

WELCOME TO TECHNICAL ORDER 00-105E-9, 1 JULY 2004, REVISION 9.

THIS IS SEGMENT 13 COVERING CHAPTERS 13, 14, 15 & 16.

TO NAVIGATE

CLICK ON THE BOOKMARKS AND CLICK ON THE (+) SYMBOLS, THEN CLICK ON SUBJECT LINKS TO GO TO SPECIFIC VIEWS IN THIS SEGMENT.



CONTINUE

NOTICE

CONTACT

**TO GO DIRECTLY TO THE TECHNICAL ORDER,
CLICK ON THE CONTINUE BUTTON.**

**TO SEE THE SEGMENT INFORMATION CHANGE NOTICE,
CLICK ON THE NOTICE BUTTON.**



**TO CONTACT THE TECHNICAL CONTENT MANAGER ,
CLICK ON THE CONTACT BUTTON.**

TECHNICAL ORDER 00-105E-9 TECHNICAL CONTENT MANAGER

WRITTEN CORRESPONDENCE:

HQ AFCESA/CEXF

ATTN: Fire and Emergency Services Egress Manager
139 Barnes Drive Suite 1
Tyndall AFB, Florida 32403-5319



E-MAIL: Tom.Stemphoski@tyndall.af.mil

INTERNET: HQ AFCESA Fire and Emergency Services PUBLIC WEB PAGE:
<http://www.afcesa.af.mil/CEX/fire/index.asp>

PHONE: (850) 283-6150
DSN 523-6150

FAX: (850) 283-6390
DSN 523-6390

For technical order improvements, correcting procedures, and other inquiries, please use the above media most convenient.

SEGMENT 13 INFORMATION CHANGE NOTICE

This page is provided to notify the user of any informational changes made to Technical Order 00-105E-9 in this Segment and the current Revision. Informational changes will be referenced in the Adobe Reader's Bookmark tool as a designator symbol illustrated as a <[C]> for quick reference to the right of the affected aircraft. The user shall insure the most current information contained in this TO is used for his operation. Retaining out of date rescue information can negatively affect the user's operability and outcome of emergencies. If the user prints out pages his unit requires, the user shall print the affected page(s), remove and destroy the existing page(s), and insert the newly printed page(s) in the binder provided for that purpose. A Master of this TO shall be retained in the unit's library for reference, future printing requirements and inspections.

<u>CHAPTER</u>	<u>AIRCRAFT</u>	<u>PAGE</u>	<u>EXPLANATION OF CHANGE</u>
13	UH-60A	ALL	Added new file. Incorporates Safety Supplement-3, dated 6 June 2003.

NOTE

Chapter 13 contains emergency rescue and mishap response information for the following aircraft:

USA	AH-1S
USA	AH-64A
USA	AH-64D
USA	CH-47D
USA	CH-54
USA	HH-60
USA	MH-6
USA	OH-58A/C/D
USA	TH-67
USA	UH-1
USA	UH-60A

CHAPTER 13

U.S. ARMY

HELICOPTER

AEROSPACE EMERGENCY RESCUE AND MISHAP RESPONSE INFORMATION

13-1. INTRODUCTION AND USE.

13-2. This section contains emergency rescue and mishap response information illustrations in alpha-numerical order relative to type and model of aircraft. This arrangement of illustrations is maintained from Chapter 4 throughout the remainder of the publication.

13-3. GENERAL ARRANGEMENT.

13-4. Aircraft type designation has been positioned in the upper right corner of the horizontal illustration for rapid identification. Additional aids to rapid orientation are:

a. Recent technological advances in aviation have caused concern for the modern firefighter. Aircraft hazards, cabin configurations, airframe materials, and any other information that would be helpful in fighting fires, the locating and rescue of personnel will be added as the information becomes available.

b. Suggested special tools/equipment are listed in the upper left corner, on the Aircraft/Entry page of each listed aircraft.

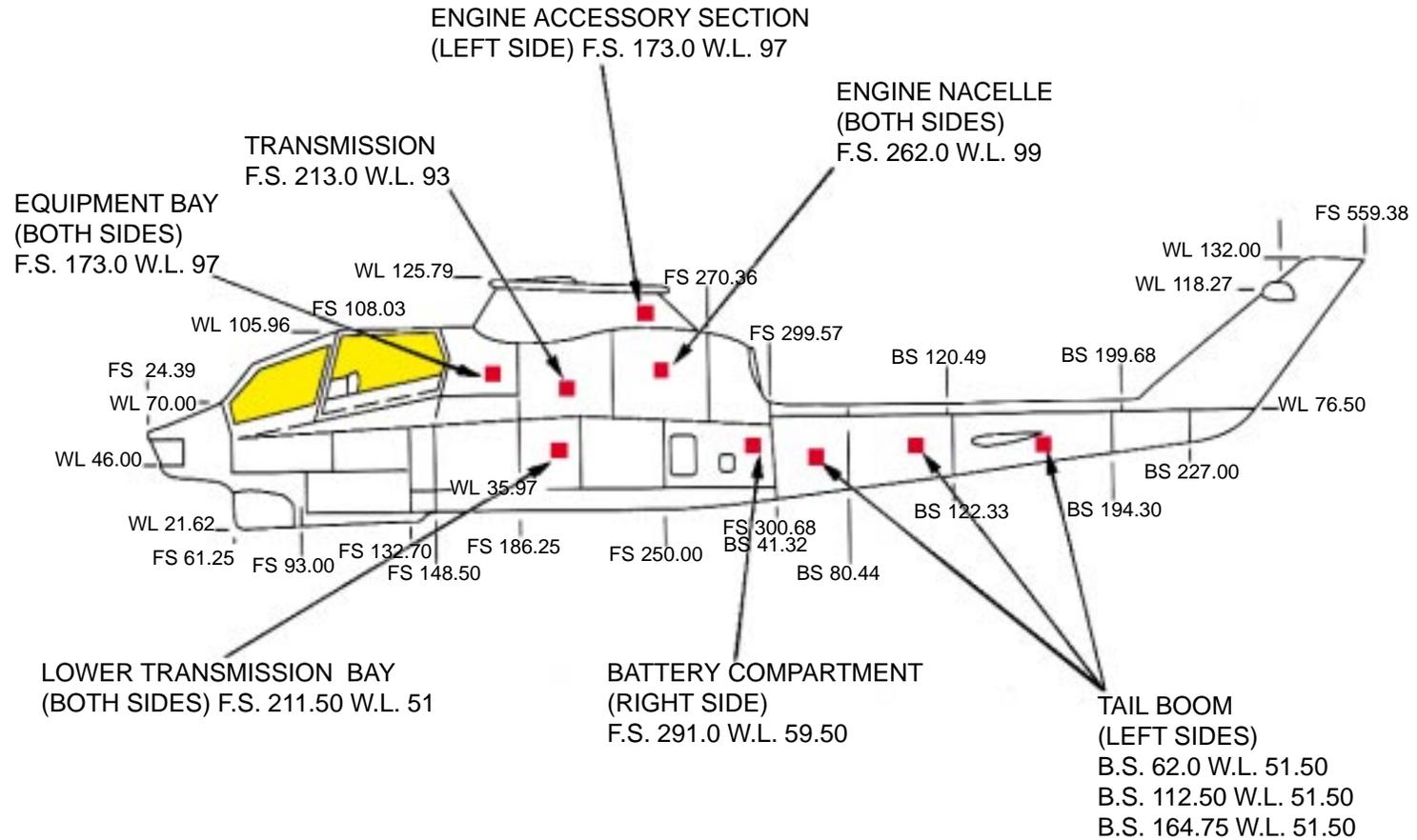
c. Procedural steps covering emergency/normal entrances, cut-ins, engine/APU shutdown, safetying ejection/escape systems, and aircrew extraction are outlined on the left side of each page with coordinated illustrations on the right.

d. Illustrations located on right side of pages are coordinated with text by numerals and small letters depicting both paragraph and subparagraph on the page.

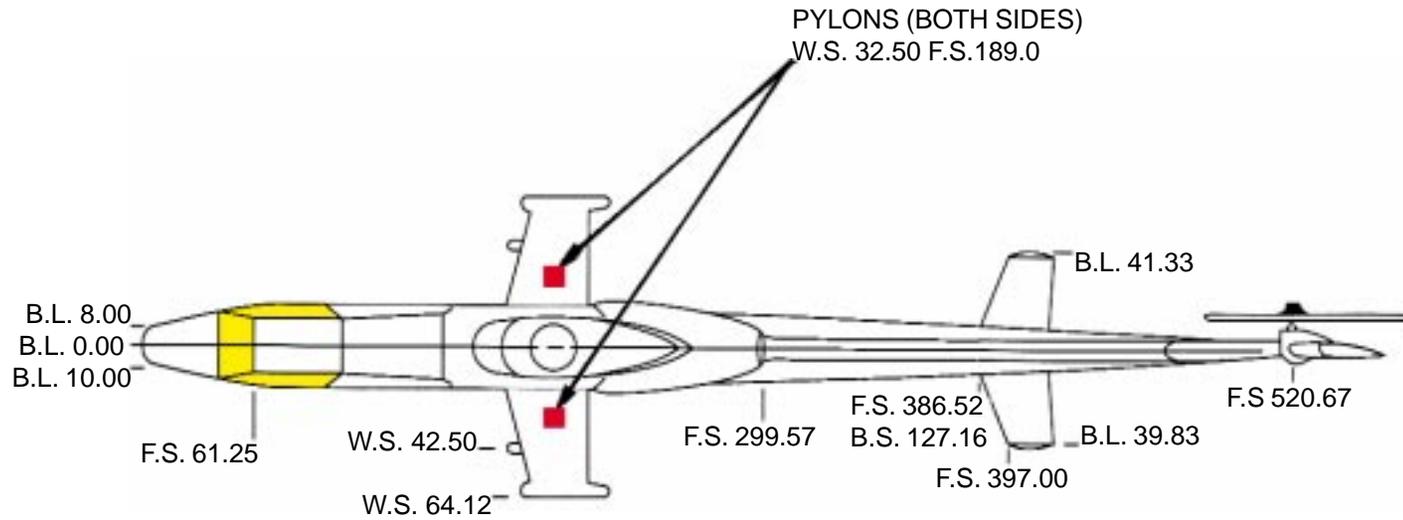
e. Each illustration is consistently colored and/or pattern keyed to highlight essential emergency rescue information.

f. Details are pulled directly from the illustration to highlight an area, thus eliminating unnecessary searching for desired information.

