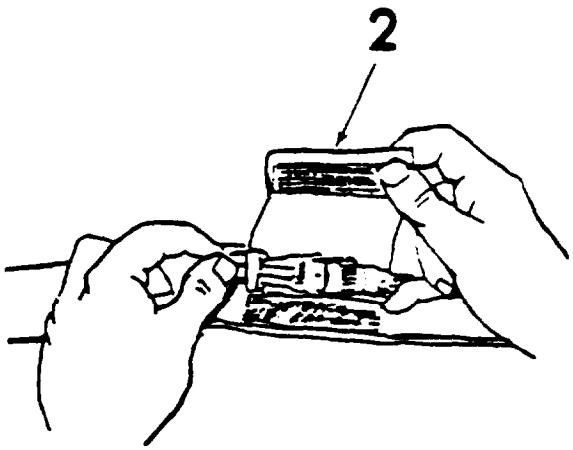
Route cable through access hole (9) in fuselage below cargo door. Temporarily leave cable lying on cockpit floor behind copilot's seat.



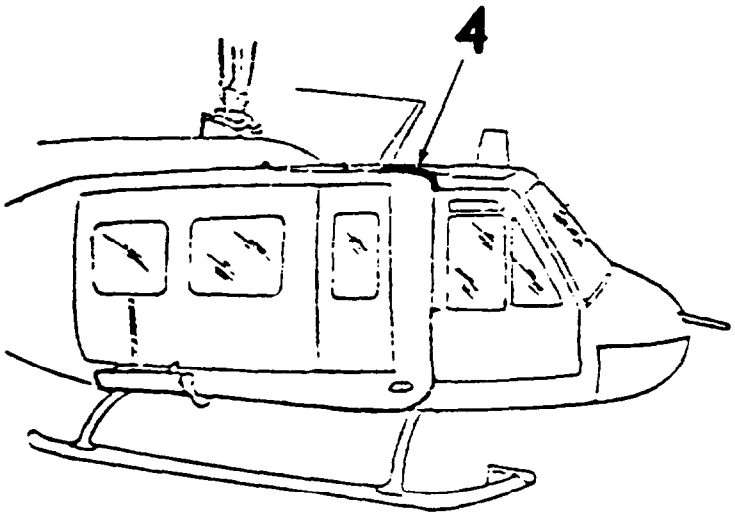
Outside Installation Task 15: Install Right Side Cable Assembly. The Right Side Cable Assembly is installed in a manner identical to that of the left side.



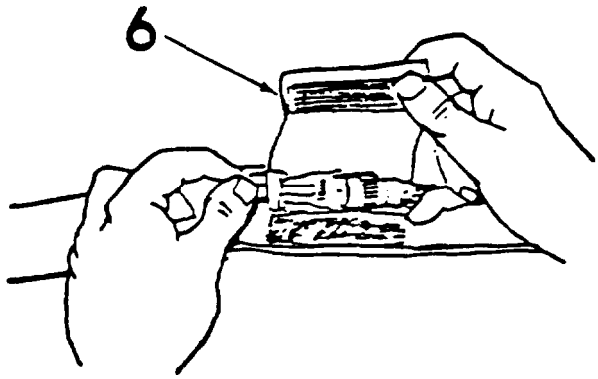
Locate the cable assembly labeled W. 4 UH-1H BELT HARNESS RIGHT. This cable has three plugs. Locate plug labeled, P2, BELT, TOP RIGHT. Attach this plug to top right detector belt connector (1). Cover connection with flap (2).



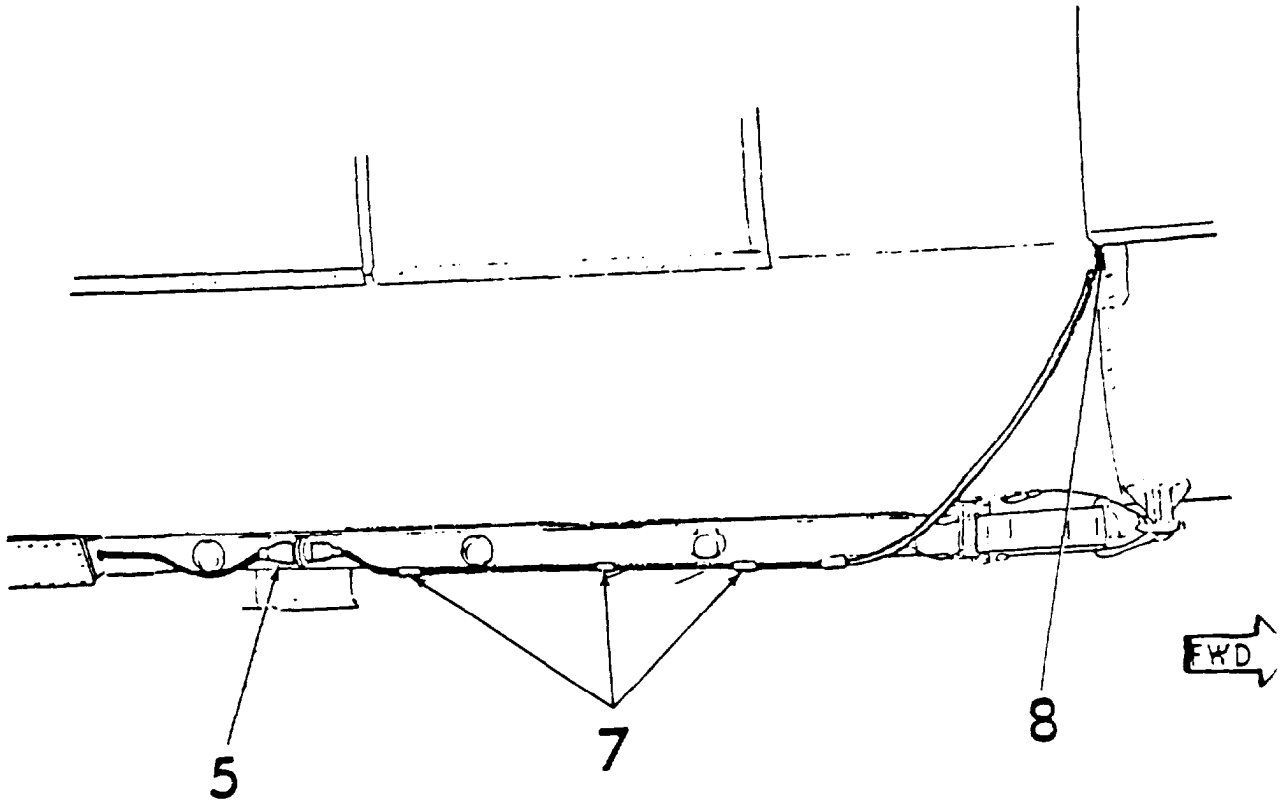
Secure cable to top edge of detector belt using small fastener tabs (3) attached to belt. Make sure cable is beside and not underneath belt.



Route cable into cockpit at top rear corner of pilots door (4).



Locate another plug on same cable assembly labeled P3 BELT, BOTTOM RIGHT. Attach this to bottom right detector belt connector (5). Cover connection with protective flap (6).



Secure cable to bottom edge of bottom detector belt using small fastener tabs (7) attached to belt.

Make sure cable is beside and not underneath belt.

Route remaining cable and connector into cockpit at bottom rear corner (8) of pilot‘s door.

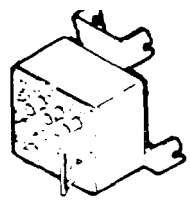
Temporarily leave remaining connector lying on cockpit floor behind pilot’s seat

INSIDE INSTALLATION TASK - LIST

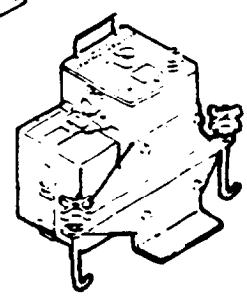
Perform these tasks in the order given.

Inside Installation Task 1: Obtain Equipment. Completion of Inside Installation Tasks requires equipment listed and illustrated below. Locate and set aside this equipment.

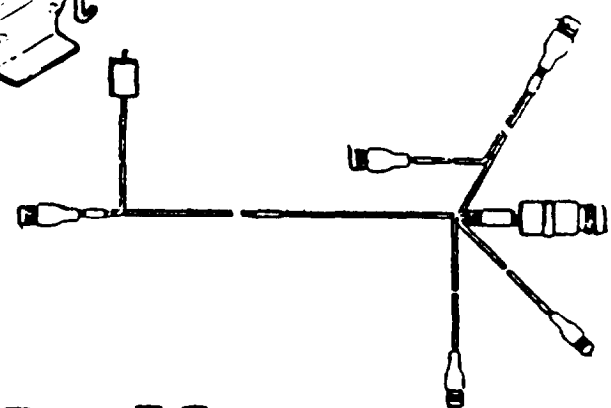
Cockplt Kill Indicator (CKI)



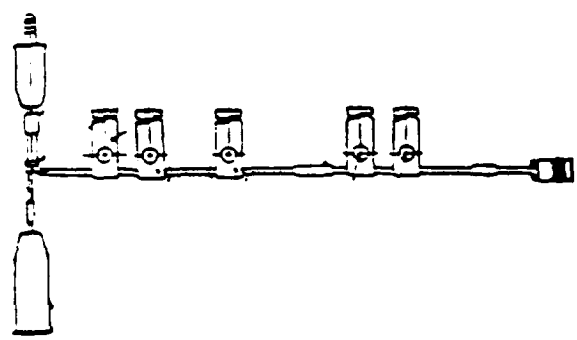
Aircraft Control Indicator Assembly (ACIA) including Battery Box



UH-1H ACIA INTFC Cable Assembly (W3)

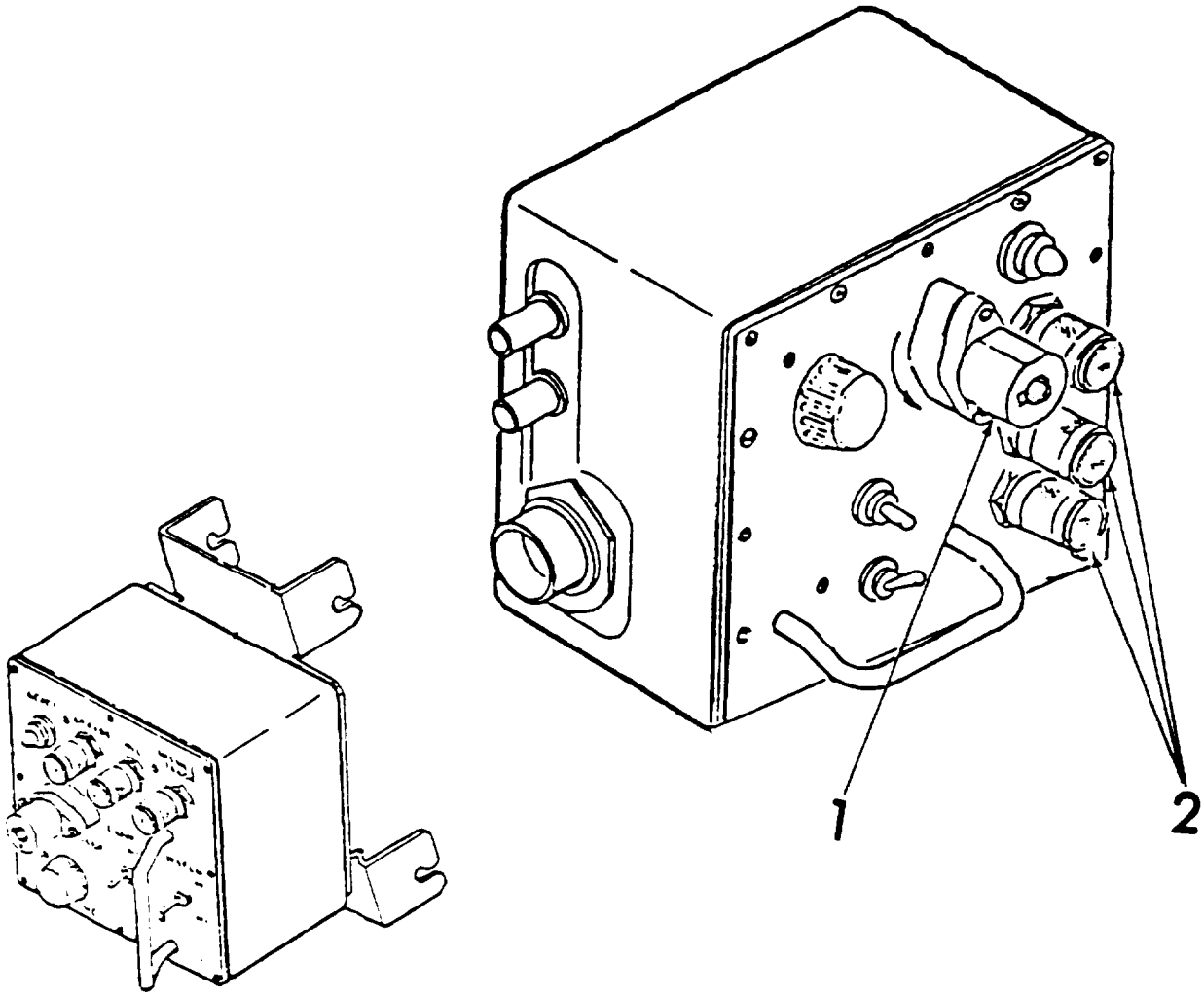


2 Headset-CKI Cable Assemblies (W1)



4 Cable Loop Clamps

Inside Installation Task 2: Inspect Cockpit Kill Indicator.



Inspect Cockpit Kill Indicator for damage that would prevent proper operation or installation.

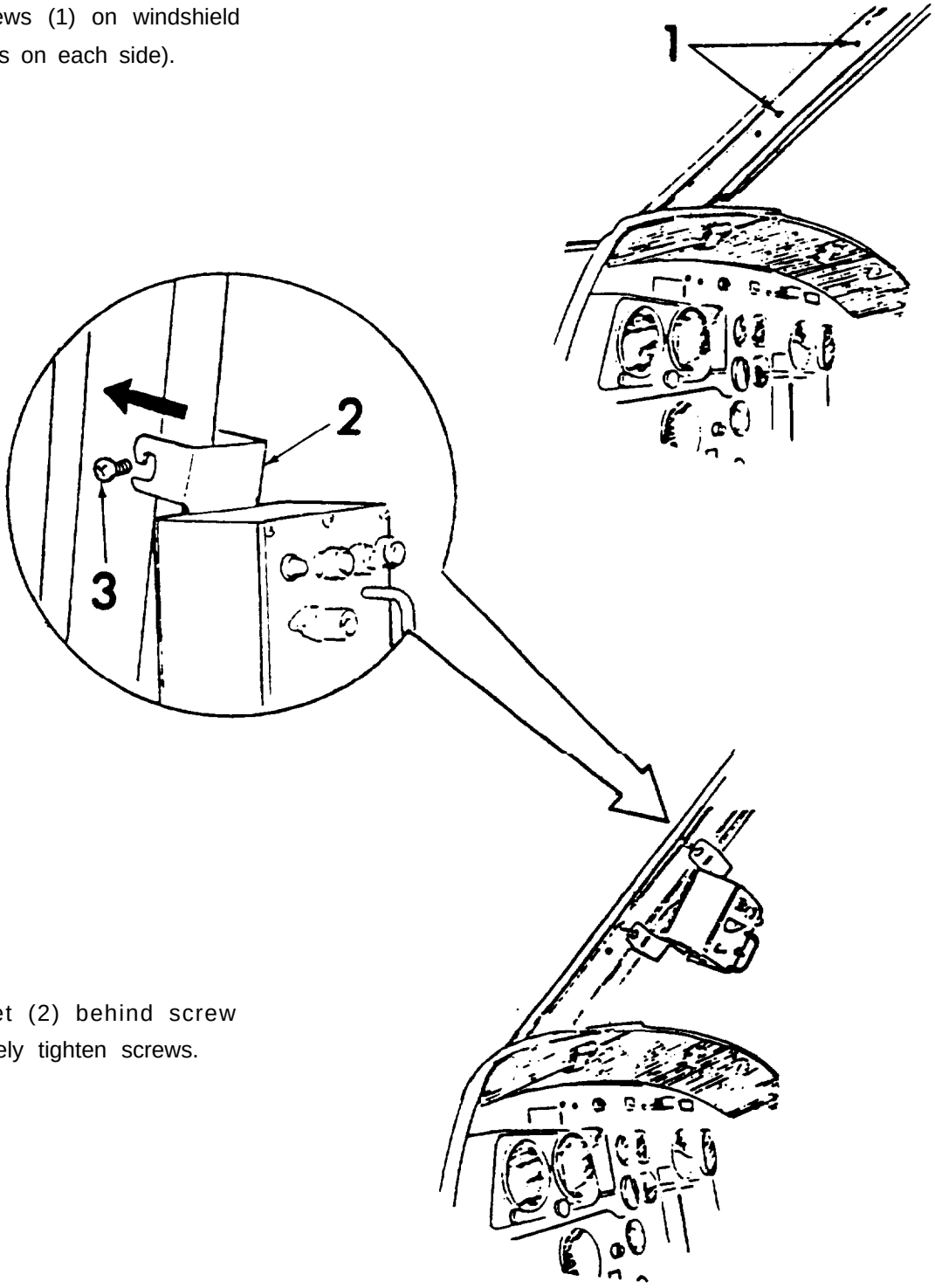
Check that Controller Key turns freely in key receptacle (1).

Insure that irises on warning lamps (2) operate properly.

Report any damage on DA Form 2404. Replace CKI only if not operable.

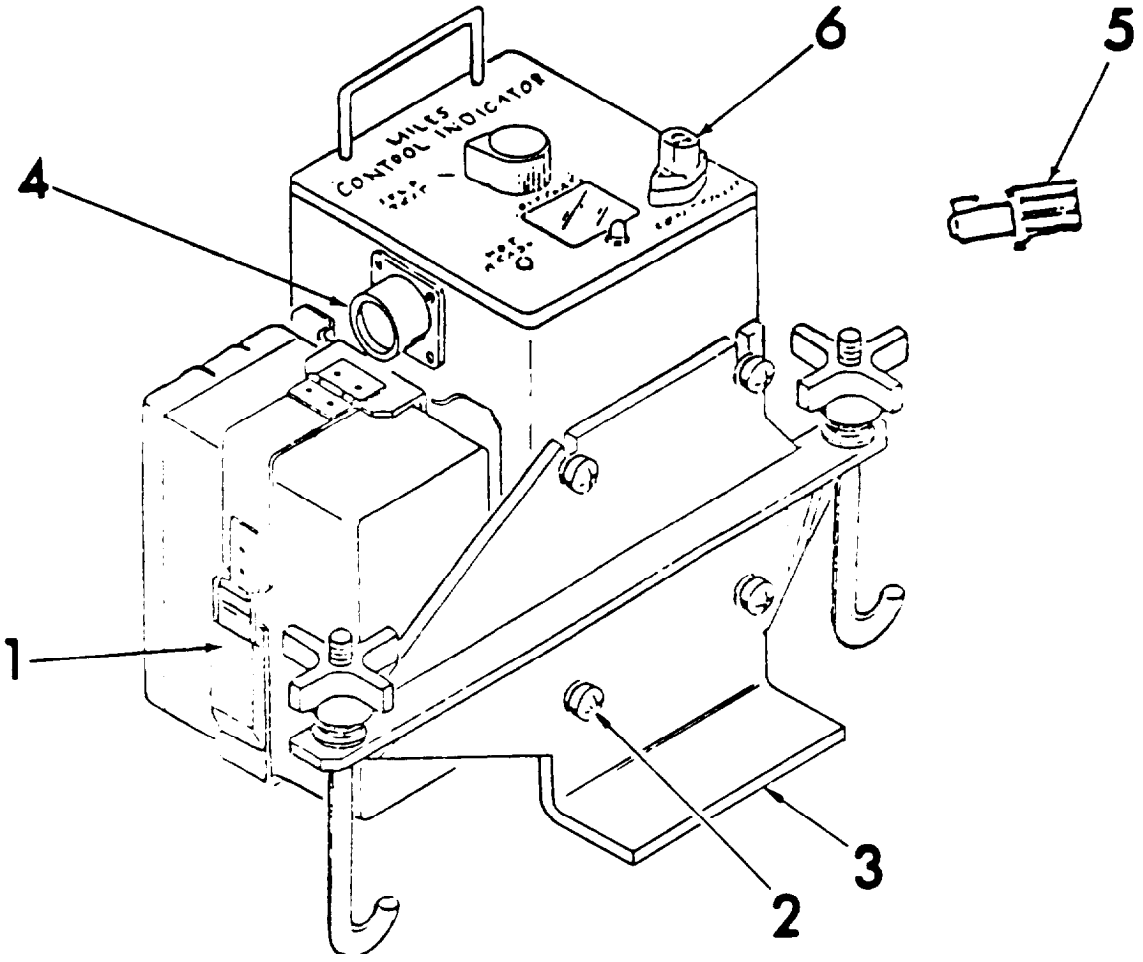
Inside Installation Task 3: Install Cockpit Kill Indicator. The Cockpit Kill Indicator (CKI) is attached to center windshield frame.

Loosen four screws (1) on windshield frame (two screws on each side).



Slip CKI bracket (2) behind screw heads (3). Securely tighten screws.

Inside Installation Task 4: Inspect Aircraft Console Adapter Assembly



Inspect Aircraft Console Adapter Assembly for any damage that would prevent normal operation or installation.

Ensure battery box fastener (1) is securely latched.

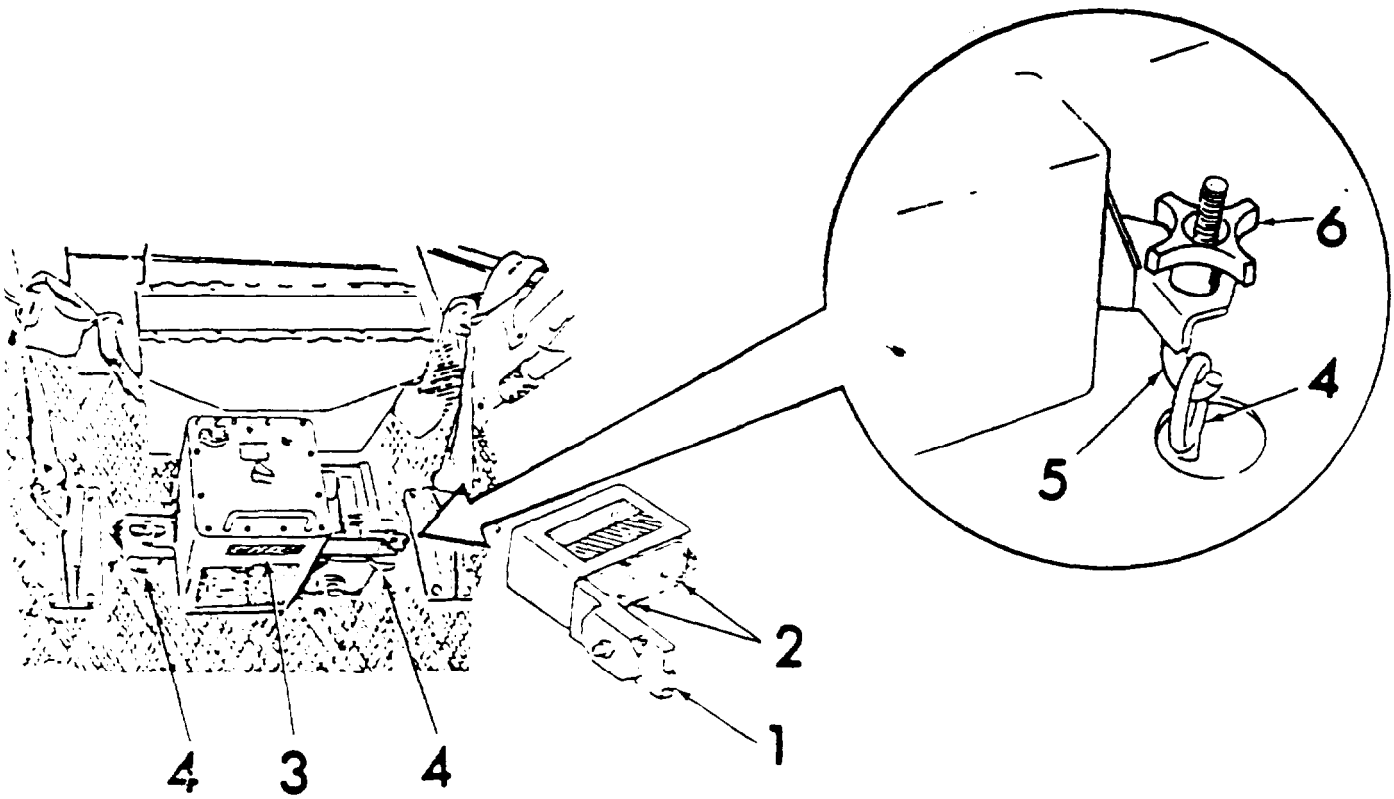
Ensure screws (2) securing mounting bracket (3) to ACIA are snug.

Check for damaged connectors (4).

Check that Controller Key (5) turns freely in key receptacle (6).

Report any damage on DA Form 2404. Replace equipment only if not operable.

Inside Installation Task 5: Install Aircraft Console Adapter Assembly. The Aircraft Console Adapter Assembly attaches to two tie down rings located immediately behind the center console.



Remove the battery box from the ACIA

Unlatch and swing open lid (1) of battery box.

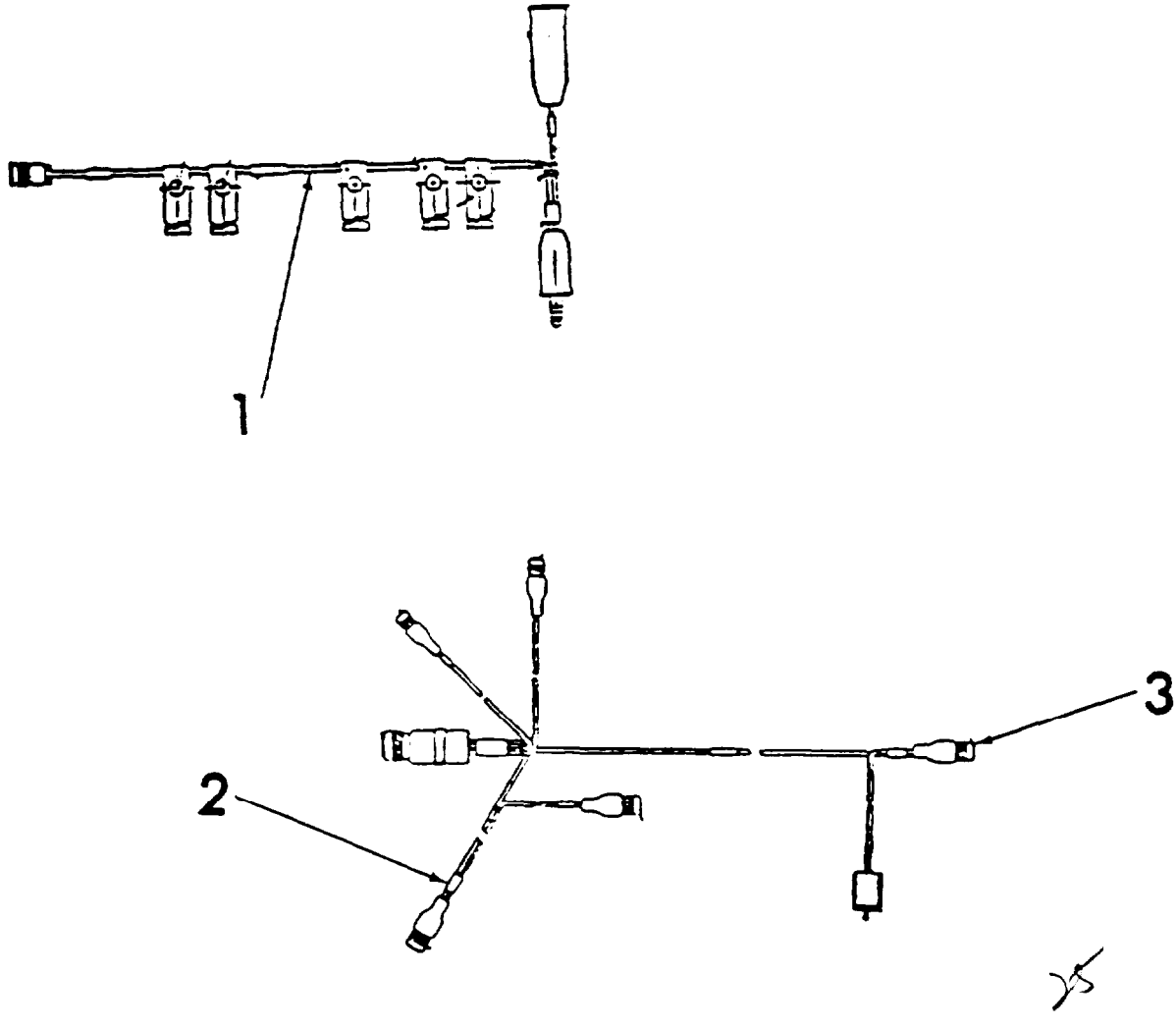
Insert two 6 V batteries (2) in the battery box.

Secure lid and reinstall into ACIA.

Set Aircraft Console Adapter Assembly (3) in position between two tie down rings (4) located directly behind center console.