AIRCRAFT SKIN PENETRATION POINTS



AIRCRAFT SKIN PENETRATION POINTS-Continued



AH-1S

SPECIAL TOOLS/EQUIPMENT
 Power Rescue Saw
 Darming Tool
 Crash Ax

AIRCRAFT ENTRY

WARNING

Any rotation of gun barrels will cause guns to fire.

1. NORMAL ENTRY

- a. Rotate pilot's canopy handle, located on right hand side of aircraft beneath aft canopy, up and raise canopy.
- b. Rotate gunner's canopy handle, located on left side of aircraft beneath forward canopy, up and raise canopy.

2. EMERGENCY ENTRY

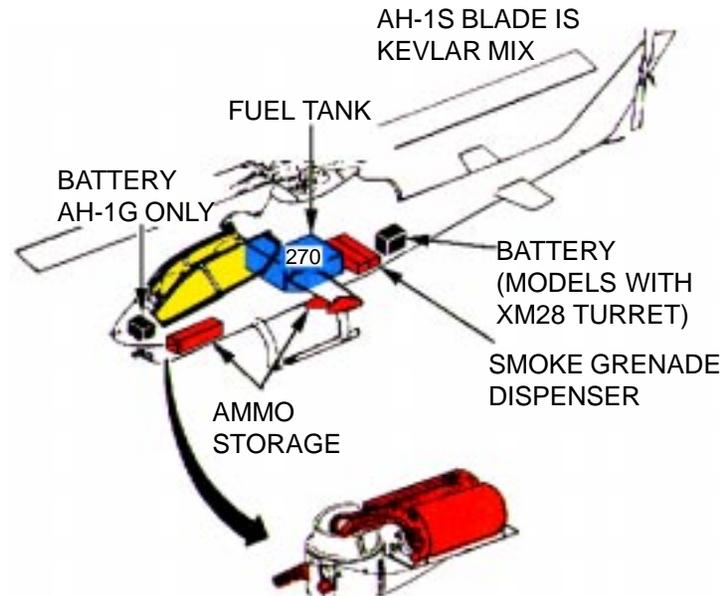
NOTE:

If canopies are inoperable break canopy as necessary to reach jettison handle.

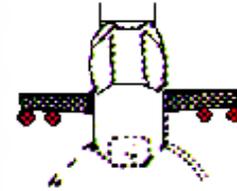
- a. Rotate pilot's canopy handle, located on right hand side of aircraft beneath aft canopy, down and raise canopy.
- b. Reach inside and rotate canopy jettison release handle, located at top center of canopy, inboard and pull canopy out.
- c. Rotate gunner's canopy handle, located on left hand side of aircraft beneath forward canopy, up and raise canopy.
- d. Reach inside and rotate canopy jettison release handle, located top center of canopy, inboard and pull canopy out.

3. CUT-IN

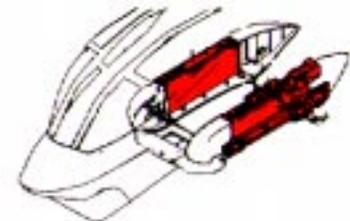
- a. Cut-in canopies as required.



WING MOUNTED STORES

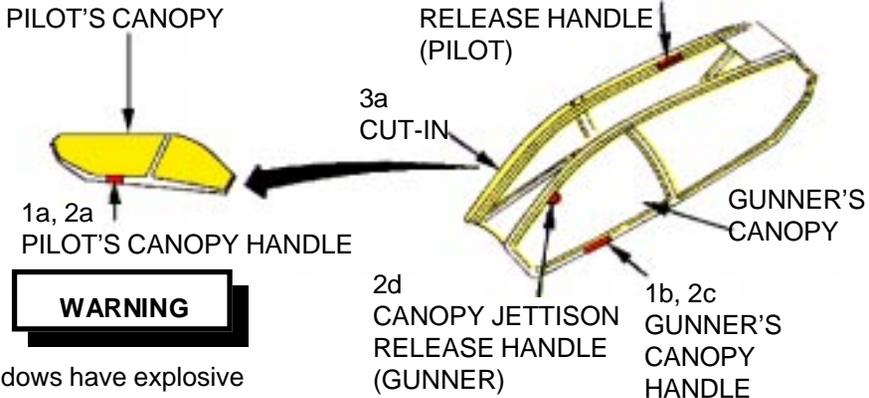


2.75 INCH FFAR ROCKETS
 XM18 GUN POD
 7.62MM AMMUNITION
 SMOKE GRENADE DISPENSER
 TOW MISSILES ON AH-1S



XM35, 20 MM WEAPONS
 SUBSYSTEM ON AH-1G ONLY

AH-1 GUN IS MECHANICALLY FIRED (6 BARRELS)	XM129 GRENADE LAUNCHER M134 MACHINE GUN
AH-1S 20MM CANNON IS ELECTRICALLY FIRED (3 BARRELS)	M134 MACHINE GUN XM28 GRENADE LAUNCHER
	TWO M134 MACHINE GUNS AMMUNITION MAGAZINE
	TWO XM129 GRENADE LAUNCHERS XM191 20 MM CANNON AH-1S ONLY



WARNING

Windows have explosive charges to blow windows out.

ENGINE SHUTDOWN

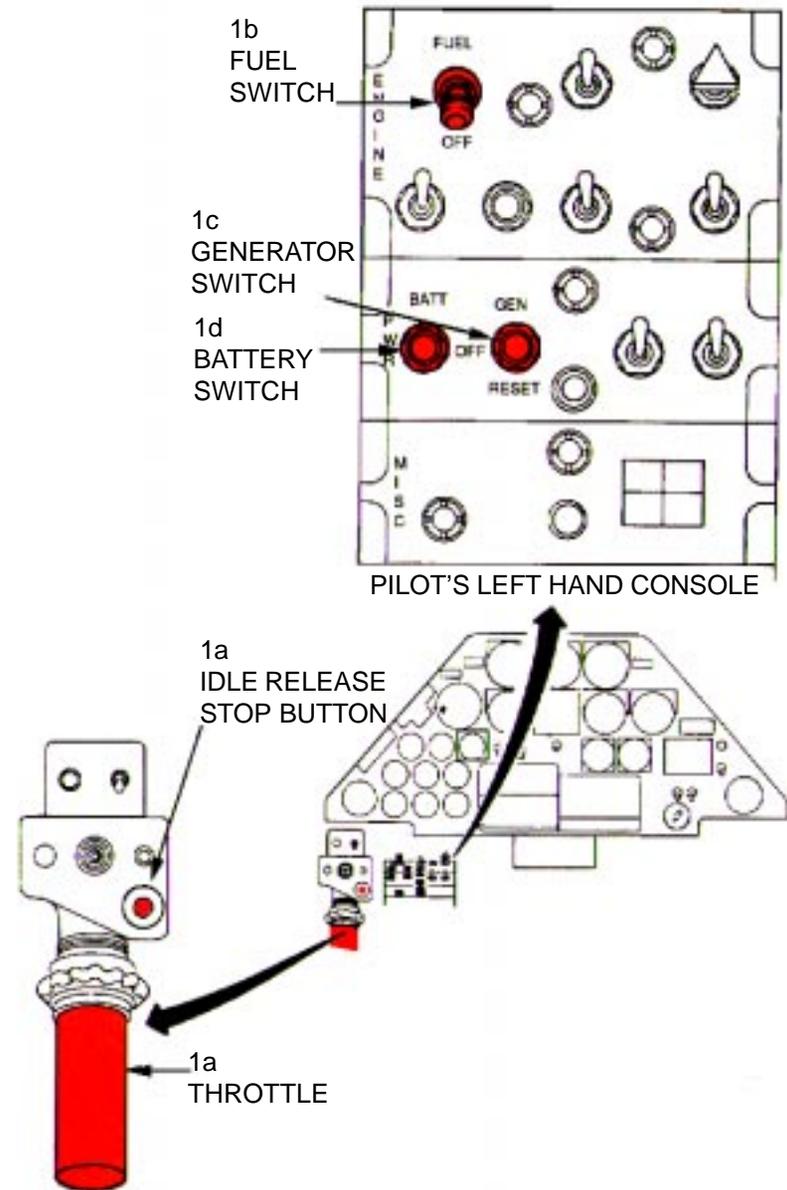
1. ENGINE SHUTDOWN

- a. Depress idle release stop button, located on pilot's collective pitch stick at pilot's left side and rotate throttle to FULL OFF position.

NOTE:

The fuel switch is spring-loaded and must be pulled up before switch can be moved.

- b. Place fuel switch, located on engine control panel at pilot's left side, in OFF position.
- c. Place generator switch, located on power panel at pilot's left side, in OFF position.
- d. Place battery switch, located beside generator switch, in OFF position.



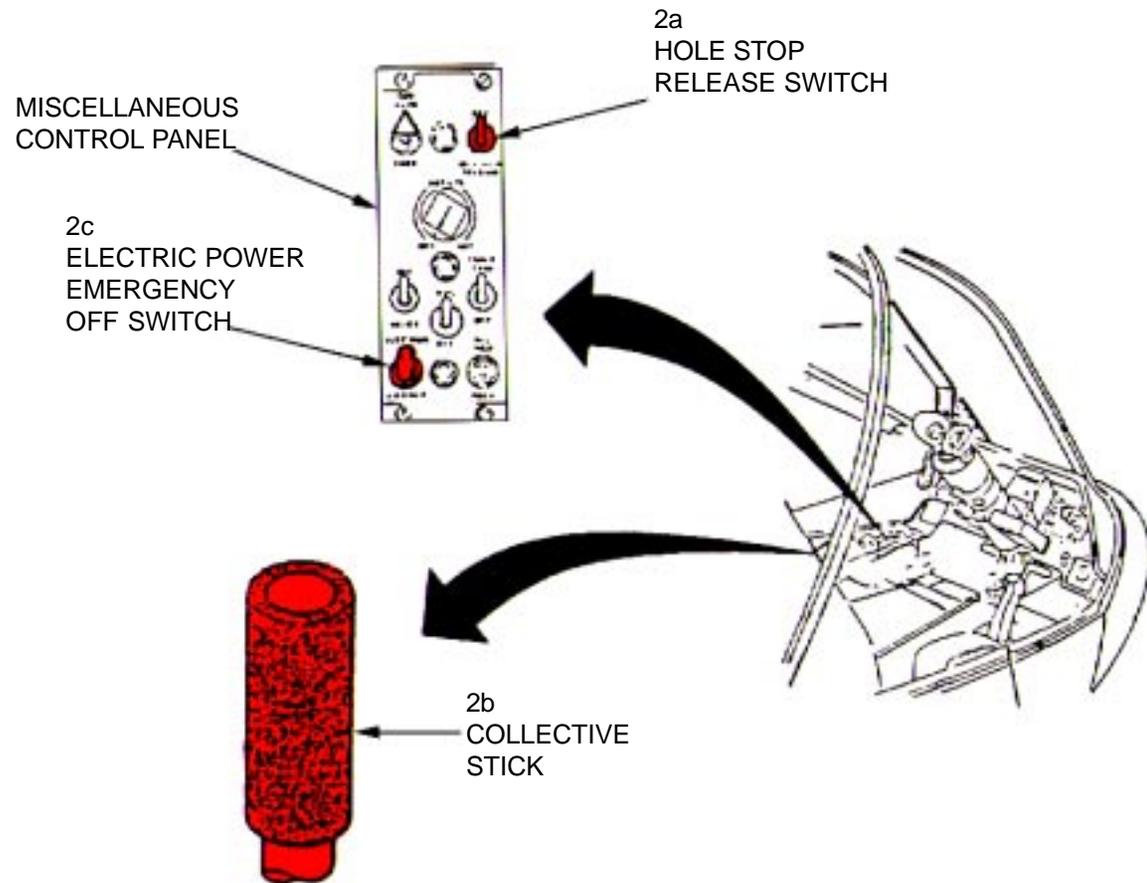
EMERGENCY ENGINE SHUTDOWN AND AIRCREW EXTRACTION