Attach the two hooks (5) to the tie down rings Securely tighten the two knobs (6). Hand tighten only.

Inside Installation Task 6: Inspect Interior Cables.



Inspect cable assembly labeled W1, HEADSET-CKI (1), and cable assembly labeled W3. UH-1H ACIA INTFC (2).

Check for worn or bare wires.

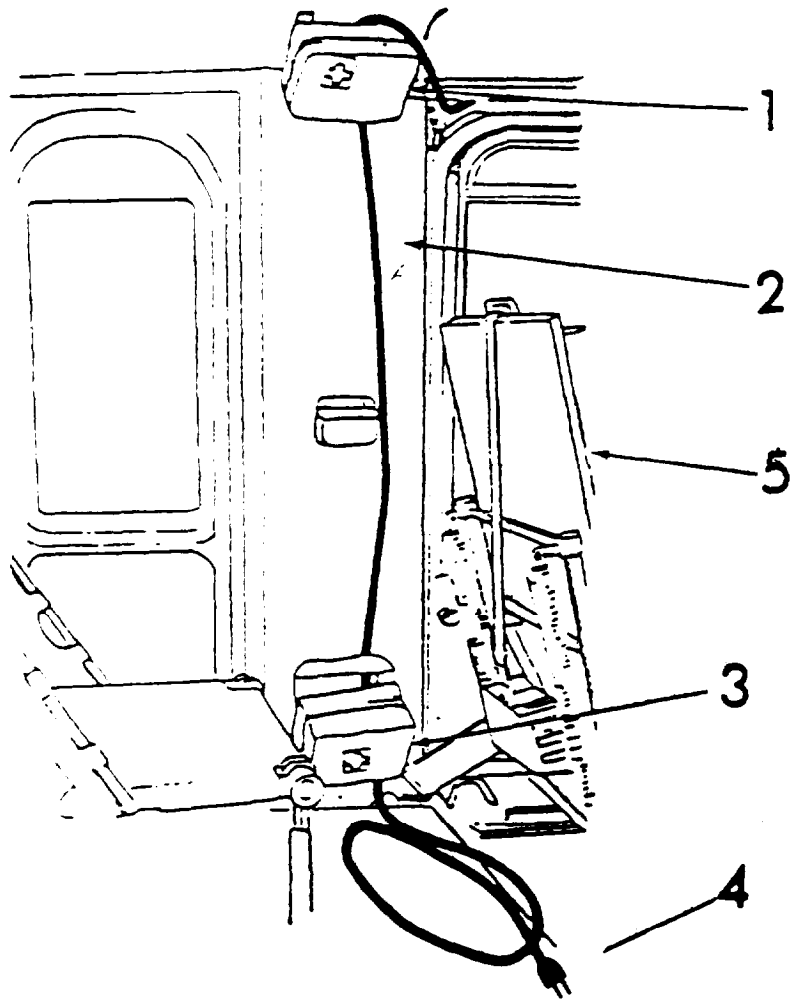
Check all connectors (3) for obvious damage.

Report any damage on DA Form 2404. Replace cable assemblies only if not operable.

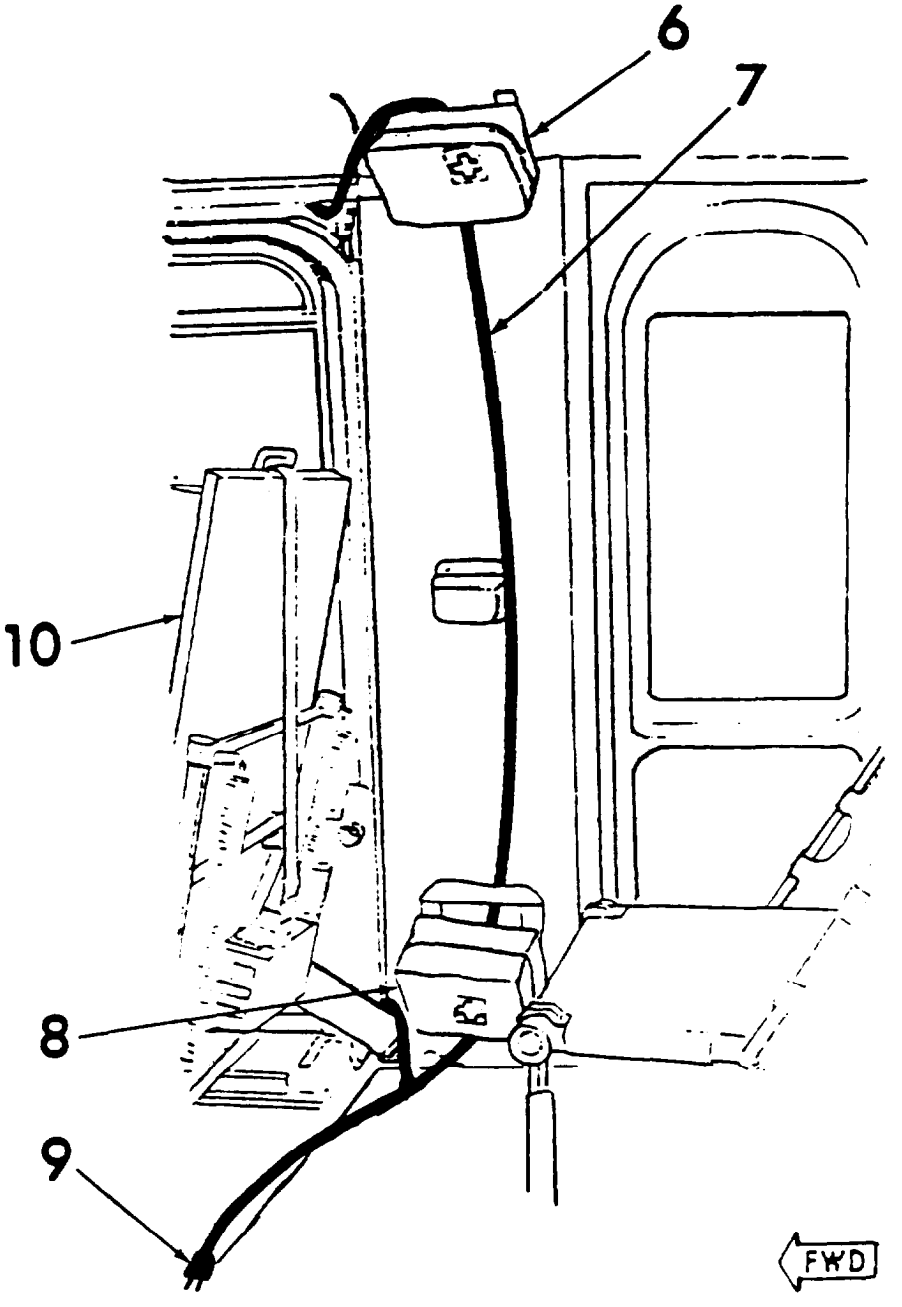
Inside Installation Task 7: Install Interior Cables.

NOTE

Installation procedures for interior cables assume that insulating blankets are installed on interior cabin walls and ceiling. If not, ignore references to the blankets. Fastener straps are attached to the cables at various places. Use these to secure cables to appropriate hardware or cable bundles on interior walls and ceiling when insulating blankets are not present.

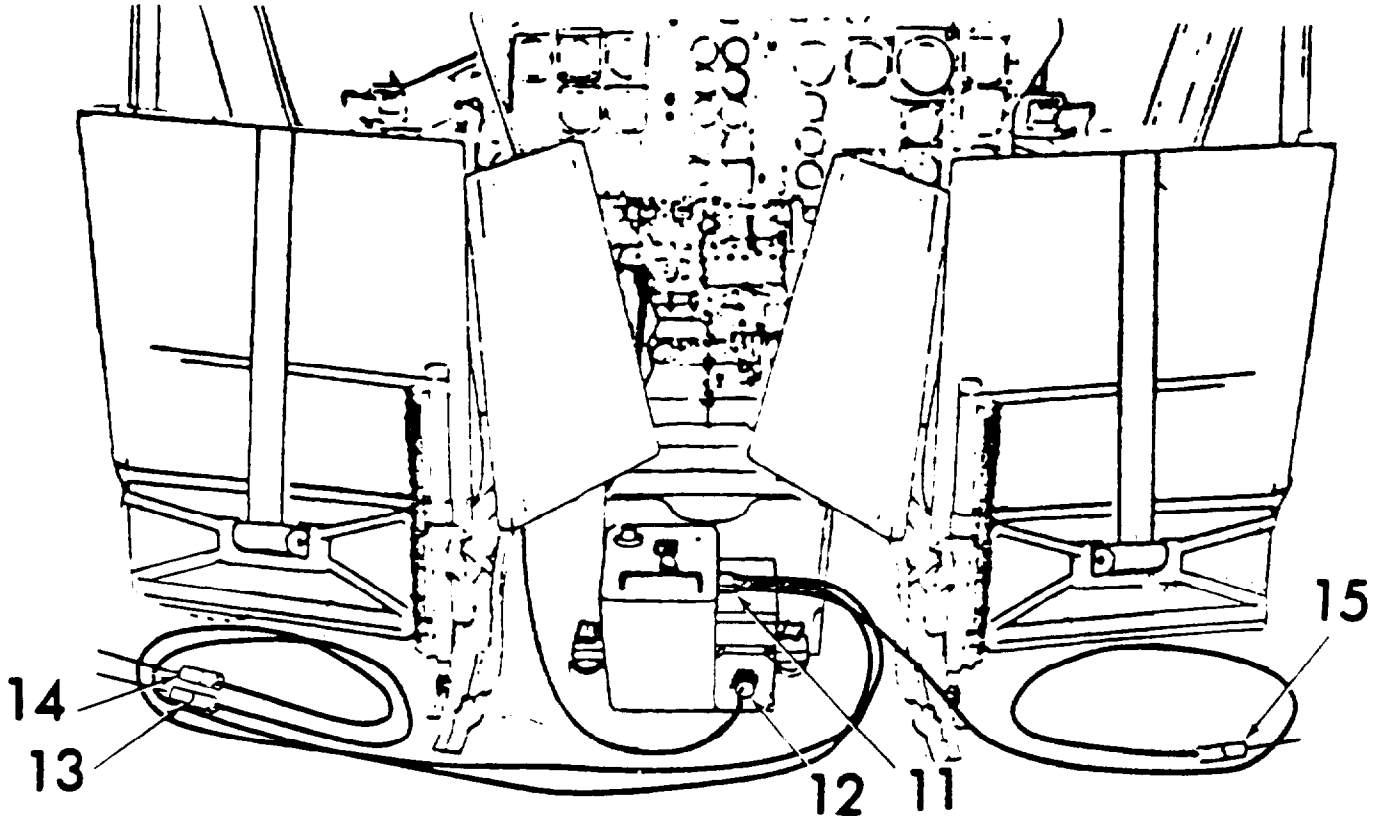


Locate cable and connector labeled W4 BELT. LEFT SIDE that enters cabin on left side at top of copilot's door. Route cable behind first aid kit (1) and down cabin wall. Unsnap insulating blanket (2) as required in order to route cable behind it. Continue routing cable behind lower first aid kit (3) and onto floor. Leave cable plug (4) on floor behind copilot's seat (5).



Locate cable and connector labeled W5 BELT, RIGHT SIDE that enters cabin on right side at top of pilot's door. Route cable behind first aid kit (6) and down cabin wall. Unsnap insulating blanket (7) as required in order to route cable behind it. Continue routing cable behind lower first aid kit (8) and onto floor. Leave cable plug (9) on floor behind pilot's seat (10).

Inside Installation Task 7: Install Interior Cables (Cont).



Locate cable assembly labeled UH-1H ACIA INTFC (W3). This cable assembly has seven connectors

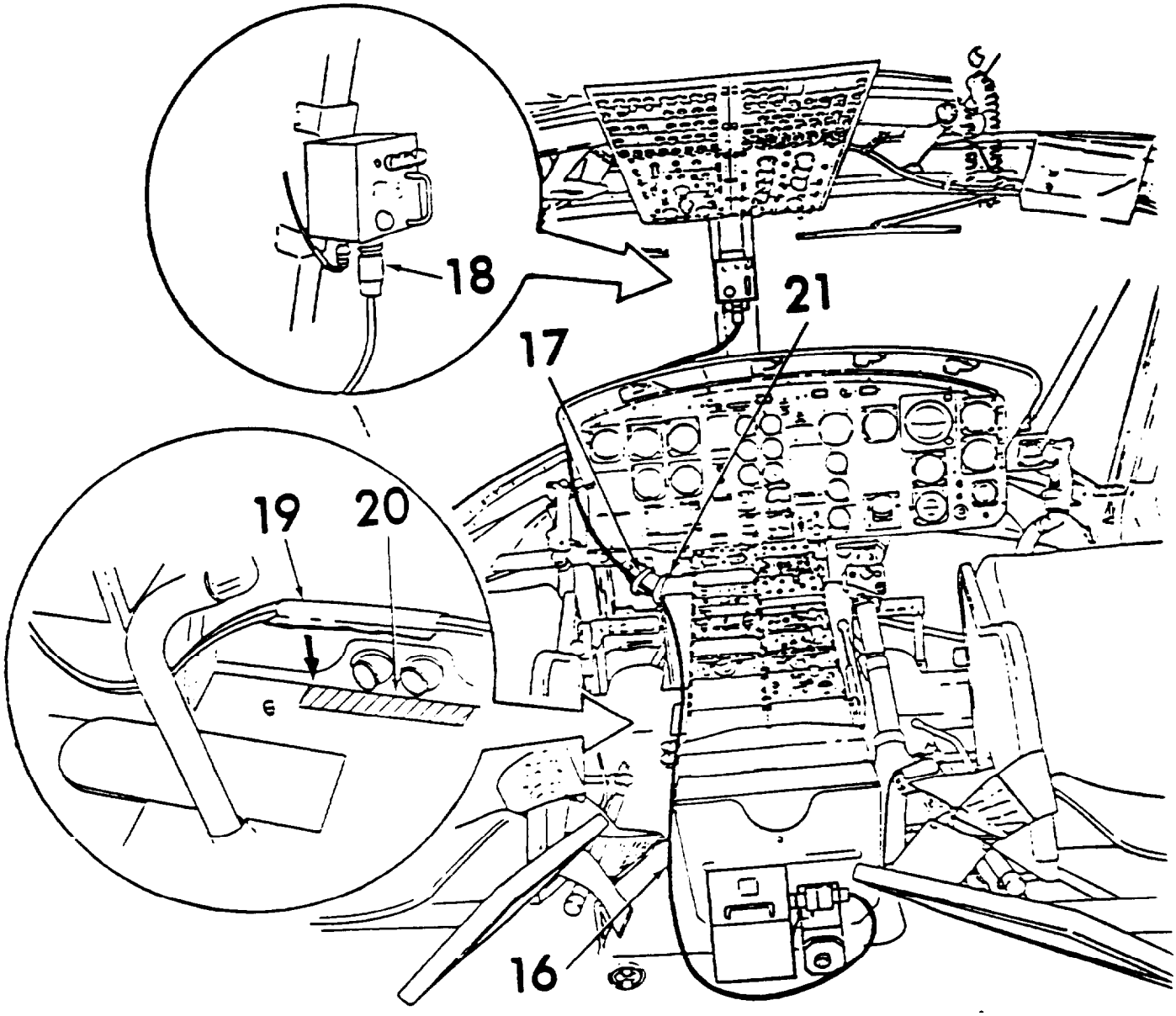
Mate cable connector labeled P1 ACIA to connector (11) on side of ACIA

Mate cable connector labeled P3 BATTERY BOX to connector (12) on battery box.

Mate cable connector labeled P7 AKI to connector labeled P2 ACIA INTERFACE (13). This connector will be on floor behind copilot's seat.

Mate cable connector labeled P4 BELT, LEFT SIDE to connector labeled P1 ACIA (14). This connector will be on floor behind copilot's seat.

Mate cable connector labeled P5 BELT. RIGHT SIDE to connector labeled P1 BELT, RIGHT SIDE ACIA INTERFACE (15). This connector will be on cabin right side floor behind pilot's seat.



Route remainder of cable W3 forward along floor on left edge of center console (16).

Route cable along air-vent pipe (17) and up onto dash.

Route cable along dash and up windshield frame.

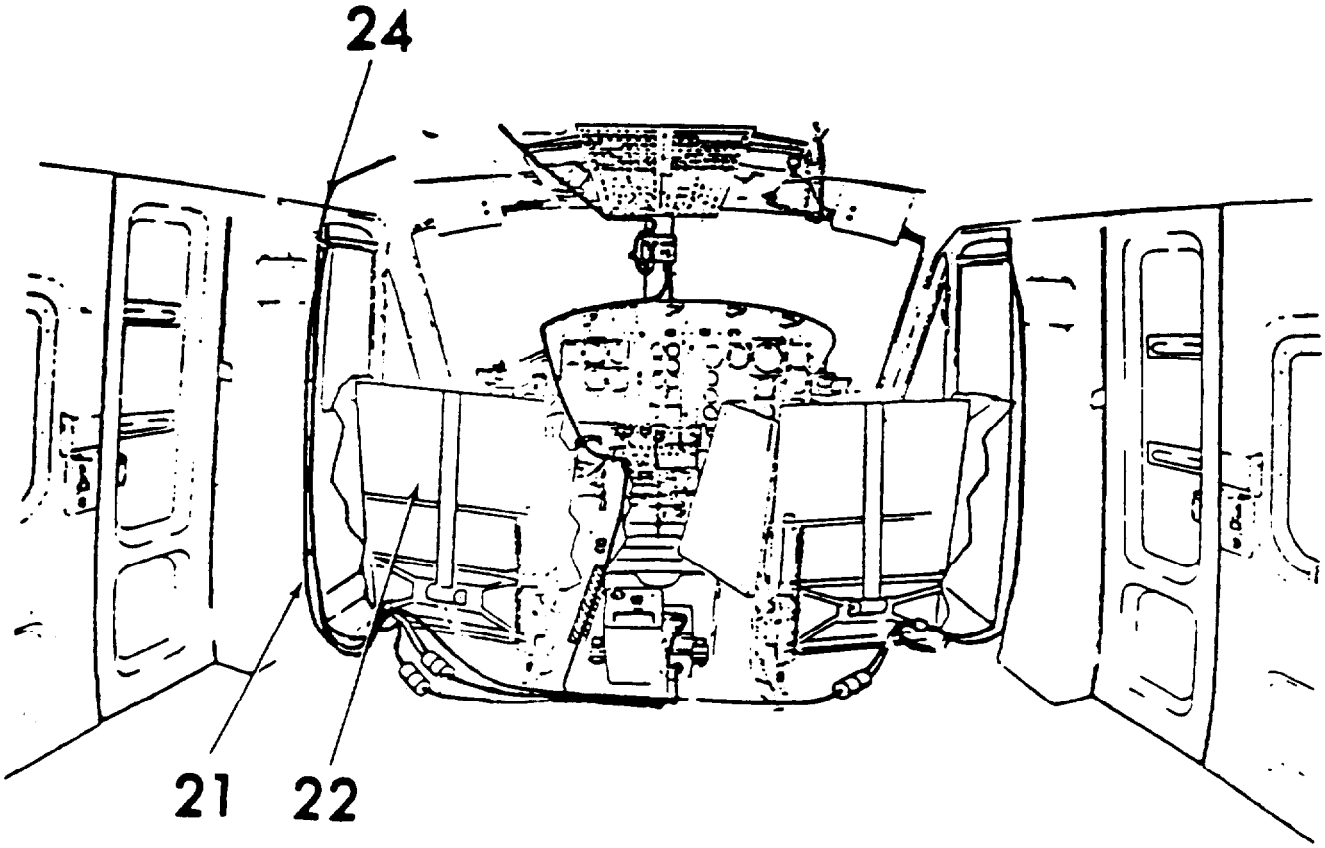
Attach connector labeled P2 CKI to large receptacle (18) on bottom of CKI.

Secure cable to air vent pipe with two fastener straps (21) attached to cable.

Install tape using procedures given in Outside Installation Task 4, page 2-21.

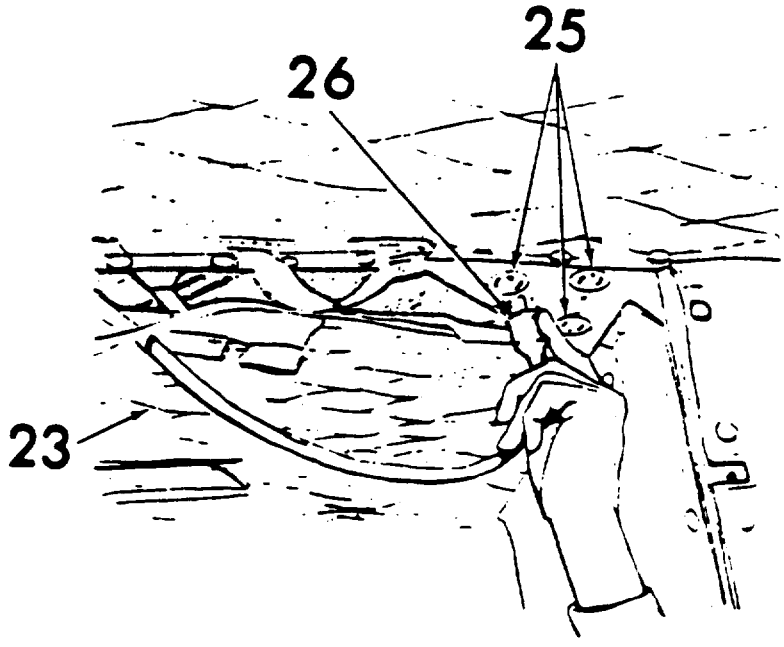
Cut a 12-inch long strip of fastener tape and attach to cockpit floor near forward end of console. Use fastener pad (19) that is attached to cable as guide to locate tape. Press fastener pad against tape (20).

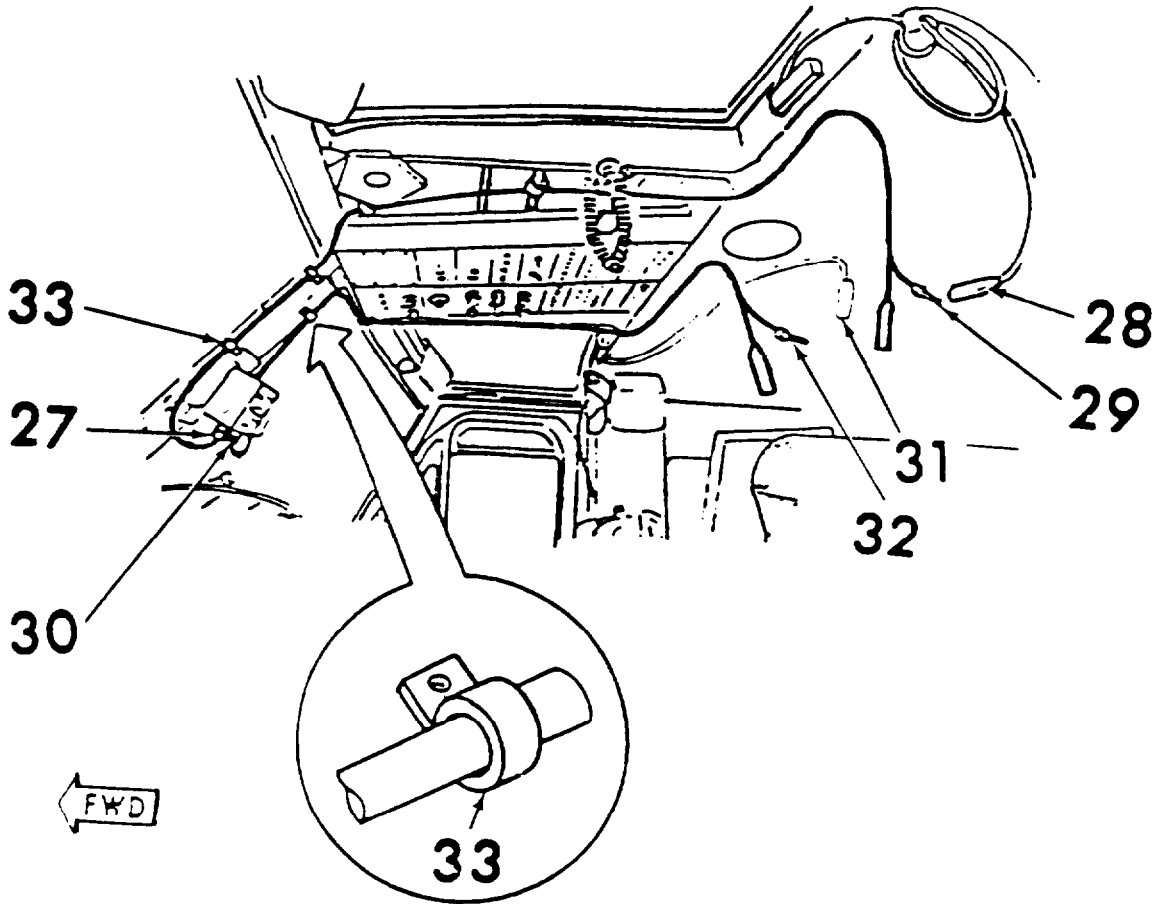
Inside Installation Task 7: Install Interior Cables (Cont).



Locate plug labeled P6 OVERHEAD HEATER BLANKET. Route this cable behind copilot's seat (22) and up left side of fuselage (keep clear of FIRST AID kit) and to rear of the copilot's door (24). Continue routing across left top of cabin behind insulating blanket (23) to 28 Vdc battery connections (25) at left rear of cabin roof.

Connect plug (26) to receptacle. Unsnap insulating blanket on side and roof as required to route cable behind the blanket.



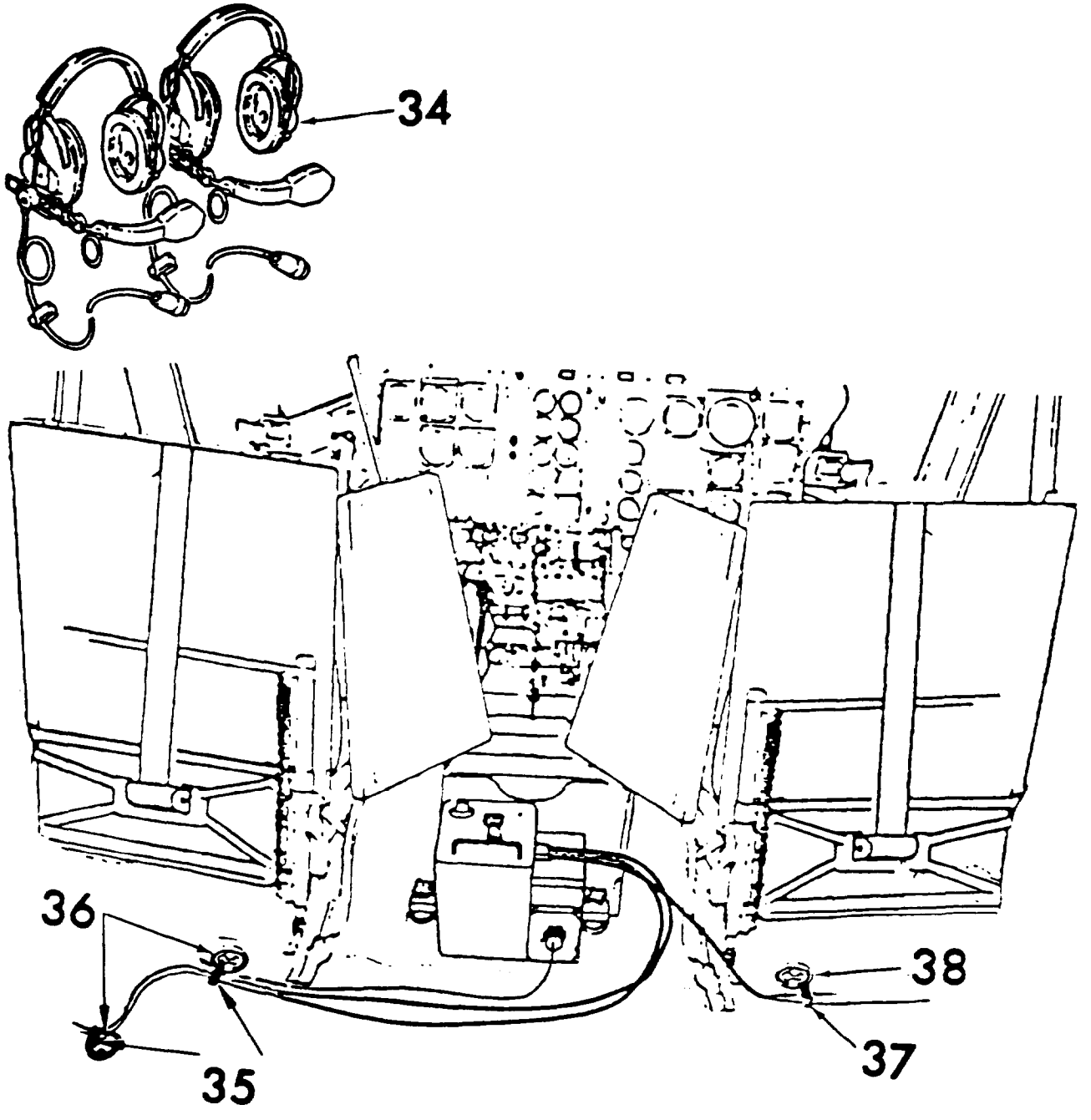


Locate cable assembly labeled W1, HEADSET-CKI. Connect P1 CKI to either of two connectors on bottom of CKI (27) Route cable up left edge of windshield center frame to cabin roof. across roof to insulating blanket. under blanket as required, then direct to copilot's intercom cordage connector (28). Connect connector labeled P2 ACFT (29) to copilot's cordage connector. Where there is no Insulating blanket, use fastener straps attached to cable to secure cable to cabin roof structure

Locate second cable assembly labeled W1, HEADSET-CKI. Attach connector P1 CKI to remaining connector (30) on bottom of CKI. Route cable up right edge of windshield center frame to cabin roof, across roof to insulating blanket. under blanket as required, then direct to pilot's intercom cordage connector (31). Connect connector labeled P2 ACFT (32) to pilot's cordage connector. Where there is no insulating blanket, use fastener straps attached to cable to secure to cabin roof structure.

Use cable loop clamps (MS 21919-WCG6) supplied with MILES system to secure both intercom cables to windshield frame (33).

Inside Installation Task 7: Install Interior Cables (Cont).



Connect pilot's and copilot's headsets (34) to connectors labeled P3 HEADSET.

Gather up excess cable located behind copilot's seat. Wrap fastener straps (35) around loose cable and tie-down rings (36) behind copilot's seat.

Gather up excess cable located behind pilot's seat. Wrap fastener straps (37) around loose cable and tie down ring (38) behind pilot's seat.

INITIAL ADJUSTMENTS, DAILY CHECKS AND SELF TEST

TEST TASK - LIST

Alignment Task. Some of the detectors on each belt are movable. They must be aligned by turning the movable detectors to the proper color index mark (1). Index marks are located on the mount (2) at the base of each detector (3).

There are three different color dots - red green, and white. The detectors on each belt are turned to one of these colors as given in Table 2-4.

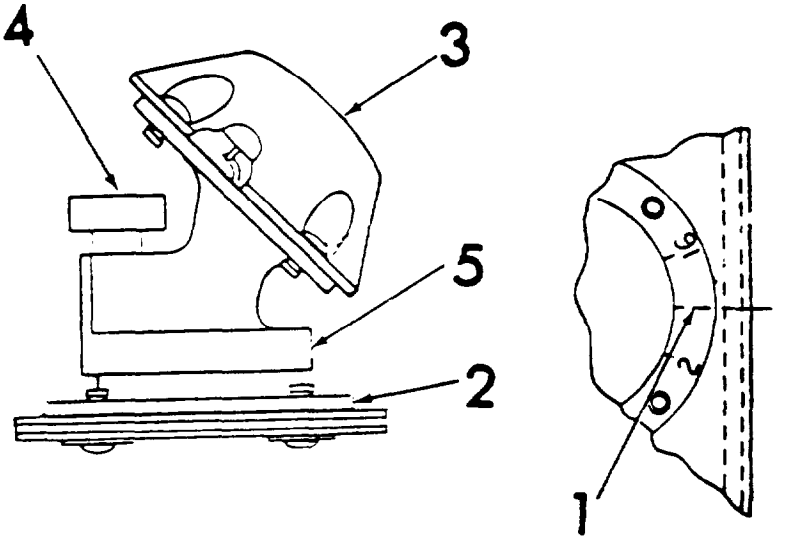
Table 2-4 Detector Belt Color Codes

Detector Belt	Color
Top Left	Red or White
Bottom Left	Red or White
Top Right	Green or White
Bottom Right	Green or White
Nose	White

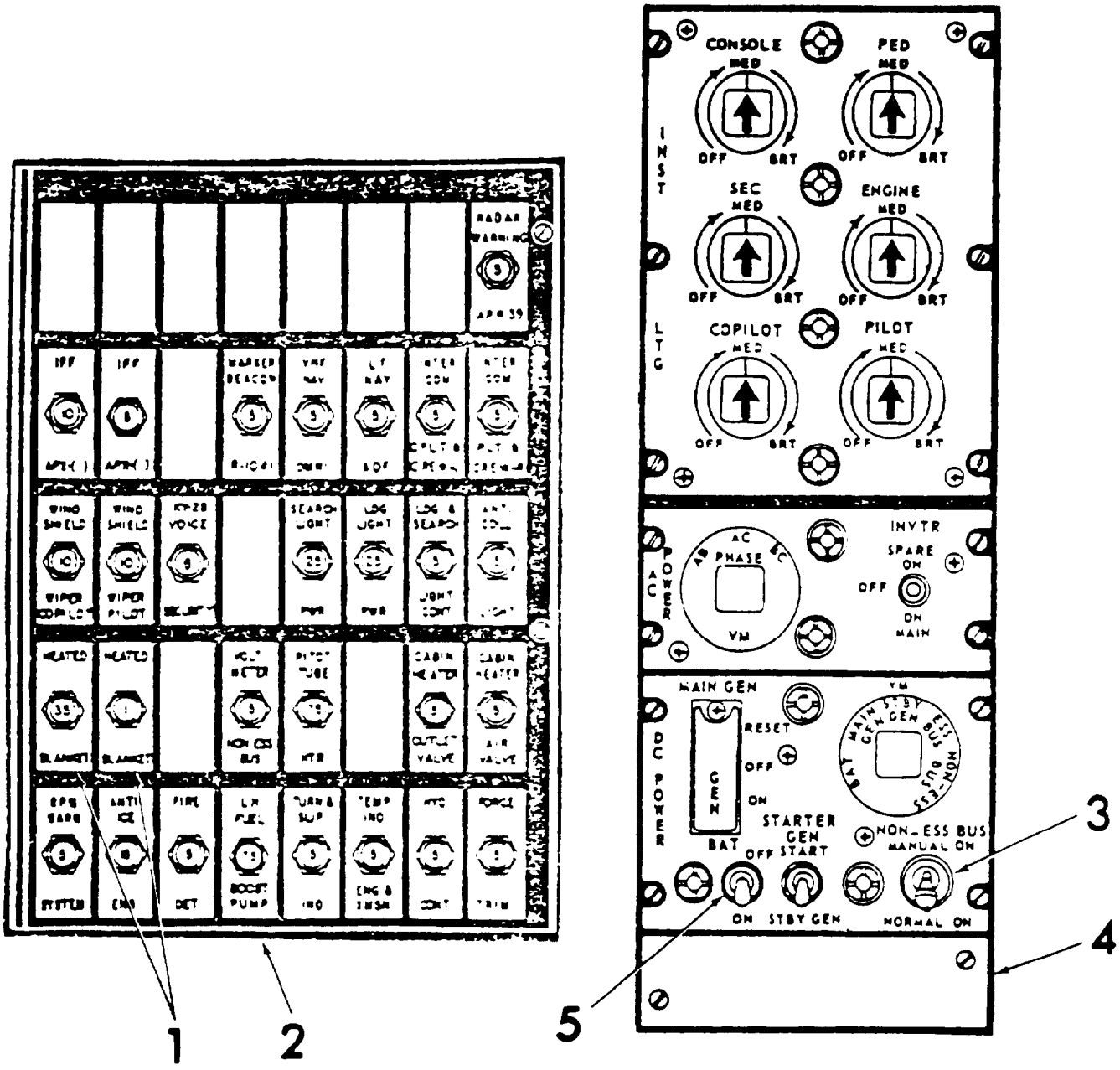
Pull up spring loaded plunger (4) and hold in up position.

Turn detector until index line (5) on detector base points to proper color index mark (1) as listed in Table 2-4.

Release plunger. Make sure plunger fully seats in its down position.



Test Tasks.



Prior to testing MILES system, make sure both HEATED BLANKET circuit breakers (1) on DC circuit breakers panel (2) are depressed.

Turn NON-ESS BUS switch (3) on DC Power Panel (4) to MANUAL ON. Turn BAT switch (5) to ON.

WARNING

M18 Smoke Canisters are the ONLY canisters authorized for use with the AKI Smoke Assembly.

Care should be taken when handling expended canisters as they are initially hot to the touch.

Failure to comply may result in injury to Personnel.

Make sure a grenade IS NOT installed in Smoke Indicator.

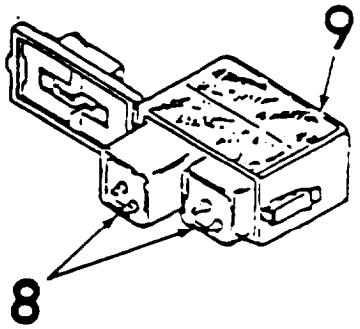
Open up Smoke Indicator housing cover (6) and pull extractor shaft (7) out to its extended position.

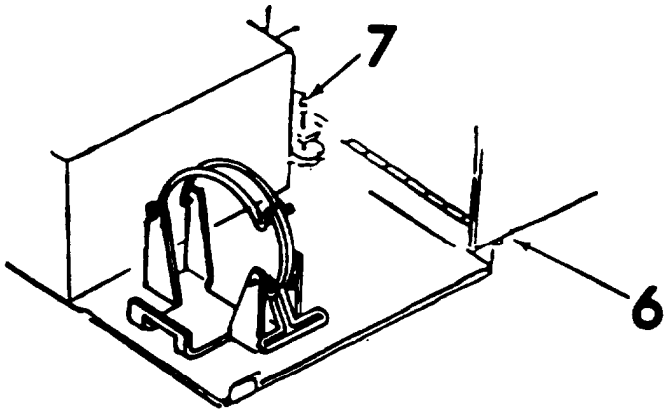
Make sure two 6 V batteries (8) have been installed in battery box (9)

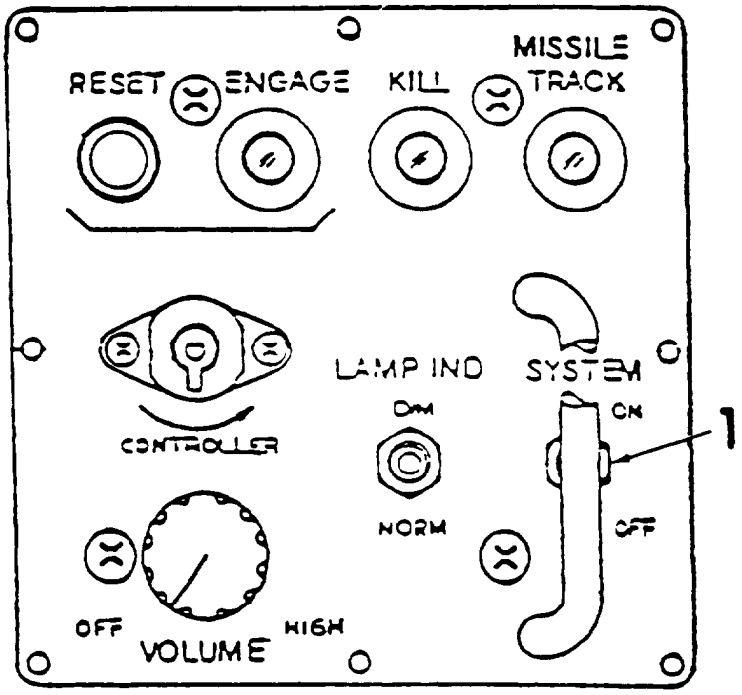
Ensure that system switch (10) on CKI is ON.

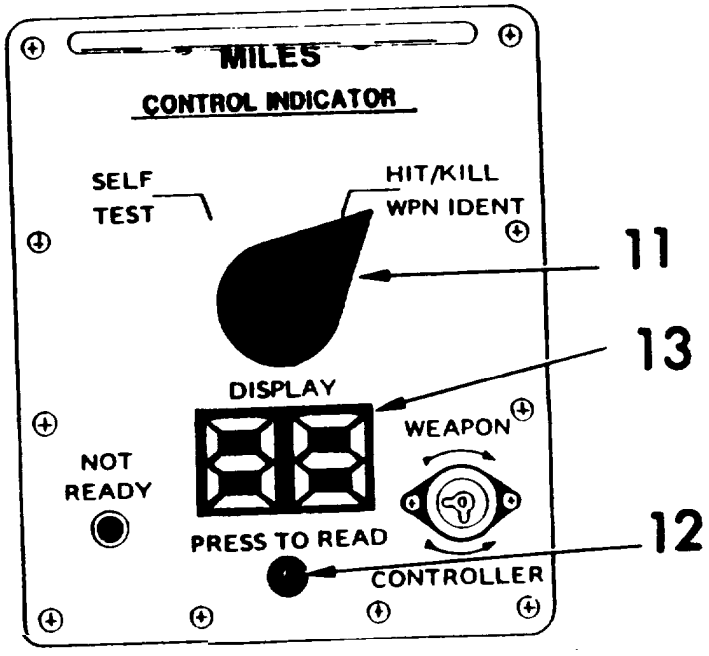
Turn switch (11) to HIT/KILL WPN IDENT Depress PRESS TO READ button (12) on ACIA. Verify display (13) indicates 00.

If any indication is not correct. turn to Troubleshooting, page 3-1.

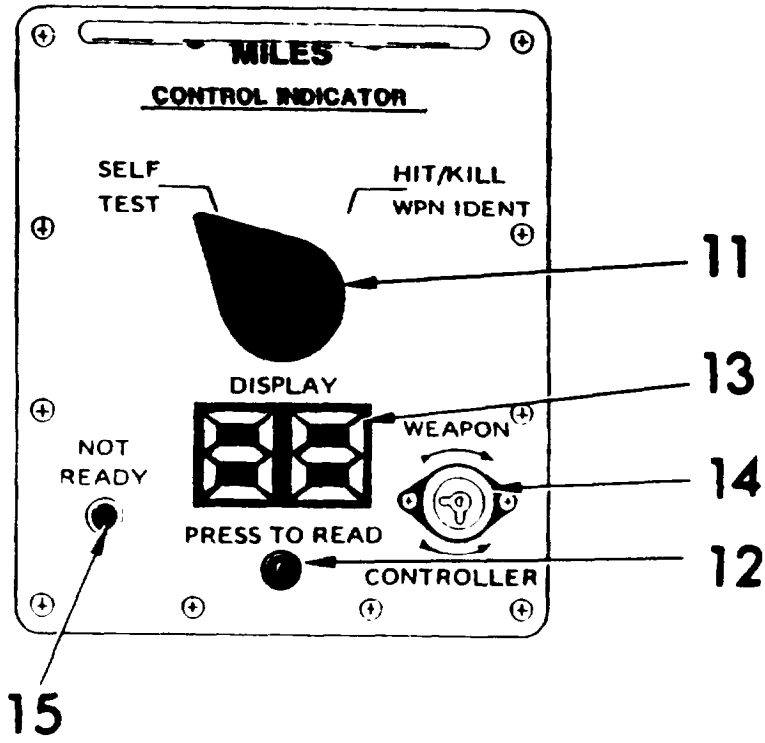








Test Tasks (Cont).



ASK Controller to insert his green controller key in receptacle (14) on ACIA turn to CONTROLLER position momentarily then remove key

Turn switch (11) to SELF TEST Verify display (13) indicates 88.

Verify NOT READY light (15) is OFF.

If any indication is not correct, turn to Troubleshooting, page 3-1.

Have Controller fire once at each detector with Controller Gun (16) set in “NEAR MISS” mode. Fire from a distance of at least 5 feet. Verify AKI (17) flashes twice and extractor shaft (7) in Smoke Indicator does not move.

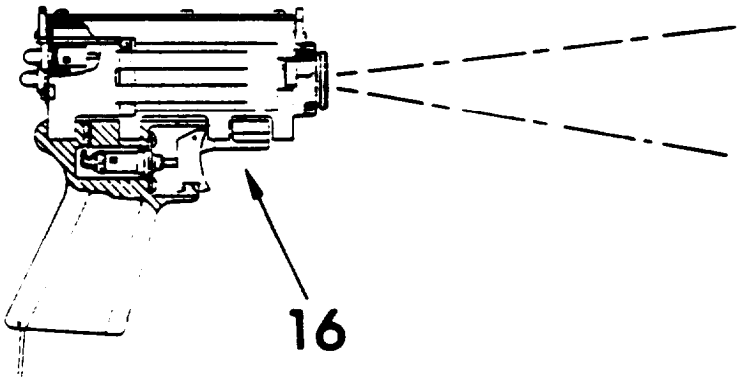
Verify CKI KILL light (18) is OFF.

Verify CKI ENGAGE light (19) is ON.

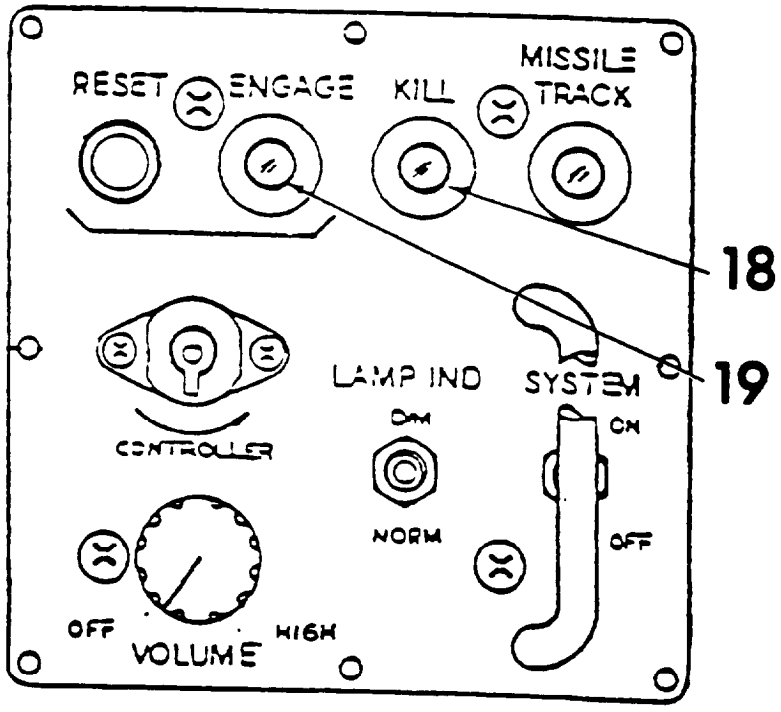
Verify intercom tone beeps twice

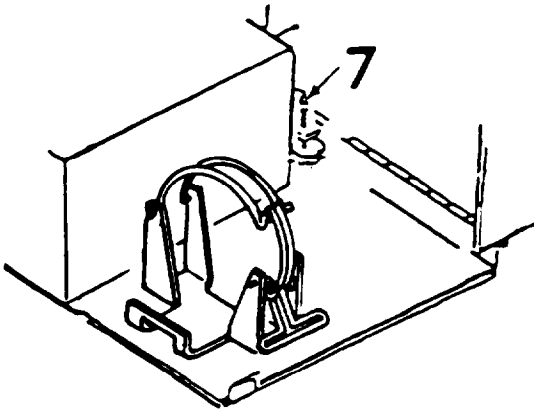
NOTE

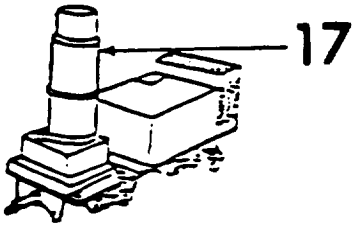
It is OK for one detector to be bad on each belt



If any indication is not correct turn to Troubleshooting. page 3-1.

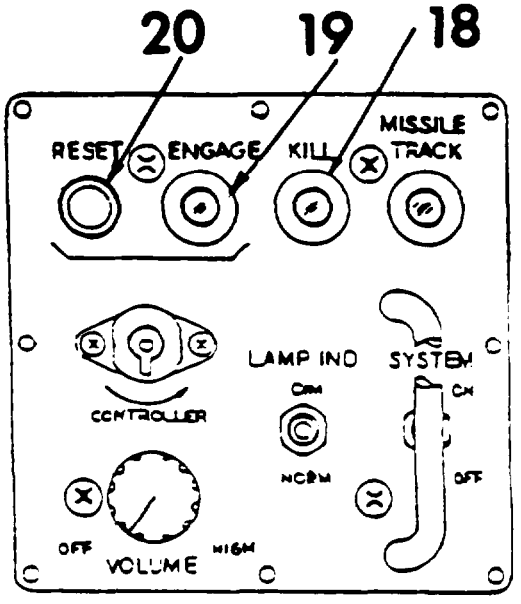


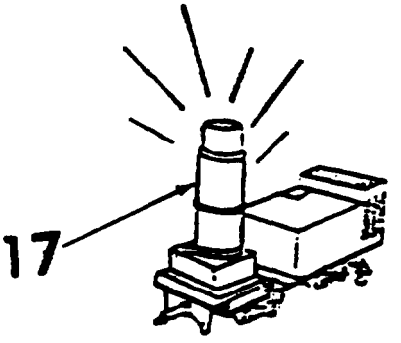


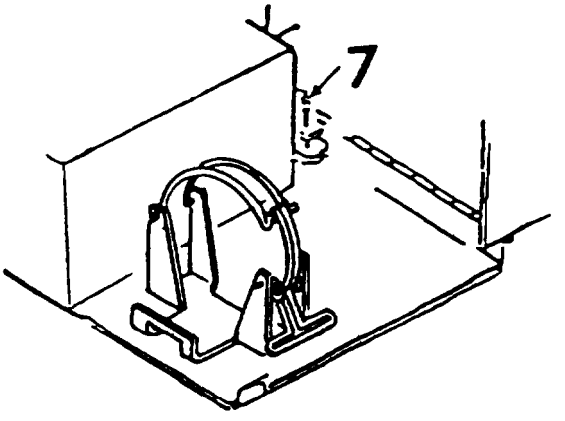


Test Tasks (Cont).

Depress RESET switch (20) on CKI and verify that ENGAGE light (19) is OFF.







Have Controller fire at a detector with one burst of UNIVERSAL KILL words and verify AK1 (17) flashes continuously and extractor shaft (7) on Smoke Indicator moves in.

Verify CKI KILL light (18) is ON

Verify CKI ENGAGE light (19) is OFF.

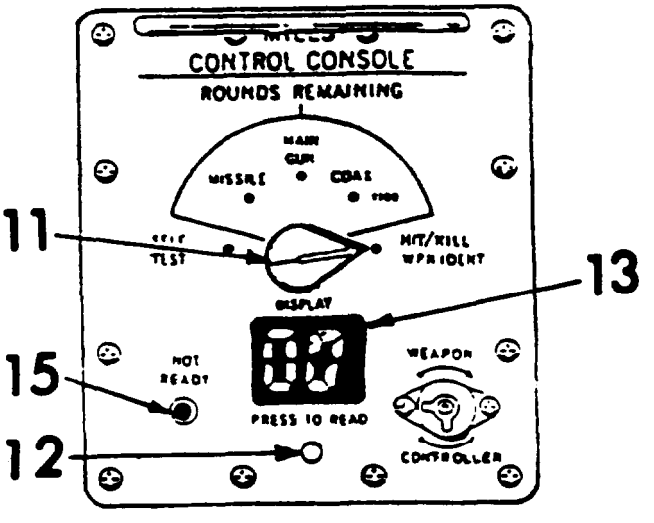
Verify intercom tone is ON.

Turn switch (11) to HIT/KILL WPN IDENT. Press PRESS TO READ button (12) on ACIA. Verify display (13) indicates 00.

Turn switch (11) to SELF TEST. Verify display (13) indicates 88.

Verify NOT READY light (15) is ON.

If any indication is not correct, turn to Troubleshooting. page 3-1.



OPERATIONAL TASKS - LIST

Operational Task 1: Complete Operator and Crew Member Checklist.

Perform the following Operator and Crew Member Checklist:

BEFORE INTERIOR AND EXTERIOR CHECK

WARNING

Do not preflight until all safety switches are set to their SAFE positions.

EXTERIOR CHECK

FUSELAGE. FRONT

1.	Front detector belt snugly mounted against fuselage	CHECK
2.	Detector modules aligned with white dot.	CHECK
3.	Safety lanyards secured	CHECK
4.	Belt brackets securely fastened against access panels	CHECK

FUSELAGE. LEFT SIDE

1.	Lower belt snugly mounted against fuselage	CHECK
2.	Upper belt snugly mounted against fuselage.	CHECK
3.	Belts securely buckled and safety lanyard attached.	CHECK
4.	Electronics box screw tightly fastened to fuselage on bottom belt.	CHECK
5.	Belt securely attached to forward and rear hard point clevises.	CHECK
6.	AKI/Smoke indicator assembly secured to skid.	CHECK
7.	AKI/Smoke cable connectors P1 and P3 connected to AKI/Smoke indicator assembly.	CHECK
8.	AKI/Smoke cable securely fastened to rear cross tube and bottom detector belt	CHECK

9.	Nose belt cable securely mounted with cable clamp.	CHECK
10.	Cable connection covered with flaps.	CHECK
11.	Upper and lower cables securely routed into aircraft.	CHECK

FUSELAGE, RIGHT SIDE

1.	Lower belt snugly mounted against fuselage.	CHECK
2.	Upper belt snugly mounted against fuselage.	CHECK
3.	Belts securely buckled and safety lanyard attached.	CHECK
4.	Electronics box screw tightly fastened to fuselage on bottom belt	CHECK
5.	Belt securely attached to forward and rear hard point clevises.	CHECK
6.	Cable connection covered with flaps.	CHECK
7.	Upper and lower cables securely routed into aircraft.	CHECK

INTERIOR CHECK

PILOT/COPILOT AREA

1.	CKI securely fastened to windshield retainer.	CHECK
2.	CKI electrical connectors securely mounted and cables fastened with cable straps.	CHECK
3.	Intercom functioning in headsets.	CHECK

PASSENGER AREA

1.	ACIA/battery box securely mounted.	CHECK
2.	Electrical connections securely made.	CHECK
3.	Cables secured to tie-down rings with fastener straps.	CHECK

Operational Task 1: Complete Operator and Crew Member Checklist (Cont).

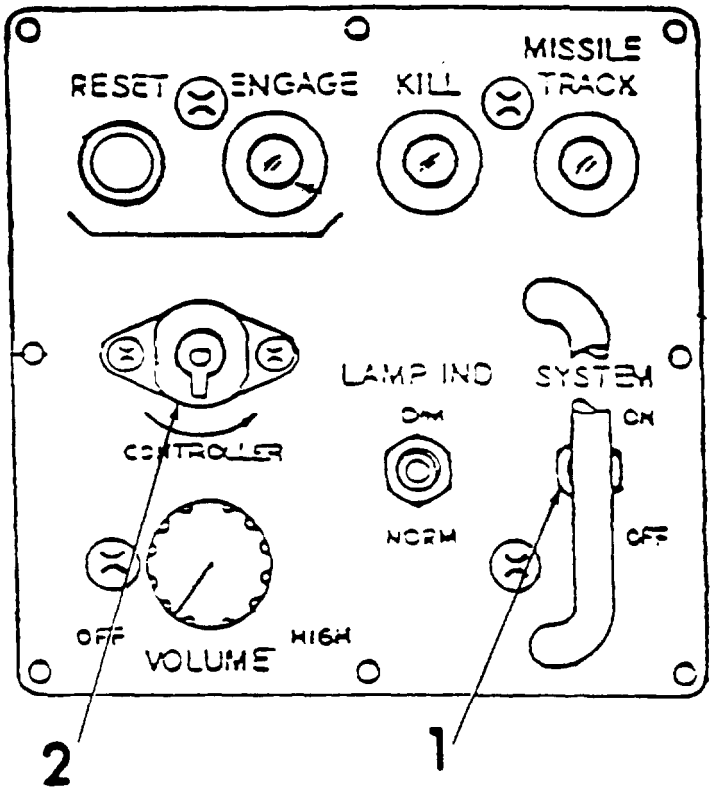
BEFORE TAKEOFF

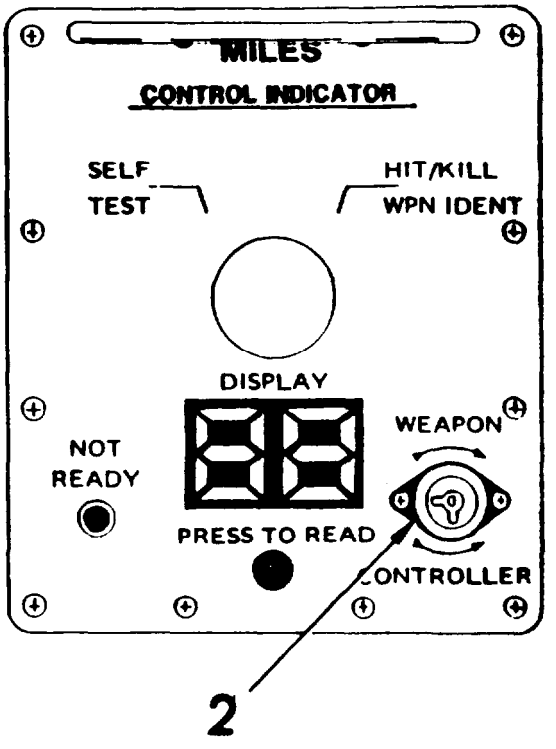
1.	Load smoke indicator with M18 smoke grenade only.	LOADED

BEFORE LEAVING HELICOPTER

1.	ACIA DISPLAY switch	HIT/KILL WPN IDENT
2.	PRESS TO READ	Momentarily press Read and note number.

Operational Task 2: Initialize MILES System.