2. EMERGENCY ENGINE SHUTDOWN (FRONT COCKPIT)

- a. Place hole stop release toggle switch, located on the miscellaneous control panel at the gunner's left side, to ON position and hold.
- b. While holding the hole stop release switch ON, turn the collective pitch stick, located at the gunner's left side, counterclockwise and hold.
- c. While holding the collective pitch stick counterclockwise, release hole stop release switch and place the ELEC PWR EMER OFF switch, located on the miscellaneous control panel, to OFF.

3. AIRCREW EXTRACTION

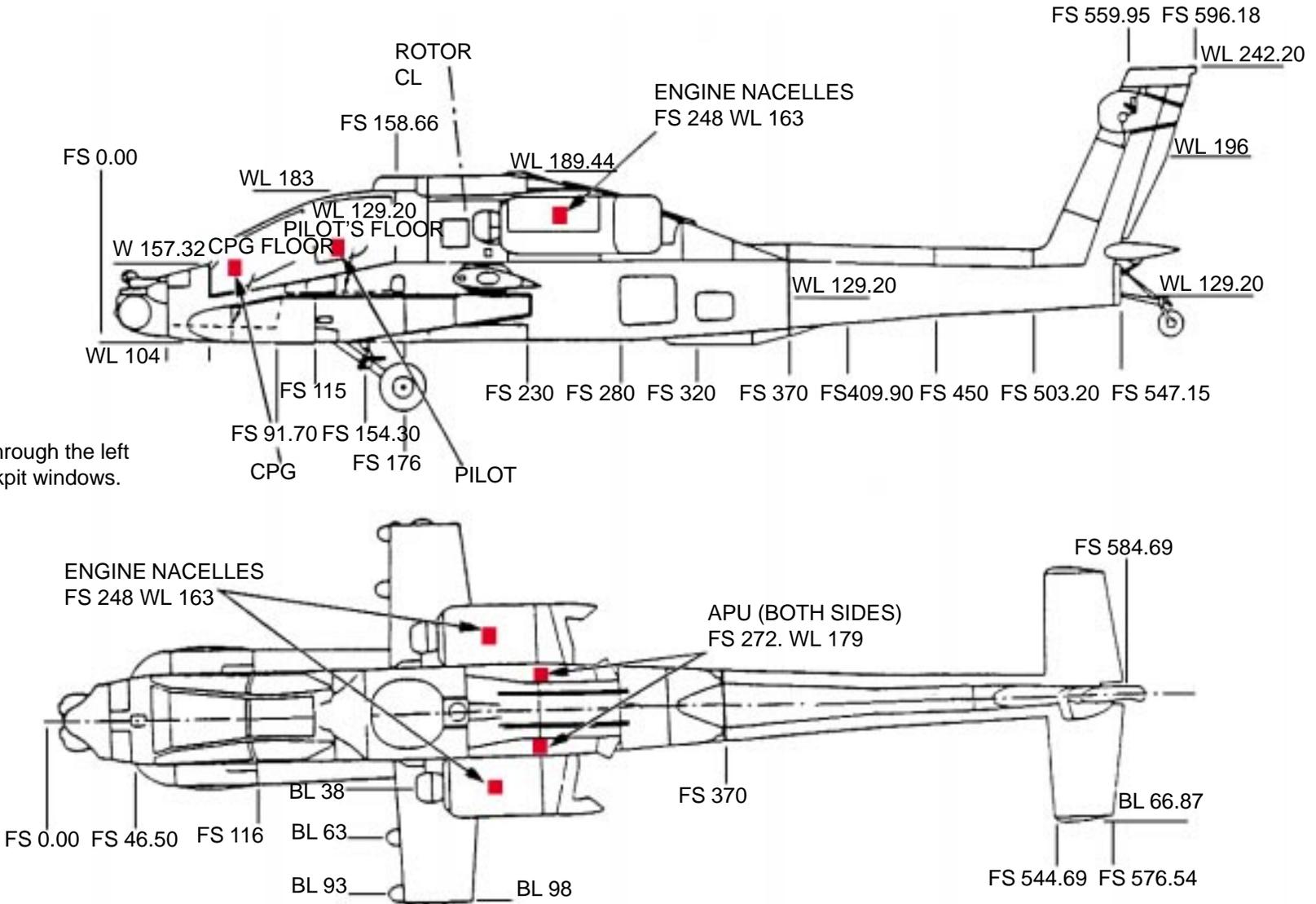
- a. Unlatch lap belts and remove shoulder harness from crewmember(s).



AIRCRAFT SKIN PENETRATION POINTS

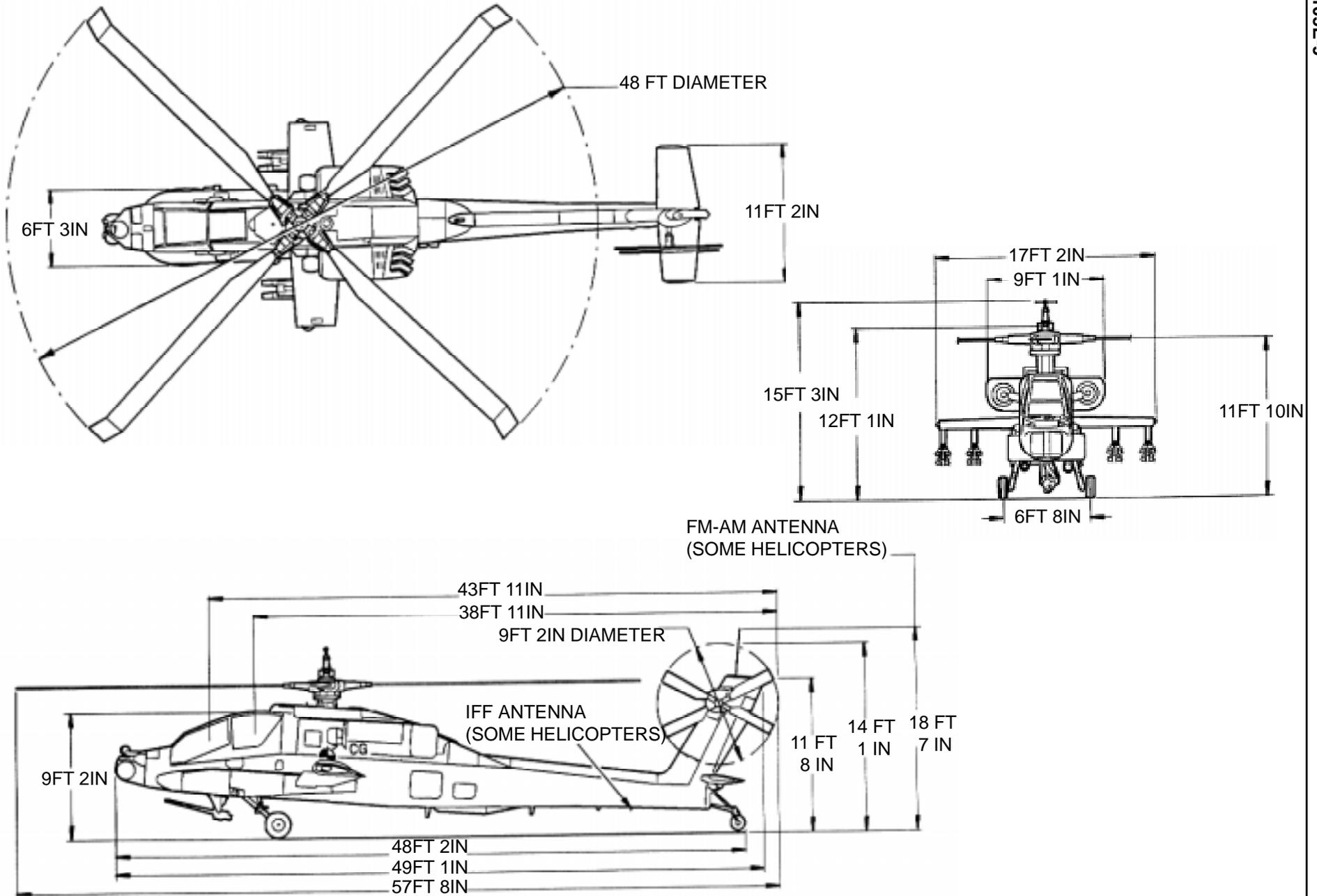
ALL DIMENSIONS ARE IN INCHES

- BL = BUTT LINE
- CL = CENTERLINE
- FS = FUSELAGE



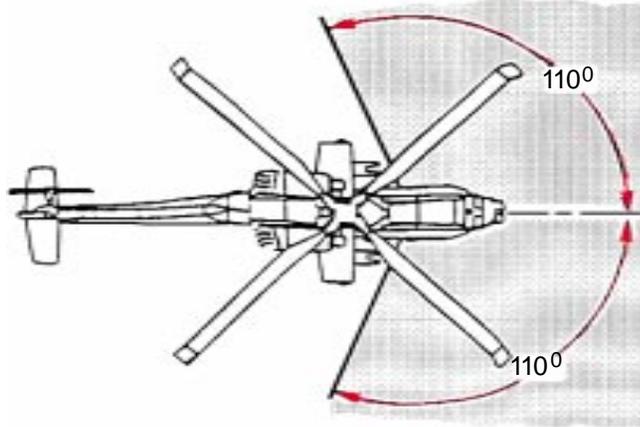
NOTE:
Penetrate through the left
or right cockpit windows.