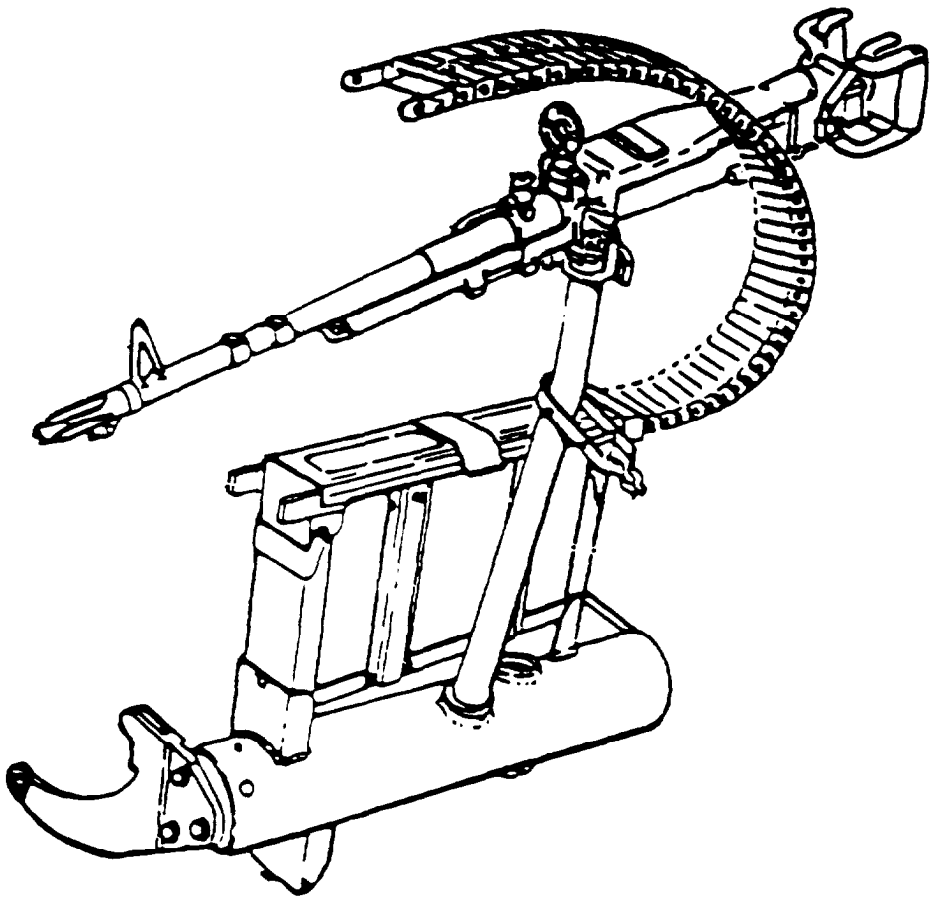
NOTE

The SYSTEM ON/OFF switch is for emergency use only. It shuts down the MILES and isolates it from other aircraft systems. If switch is turned OFF during an exercise, MILES will no longer operate until reset by a Controller.

Turn CKI system power ON/OFF switch (1) to ON.

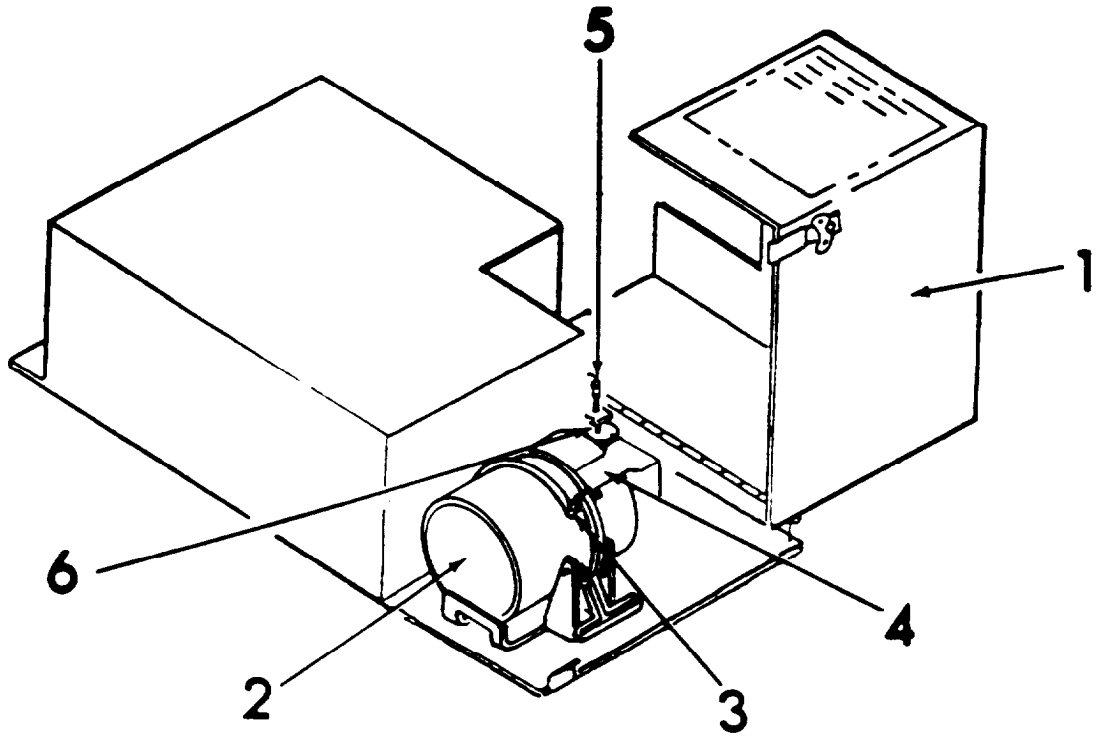
Initialize MILES systems by having Controller insert Controller Green Key in either CKI or ACIA receptacles (2). Turn key to and from CONTROLLER position. Remove key.

Operational Task 3: M60 Machine Gun Operation.



MILES equipment is available to simulate the firing characteristics of the M60 machine gun. This equipment is not supplied with the UH-1H MILES system equipment. If your helicopter is equipped with an M60 machine gun, refer to TM 9-1265-370-10-2 for instructions on installing and operating the M60 MILES laser transmitter.

Operational Task 4: Install Smoke Grenade. Just prior to takeoff on a MILES training mission. install a smoke grenade in Smoke lndicator mounted on left skid tube.



Unlatch and swing open canister cover (1).

WARNING

M16 Smoke Canisters are the ONLY canisters authorized for use with the AKI Smoke Assembly.

Care should be taken when handling expended canisters as they are initially hot to the touch.

Failure to comply may result in Injury to Personnel.

Install M18 smoke grenade (2) (Item 8. Section II, Appendix D) in canister clamp (3). Secure grenade by tightening clamp. Ensure that clamp does not restrict movement of grenade spoon (4).

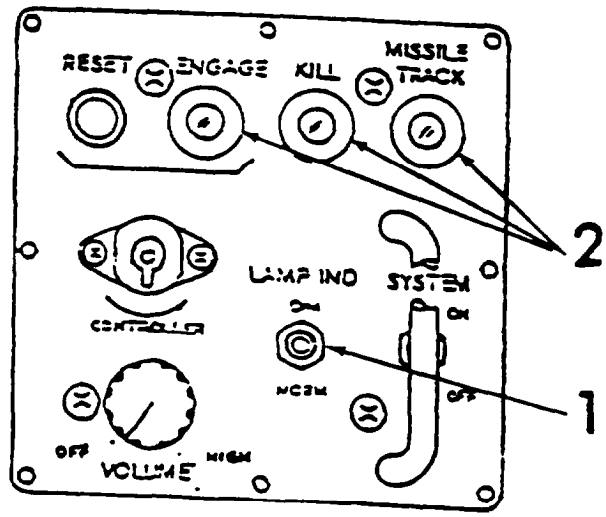
Pull extractor shaft out to its extended position. Connect clevis (5) of extractor shaft to smoke grenade ring (6). Secure with quick-release pin.

Close and latch canister cover (1).

NOTE

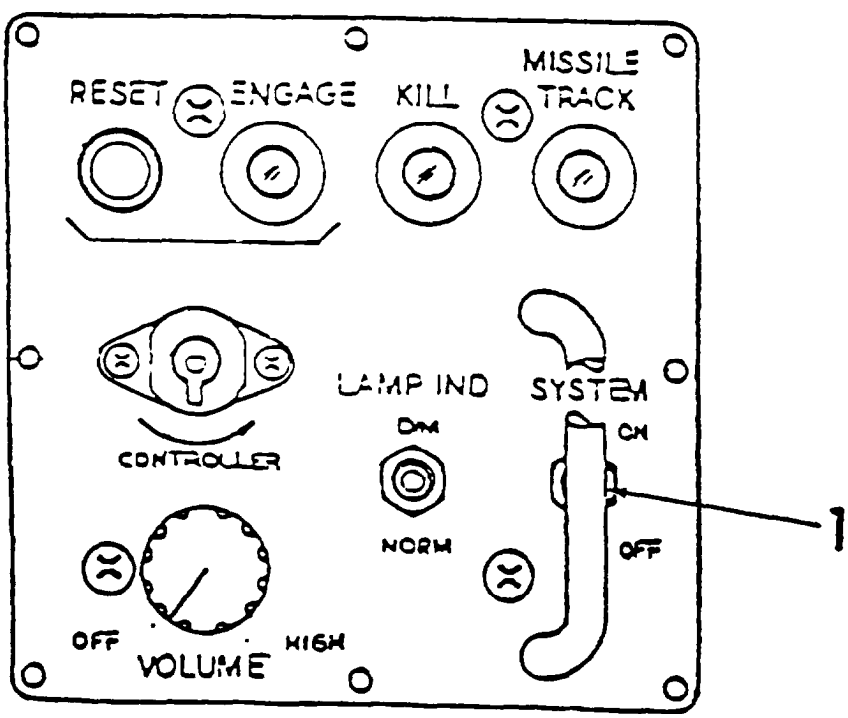
If you are operating without a smoke grenade, ensure that extractor shaft is pushed into smoke indicator housing.

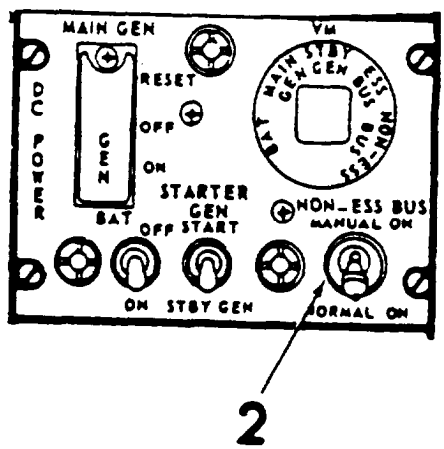
Operational Task 5: Night Operations.



Irises are built into CKI light displays. When night vision goggles are worn these irises should be dimmed. Turn LAMP IND switch (1) to DIM. Turn each iris (2) clockwise to dim light.

Operational Task 6: Emergency Operations.

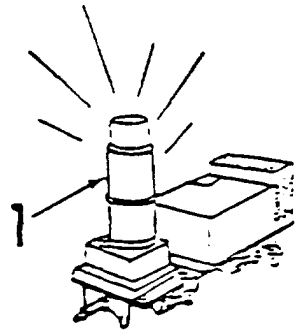




In an emergency the MILES system is shut off by turning CKI system switch (1) to OFF. Auxiliary power switch (2) will disconnect the 28 V dc supply to the MILES system,

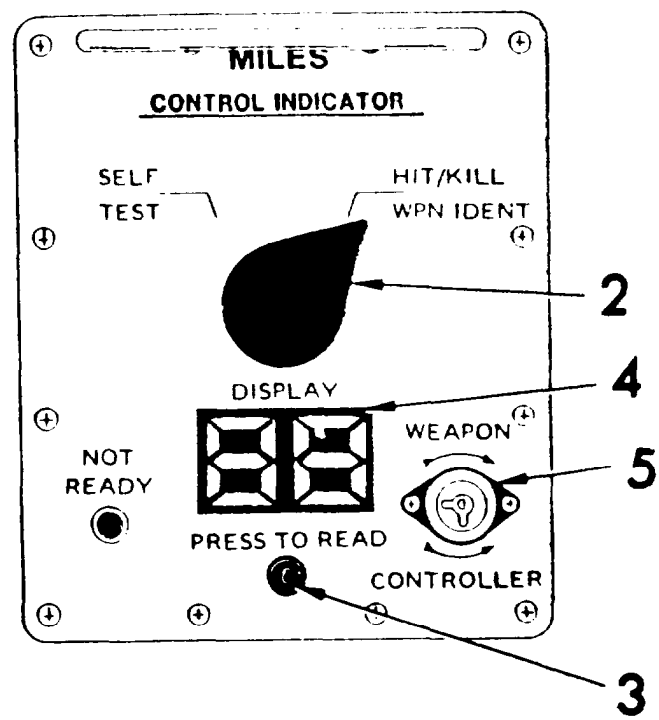
Operational Task 7: Recognizing Enemy Fire.

1 If you are hit by laser fire. the AKI (1) will flash. You will also hear tones on your intercom unit. A brief alarm (two AKI flashes and two intercom beeps) means a “NEAR MISS” occurred. Repeated alarm (four to six Intercom tones and four to six AKI flashes) means a “HIT” occurred. Continuous AKI flashing and intercom tone indicates a “KILL” occurred.



2. To determine what kind of weapon has fired on you, turn the switch (2) on the ACIA to HIT/KILL position. Press PRESS TO READ button (3) Display (4) will snow a number Use chart below to match number on display with type of weapon firing on you.

Display Number	Weapon
00	Controller Gun
07	TOW
08	Dragon
12	105 mm
13	152 mm
14	-75-inch Rocket
15	Viper
16	120 mm
22	25 mm
23	20 mm Cannon
24	M2/M85
25	Chaparral
26	Stinger
27	M16 or M60 machine gun
99	Self-Kill

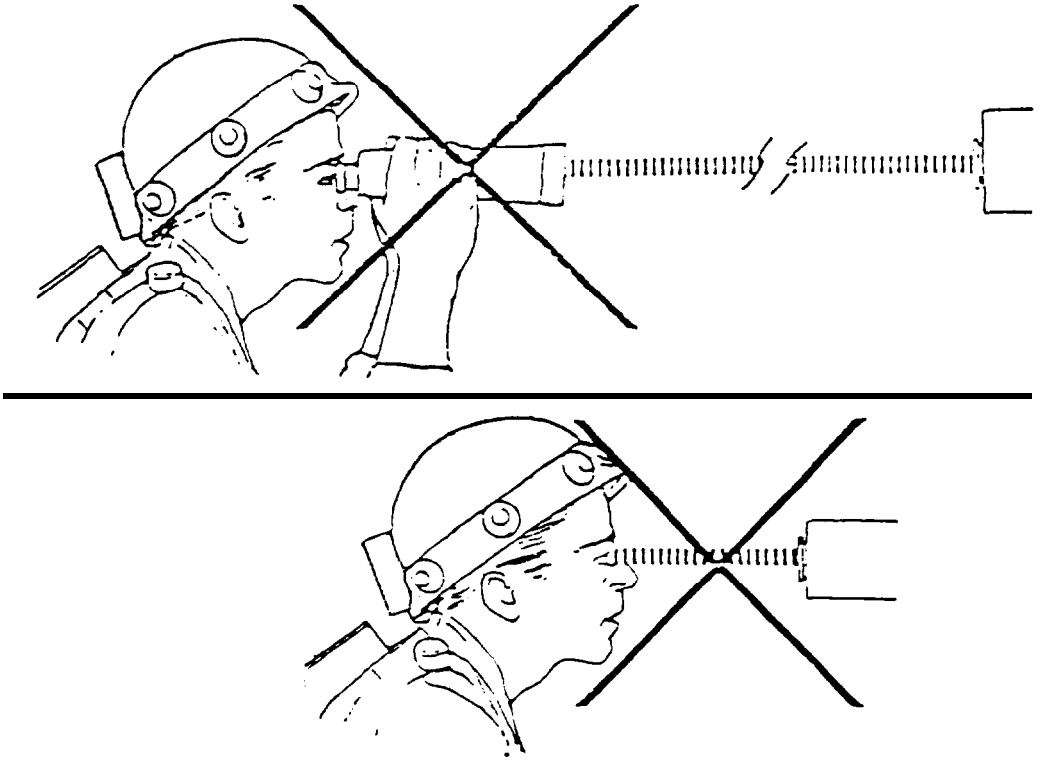


Operational Task 7: Recognizing Enemy Fire (Cont).

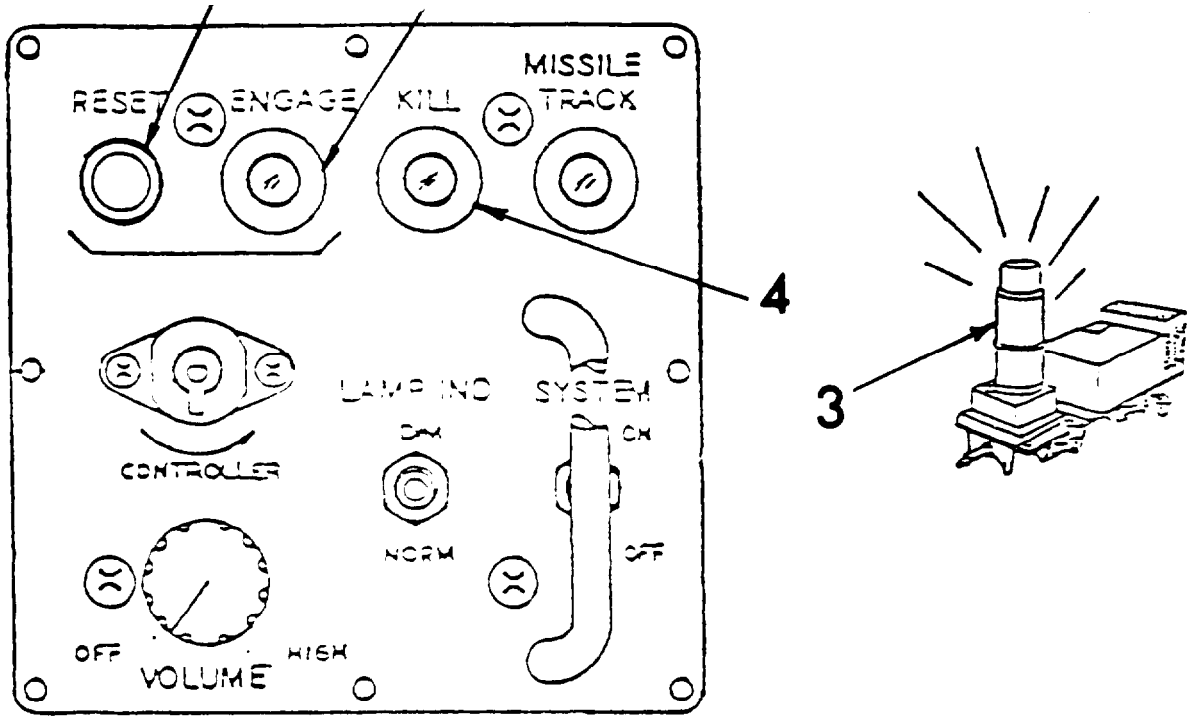
WARNING

Although the laser light emitted by MILES laser transmitters is considered eye safe by the Bureau of Radiological Health, suitable precautions must be taken to avoid possible eye damage from over-exposure to this radiated energy. Precautionary measures include the following.

- Avoid viewing laser emitter at close range (less than 12 meters). Increasing the eye-to-laser distance greatly reduces the risks of overexposure.
- Avoid viewing the laser emitter directly along the optical axis of radiated beam
- Especially avoid viewing the laser emitter through magnifying optics at engagement ranges of less than 75 meters for STINGER, VULCAN, and TOW, and 110 meters for the CHAPARRAL.
- Avoid allowing personnel with optics of higher transmission or magnifying power than normal tank optics to view STINGER VULCAN or TOW within 150 meters or the CHAPARRAL within 330 meters.



Operational Task 8: Resetting System After a “KILL”.



WARNING

In Inclement weather shut off AKI strobe to prevent experiencing vertigo during flight AK1 strobe is extinguished with circuit breakers for HEATED BLANKET.

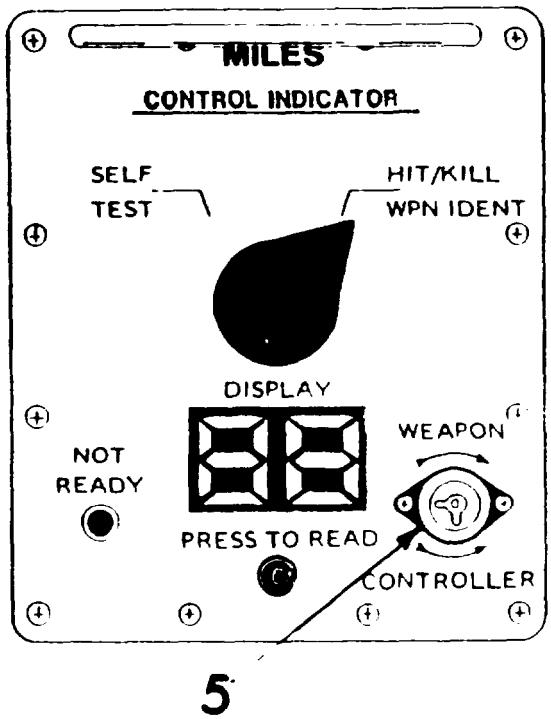
NOTE

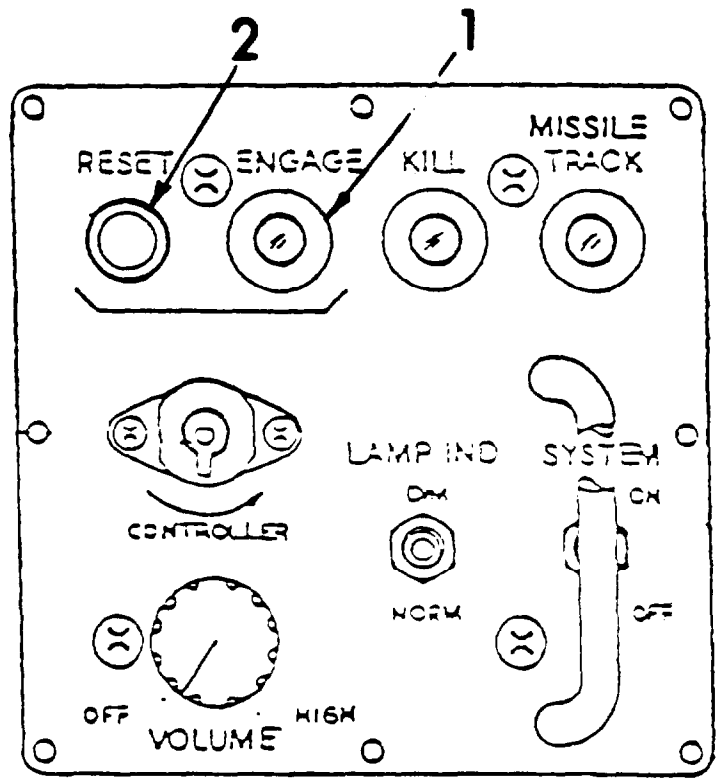
If your helicopter: is “KILLED,” return to your base (unless otherwise Instructed). Your UH-1H MILES system must be reset by the Controller and the spent smoke grenade replaced.

ENGAGE light (1) on CKI may be reset at any time by pressing the RESET button (2).

AKI (3) and KILL light (4) on CKI must be reset by a Controller after the helicopter lands

Operational Task 8: Resetting System After a "KILL" (Cont).





The Controller resets the system by inserting his Controller (Green) Key in receptacle (5) on ACIA, turning to CONTROLLER position momentarily, then removing key.

NOTE

If ENGAGE light (1) on CKI comes on when Controller resets system, depress RESET button (2) and ENGAGE light (1) should extinguish.

Remove and replace spent smoke grenade.

WARNING

M18 Smoke Canisters are the ONLY canisters authorized for use with the AKI Smoke Assembly.

Care should be taken when handling expended canisters as they are initially hot to the touch.

Failure to comply may result in injury to personnel.

Have Controller check condition of batteries using MILES Systems Test Set.

POSTOPERATIONAL TASKS - LIST

Postoperational Task 1 Inside Postoperational Task.

Disconnect and remove cables to battery box, ACIA, AKI, detector belts, intercom, helicopter: 28 V dc supply. and AKI/Smoke Indicator. See lnside lnstallation Task 7 (page 2-68).

Remove CKI and ACIA Remove two battieries from battery bow See Inside Installation Tasks 3 and 5 (pages 2-64 and 2-66).

Postoperational Task 2: Outside Postoperational Task.

Disconnect cables from all five detector belts See Outside lnstallation Tasks 12, 13 and 15 (See page 2-10).

Disconnect or loosen all fastener straps and other cable securing devices so that the cabling is free of helicopter. See Outside Installation Tasks 12, 13, 14 and 15 (See page 2-10).

Disconnect cables to AKI/Smoke Indicator Assembly. See Outside Installation Task 14 (See page 2.59).

Loosen belt end assemblies. See Outside lnstallation Tasks 4, 5, 6, 7 and 8 (See page 2-10).

Disconnect all safety cables See Outside Installation Tasks 4, 5, 6, 7 and 8 (See page 2.10).

Loosen or remove all screws holding detector belt plates to the fuselage and remove plates. See Outside lnstallation Tasks 4, 5, 6, 7 and 8 (See page 2-10).

Tighten screws. Make sure proper screws are replaced in fuselage. See Outside Installation Tasks 4, 5, 6, 7 and 8 (See page 2-10)

Remove detector belts and end belts. See Outside Installation Tasks 4, 5, 6, 7 and 8 (See page 2-10).

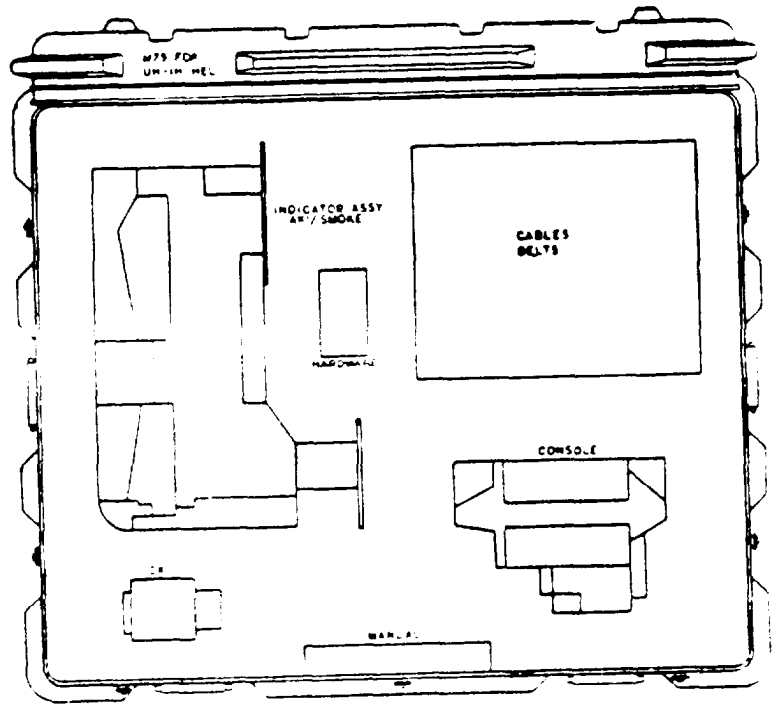
NOTE

Do not remove fastener tape attached to helicopter.

Remove AKI/Smoke Indicator Assembly. See Outside Installation Task 10 (See page 2.52)

Postoperational Task 3: Transit Case Packing Instructions.

Store MILES equipment in appropriate Iocation in transit case.



Postoperational Task 4: Return Equipment.

Return all equipment to your NCOIC.

Include MILES UH-1H transit case.

Unused M18 Smoke Grenades.

Authorized Materials (Appendix C).

MILES M60 machine gun equipment (if Issued)

SECTION IV. OPERATION UNDER UNUSUAL CONDITIONS

Under unusual conditions, operational procedures for the MILES equipment have the same limitations as the UH-1H Utility Helicopter.

CHAPTER 3

MAINTENANCE INSTRUCTIONS

SECTION I. LUBRICATION INSTRUCTIONS

No lubrication is required for the MILES UH-1H Helicopter equipment.

SECTION II. TROUBLESHOOTING PROCEDURES

Table 3-1 (Symptom Index - No Test Set! and Table 3-3 (Symptom Index - MILES System Test Set) list the common malfunctions which you may find during the operation or maintenance of the MILES UH-1H Helicopter or its components. You should perform the Tests/Inspections and Corrective Actions in the order listed.

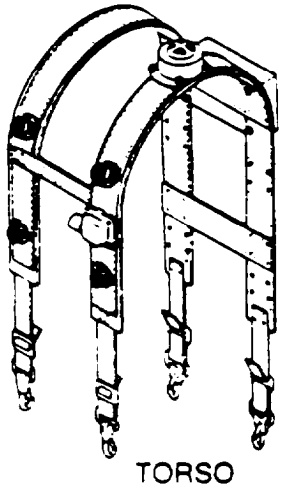
Table 3-2, Troubleshooting - No MILES System Test Set, lists corrective actions by removing and replacing components.

Table 3-4, Troubleshooting - With MSTS, requires use of troubleshooting test equipment shown in figure 3-1.