AIRCRAFT DIMENSIONS



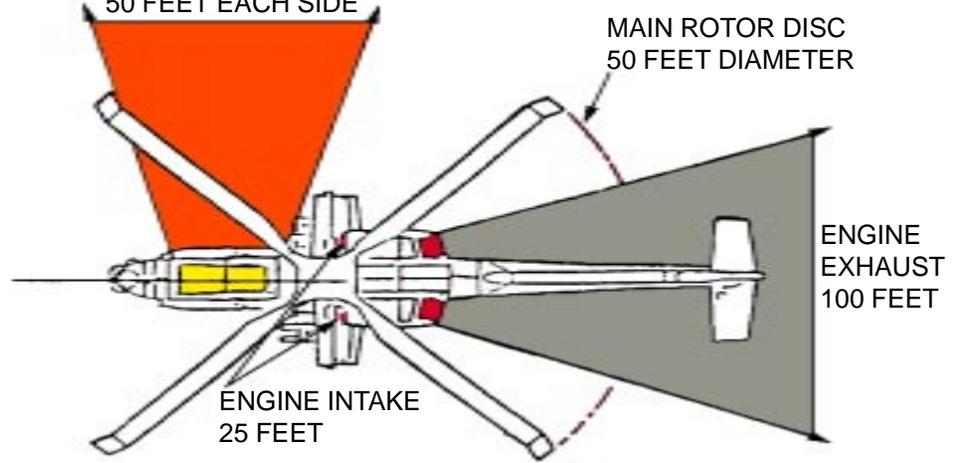
AIRCRAFT HAZARDS

LASER/CHAIN GUN
 110 DEGREE HORIZONTAL AZIMUTH
 60 DEGREE VERTICAL TRAVEL PLANE



CANOPY JETTISON
 50 FEET EACH SIDE

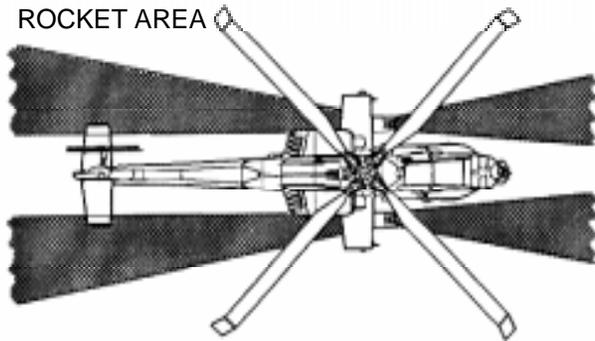
MAIN ROTOR DISC
 50 FEET DIAMETER



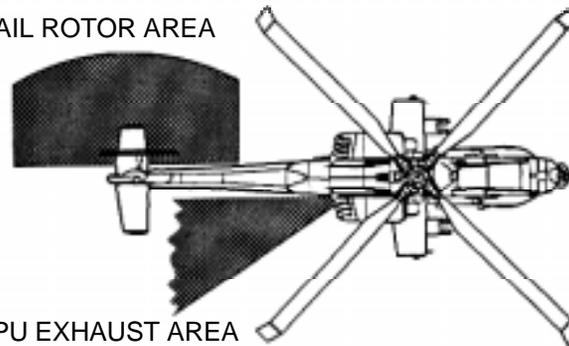
ENGINE INTAKE
 25 FEET

ENGINE EXHAUST
 100 FEET

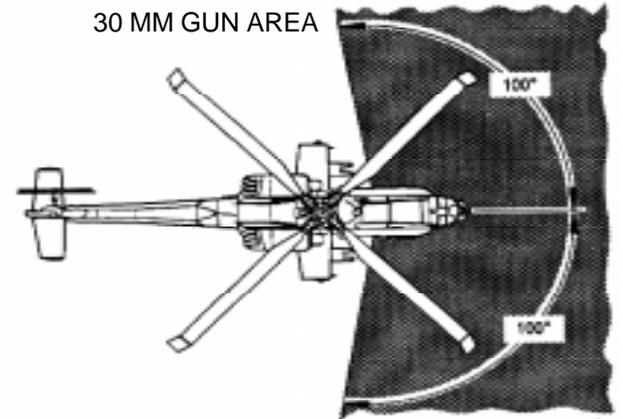
HELLFIRE AND
 ROCKET AREA



TAIL ROTOR AREA



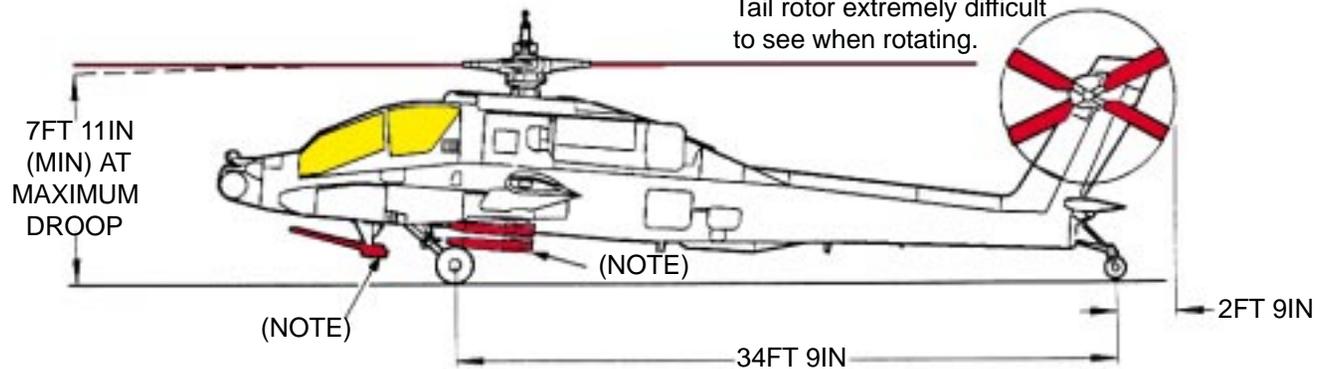
30 MM GUN AREA



APU EXHAUST AREA

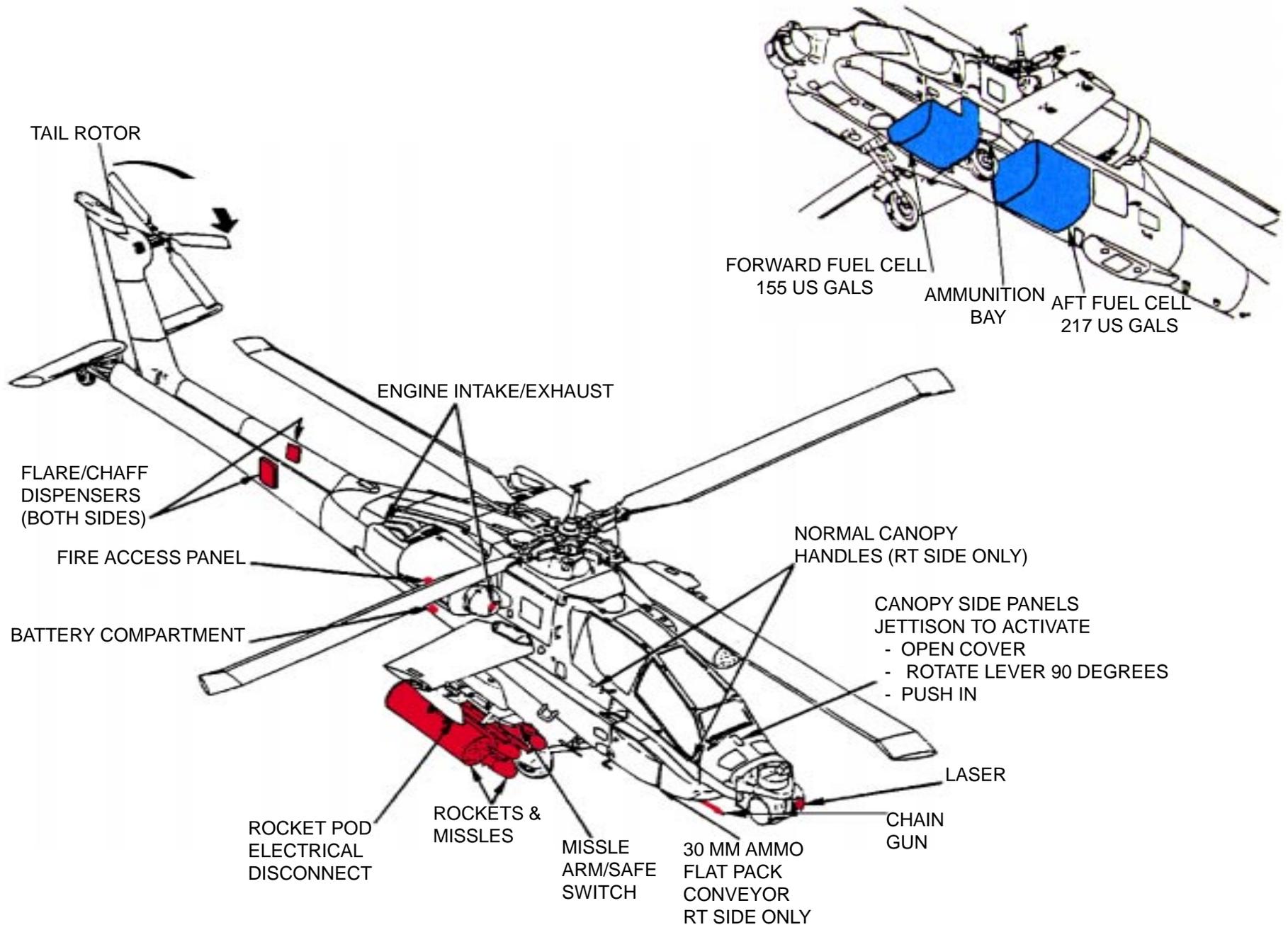
NOTE
 Tail rotor extremely difficult
 to see when rotating.