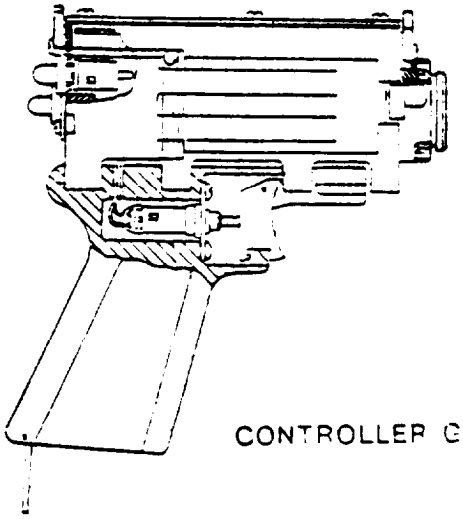
This manual cannot list all malfunctions that may occur, nor all Tests or Inspections and Corrective Actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your Supervisor.

Troubleshooting procedures in table 3-4 require the assistance of a Controller, a MILES System Test Set (MSTS) (Section II Appendix C), Man Worn Laser Detector Assembly (Section II, Appendix C), and Controller Gun (Section II, Appendix C).

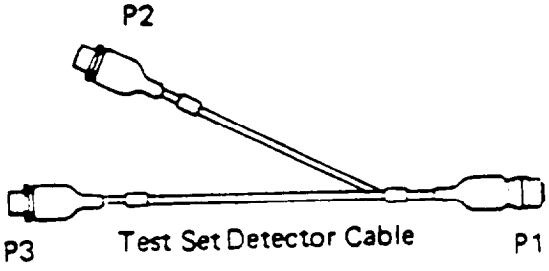
The Controller will provide this equipment and perform troubleshooting procedures. Crew members will assist the Controller. Figure 3-2 is a component connection diagram and should be used as a reference.



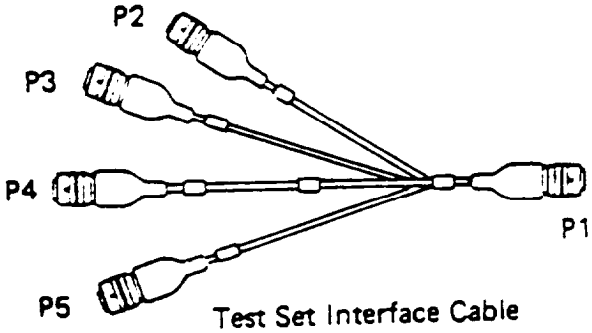
TORSO
HARNESS



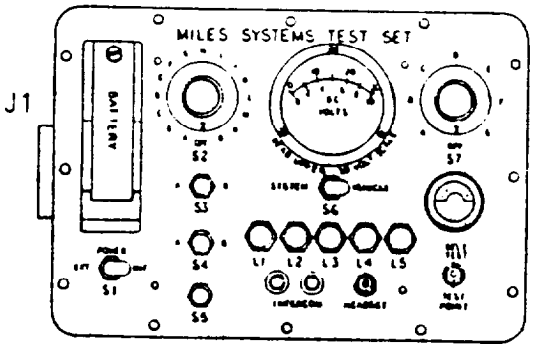
CONTROLLER GUN



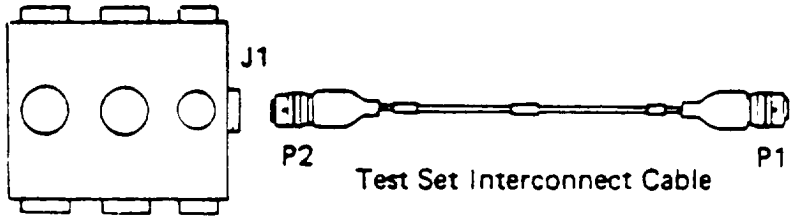
Test Set Detector Cable



Test Set Interface Cable



* MILES SYSTEM TEST SET
* (PRELIMINARY DESIGN)



Test Set Junction Box

Test Set Interconnect Cable

Figure 3-1. MILES UH-1H Helicopter Troubleshooting Equipment

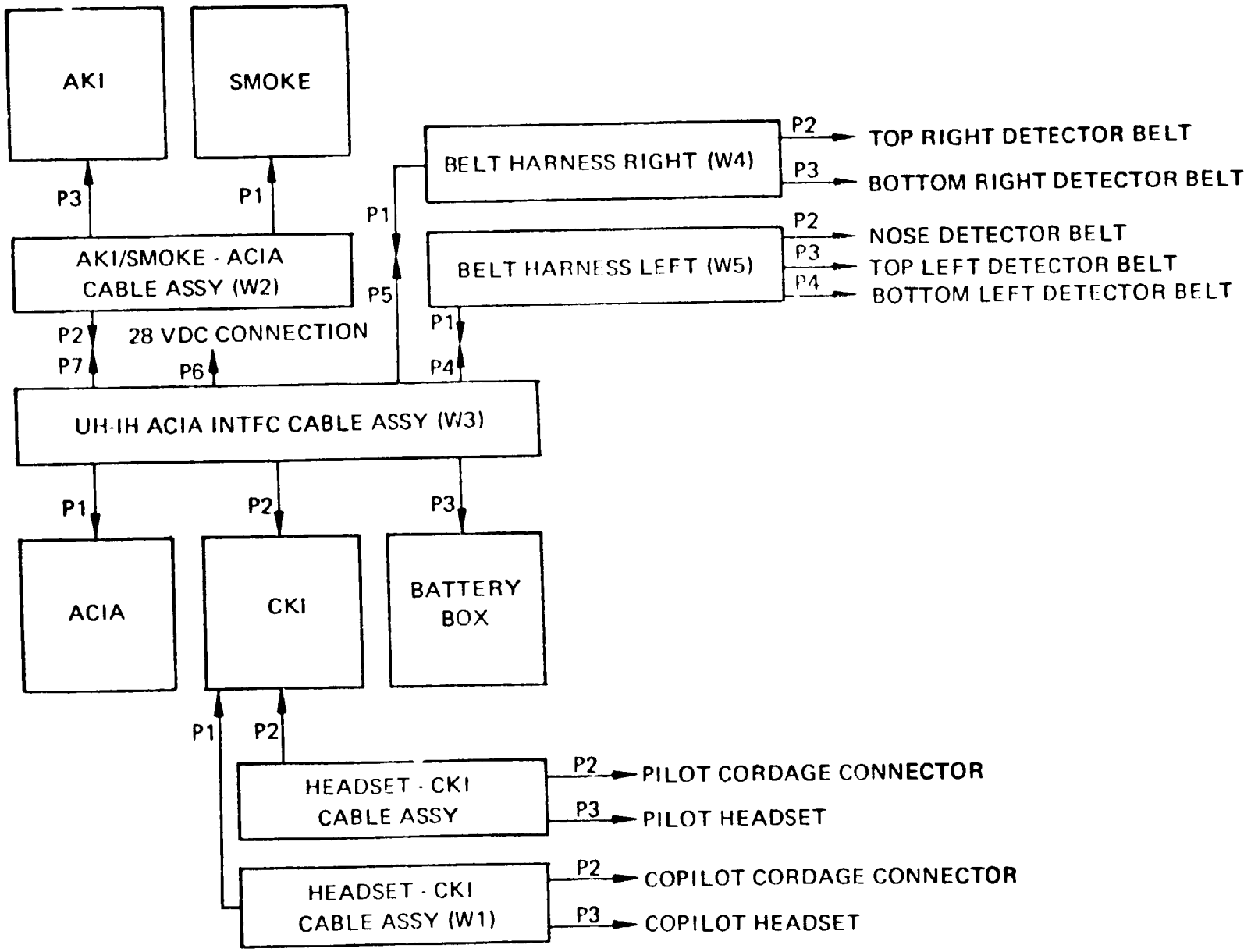


Figure 3-2. MILES UH-1H System Interconnect Diagram

WARNING

If task requires Vehicle Equipment Power to be turned ON, ensure Vehicle Equipment Power is turned OFF upon completion of task. Failure to comply may result in Personal Injury or Equipment Damage.

NOTE

If no Test Set is available. go to Table 3-1 (below). If a MILES System Test Set (MSTS) is available, go to Table 3-3, page 3-14.

Table 3-1. SYMPTOM INDEX
NO TEST SET

Unit	Symptom	Troubleshooting Procedure Pace
1. Aircraft Control Indicator Assembly (ACIA) Test	(1) Display Is Blank	3-5
	(2, Display Does Not Indicate 88	3-6
	(3) Weapon Identification Code Is Not Displayed	3-7
	(4) NOT READY Lamp Does Not Light	3-7
	(5) Display Indicates 33	3-7
2. Cockpit Kill Indicator (CKI) Test	(1) Any indicator Lamp Does Not Light	3-8
	(2) KILL Lamp Does Not Light When System Is Killed And Smoke Assembly Operates	3-8
	(3) KILL Lamp Does Not Light When System Is Killed And Smoke Assembly Does Not Operate	3-8
	(4) ENGAGE Lamp Does Not Light	3-8
	(5) ENGAGE Lamp Does Not Reset	3-9
3. Smoke Assembly Test	(1) Smoke Assembly Inoperative	3-9
4. Aircraft Kill Indicator (AKI) Test	(1) AKI Inoperative With Correct CKI Lamp indication	3-10
	(2) AKI Inoperative With No CKI ENGAGE Lamp Indication	3-11
5. Aircraft Detector Assemblies Test	(1) Any One Detector Belt Fails	3-11
	(2) All Detector Belts Fail	3-12
6. Headset Test	(1) Headsets Faulty	3-12

Table 3-2. Troubleshooting - No MILES System Test Set

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

NOTE

The following Troubleshooting procedures are common to all malfunctions listed. These should be performed before attempting procedures listed for each item of AGES/AD equipment.

Disconnect connector(s) from unit being tested. Wait one second and reconnect.

If malfunction is corrected, return system to service.

If unit still malfunctions disconnect Battery Box from UH-1H ACIA INTFC Cable Assembly, connector P3. Wait one second and reconnect.

If malfunction is corrected, return system to service.

If unit stiff malfunctions remove battery from Battery Box. Replace with new battery

If malfunction is corrected, return system to service.

If unit still malfunctions remove Battery Box. Replace with Battery Box known to be usable. Insert new battery.

If malfunction is corrected, return system to service.

1. AIRCRAFT CONTROL INDICATOR ASSEMBLY (ACIA) TEST

(1) Display Is Blank

Place SYSTEM switch on CKI to OFF. Pause for one second and place to ON. Check ACIA display.

If display indicates 00, return system to service.

If display is blank. remove ACIA. Replace with ACIA known to be operable Check ACIA display.

If display indicates 00, return system to service.

If display is blank, reinstall former ACIA. Remove CKI. Replace with CKI known to be operable. Check ACIA display.

If display indicates 00, return system to service.

Table 3-2. Troubleshooting - No MILES System Test Set (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

1. AIRCRAFT CONTROL INDICATOR ASSEMBLY (ACIAI) TEST (CONT)

(1) Display Is Blank (Cont)

If display is blank, reinstall former CKI. Remove UH-1H ACIA INTFC Cable Assembly. Replace with cable assembly known to be usable. Check ACIA display.

If display indicates 00, return system to service.

If display is blank, reinstall former UH-1H ACIA INTFC Cable Assembly. Each of the assemblies and cable assemblies listed below should be removed and replaced, ONE AT A TIME and IN THE ORDER LISTED. Check display reading between each removal and replacement.

a. NOSE DETECTOR BELT
b. BOTTOM LEFT DETECTOR BELT
c. TOP LEFT DETECTOR BELT
d. BELT HARNESS LEFT (W5)
e. AKI
f. SMOKE ASSEMBLY
g. AKI/SMOKE-ACIA CABLE ASSEMBLY (W2)
h. BOTTOM RIGHT DETECTOR BELT
i. TOP RIGHT DETECTOR BELT
j. BELT HARNESS RIGHT (W4)

If display indicates 00 during any step of the procedure, return system to service.

If display still does not indicate 00, verify UH-1H Electrical System is operational.

If electrical system is operational, return system to service.

If electrical system is not operational, correct electrical system malfunction (refer to TM 55-1520-210-10). Return system to service.

(2) Display Does Not Indicate 88

Failure of ACIA to display 88 indicates a malfunction of the ACIA.

Replace defective ACIA. Return system to service.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

(3) Weapon Identification Code Is Not Displayed

Failure of ACIA to display a Weapon Identification Code indicates a malfunction Of the ACIA.

Replace defective ACIA. Return system to service.

Failure of NOT READY lamp to light when a KILL response is indicated by AKI/Smoke Assembly and CKI indicates a malfunction of the ACIA.

Replace defective ACIA. Return system to service.

(5) Display Indicates 33

Place SYSTEM switch on CKI to OFF. Pause one second and place SYSTEM switch to ON.

Insert Controller Key into key receptacle on CKI. Turn counterclockwise to CONTROLLER. Turn back and remove key.

Turn ACIA Select switch to HIT/KILL WPN IDENT. turn to SELF TEST. Check ACIA display.

If display indicates 88, return system to service

If display does not indicate 88, remove ACIA. Replace with ACIA known to be operable. Check ACIA display.

If display indicates 88, return system to service.

If display does not indicate 88, reinstall former ACIA. Remove CKI. Replace with CKI known to be operable. Check display reading.

If display indicates 88, return system to service

If display does not indicate 88, reinstall former CKI.

Replace defective UH.1H ACIA INTFC Cable Assembly (W3). Return system to service.

Table 3-2. Troubleshooting - No MILES System Test Set (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

2. COCKPIT KILL INDICATOR (CKI) TEST

(1) Any Indicator Lamp Does Not Light

Momentarily depress each indicator lamp on CKI.

If any indicator lamp fails to light, replace defective CKI. Return system to service.

(2) KILL Lamp Does Not Light When System Is Killed And Smoke Assembly Operates

Failure of the KILL lamp to light when Smoke Assembly is operating properly indicates a malfunction in the CKI.

Replace defective CKI. Return system to service.

(3) KILL Lamp Does Not Light When System Is Killied And Smoke Assembly Does Not Operate

Remove CKI and replace with CKI known to be operational. Check KILL lamp.

If KILL lamp lights, return system to service.

If KILL lamp does not light, reinstall former CKI. Remove ACIA. Replace with ACIA known to be operable. Check KILL lamp.

If KILL lamp lights, return system to service.

If KILL lamp does not light, reinstall former ACIA.

Replace defective UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

(4) ENGAGE Lamp Does Not Light

Remove CKI. Replace with CKI known to be operational. Check ENGAGE light.

If ENGAGE lamp lights, return system to service.

If ENGAGE lamp does not light, reinstall former CKI.

Replace defective UH-1H ACIA INTFC Cable Assembly (W/3). Return system to service.

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

(5) ENGAGE Lamp Does Not Reset

Remove CKI. Replace with CKI known to be operational. Check ENGAGE lamp for reset.

If ENGAGE lamp resets, return system to service.

If ENGAGE lamp does no: reset, reinstall former CKI. Remove ACIA. Replace with ACIA known to be operable. Check ENGAGE lamp for reset.

If ENGAGE lamp resets, return system to service.

If ENGAGE lamp does not reset, reinstall former CKI. Remove AKI. Replace with AKI known to be operable Check ENGAGE lamp for reset.

If ENGAGE lamp resets, return system to service.

If ENGAGE lamp does not reset, reinstall former AKI. Remove AKI/Smoke-ACIA Cable Assembly. Replace with cable assembly known to be usable. Check ENGAGE lamp for reset.

If ENGAGE lamp resets, return system to service.

If ENGAGE lamp does not reset, reinstall former AKI/Smoke-ACIA Cable Assembly.

Replace defective UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

3. SMOKE ASSEMBLY TEST

(1) Smoke Assembly Inoperative

Check the following:

UH-1H ACIA INTFC Cable Assembly (W3), connector P6 is properly connected.

NON-ESS BUS Selector is set to MANUAL ON if operating on aircraft battery power.

BAT switch is ON.

Both HEATED BLANKET circuit breakers are ON.

If Smoke Assembly does not operate, remove CKI. Replace with CKI known to be operable. Retest Smoke Assembly.

If assembly operates correctly (extractor is pulled into housing), return system to service.

Table 3-2. Troubleshooting - No MILES System Test Set (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

3. SMOKE ASSEMBLY TEST (CONT)

(1) Smoke Assembly Inoperative (Cont)

If Smoke Assembly does not operate, reinstall former CKI. Remove Smoke Assembly. Replace with assembly known to be operable. Retest Smoke Assembly.

If assembly operates correctly, return system to service.

If Smoke Assembly does not operate, reinstall former Smoke Assembly. Remove ACIA. Replace with ACIA known to be usable. Retest Smoke Assembly.

If assembly operates correctly, return system to service

If Smoke Assembly does not operate, reinstall former ACIA. Remove AKI/Smoke-ACIA Cable Assembly. Replace with cable assembly known to be usable. Retest Smoke Assembly.

If assembly operates correctly, return system to service.

If Smoke Assembly does not operate, reinstall former AKI/Smoke-ACIA Cable Assembly. Remove UH-1H ACIA INTFC Cable Assembly. Replace with cable assembly known to be usable. Retest Smoke Assembly.

If assembly operates correctly, return system to service.

If Smoke Assembly does not operate, reinstall former UH-1H ACIA INTFC Cable Assembly. Verify UH-1H Electrical System is operational.

If electrical system is operational, return system to service.

If electrical system is not operational, correct electrical system malfunction (refer to TM 55-l520-210-10). Return system to service.

4. AIRCRAFT KILL INDICATOR (AKI) TEST

(1) AKI Inoperative With Correct CKI Lamp Indication

Check the following:

UH-1H ACIA INTFC Cable Assembly (W3), connector P6 is properly installed.

HEATED BLANKET circuit breaker switch is ON.

BAT switch is ON.

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

NON-ESS BUS selected to MANUAL ON if operating on aircraft battery power.

If AKI does not operate, remove AKI. Replace with AKI known to be operable. Retest AKI.

If AKI operates correctly, return system to service.

If AKI does no? operate, reinstall former AKI. Remove ACIA. Replace with ACIA known to be operable. Retest AKI.

If AKI operates correctly, return system to service.

If AKI does not operate, reinstall former ACIA. Remove AKI/Smoke-ACIA Cable Assembly (W2). Replace with cable assembly known to be usable. Retest AKI.

If AK1 operates correctly, return system to service.

If AKI does not operate, reinstall former AKI/Smoke-ACIA Cable Assembly. Remove AKI/Smoke-ACIA Cable Assembly. Verify UH-1H Electrical System is operational

If electrical system is operationa!. return system to service.

If electrical system is not operational. correct electrical system malfunction (refer to TM 55-1520-210-10). Return system to service.

(2) AKI Inoperative With No CKI ENGAGE Lamp Indication

If AKI does not operate and CKI ENGAGE lamp does not light, remove ACIA. Replace with ACIA known to be operable. Retest AKI.

If AKI operates and CKI ENGAGE lamp lights, return system to service.

If AKI does not operate and CKI ENGAGE lamp does not light, reinstall ACIA.

Replace UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

5. AIRCRAFT DETECTOR ASSEMBLIES TEST

(1) Any One Detector Belt Fails

If Nose Detector belt fails, remove belt. Replace with belt known to be usable. Retest system.

If detector belt responds correctly, return system to service.

Table 3-2. Troubleshooting - No MILES System Test Set (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

5. AIRCRAFT DETECTOR ASSEMBLIES TEST (CONT)

(1) Any One Detector Belt Fails (Cont)

If Nose Detector belt still fails, reinstall former belt assembly. Remove Belt Harness Left (W5). Replace with harness known to be usable. Retest system.

If detector belt responds correctly, return system to service.

If Nose Detector belt still fails, reinstall former Belt harness Left (W5).

Replace defective UH-1H ACIA INTFC Cable Assembly. Return system to service.

(2) All Detector Belts Fail

If all Detector Belts fail, each of the assemblies and cable assemblies listed should be removed and replaced. Each removal/replacement should be done ONE AT A TIME and IN THE ORDER LISTED. Retest system between each removal and replacement,

a. NOSE DETECTOR BELT

b. TOP LEFT DETECTOR BELT

c. BOTTOM LEFT DETECTOR BELT

d. TOP RIGHT DETECTOR BELT

e. BOTTOM RIGHT DETECTOR BELT

f. BELT HARNESS LEFT (W5)

g. BELT HARNESS RIGHT (W4)

h. UH-1H ACIA INTFC CABLE ASSEMBLY (W3)

6. HEADSET TEST

(1) Headset(s) Faulty

Remove CKI. Replace with CKI known to be operable. Retest System.

If audio tone is heard, return system to service.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
		If no tone is heard, reinstall former CKI. Remove ACIA. Replace with ACIA known to be operable. Retest system.
		If audio tone is heard, return system to service.
		Remove CKI. Replace with CKI known to be operable. Retest System.
		If audio tone is heard, return system to service.
		If no tone is heard, reinstall former CKI. Remove ACIA. Replace with ACIA known to be operable. Retest system.
		If audio tone is heard. return system to service.
		If no tone is heard, reinstall former ACIA. Remove UH-1H ACIA INTFC Cable Assembly. Replace with cable assembly known to be usable. Retest system.
		If audio tone is heard. return system to service.
		If no tone is heard reinstall former UH-1H ACIA INTFC Cable Assembly. Remove Headset-CKI Cable Assembly. Replace with cable assembly known to be usable. Retest system.
		If audio tone is heard, return system to service.
		If no tone is heard, reinstall former Headset-CKI Cable Assembly
		Replace aircraft headsets. Return system to service.

Table 3-3. SYMPTOM INDEX
MILES SYSTEM TEST SET

Unit		Symptom	Troubleshooting Procedure Page
1. Aircraft Control Indicator Assembly (ACIA) Test	(1)	Display Is Blank	3-15
	(1.1)	Display Is Blank-Incorrect Voltage	3-17
	(1.2)	Display Is Blank-Belt/Cable Test	3-18
	(1.3)	All Detector Belts Faulty-Voltage Low	3-19
	(I.4)	All Detector Belts Faulty-Voltage Low-AKI/Smoke	3-20
	(2)	Display Does Not Indicate 88	3-20
	(3)	Weapon Identification Code Is Not Displayed	3-22
	(4)	NOT READY Lamp Does Not Light	3-22
	(5)	Display Indicates 33	3-22
2. Cockpit Kill Indicator (CKI) Test	(1)	Any Indicator Lamp Does Not Light	3-25
	(2)	KILL Lamp Does Not Light When System Is Killed And Smoke Assembly Operates	3-25
	(3)	KILL Lamp Does Not Light When System Is Killed And Smoke Assembly Does Not Operate	3-25
	(4)	ENGAGE Lamp Does Not Light	3-27
	(5)	ENGAGE Lamp Does Not Reset	3-29
3. Smoke Assembly Test	(1)	Smoke Assembly Inoperative	3-31
	(1.1)	Smoke Assembly Inoperative-Correct Voltage	3-33
4. Aircraft Kill Indicator (AKI) Test	(1)	AKI Inoperative With Correct CKI Lamp Indication	3-35
	(1.1)	AKI Inoperative With Correct CKI Lamp lndication-Correct Voltage	3-37
	(2)	AKI Inoperative With No CKI ENGAGE Lamp Indication	3-39
5. Aircraft Detector Assemblies Test	(1)	Any One Detector Belt Fails	3-40
	(2)	All Detector Belts Fail	3-42
	(2.1)	All Detector Belts Fail-Controller Gun Test	3-44
	(2.2)	All Detector Belts Fail-Controller Gun Test-Nose	3-48
6. Headset Test	(1)	Headsets Faulty	3-47
	(1.1)	Headsets Faulty-Audio Tone	3-49

Table 3-4. Troubleshooting - With MSTS

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION

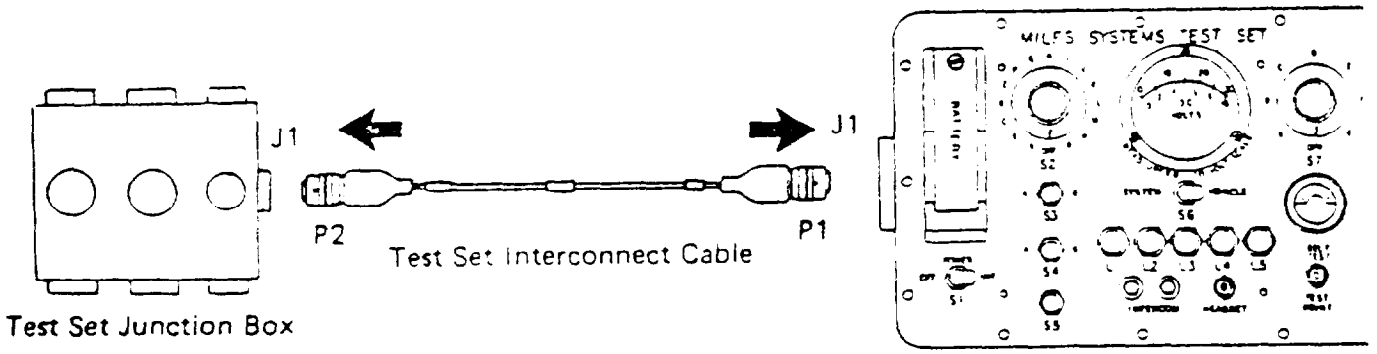
1. AIRCRAFT CONTROL INDICATOR ASSEMBLY (ACIA) TEST

(1) Display Is Blank

Place SYSTEM switch on CKI to OFF. Pause for one second. Place SYSTEM switch to ON. Check ACIA display.

If display reads 00, return system to service

If display is blank disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P2 from CKI. Connect Test Set Interconnect Cable, connector P1, to test set, connector J1. Connect Test Set Interconnect Cable, connector P2, to Test Set Junction Box, connector J1.



Connect UH-1H ACIA INTFC Cable Assembly (W3), connector P2, to Test Set Junction Box, connector J7.

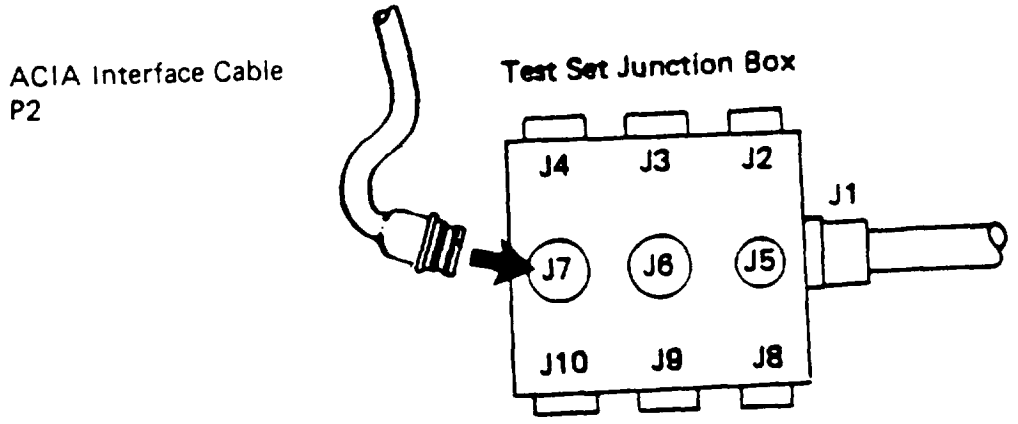


Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

1. AIRCRAFT CONTROL INDICATOR ASSEMBLY (ACIA) TEST (CONT)

(1) Display Is Blank (Cont)

Place test set switch S1 to EXT.

Place test set switch S6 to SYSTEM.

Read voltage on voltmeter.

If voltage reading is less than 8.5 volts, proceed to (1.1) Display Is Blank - Incorrect Voltage.

If voltage is 8.5 to 13 volts. place test set switch S2 to 0. (Note that test set indicator lights L2 and L4 are ON. These indications do not affect troubleshooting procedures.)

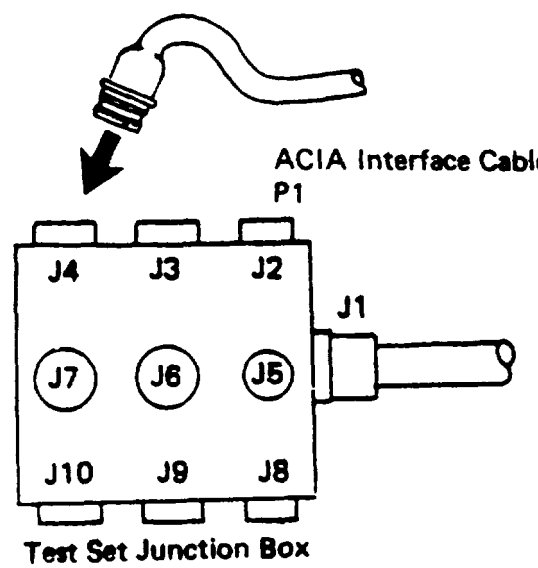
Check ACIA display.

If display indicates 00, replace defective CKI. Return system to service

If display is blank, disconnect UH-1H ACIA INTFC Cable Assembly (W3), from Test Set Junction Box. Reconnect to CKI.

Place test set switch S2 to OFF.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P1 from ACIA. Connect to Test Set Junction Box, connector J4.



MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

Verify SYSTEM switch on CKI is ON.

Read voltage on voltmeter

If voltage reading is 8.5 to 13 volts, replace defective ACIA. Return system to service.

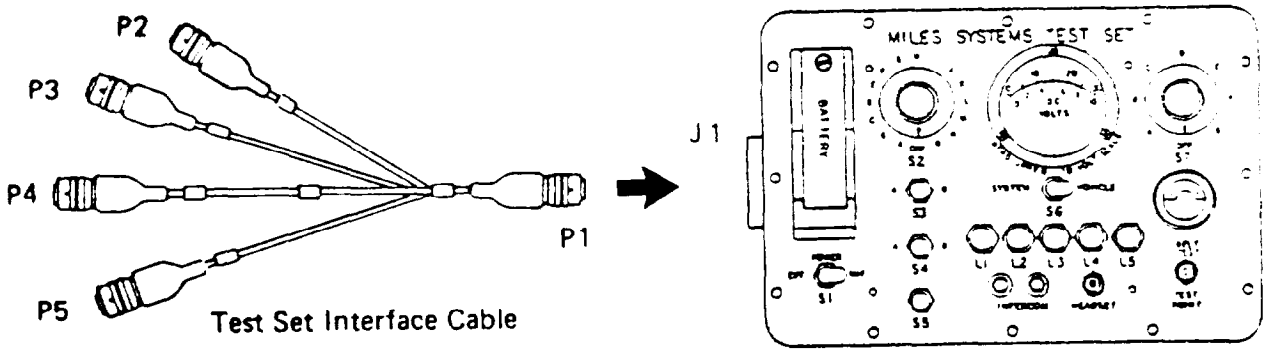
If voltage reading is less than 8.5 volts replace defective ACIA interface Cable Return system to service.

(11) Display Is Blank - Incorrect Voltage

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), from Test Set Junction Box. Reconnect to CKI Disconnect Test Set Interconnect Cable from test set.

Connect Test Set interface Cable connector P1, to Test Set Junction Box, connector J1.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P3 from battery box. Connect Test Set Interface Cable, connector P4 to battery box.



Place test set switch S6 to SYSTEM.

Read voltage on voltmeter.

If voltage reading is 8.5 to 13 volts go to (1.2) Display Is Blank - Belt /Cable lest

If voltage reading is less than 8.5 volts, install two new 6 V batteries in battery box

Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

1. AIRCRAFT CONTROL INDICATOR ASSEMBLY (ACIA) TEST (CONT)

(1-1) Display Is Blank - Incorrect Voltage (Cont)

Read voltage on voltmeter.

If voltage reading is 8.5 to 13 volts, discard old batteries Return system to service.

If voltage reading is less than 8.5 volts, replace defective battery box Return system to service.

(1.2) Display is Blank - Belt/Cable Test

Disconnect Test Se! Interface Cable, connector P4, from battery box. Reconnect UH-1H ACIA INTFC Cable Assembly (W3), to battery box.

Disconnect Test Set Interface Cable from test set.

Connect Test Set Interconnect Cable, connector P1 to test set, connector J1 (ensure Test Set Junction Box is attached to Test Set Interconnect Cable).

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P1 from ACIA.

Connect UH-1H ACIA INTFC Cable Assembly (W3), connector P1, to Test Set Junction Box. connector J4.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P4, from Belt Harness Left (W5), connector P1.

Check voltage on voltmeter.

If voltage reading is less than 8.5 volts, go to (1.3) All Detector Belts Faulty - Voltage Low.

If voltage reading is 8.5 to 13 volts, reconnect UH-1H ACIA INTFC Cable Assembly (W3), to Belt Harness Left Cable Assembly (W5). Disconnect Nose Detector Bell from Belt Harness Left Cable Assembly (W5), connector P2.

Check voltage on voltmeter.

If voltage reading is between 8.5 and 13 volts, replace detector belt Return system to service.

If voltage reading is less than 8.5 volts, reconnect Nose Detector Belt to Belt Harness Left Cable Assembly (W5), connector P2.

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

Disconnect Bottom Left Detector Belt from Belt Harness Left Cable Assembly (W/5), connector P4.

Check voltage on voltmeter.

If voltage reading is between 8.5 and 13 volts, replace detector belt Return system to service.

If voltage reading is less than 8.5 volts reconnect Bottom Left. Detector Belt to Belt Harness Left Cable Assembly (W5), connector P4.

Disconnect Top Left Detector Belt from Belt Harness Left Cable Assembly(W5), connector P3.

Check voltage on voltmeter

if Voltage reading is between 8.5 and 13 volts, replace detector belt. Return system to service.

If voltage reading is less than 8.5 volts, replace Belt Harness Left Cable Assembly (W5). Return system to service.

(1.3) All Detector Belts Faulty - Voltage Low

Reconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P4, to Belt Harness Left Cable Assembly (W5), connector P1.

Disconnect UH-1H AC14 INTFC Cable Assembly (W3), connector P5, from Belt Harness Right Cable Assembly (W4), connector P1.

Check voltage on voltmeter.

If voltage reading is less than 8.5 volts, go to (1.4) All Detector Belts Faulty - Voltage Low - AKI/Smoke.

If voltage reading is between 8.5 and 13 volts. reconnect Belt Harness Right Cable Assembly (W4), connector P1, to UH-1H ACIA INTFC Cable Assembly (W3), connector P5.

Disconnect Bottom Right Detector Belt from Belt Harness Right Cable Assembly (W4), connector P5.

Check voltage on voltmeter.

If voltage reading is 8.5 to 13 volts, replace defective detector belt. Return system to service.

If voltage reading is less than 8.5 volts, reconnect Bottom Right Detector Belt to Belt Harness Right Cable Assembly (W4), connector P5.

Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

1. AIRCRAFT CONTROL INDICATOR ASSEMBLY (ACIA) TEST (CONT)

(1.3) All Detector Belts Faulty - Voltage Low (Cont)

Disconnect Top Right Detector Belt from Belt Harness Right Cable Assembly (W4), connector P2.

Check voltage on voltmete:.

If voltage reading is 8.5 to 13 volts, replace defective detector belt. Return system to service.

If voltage reading is less than 8.5 volts, replace defective Belt Harness Right Cable Assembly (W4). Return system to service.

(1.4) All Detector Belts Faulty - Voltage Low - AKI/Smoke

Reconnect Top Right Detector Belt to Belt Harness Right Cable Assembly (W4).

Disconnect AKl/Smoke-ACIA Cable Assembly (W2), connector P3 from AKI.

Check voltage on voltmeter.

If voltage reading is 8.5 to 13 volts, replace defective AKI. Return system to service.

If voltage reading is less than 8.5 volts, reconnect AKI/Smoke-ACIA Cable Assembly (W2), connector P3 to AKI.

Disconnect AKI/Smoke-ACIA Cable Assembly (W2), connector P1, from Smoke Assembly.

Check voltage on voltmeter.

If voltage reading is 8.5 to 13 volts, replace defective Smoke Assembly and return system to service.

If voltage reading is less than 8.5 volts, replace AKI/Smoke-ACIA Cable Assembly (W2). Return system to service.

(2) Display Does Not Indicate 88

Place SYSTEM switch on CKI to OFF. Pause one second. Place SYSTEM switch to ON.

Insert Controller Key into key receptacle on ACIA. Turn key counterclockwise to CONTROLLER. Turn back and remove key.

MALFUNCTION

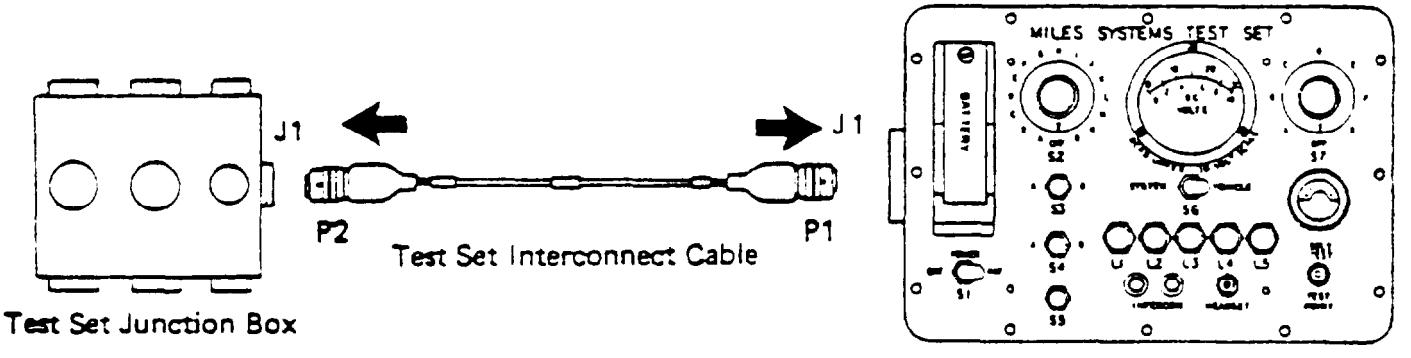
TEST OR INSPECTION

CORRECTI'VE ACTION

Turn ACIA select switch to HIT/KILL. Then turn to SELF TEST. Check display.

If display indicates 88, return system to service.

If display does not indicate 88, connect Test Set Interconnect Cable, connector P1, to Test Set connector J1. Connect lest Set Interconnect Cable, connector P2, to Test Set Junction Box connector J1.



Disconnect UH-IH ACIA INTFC Cable Assembly (W3), connector P1 from ACIA. Connect to connector J4 on Test Set Junction Box.

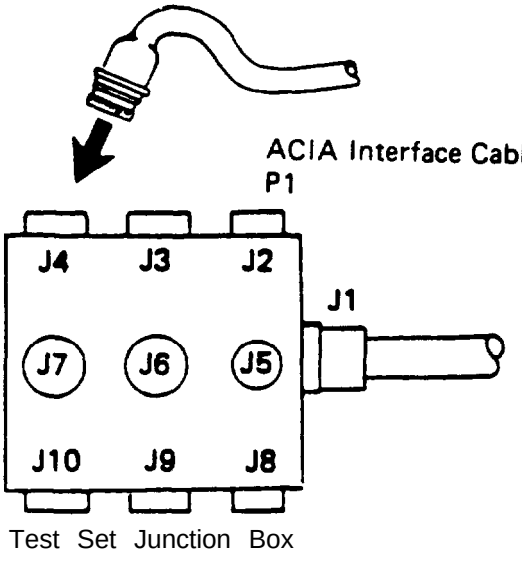


Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

1. AIRCRAFT CONTROL INDICATOR ASSEMBLY (ACIA) TEST (CONT)

(2) Display Does Not Indicate 88 (Cont)

Place test set switch S6 to SYSTEM

If voltage reading is 8.5 to 13 volts, replace defective ACIA. Return system to service.

If voltage reading is less than 8.5 volts, discard old batteries. Install two new 6 V batteries Return system to service.

(3) Weapon Identification Code Is Not Displayed

Failure of ACIA to display a Weapon Identification Code indicates a malfunction of the ACIA.

Replace defective ACIA. Return system to service.

(4) NOT READY Lamp Does Not Light

Failure of NOT READY lamp to light when a KILL response is being given by AKI, CKI, and Smoke Assembly indicates a malfunction of the ACIA.

Replace defective ACIA. Return system to service.

(5) Display indicates 33

Place SYSTEM switch on CKI to OFF. Pause one second. Place SYSTEM switch to ON.

Insert Controller Key into key receptacle on CKI. Turn counterclockwise to CONTROLLER. Turn back and remove key.

Turn ACIA select switch to HIT/KILL WPN IDENT. Then turn to SELF TEST. Check ACIA display.

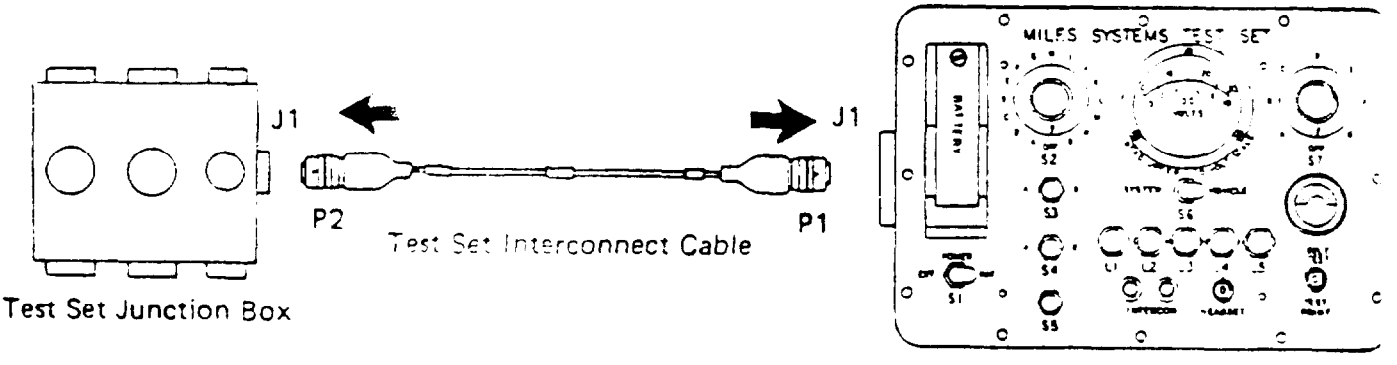
If display indicates 88, return system to service.

MALFUNCTION

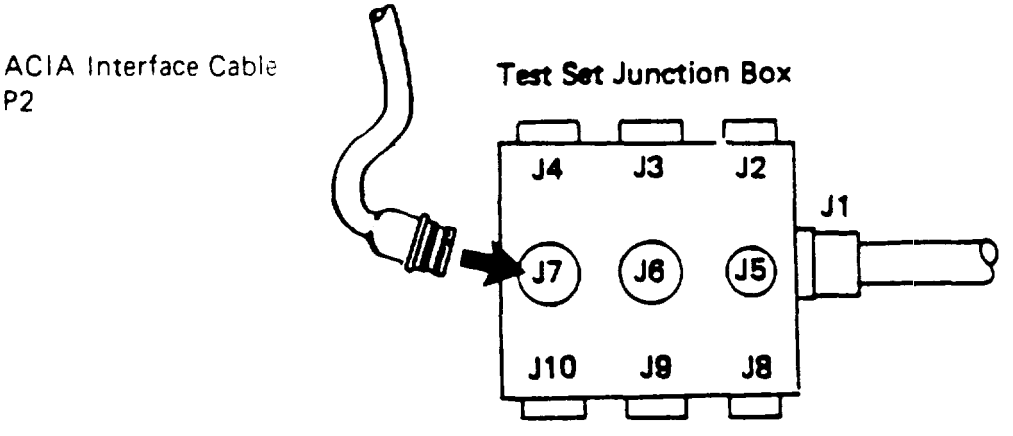
TEST OR INSPECTION

CORRECTIVE ACTION

If display does not Indicate 88, disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P2 from CKI. Connect Test Set Interconnect Cable, connector P1, to test set. connector J1. Connect Test Set Interconnect Cable. connector P2, to Test Set Junction Box. connector J1.



Connect UH-1H ACIA INTFC Cable Assembly (W3), connector P2, to Test Set Junction Box, connector J1.



Place test set switch S1 to EXT.

Place test set switch S2 to 0. (Note that test set indicator lights L2 and L4 may be ON These indications have no effect on troubleshooting procedures.)

Insert Controller Key into key receptacle on ACIA. Turn key counterclockwise CONTROLLER Turn back and remove key Turn ACIA switch to HIT/KILL, then to SELF TEST. Check ACIA display.

Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

1. AIRCRAFT CONTROL INDICATOR ASSEMBLY (ACIA) TEST (CONT)

(5) Display Indicates 33 (Cont)

If display indicates 88, replace defective CKI. Return system to service.

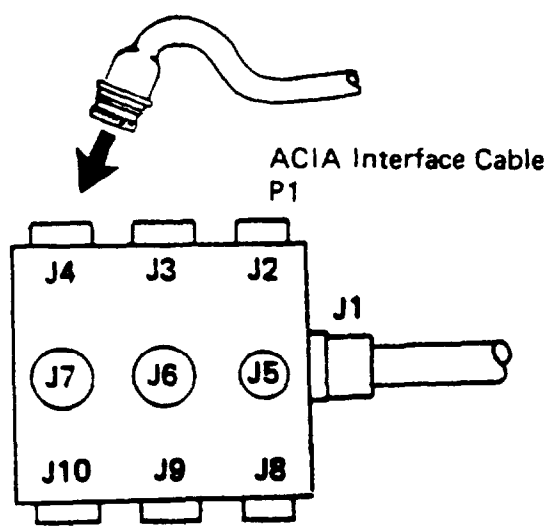
If display does not indicate 88, check status of test set indicator lamp L4.

If lamp L4 is ON. replace defective ACIA. Return system to service.

If lamp L4 is not ON, disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P2, from Test Set Junction Box. Reconnect to CKI.

Place test set switch S2 to OFF.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P1, from ACIA. Connect to connector J4 on Test Set Junction Box.



Place test set switch S7 to G. Depress test set switch S5. Check Indicator lamp L4.

If lamp L4 is ON, replace defective ACIA. Return system to service.

If lamp L4 is not ON, replace defective UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

2. COCKPIT KILL INDICATOR (CKI) TEST

(1) ANY Indicator Lamp Does Not Light

Momentarily depress each indicator lamp on CKI.

If any lamp does not light replace defective CKI Return system to service.

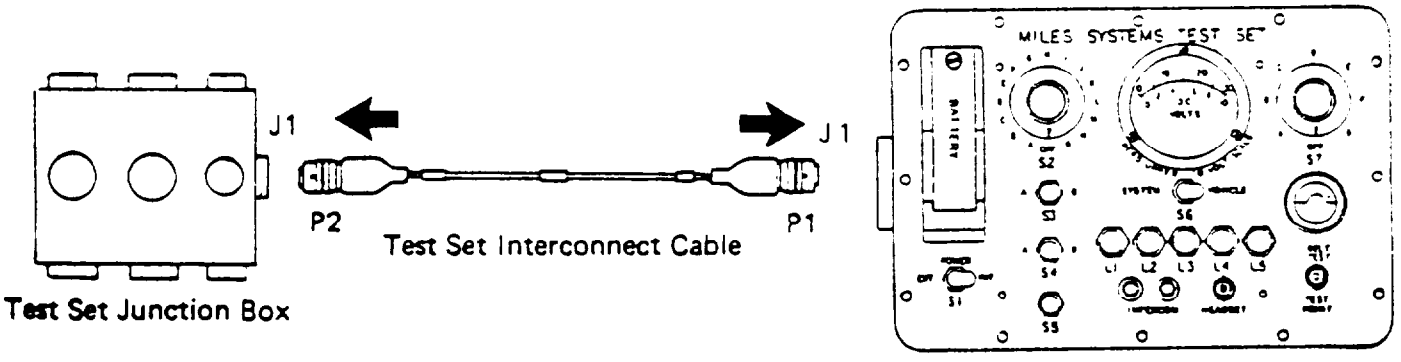
(2) KILL Lamp Does Not Light When System Is Killed And Smoke Assembly Operates.

Failure of KILL lamp to light when Smoke Assembly is properly responding to a “KILL” indicates a malfunction of the CKI.

Replace defective CKI. Return system to service.

(3) KILL Lamp Does Not Light When System Is Killed And Smoke Assembly Does Not Operate.

Connect Test Set Interconnect Cable connector P1 to test set connector J1. Connect Test Set Interconnect Cable connector P2, to Test Set Junction Box, connector J1.

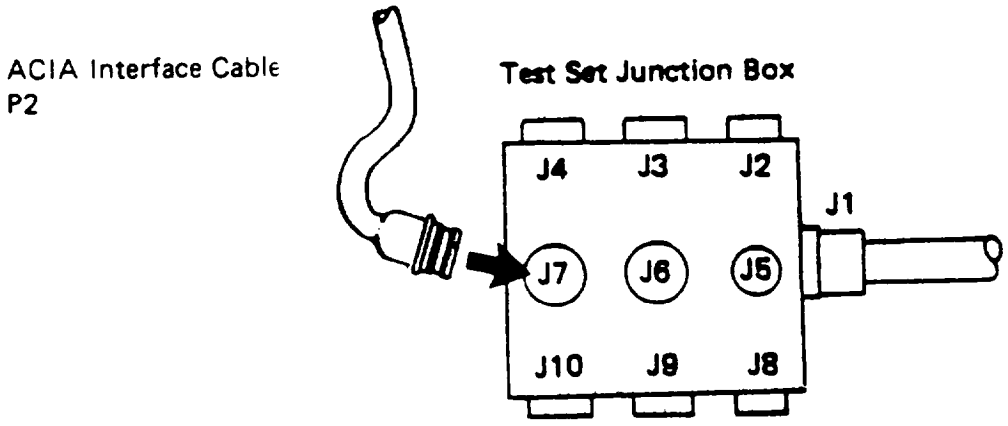


Place test set switch S1 to EXT.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P2, from CKI Connect to Test Set Junction Box, connector J7.

Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION	CORRECTIVE ACTION
2. **COCKPIT KILL INDICATOR (CKI) TEST (CONT)**	
(3) KILL Lamp Does Not Light When System Is Killed And Smoke Assembly Does Not Operate (Cont)	



Place test set switch S2 to 0. (Note test set indicator lamps L2 and L4 are ON. These indications have no effect on troubleshooting procedures.)

Insert Controller (Green) Key into key receptacle on ACIA. Turn key counterclockwise to CONTROLLER position. Turn back and remove key.

Insert a Vehicle (Orange) Key into key receptacle on ACIA. Turn key clockwise to SELF KILL system.

(Note that test set indicator lamp L4 may be ON and indicator lamp L2 may continuously flash ON/OFF. These indications have no effect on troubleshooting procedures.)

Check test set indicator lamp L1.

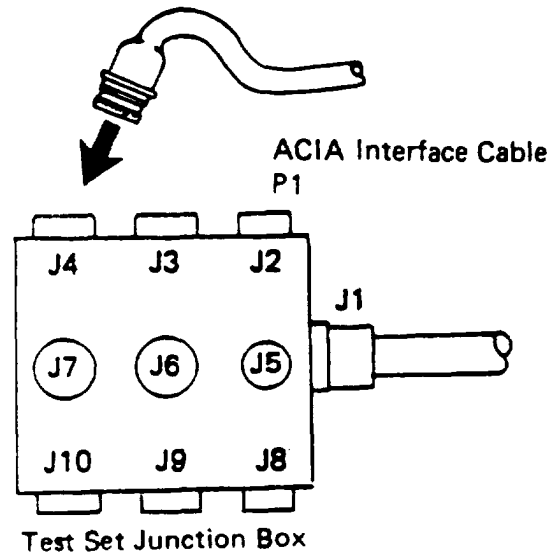
If lamp L1 is ON, replace defective CKI. Return system to service.

If lamp L1 is not ON, disconnect UH-1H ACIA INTFC Cable Assembly (W3), from Test Set Junction Box. Reconnect to CKI.

Place test set switch S2 to OFF.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P1, from ACIA. Connect to Test Set Junction Box, connector J4.

MALFUNCTION	TEST OR INSPECTION.	CORRECTIVE ACTION



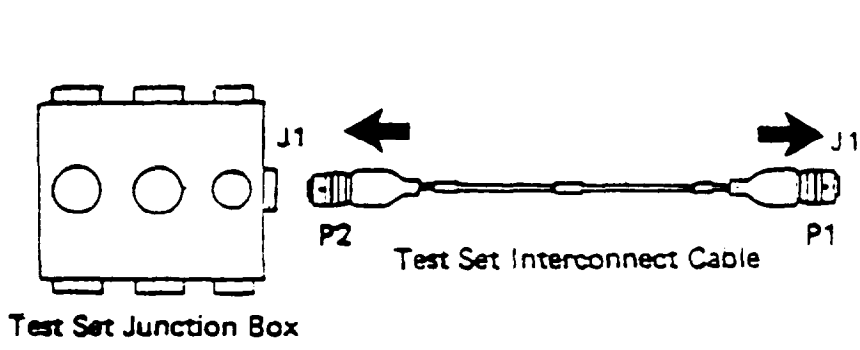
Place test set switch S7 to F. Depress test set switch S5. Check KILL lam; on CKI.

If KILL Iamp is ON, replace defective ACIA. Return system to service.

If KILL lamp is not ON, replace UH-1H ACIA INTFC Cable Assembly (W3), Return system to service.

(4) ENGAGE Lamp Does Not Light

Connect Test Set Interconnect Cable connector P1, to test set connector J1. Connect Test Set Interconnect Cable connector P2, to Test Set Junction Box, connector J1.



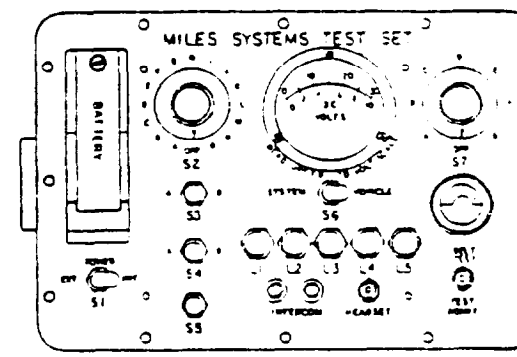


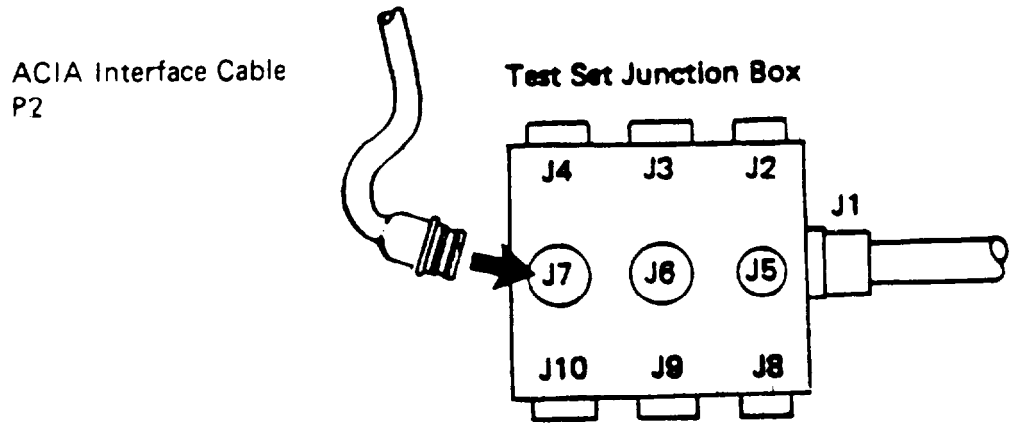
Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION

2. COCKPIT KILL INDICATOR (CKI) TEST (Cont)

(4) ENGAGE Lamp Does Not Light (Cont)

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P2, from CKI. Connect to Test Set Junction Box, connector J7.



Place test set switch S2 to 0. (Note that test set indicator lamps L2 and L4 may be ON. These indications have no effect on troubleshooting procedures.)

Insert Controller (Green) Key into key receptacle on ACIA. Turn counterclockwise to CONTROLLER position. Turn back and remove key.

Check test set indicator lamp L2.

If lamp L2 is not ON, replace defective UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

If lamp L2 is ON, aim Controller Gun at detector belts. Fire a “NEAR MISS” signal. Check test set indicator lamp L2.

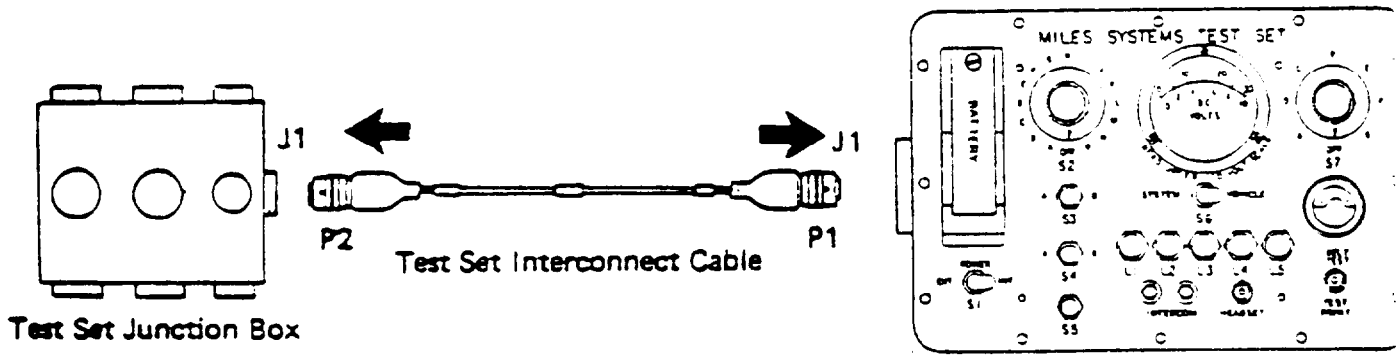
If lamp L2 flashes ON/OFF, replace defective CKI. Return system to service.

If lamp L2 does not flash ON/OFF, replace defective UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION

(5) ENGAGE Lamp Does Not Reset

Connect Test Set Interconnect Cable, connector P1, to test set. connector J1. Connect Test Set Interconnect Cable, connector P2, to Test Set Junction Box, connector J1.



Place test set switch S1 to EXT.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P2 from CKI Connect to Test Set Junction Box. connector J7.