NOTE:
 GROUND CLEARANCE
 30 MM GUN, STOWED - 12 IN
 Clearance is reduced if wire strike
 protection system is installed.
 Rocket Launcher, Ground Stow - 25 IN
 Missile Launcher, Unloaded Rail - 27 IN
 Missile Launcher, Loaded Rail - 18 IN



AIRCRAFT HAZARDS-Continued

AH-64A



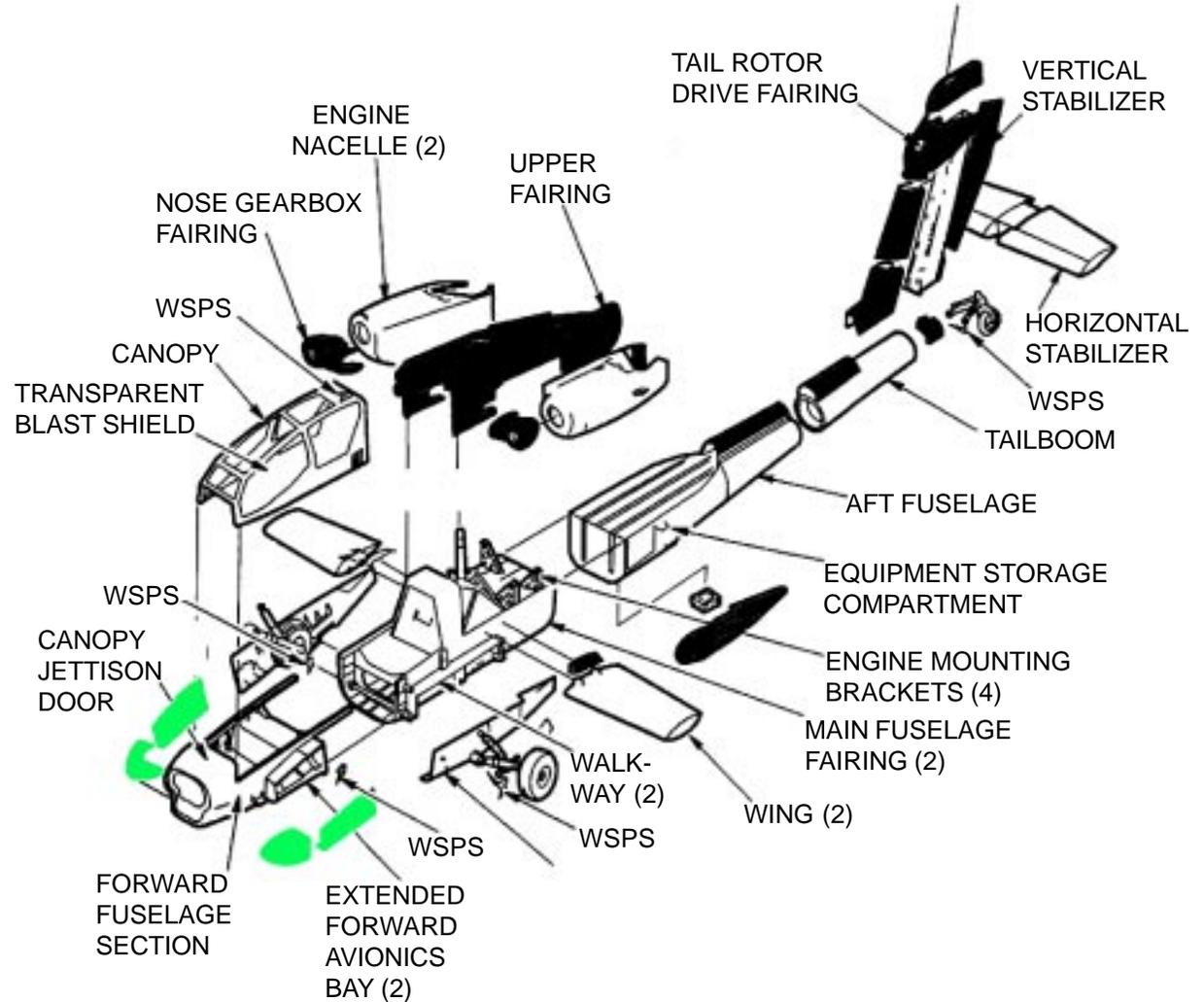
AIRFRAME MATERIALS

1. AIRFRAME MATERIALS

- a. Main Rotor Blades (not pictured) are constructed of stainless steel, aluminum, fiberglass, and nomex honeycomb.
- b. Cockpit flooring (not pictured) is constructed of Boron armor.
- c. Crew seats (not pictured) are constructed of Kevlar/Boron carbide and nylon.
- d. Tail Rotor hub forks (not pictured) are constructed of Titanium.
- e. Both aircraft engines (T700-GE-701-C) are constructed with Titanium/Carbon/Nickel Graphite.
- f. Battery (not pictured), located on the right side is a Fiber Nickel-Cadmium battery.

LEGEND

- Graphite Composite
- Kevlar/epoxy Composite



SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
Crash Ax

AIRCRAFT ENTRY

1. NORMAL ENTRY

NOTE:

Entry can only be accomplished from the right side of the aircraft.

- a. Rotate canopy unlock handle counterclockwise, located on the forward lower corner of each cockpit, up to unlock position and raise canopy door to maximum height.
- b. Rotate handle back to the horizontal position to lock canopy door open.

2. EMERGENCY ENTRY

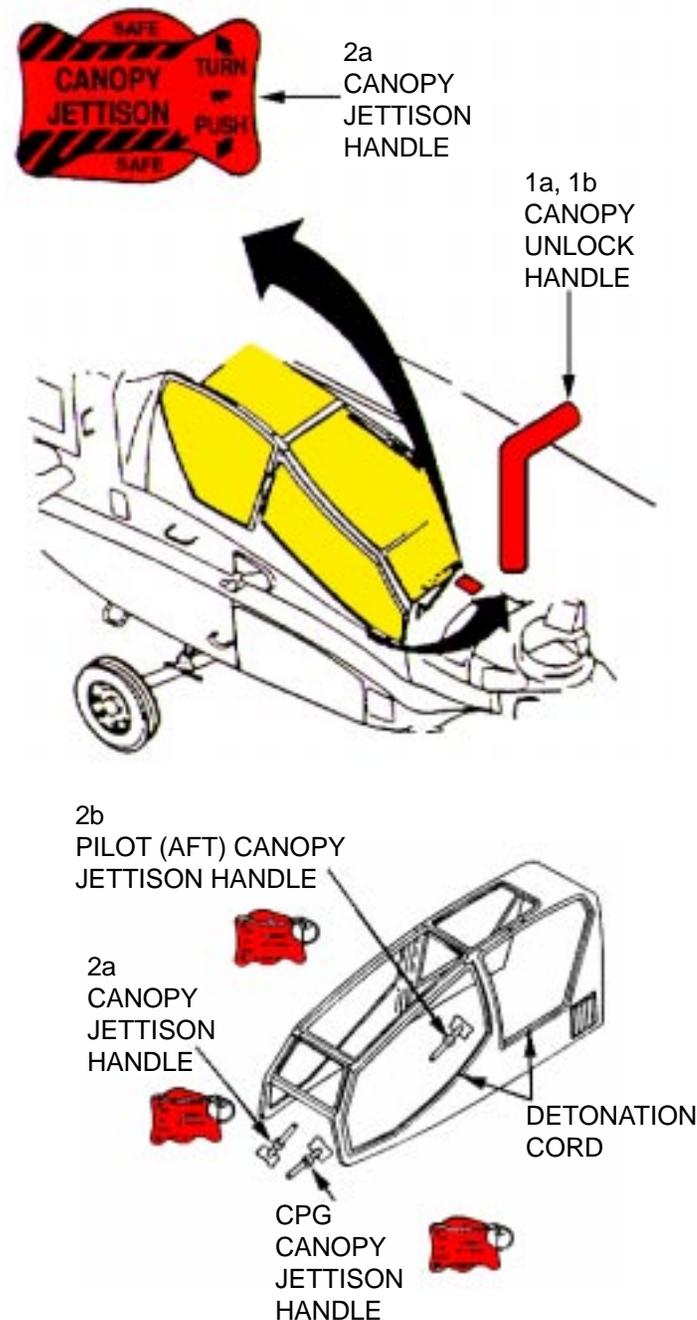
WARNING

Activating the canopy jettison system, internally or externally, propels fragments and debris from all four windows at a high velocity up to 50 feet on each side of the aircraft. All personnel must remain clear during canopy jettison. Personnel activating the canopy jettison handle must wear full protective clothing and eye protection to avoid serious injury.

- a. Open access door, located on the nose of the aircraft directly in front of the CPG (fwd) cockpit, rotate canopy jettison handle 90 degrees counterclockwise and push in to jettison canopy side panels.
- b. Once inside, if the need arises to activate canopy jettison internally, the internal canopy jettison handle is located on the side of instrument panel in both cockpits.

NOTE:

Windshield and first overhead window is glass, all other windows are Plexiglas.



ENGINE AND APU FIRE DETECTION AND SUPPRESSION CONTROLS

AH-64A

1. EMERGENCY SHUTDOWN

- Pull engine fire T-handles, located on pilot's instrument panel.
- Place engine fire extinguisher switch, located below the engine fire T-handles, to primary position.

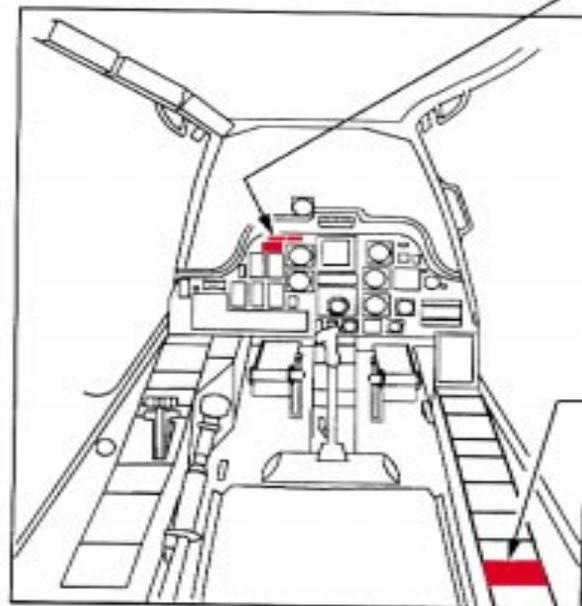
NOTE:

The APU cannot be shutdown from the GCP (front) cockpit.