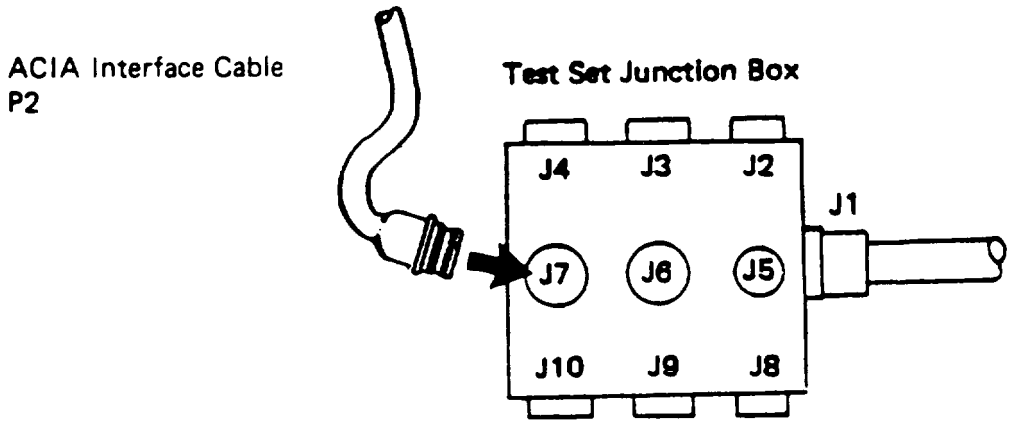


Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

2. COCKPIT KILL INDICATOR (CKI) TEST (CONT)

(5) ENGAGE Lamp Does Not Reset (Cont)

Place test set switch S2 to N. Check test set indicator lamp L2.

If lamp L2 is ON, replace defective CKI. Return system to service.

If lamp L2 is not ON, disconnect AKI/Smoke-ACIA Cable Assembly (W2), connector P3 from AKI. (Indicator lamp L4 may be ON. This indication has no effect on troubleshooting procedure.)

Check test set indicator lamp L2.

If lamp L2 is ON, replace defective AKI. Return system to service.

If lamp L2 is not ON, reconnect P3 to AKI. Disconnect AKI/Smoke-ACIA Cable Assembly (W2), connector P2, from UH-1H ACIA INTFC Cable Assembly (W3), connector P7. Check test set indicator lamp L2.

If ramp L2 is ON, replace defective AKI/Smoke-ACIA Cable Assembly (W2). Return system to service.

If lamp L2 is not ON, reconnect AKI/Smoke-ACIA Cable Assembly (W2), connector P2. to UH-1H ACIA INTFC Cable Assembly (W3), connector P7. Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P1 from ACIA. Check test set indicator lamp L2.

If lamp L2 is ON, replace defective ACIA. Return system to service

If lamp L2 is not ON, replace defective UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

3. SMOKE ASSEMBLY TEST

(1) Smoke Assembly Inoperative

Before proceeding check that:

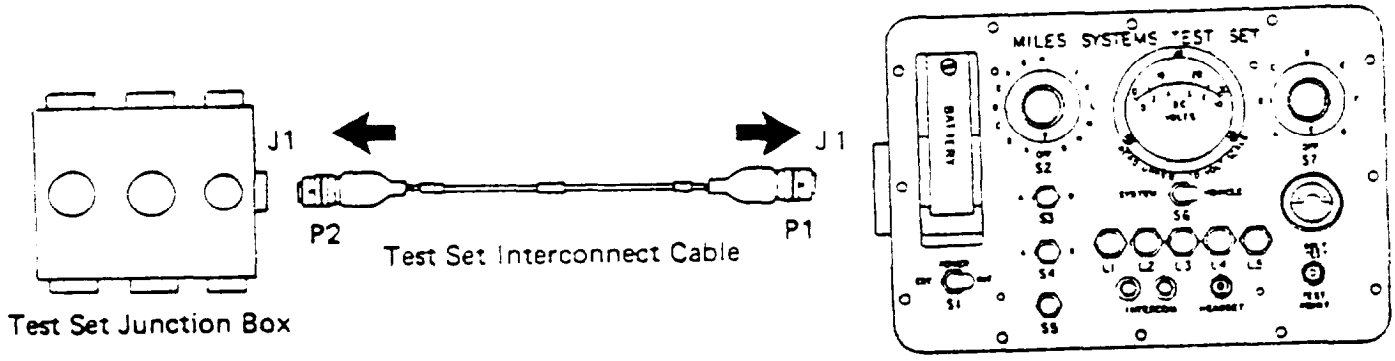
UH-1H ACIA INTFC Cable Assembly (W3), connector P6. is properly installed.

NON-ESS BUS switch is to MANUAL ON if operation on aircraft battery power.

BAT switch is ON.

Both HEATED BLANKET circuit breakers are ON.

Connect Test Set interconnect Cable Connector P1, to test set connector J1. Connect Test Set Interconnet Cable connector P2, Test Set Junction Box, connector J1.



Install a 9 V battery in test set battery box.

Place test set switch S1 to INT position.

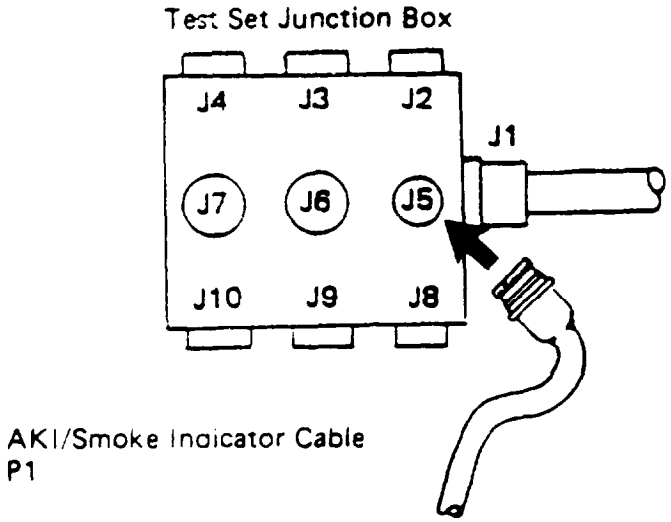
Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

3. SMOKE ASSEMBLY TEST (CONT)

(1) Smoke Assembly Inoperative (Cont)

Disconnect AKI/Smoke-ACIA Cable Assembly (W2), connector P1, from Smoke Assembly. Connect to connector J5 on Test Set Junction Box.



Place test set switch S2 to 0.

Place test set switch S6 to VEHICLE.

Read voltage on voltmeter.

If voltage reading is 20 to 30 volts, proceed to (1.1) Smoke Assembly Inoperative - Correct Voltage.

If voltage reading is less than 20 volts, check aircraft electrical system (refer to TM 55-1520-210-10). Correct Electrical System malfunctions. Return system to service.

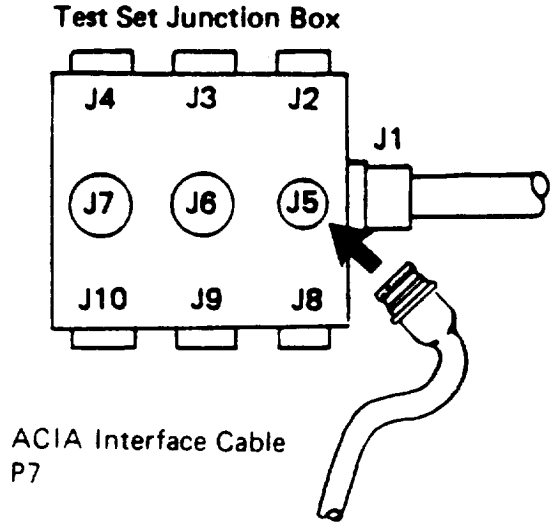
If there is no voltage indication on voltmeter, disconnect AKI/Smoke-ACIA Cable Assembly (W2), from Test Set Junction Box. Reconnect to Smoke Assembly.

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P7, from AKI/Smoke-ACIA Cable Assembly (W2), connector P2. Connect connector P7 to connector J5 on Test Set Junction Box



Read voltage on voltmeter.

If voltage reading is 20 to 30 volts, replace defective AKI/Smoke-ACIA Cable Assembly (W2). Return system to service.

If voltage reading is less than, 20 volts check aircraft electrical system.

If aircraft electrical system is inoperative, repair all malfunctions (refer to TM 55-1520-210-10). Return system to service.

If aircraft electrical system has no malfunctions, replace UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

(1.1) Smoke Assembly Inoperative - Correct Voltage

Place test se! switch S7 to G.

Insert Vehicle (Orange) Key into key receptacle on ACIA. Turn key clockwise to WEAPON.

Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

3. SMOKE ASSEMBLY TEST (CONT)

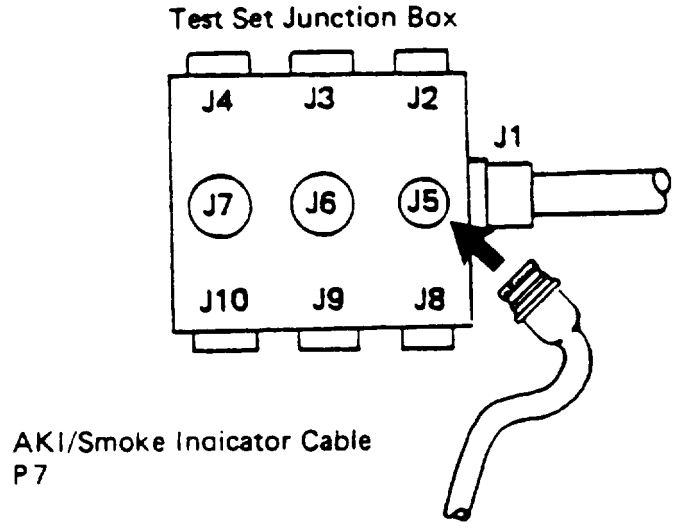
(1.1) Smoke Assembly Inoperative - Correct Voltage (Cont)

Check test set indicator light L3.

If lamp L3 is ON, replace defective Smoke Assembly. Return system to service.

If lamp L3 is not ON, disconnect AKI/Smoke-ACIA Cable Assembly (W2), from Test Set Junction Box Reconnect to Smoke Assembly.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P7, from AKl/Smoke-ACIA Cable Assembly (W2), connector P2. Connect connector P7 to connector J5 on Test Set Junction Box.



Check test set indicator light L3.

If light L3 is ON, replace defective AKI/Smoke-ACIA Cable Assembly (W2). Return system to service.

If light L3 is not ON. disconnect UH-1H ACIA INTFC Cable Assembly (W3), from Test Set Junction Box. Reconnect to AKISmoke-ACIA Cable Assembly (W2).

Place test set switch S1 to EXT.

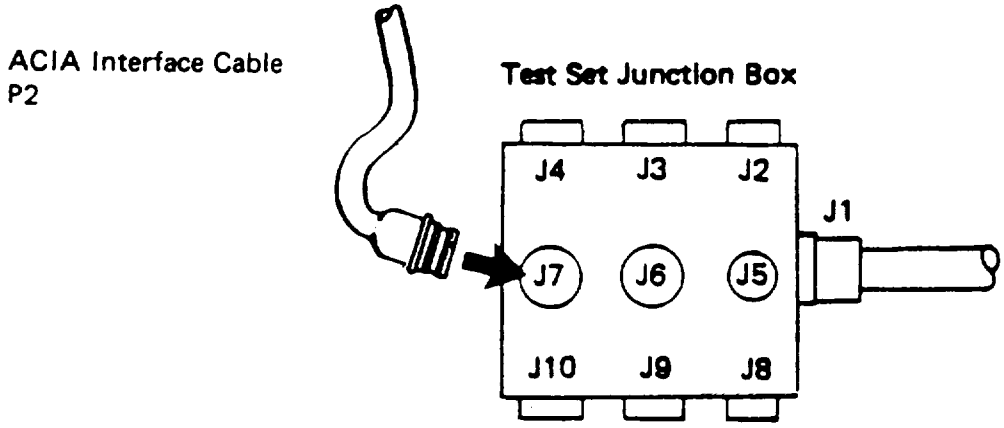
Place test set switch S2 to OFF.

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P2 from CKI. Connect to Test Set Junction Box, connector J7.



Open up Smoke Indicator housing cover and pull extractor shaft out to its extended position.

Place test set switch S7 to F. Momentarily depress test set switch S5. Check Smoke Assembly.

If Smoke Assembly extractor shaft moves into Smoke Indicator housing, replace defective CKI. Return system to service.

If Smoke Assembly extractor shaft does not move into Smoke Indicator housing, replace UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

4. AIRCRAFT KILL INDICATOR (AKI) TEST

(1) AKI Inoperative With Correct CKI Lamp Indication

Before proceeding check that:

UH-1H ACIA INTFC Cable Assembly (W3), connector P6, is properly installed.

HEATED BLANKET circuit breakers are ON.

BAT switch is ON.

NON-ESS BUS switch to MANUAL ON if operating on aircraft battery power.

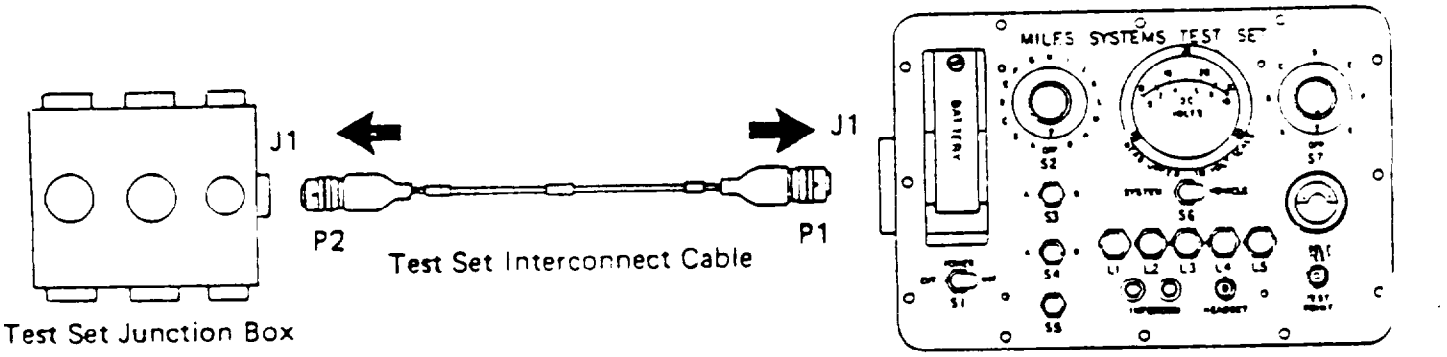
Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION

4. AIRCRAFT KILL INDICATOR (AKI) TEST (CONT)

(1) AKI Inoperative With Correct CKI Lamp Indication (Cont)

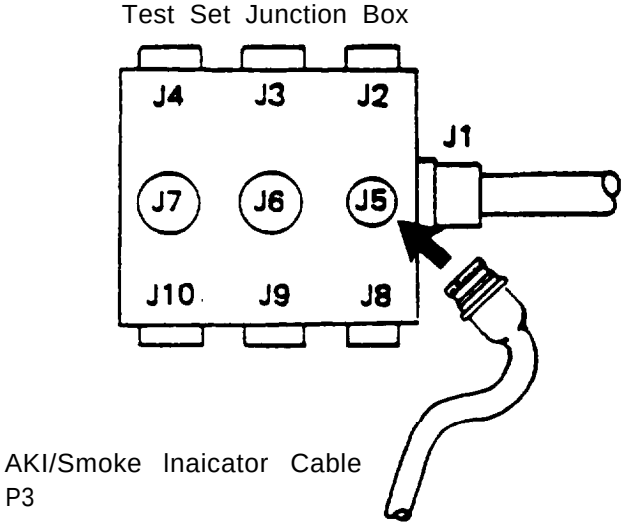
Connect Test Set Interconnect Cable, connector P1, to test set, connector J1. Connect Test Set Interconnect Cable, connector P2, to Test Set Junction Box, connector J1.



Install a 9 V battery in test se: battery box.

Place test set switch S1 to INT.

Disconnect AKI/Smoke-ACIA Cable Assembly (W2), connector P3, from AKI Assembly, Connect to Test Set Junction Box, connector J5.



MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

Place test set switch S2 to 0.

Place test set switch S6 to VEHICLE.

Read voltage on voltmeter.

If voltage reading is 20 to 30 volts, proceed to (1.1) AKI Inoperative With Correct CKI Lamp Indication -Correct Voltage.

If voltage reading is less than 20 volts. check aircraft electrical system for proper operation (refer to TM 55-1520-210-10). Correct all malfunctions. Return system to service.

If voltmeter indicates no voltage, disconnect AKI/Smoke-ACIA Cable Assembly (W2), from Test Set Junction Box. Reconnect to AKI Assembly.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P7, from AKI/Smoke ACIA Cable Assembly (W2), connector P2. Connect connector P7 to connector J5 on Test Set Junction Box.

Read voltage on voltmeter.

If voltage reading is 20 to 30 volts, replace defective AKI/Smoke-ACIA Cable Assembly (W2). Return system to service.

If voltage reading is less than 20 volts, verify UH-1H electrical system is functional.

If aircraft electrical system is inoperative, repair all malfunctions (refer to TM 55-1520-210-10). Return system to service.

If aircraft electrical system has no malfunctions, replace UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

(1.1) AKI Inoperative With Correct CKI Lamp Indication-Correct Voltage

Turn test set switch S6 to E.

Insert Vehicle (Orange) Key into key receptacle on ACIA. Turn key clockwise to WEAPON.

Check test set indicator lamp L2.

If lamp L2 flashes ON/OFF, replace defective AKI Assembly. Return system to service.

Table 3-4. Troubleshooting - With MSTS (Cont)

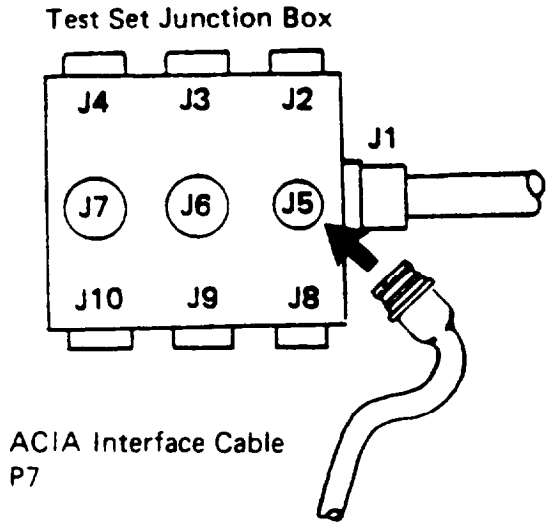
MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

4. AIRCRAFT KILL INDICATOR (AKI) TEST (CONT)

(1.1) AKI Inoperative With Correct CKI Lamp Indication - Correct Voltage (Cont)

If lamp L2 does not flash ON/OFF, disconnect AKI/Smoke-ACIA Cable Assembly (W2), from Test Set Junction Box. Reconnect to AKI assembly.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P7, from AKI/Smoke-ACIA Cable Assembly (W2), connector P2. Connect P7 to connector J5 on lest Set Junction Box.



Check test set indicator light L2.

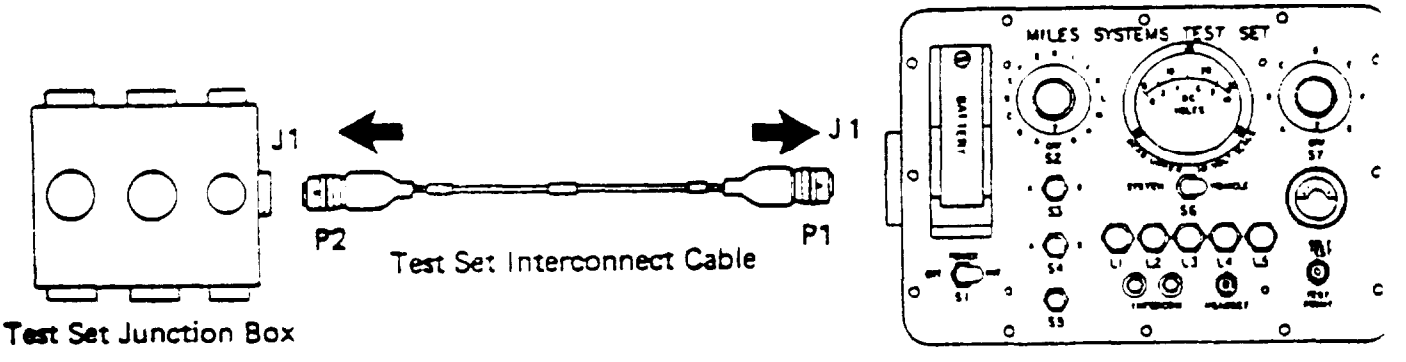
If light L2 flashes ON/OFF, replace defective AKI/Smoke-ACIA Cable Assembly (W2). Return system to service.

If light L2 does not flash ON/OFF, replace defective UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION

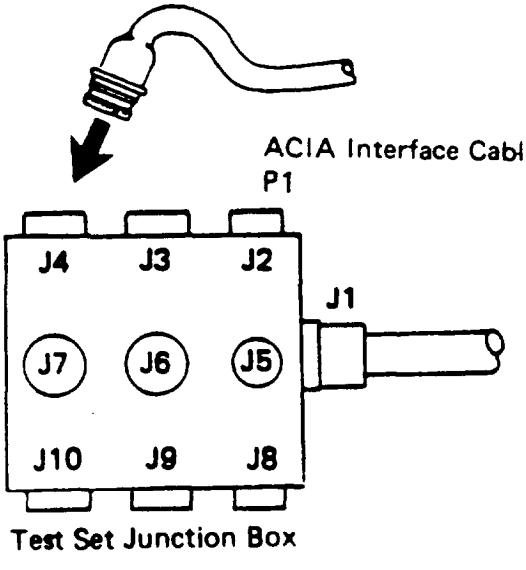
(2) AKI Inoperative With NC CKI ENGAGE Lamp Indication

Connect Test Set Interconnect Cable, connector P1, to test set. connector J1. Connect Test Set Interconnect Cable, connector P2, to Test Set Junction Box, connector J1.



Place test: set switch S1 to ext.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3) connector P1 from ACIA, Connect to Test Set Junction Box. connector J4.



MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION

4. AIRCRAFT KILL INDICATOR (AK1) TEST (CONT)

(2) AKI Inoperative With No CKI ENGAGE Lamp Indication (Cont)

Place test set switch S7 to G. Momentarily depress and release switch S5. Check AKI.

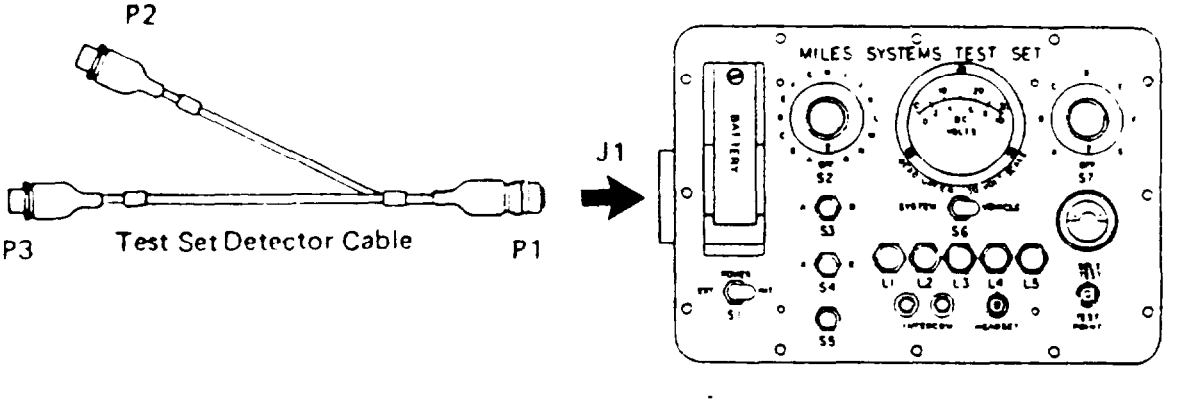
If AKI flashes. replace defective ACIA. Return system to service.

If AKI does not flash, replace UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

5. AIRCRAFT DETECTOR ASSEMBLIES TEST

(1) Any One Detector Belt Fails

Connect Test Set Detector Cable connector P1, to test set, connector J1,



MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

Place test set switch S1 to EXT.

Disconnect suspect faulty detector belt.

Connect Test Set Detector Cable, connector P2, to detector belt and connector P3 to Right or Left Side Belt Harness Cable (W4 or W5) previously connected to belt.

Place test set switch S6 to SYSTEM

Read voltage on voltmeter.

If voltage reading is less than 8.5 volts, replace defective Right or Left Side Belt Harness Cable. Return system to service.

If voltage reading is 8.5 to 13 volts, aim Controller Gun at suspect faulty detector belt. Fire a “NEAR MISS” signal. Check BELT TEST meter.

NOTE

When firing Controller Gun at suspect faulty detector belts, maintain a minimum of 5 feet between Controller Gun and detector belts. At distances less than 5 feet, a FALSE rate reading is possible.

If BELT TEST meter indicates greater than 96, replace defective Right or Left Side Belt Harness Cable. Return system to service.

If BELT TEST meter indicates less than 96, replace faulty detector belt. Return system to service.

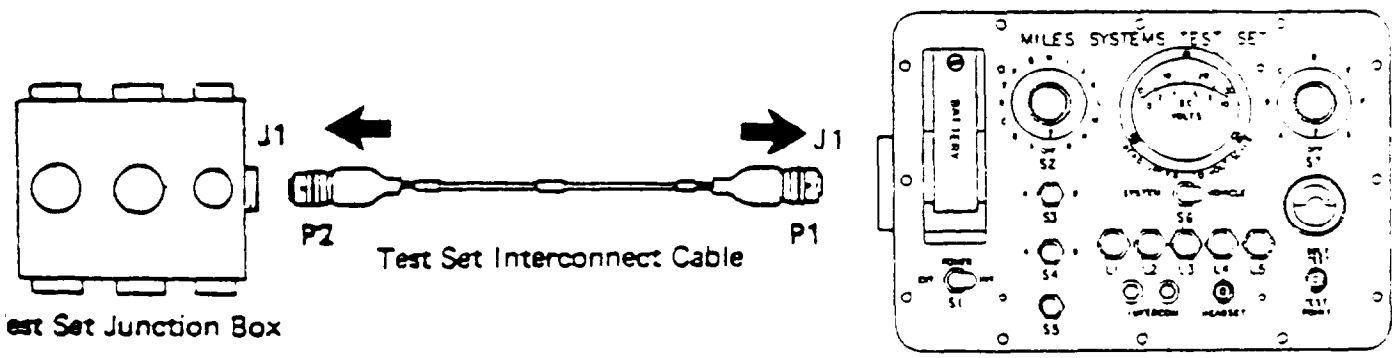
Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

5. AIRCRAFT DETECTOR ASSEMBLIES TEST (CONT)

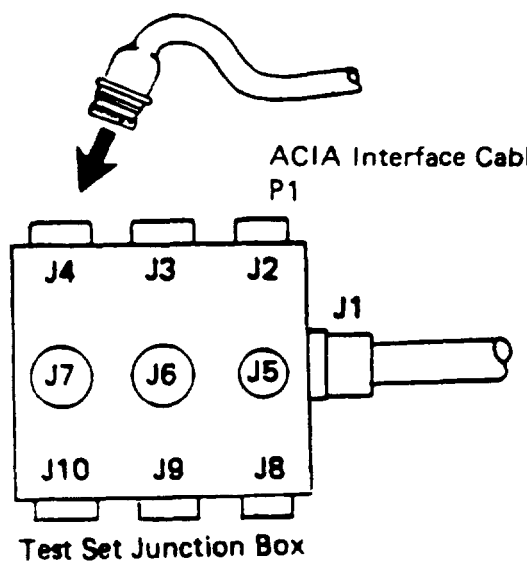
(2) All Detector Belts Fail

Connect Test Set interconnect Cable, connector P1, to test set, connector J1. Connect Test Set Interconnect Cable, connector P2, to Test Set Junction Box, connector J1.



Place test set switch S1 to EXT.

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector P1 from ACIA Connect to Test Set Junction Box, connector J4.



MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

Read rate from detector belt on test set BELT TEST meter. See Table below to determine acceptable rate for 5 detector belts.

Detector Belt Rate		
Number of Belts	Full Sun	Shade
1	0-10	0-2
2	0-15	0-4
3	0-20	0-8
4	0-30	0-10
5	0-40	0-12

If BELT TEST meter rate is acceptable, go to (2.1) All Detector Belts Fail - Controller Gun Test.

If BELT TEST meter rate is unacceptable, disconnect one aircraft detector belt.

Read detector belt rate on test set BELT TEST meter. See Table 3-5 to determine acceptable rate for 4 detector belts.

If BELT TEST meter rate is acceptable, replace detector belt that was disconnected for test. Return system to service.

If BELT TEST meter rate is unacceptable, reconnect detector belt previously disconnected. Repeat previous tests on remaining aircraft detector belts until faulty belt is isolated.

If all belts are checked and BELT TEST meter rate is still unacceptable, disconnect Belt Harness Right Cable Assembly (W4), connector P1, from UH-1H ACIA INTFC Cable Assembly (W3), connector P5.

Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

5. AIRCRAFT DETECTOR ASSEMBLIES TEST (CONT)

(2) All Detector Belts Fail (Cont)

Read detector belt rate on test set BELT TEST meter. See Table 3-5 to determine acceptable rate for 3 detector belts.

If BELT TEST meter rate is acceptable, replace defective Belt Harness Right Cable Assembly. Return system to service.

If BELT TEST meter rate is not acceptable, reconnect Belt Harness Right Cable Assembly (W4), to UH-1H ACIA INTFC Cable Assembly (W3).

Disconnect Belt Harness Left Cable Assembly (W5), from UH-1H ACIA INTFC Cable Assembly (W3), connector P4.

Read detector belt rate on test set Belt Test meter. See Table 3-5 to determine acceptable rate for 2 detector belts.

If BELT TEST meter rate is acceptable, replace defective Belt Harnes Left Cable Assembly. Return system to service.

If BELT TEST meter rate is not acceptable, replace UH-1H ACIA INTFC Cable Assembly (W3). Return system to service.

(2.1) All Detector Belts Fail - Controller Gun Test

Aim Controller Gun at detector belts. Fire a “NEAR MISS” signal. Check test set BELT TEST meter.

NOTE

When firing Controller Gun at faulty detector belts, maintain a minimum of 5 feet between Controller Gun and detector belts. At distances less than 5 feet, a FALSE rate reading is possible.

If BELT TEST meter rate is greater than 96, replace defective ACI, Return system to service.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION

If BELT TEST meter indicates less than 96, disconnect Belt Harness Right cable Assembly (W4), connector P1, from UH-1H ACIA INTFC Cable Assembly (W3), connector P5.

Aim Controller Gun, a: Left Side detector belts. Fire a “NEAR MISS” signal. Check test set BELT TEST mete:.

If BELT TEST meter indicates less than 96, proceed to (2.2) All Detector Belt Fail-Nose

If BELT TEST meter indicates greater-than 96, reconnect Belt Harness Right Cable Assembly (W4) Disconnect Right Bottom detector belt.

Aim Controller Gun at Left Side detector belts. Fire a “NEAR MISS” signal Check test set BELT TEST meter

If BELT TEST meter indicates greater than 96, replace detective Right Bottom detector belt. Return system to service.

If BELT TEST meter indicates less than 96, disconnect Right Top detector belt

Aim Controller Gun at Left Side detector belts. Fire a “NEAR MISS” signal Check test set BELT TEST meter.

If BELT TEST meter indicates greater than 96, replace defective Right Top detector belt. Return system to service.

If BELT TEST meter indicates less than 96, replace defective Belt Harness Right Cable Assembly (W4). Return system to service

Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

5. AIRCRAFT DETECTOR ASSEMBLIES TEST (CONT)

(2.2) All Detector Belts Fail - Controller Gun Test - Nose

Reconnect Belt Harness Right Cable Assembly (W4). Disconnect Belt Harness Left Cable Assembly (W5), connector P1, from UH-1H ACIA INTFC Cable Assembly (W3), connector P4.

Aim Controller Gun at Right Side detector belts. Fire a “NEAR MISS” signal Check test set BELT TEST meter.

If BELT TEST meter indicates less than 96, replace defective UH-1H ACIA INTFC Cable Assembly (W3). Return system to service

If BELT TEST meter indicates greater than 96, reconnect P1 to P4. Disconnect nose detector belt.

Aim Controller Gun at Right Side detector belts. Fire a “NEAR MISS” signal, Check test set BELT TEST meter.

If BELT TEST meter indicates greater than 96, replace defective nose detector belt. Return system to service.

If BELT TEST meter Indicates less than 96, reconnect nose detector belt. Disconnect Left Top detector belt.

Aim Controller Gun at Right Side detector belts. Fire a “NEAR MISS” signal. Check test set BELT TEST meter.

If BELT TEST meter indicates greater than 96, replace defective Left Top detector belt. Return system to service.

If BELT TEST meter indicates less than 96, reconnect Left Top detector belt. Disconnect Left Bottom detector belt.

Aim Controller Gun at Right Side detector belts. Fire a “NEAR MISS” signal. Check test set BELT TEST meter.

If BELT TEST meter indicates greater than 96, replace defective Left Bottom detector belt. Return system to service.

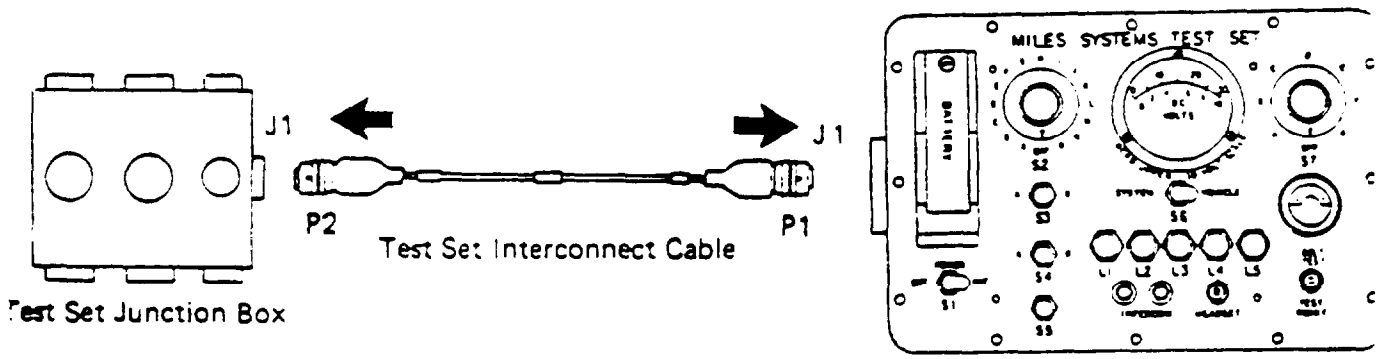
If BELT TEST meter indicates less than 96, replace defective Left Side Belt Harness Left Cable Assembly (W5). Return system to service.

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION

6. HEADSET TEST

(1) Headsets Faulty

Connect Test Set Interconnect Cable, connector P1, to test set, connector J1. Connect Test Set Interconnect Cable. connector P2. to Test Set Junction Box. connector J1.



Place test set switch S1 to EXT

Disconnect UH-1H ACIA INTFC Cable Assembly (W3) connector P2 from W1. Connect to Test Set Junction Box. connector J7.

ACIA Interface Cable P2

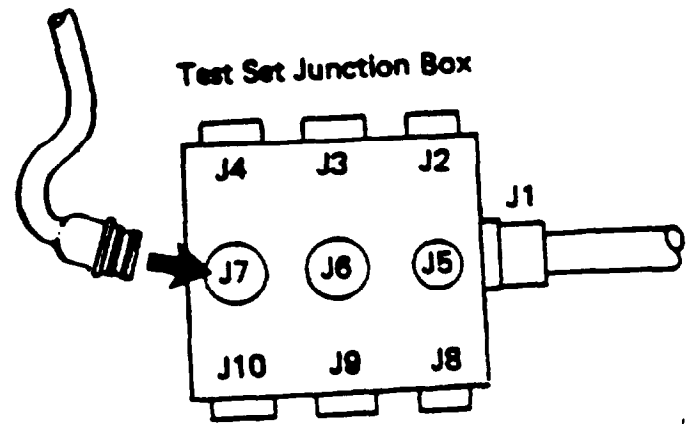


Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTIVE ACTION

6. **HEADSET TEST (CONT)**

(1) Headsets Faulty (Cont)

Place test set switch S2 to 0. (Note that test set indicator lights L2 and L4 may come ON. These indications have no effect on troubleshooting procedures.)

Insert Controller Key into key receptacle on ACIA. Turn key counterclockwise to CONTROLLER. Turn back and remove key.

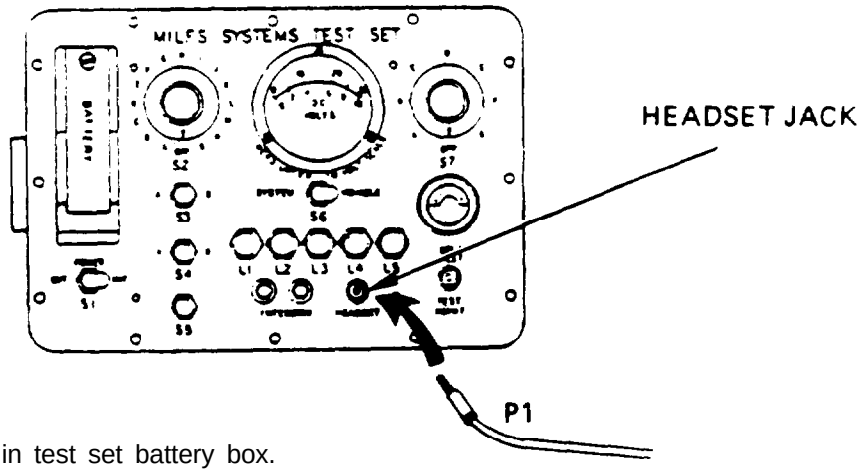
Place test set switch S7 to A

Insert Vehicle (Orange) Key into key receptacle on ACIA. Turn clockwise to "SELF KILL" system Turn back and remove key.

Check test set BELT TEST meter

If BELT TEST meter indicates less than 50, proceed to (1.1) Headset Faulty - Audio Tone.

If BELT TEST meter indicates greater than 50, disconnect UH-1H ACIA INTFC Cable Assembly (W3), from Test Set Junction Box. Reconnect to CKI. Disconnect Headset. CKI Cable Assembly in question from CKI. Connect cable assembly to test set connector labeled HEADSET.



Install a 9 V battery in test set battery box.

Set test set switch S1 to INT.

MALFUNCTION

TEST OR INSPECTION

CORRECTIVE ACTION

Place test set switch S7 to B. Depress switch S5. Listen through headset in question.

If AUDIO TONE is present, replace defective CKI. Return system to service

If AUDIO TONE is no! present, verify aircraft headset is operational.

IF aircraft handset is not operational, repair all malfunctions (refer to TM 55-1526-276-10). Return system to service.

If aircraft headset is operational, replace defective Headset-CKI Cable Assembly Return system to service.

(1.1) Headset Faulty - Audio Tone

Disconnect UH-1H ACIA INTFC Cable Assembly (W3j. from Test Se: Junction Box Reconnect to CKI. Ensure Headset-CKI Cable Assembly in question is connected to CKI

Disconnect UH-1H ACIA INTFC Cable Assembly (W3), connector PI from ACIA, Connect to Test Set Junction Box) connector J4.

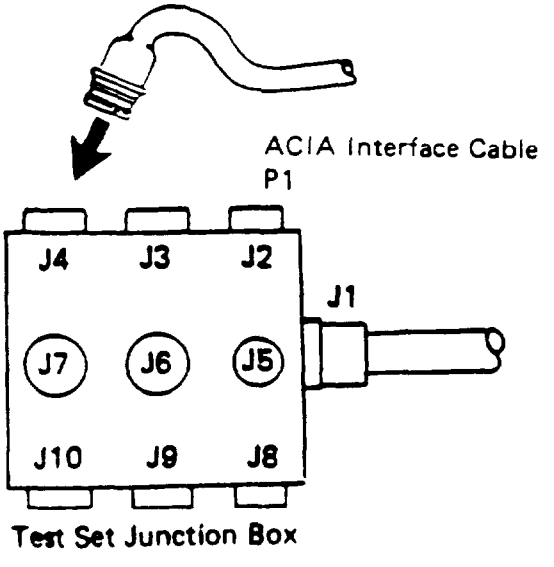


Table 3-4. Troubleshooting - With MSTS (Cont)

MALFUNCTION TEST OR INSPECTION CORRECTWE ACTION	
6. HEADSET TEST (CONT)	
(1.1) Headset Faulty- Audio Tone (Cont)	
Place test set switch S7 to B. Depress test set switch S5. Listen through aircraft headset.	If AUDIO TONE is present, replace defective ACIA. Return system to service. If AUDIO TONE is not present, replace defective UH-1H ACIA INTFC Cable Assembly. Return system to service.

CHAPTER 4

AMMUNITION

SECTION I. AUTHORIZED AMMUNITION

WARNINGS

Never carry hand grenades or handle them by safety pull ring attached to safety pin.

Handle grenade canisters with care at all times

Expended canisters may be initially hot to touch. Wait 5 minutes after being fired before attempting to remove.

Dispose of malfunctioning and expended grenade canisters in accordance with EOD procedures.

The M18 Smoke Hand Grenades (Yellow) (NSN 1330-00-289-6854) are the only grenade canisters authorized to be fired during MILES training simu. lations on helicopters

APPENDIX A

REFERENCES

A-1. SCOPE

This appendix lists all Forms, Field Manuals. Technical Manuals and miscellaneous publications referenced in this manual.

A-2. FORMS

SF 368	Quality Deficiency Report
DA Form 2028-2	Recommended Changes to DA Publications
DA Form 2062	Hand Receipt
DA Form 2402	Exchange Tag
DA Form 2404	Equipment Inspection and Maintenance Work Sheet

A-3. FIELD MANUALS

FM 21-11	Field Manual: First Aid for Soldiers

A-4. TECHNICAL MANUALS

TM 9-1270-224-10-HR	Hand Receipt for Simulator System, Firing, Laser: UH-1H Helicopter
TM 9-1265-370-10-2	Operator's Manual for Simulator System, Firing. Laser: for M60 Machine Gun
TM 55-1520-210-10	Operator's Manual for Army Models UH-1 D/H and EH-1H Helicopters
TM 9-1005-224-10	Operator's Manual: M60 Machine Gun

A-5. MISCELLANEOUS PUBLICATIONS

AR 310-2	Identification and Distribution of DA Publications
SB 11-6	Dry Battery Supply Data
DA PAM 738-750	The Army Maintenance Management System (TAMMS)

APPENDIX B

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

SECTION I. INTRODUCTION

B-1. SCOPE

This appendix lists Components Of End Item (COEI) and Basic Issue Items (BII) for the MILES UH-1H helicopter system to help you inventory items required for safe and efficient operation.

B-2 GENERAL

The Components of End Item and Basic Issue Items Lists are divided into the following sections

a Section II. Components of End Item This listing IS for informational purposes only and is not authority, to requisition replacements These items are part of the end item. but are removed and separately packaged for transportation or shipment. As part of the end item. these items must be with the end item whenever it is issued or transferred between property accounts Illustrations are furnished to assist you in identifying the items

b Section III. Basic issue Items. These are the minimum essential items required to place the MILES UH-1H helicopter system, in operation. to operate it, and to perform emergency repairs Although Shipped separately package Bll must be with the MILES UH-1H helicopter system during operation and whenever is transferred between property accounts The illustrations will assist you with hard-to-identify items This manual is your authority to request/requisition replacement Bll. based on TOE/MTOE authorization of the end item.

B-3. EXPLANATION OF COLUMNS

The following provides an explanation of columns found in the tabular listings:

a. Column (1) - Illustration Number. This column indicates the number of the illustration in which the item is shown.

b. Column (2) - National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

NOTE

National stock numbers (NSNs) have not been assigned to all COEI, BII, and AAL items because these items are presently supported by contractor logistics support (CLS). When decision is made to assume Government support, NSNs will be assigned, and hand receipt entries [columns a, c, d, and e) will be furnished.

c Column (3) - Description Indicates the Federal item name and. if requires a minimum description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by the part number

d Column (4) - Unit of Measure (U/M). Indicates the measure used in worming the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr).

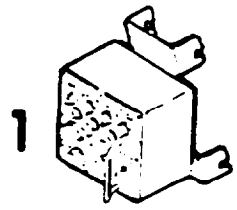
e. Column (5) - Quantity required (Qty rqr). Indicates the quantity of the item authorized to be Used with/on the equipment

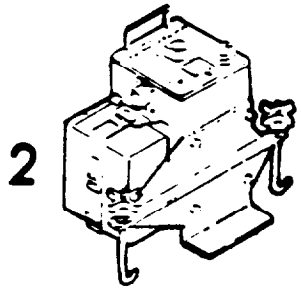
SECTION II. COMPONENTS OF END ITEM

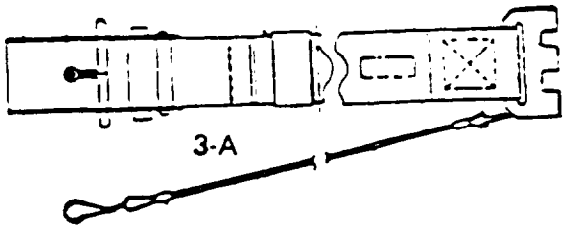
Illustration Number	National Stock Number	Description FSCM and Part Number	U/M	QtY rqr
1	·	Adapter Assembly, Cockpit Kill Indicator (19200) 9339399-2	EA	1
2	·	Adapter Assembly, Simulator System, Laser Console (19200) 9339392	EA	1
3	·	Adapter Set, Simulator System, Laser. UH-1H Helicopter (19200, 9339548	EA	1
	Line Item/Part Number 9339546 consists of the following components:			
3A	*	Belt End Assembly (19200) 9340083	EA	2
3B	*	Belt End Assembly (19200) 9340084	EA	1
3C	*	Belt End Assembly (19200) 9340103	EA	2
3D	*	Screw, Pan HD, #10-32 UNC-2A X .5 LG	EA	4
3E	*	Cable Assembly, AKI/Smoke - ACIA (19200) 9340051-2	EA	1
3F	*	Cable Assembly, Belt Harness, Left (19200) 9340054	EA	1

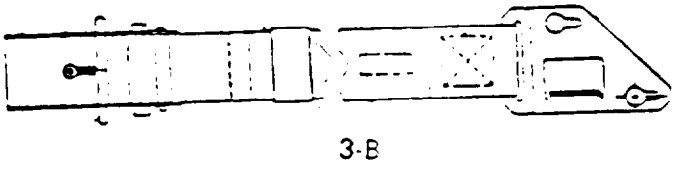
***Not Available on Publication Date**

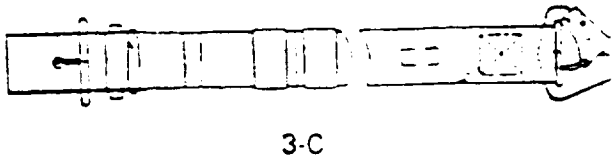
COMPONENTS OF END ITEM

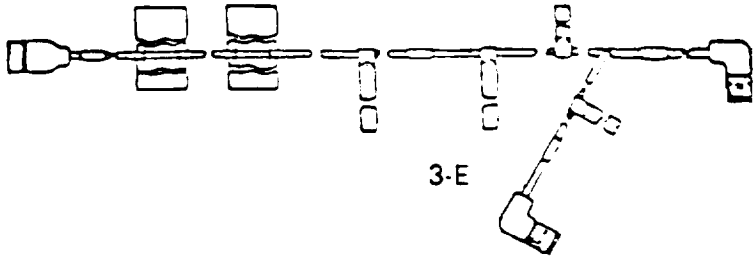


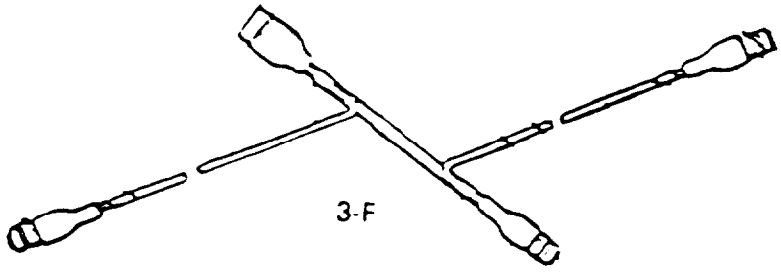










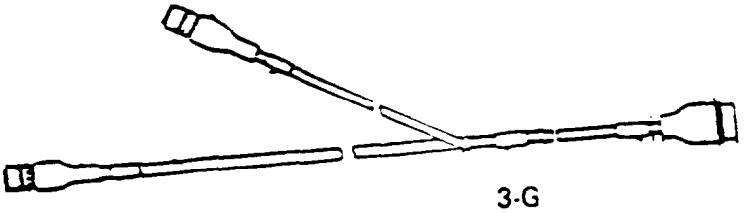


SECTION II. COMPONENTS OF END ITEM (CONT)

(1) Illustration Number	National Stock Number	(3) Description FSCM & Part Number Usable On Code	U/M	QTY rqr
3G	·	Cable Assembly, Belt Harness, Right (19200) 9340052	EA	1
3H	·	Cable Assembly, Headset - CKI (19200) 9340056-1	EA	2
3I	·	Cable Assemby. UH-1H ACIA INTFC (19200) 9340055	EA	1
3J	5340-01-148-3722	Camp Loop (96936) MS 21919-WCG6	EA	10
3K	5305-00-059-3662	Screw Pan Head #10-32 UNF-2A x .75 long (36906) MS 51958-65	EA	8
3L	•	Washer Flat .219 ID	EA	4
4	•	Detector Belt Assembly. Aircraft Segment No 2 (19200) 9339539	EA	2
5	·	Detector Belt Assembly, Aircraft Segment No 3 (19200) 9339540	E A	2
6	·	Detector Belt Assembly, Aircraft Segment No 4 (19200) 9339541	EA	1
7	·	Indicator Assembly, Simulator System. Laser Kill. Hit. Miss (19200) 9339396	EA	1
8	·	Installation Kit, UH-1H (19200) 9339416	EA	1
9	•	Operator's Manual. TM 9-1270-224-10	EA	1
10	•	Transit Case Assembly. UH-1H (19200) 9339561	EA	1

*Not Available on Publication Date

COMPONENTS OF END ITEM (CONT)



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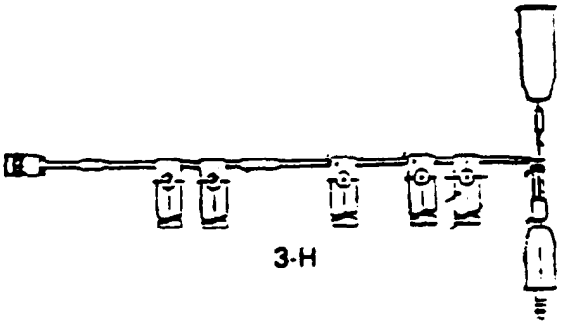

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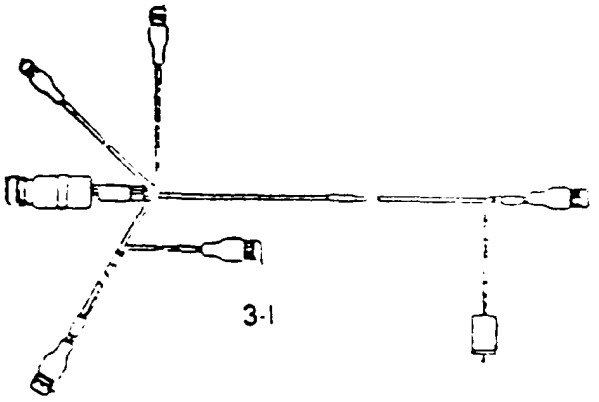
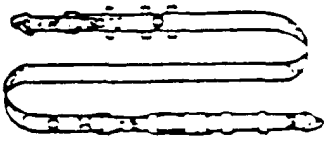


3-I

3-J

3-K

3-L



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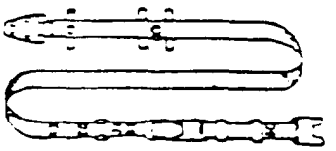

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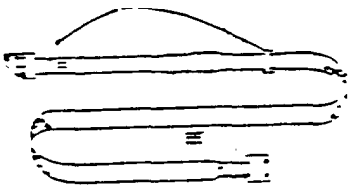

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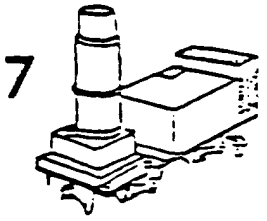

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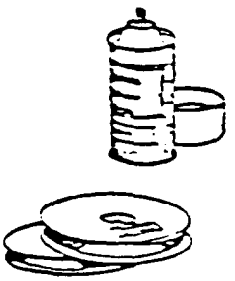

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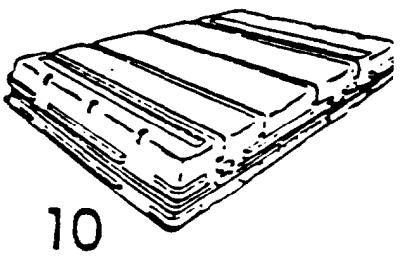

10

APPENDIX C

ADDITIONAL AUTHORIZATION LIST

SECTION I. INTRODUCTION

C-1. SCOPE

This appendix lists additional items you are authorized for the support of the MILES UH-1H System.

C-2. GENERAL

This lists identities items that do not have to accompany the MILES UH-1H System and that do not have to be turned in with it. These items are all authorized to you by either CTA, MTOE, TDA, or JTA.

C-3. EXPLANATION OF LISTING

National stock numbers. descriptions and quantities are provided to help you identify and request the additional items you require to support this equipment. The items are listed in alphabetical sequence by item, name

SECTION II. ADDITIONAL AUTHORIZATION LIST

(1) Item Number	(2) National Stock Number	(3) Description FSCM & Part Number Usable On Code	(4) U/M	(5) Qty Auth
1	1265-01-092-0891	Controller's Gun, Simulator System, Laser (19200) 11748811	EA	1
2	*	MILES System Test Set (19200) 9358670	EA	1
3	5120-00-243-9401	Roller, Hand (24617) 6523520	EA	1

*Not Available on Publication Date

APPENDIX D

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

SECTION I. INTRODUCTION

-1. SCOPE

his appendix lists expendable supplies and materials you will need to operate end maintain the MILES H-1H system. This listing is for informational purposes only and is not authority to requisition the listed ems. These items are authorized to you by CTA 50-970, Expendable/Durable Items (except Medical, lass V, Repair Parts and Heraldic Items) or CTA 8-100, Army Medical Department Expendable/Durable ems.

-2. EXPLANATION OF COLUMNS

a. Column (1) - Item Number. This number IS assigned to the entry in the listing and is eferenced in the narrative instructions to identify the material.

b. Column (2) - Level. This column identifies the lowest level of maintenance that requires the sted item.

C - Operator/Crew

C. Column (3) - National Stock Number (NSN). This is the National Stock Number assigned to e item; use it to request or requisition the item.

d. Column (4) - Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) I parentheses followed by the part number.

e. Column (5) - Unit of Measure (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, I, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

SECTION II. EXPENDABLE/DURABLE SUPPLIES AND MATERIAL LIST

(1) Number	(2) Level	(3) National Stock Number	(4) Description FSCM & Part Number Usable on code	(5) u/M
1	C, O	6136-00-050-3280	* Battery, 6 V (80058) BA2OOU	EA
2	C, O	7920-00-255-7536	Brush, Cleaning	EA
3	C O	1330-00-289-6854	Grenade, Hand, Smoke, M18 (Yellow)	EA
4	C, O	6640-00-240-5851	Paper, Lens Cleaning (81349) NNN-P-40	PK
5	C, O	801O-01-040-0947	Primer, Tape (19200) 11749034	OZ
6	C,O	7920-00-205-1711	Rag, Wiping: Cot DDD-R-30, CL 12, GR B	LB
7	C, O	8315-01-111-7170	Tape, Fastener (19200) 11749428	YD
8	C, O	7510-00-266-6694	Tape, Masking, 3” wide (or equivalent) (81348) PPP-T-42	YD

Dry battery listed is used with the equipment. It will not be preshipped automatically but is to be requisitioned in quantities necessary for the particular organization in accordance with SB 11-6.

INDEX

INDEX (CONT)

INDEX (CONT)

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JOHN A. WICKHAM, JR.
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SOMETHING WRONG WITH THIS PUBLICATION?

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PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE (MILES)
TM 9-1270-224-10	1 February 1984	Simulator System, Firing, Laser: M79 for UH-IH

BE EXACT. PIN-POINT WHERE IT IS

PAGE NO.	PARAGRAPH	FIGURE NO.	TABLE NO.	IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
8	5			Line 5. Change spelling of word unitl to read until
12	1			Change the word harnesses to read harness
12	7			Change to read: Ask controller to insert his green key into the key receptacle and turn off alarm.
4	4			Delete the word it from sentence

SAMPLE

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

JOHN SMITH SP/3 XXX-XXXX

SIGN HERE:

John Smith

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DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 9-1270-224-10	19 Oct 84	Multiple Integrated Laser Engagement System (MILES) Simulator Sys, Firing, Laser: MTS.

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARAGRAPH	FIGURE NO	TABLE NO

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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 Lb
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

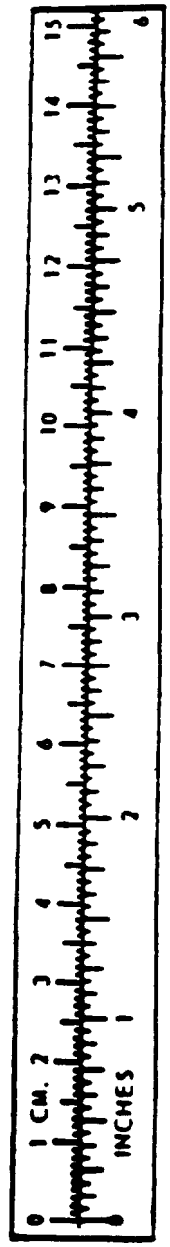
TEMPERATURE

5/9 (^{0}F - 32) = ^{0}C
212^0 Fahrenheit is equivalent to 100^0 Celsius
90^0 Fahrenheit is equivalent to 32.2^0 Celsius
32^0 Fahrenheit is equivalent to 0^0 Celsius
9/5 C^0 + 32 = F^0

APPROXIMATE CONVERSION FACTORS

TO CHANGE	To	MULTIPLY
Inches	centimeters	2.540
Feet	Meters	0.305
Yards	meters	0.914
Miles	Kilometers	1.609
Square Inches	Square centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers Per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic YardS	1.308
Milliliters	Fluid Ounces	0.034
liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles Per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621



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