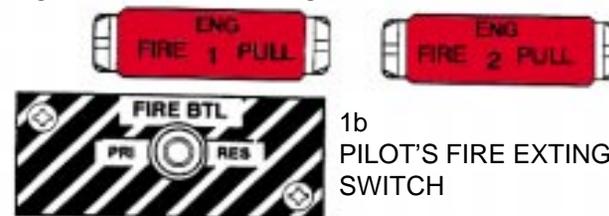
WARNING

If emergency egress is required before the rotor blades have stopped, ensure cyclic remains centered. Battery and Force Trim switches shall be left ON to prevent rotors from striking personnel or the aircraft. (See page AH-64A.3 for locations.)

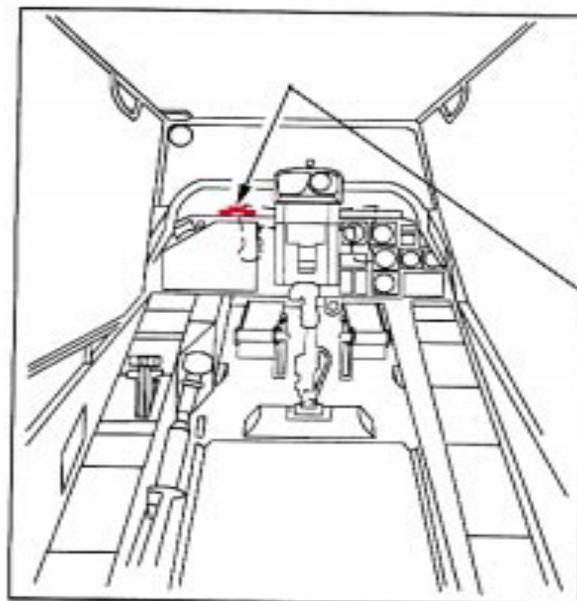
- Pull APU fire T-handle, located on pilot's right console.
- Place APU fire extinguisher switch, located behind the fire T-handle, to primary position.



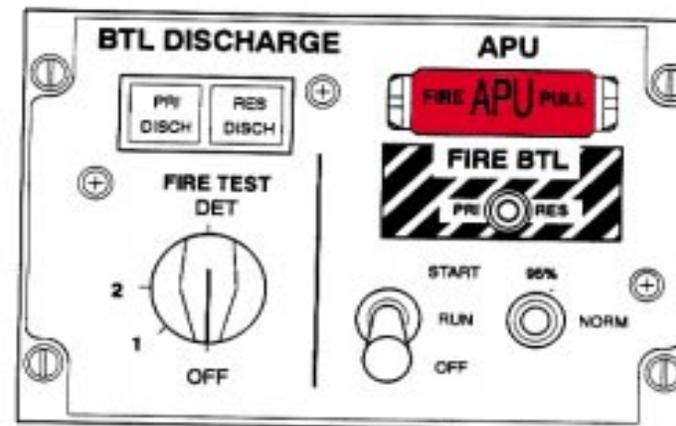
1a
PILOT'S ENGINE FIRE T-HANDLES



1b
PILOT'S FIRE EXTINGUISHER SWITCH



1c
PILOT'S APU/FIRE T-HANDLE



1d
CPG'S FIRE EXTINGUISHER SWITCH AND ENGINE FIRE T-HANDLES



ENGINE SHUTDOWN

1. NORMAL ENGINE SHUTDOWN

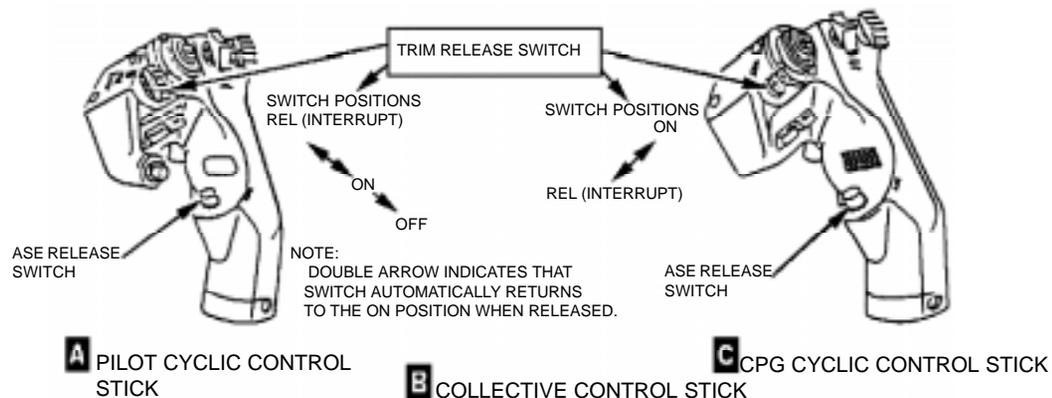
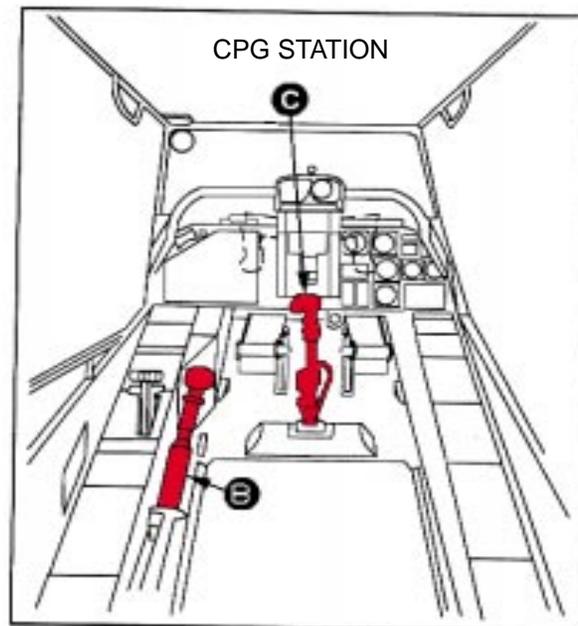
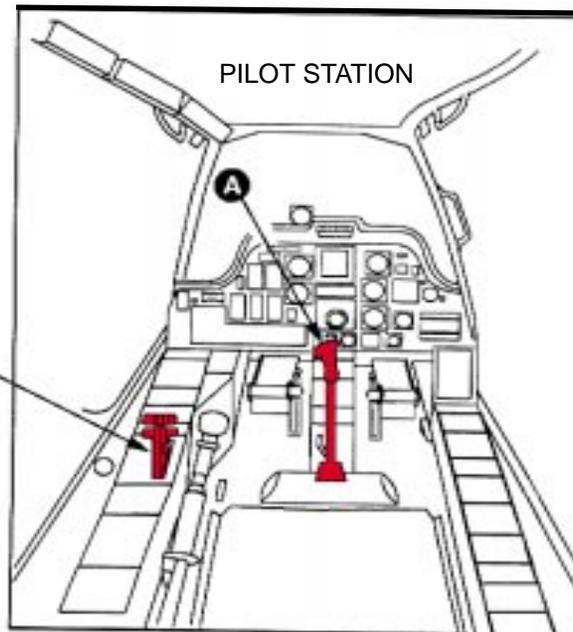
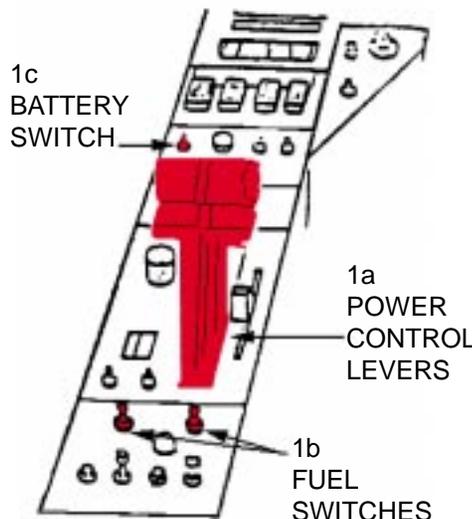
NOTE:

Normal engine shutdown can be accomplished only from the pilot's cockpit (aft).

WARNING

If emergency egress is required before the rotor blades have stopped, ensure cyclic remains centered. BATTERY and FORCE TRIM switches shall be left ON to prevent rotors from striking the aircraft or personnel.

- a. Pull power control levers, located on left console, aft to idle detent.
- b. Place fuel switches, located on left console behind the power control levers, to OFF position.
- c. Place battery switch, located on left console in front of the power control levers, to OFF position.
- d. Place APU switch, located on right console, to OFF position. (See page AH-64A.7.)



PILOT AND CPG COLLECTIVE CYCLIC CONTROL STICKS

AIRCREW EXTRACTION

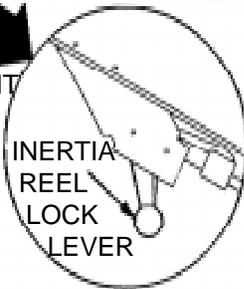
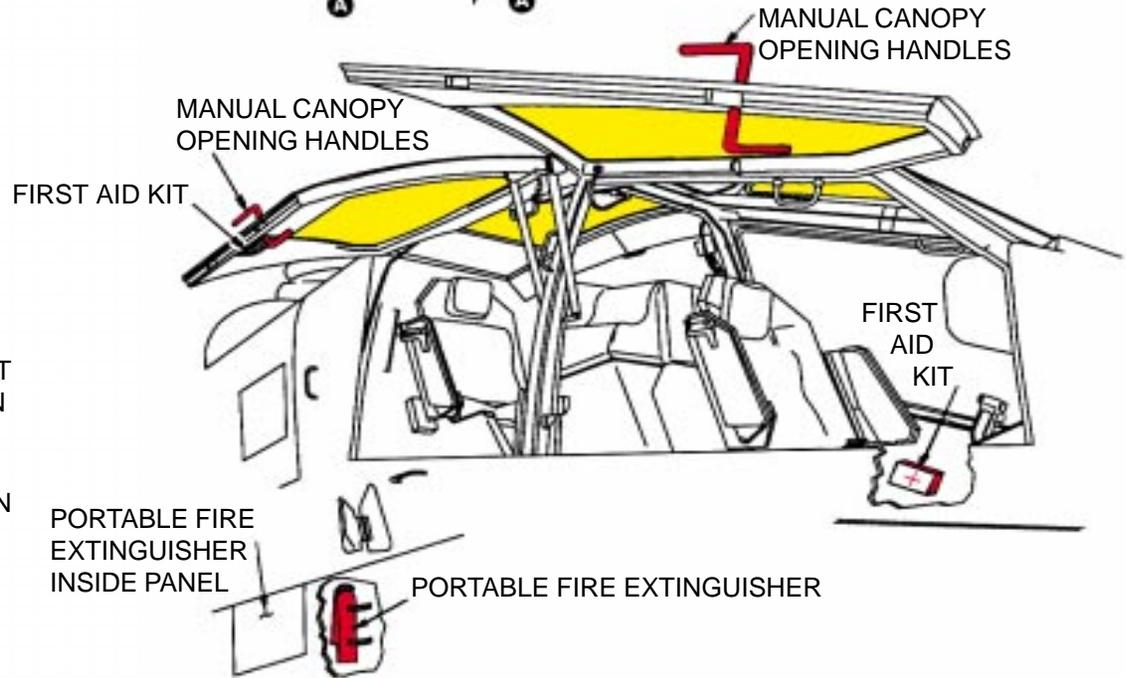
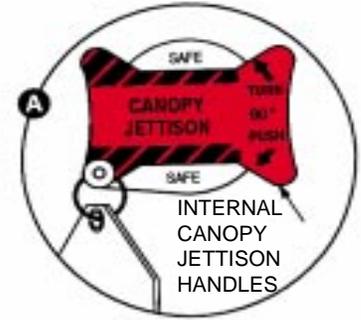
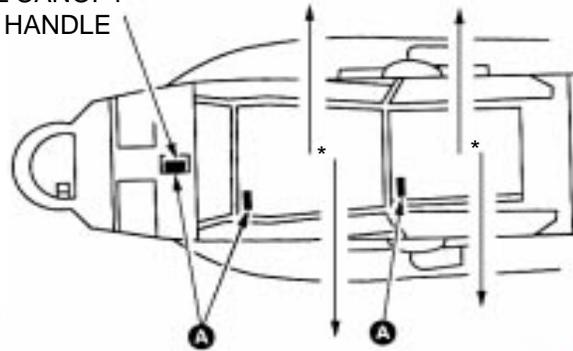
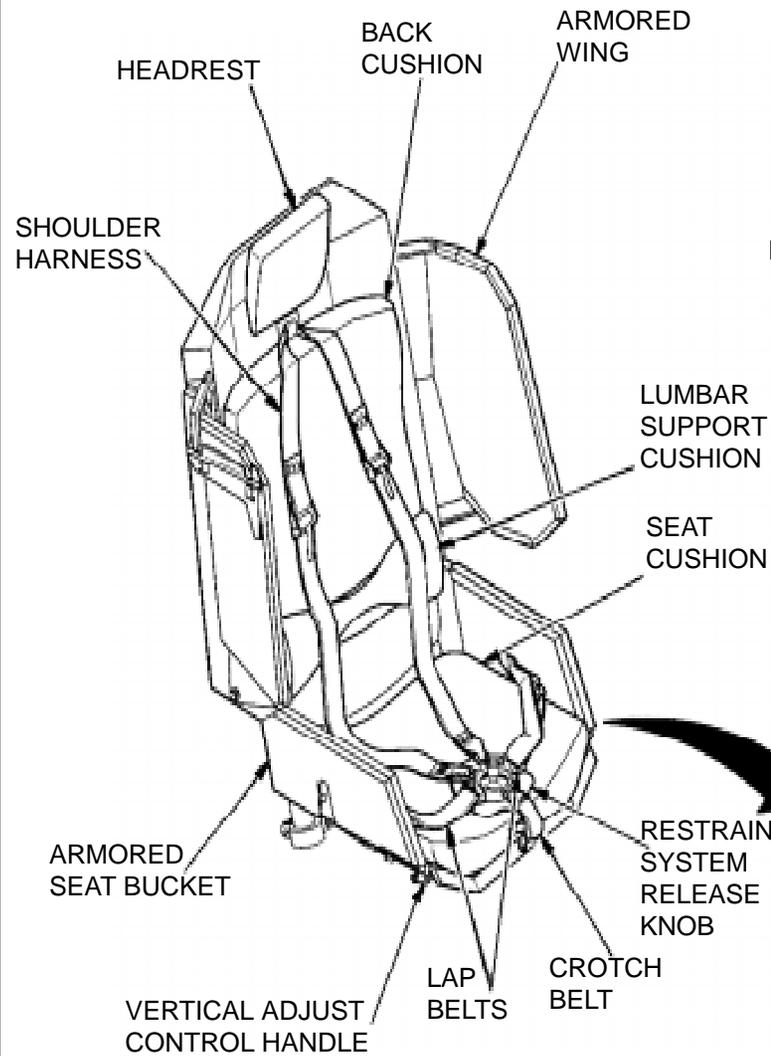
1. AIRCREW EXTRACTION

- a. Use normal or emergency entry procedures.
- b. Turn harness release knob 1/4 turn in either direction to release crewmember restraints.
- c. Use appropriate emergency exit.

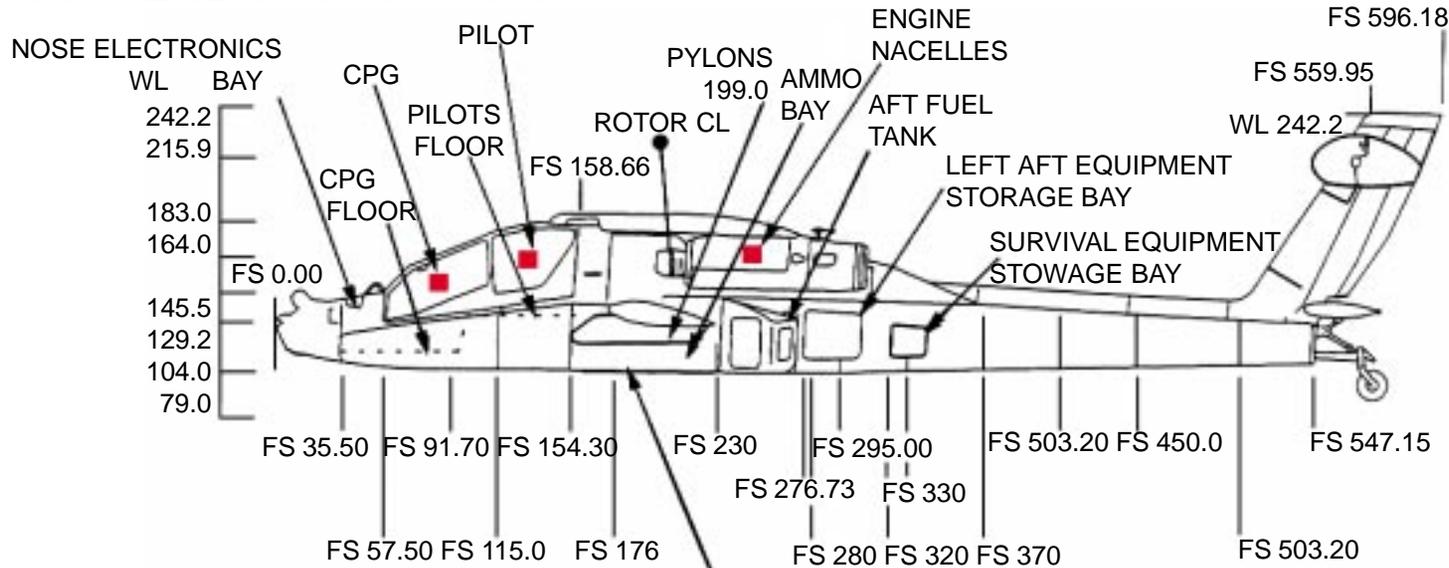
EXTERNAL CANOPY JETTISON HANDLE

* EMERGENCY EXITS (4)

AH-64A

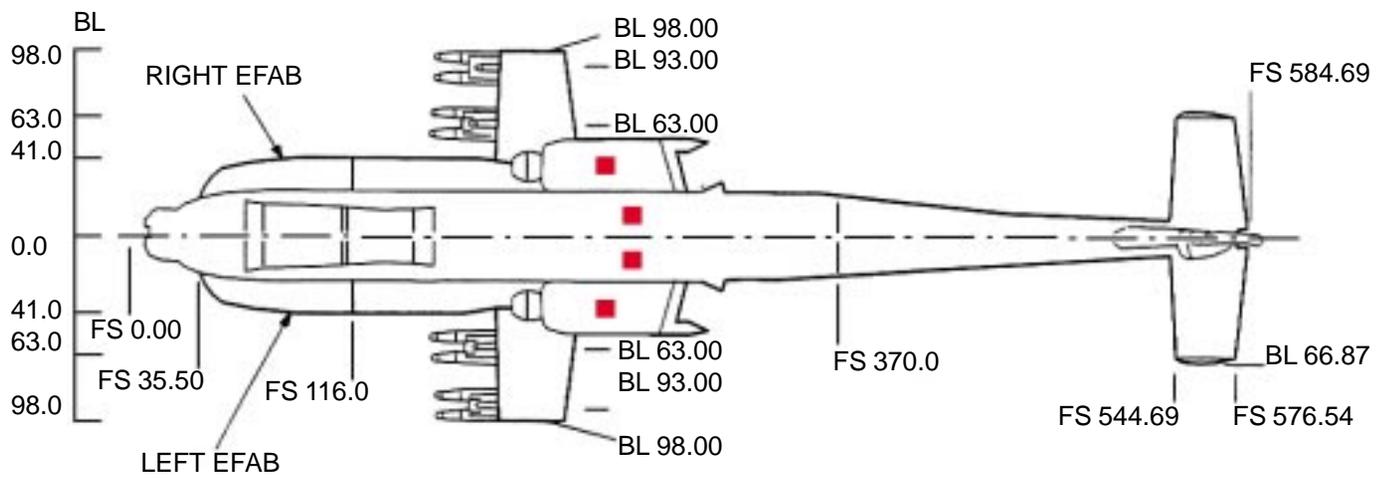
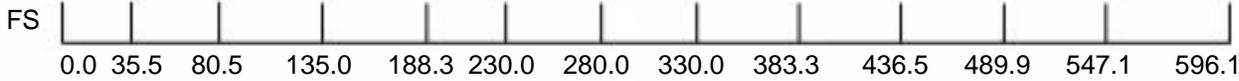


AIRCRAFT SKIN PENETRATION POINTS

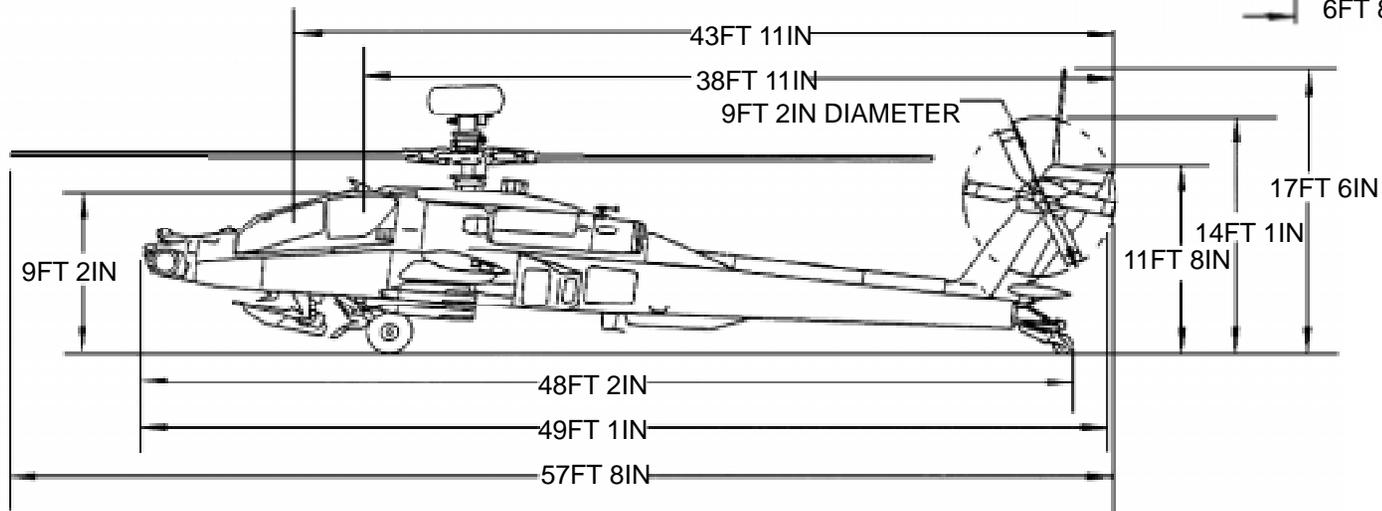
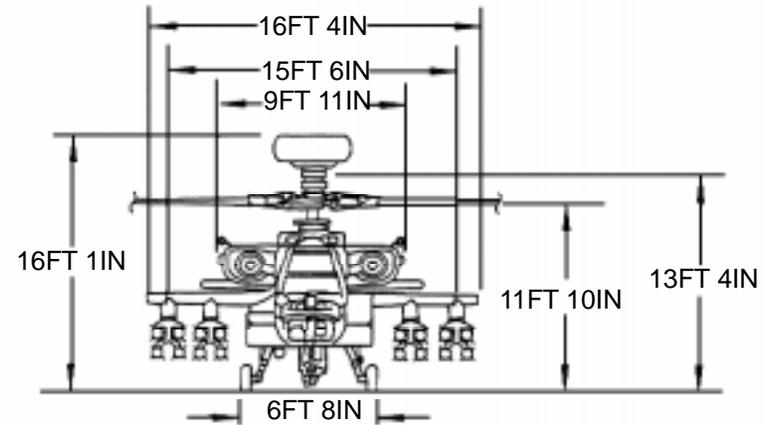
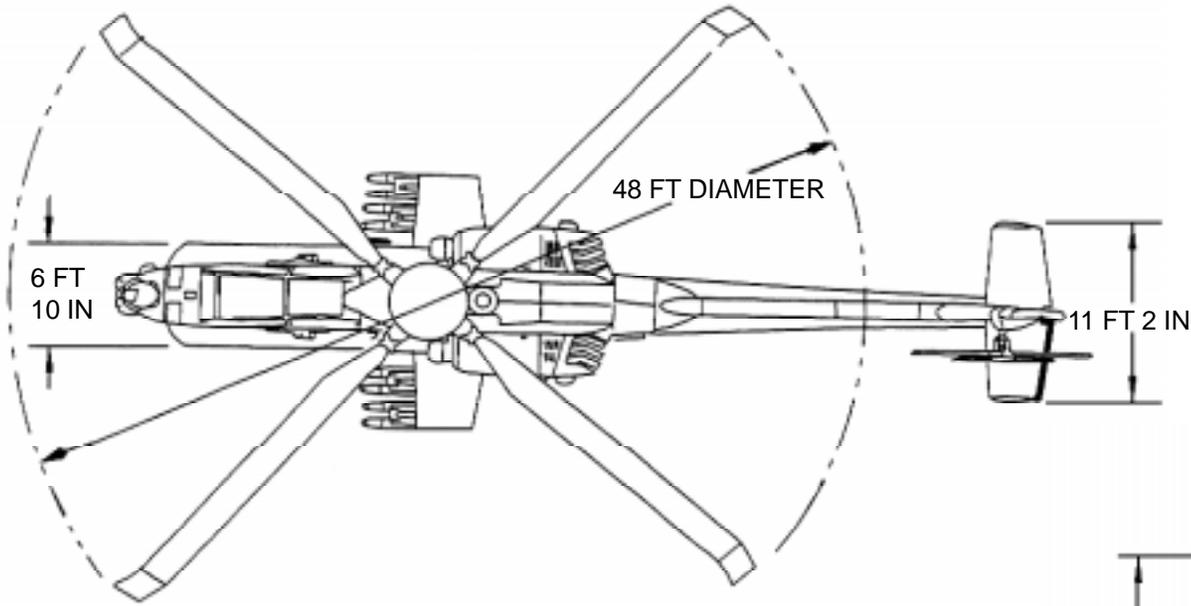


PYLON FWD LUG STATION
 INBOARD = 184.4
 OUTBOARD = 184.5

ALL DIMENSIONS ARE IN INCHES
 BL = BUTT LINE
 CL = CENTERLINE
 FS = FUSELAGE

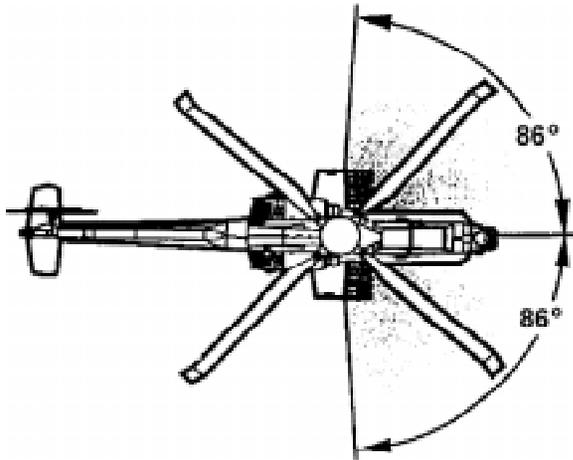


AIRCRAFT DIMENSIONS

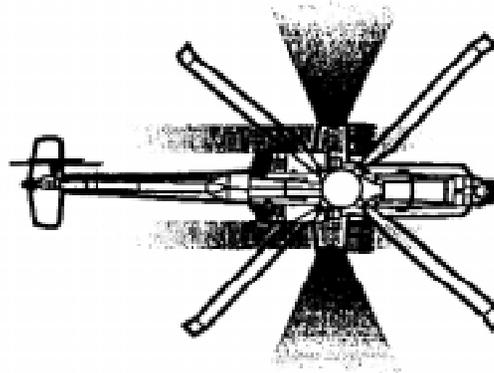


AIRCRAFT HAZARDS

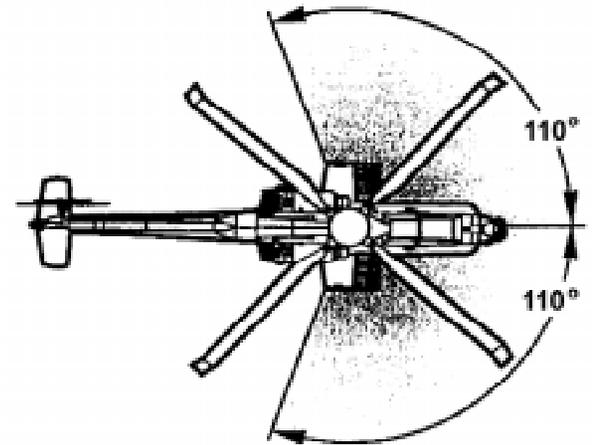
30 MM GUN AREA



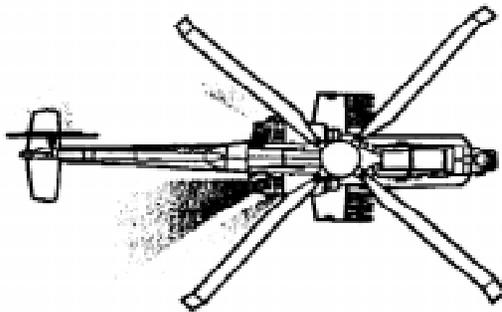
HELLFIRE MISSILES, 70 MM ROCKETS AND EXTERNAL STORES JETTISON SYSTEM



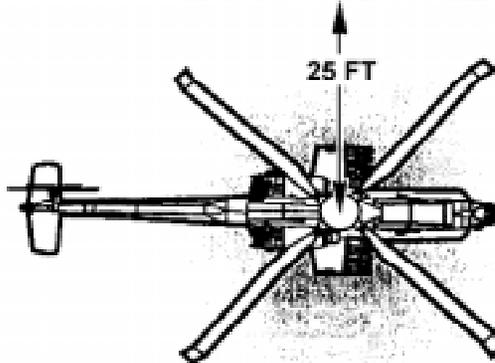
TADS/PNVS TURRET AND LASER



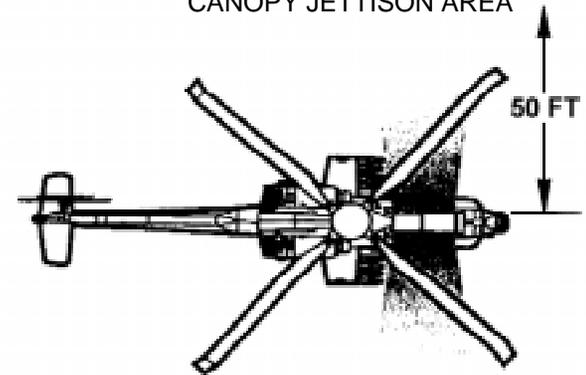
APU AND ECS EXHAUST AREAS AND TAIL ROTOR AREA



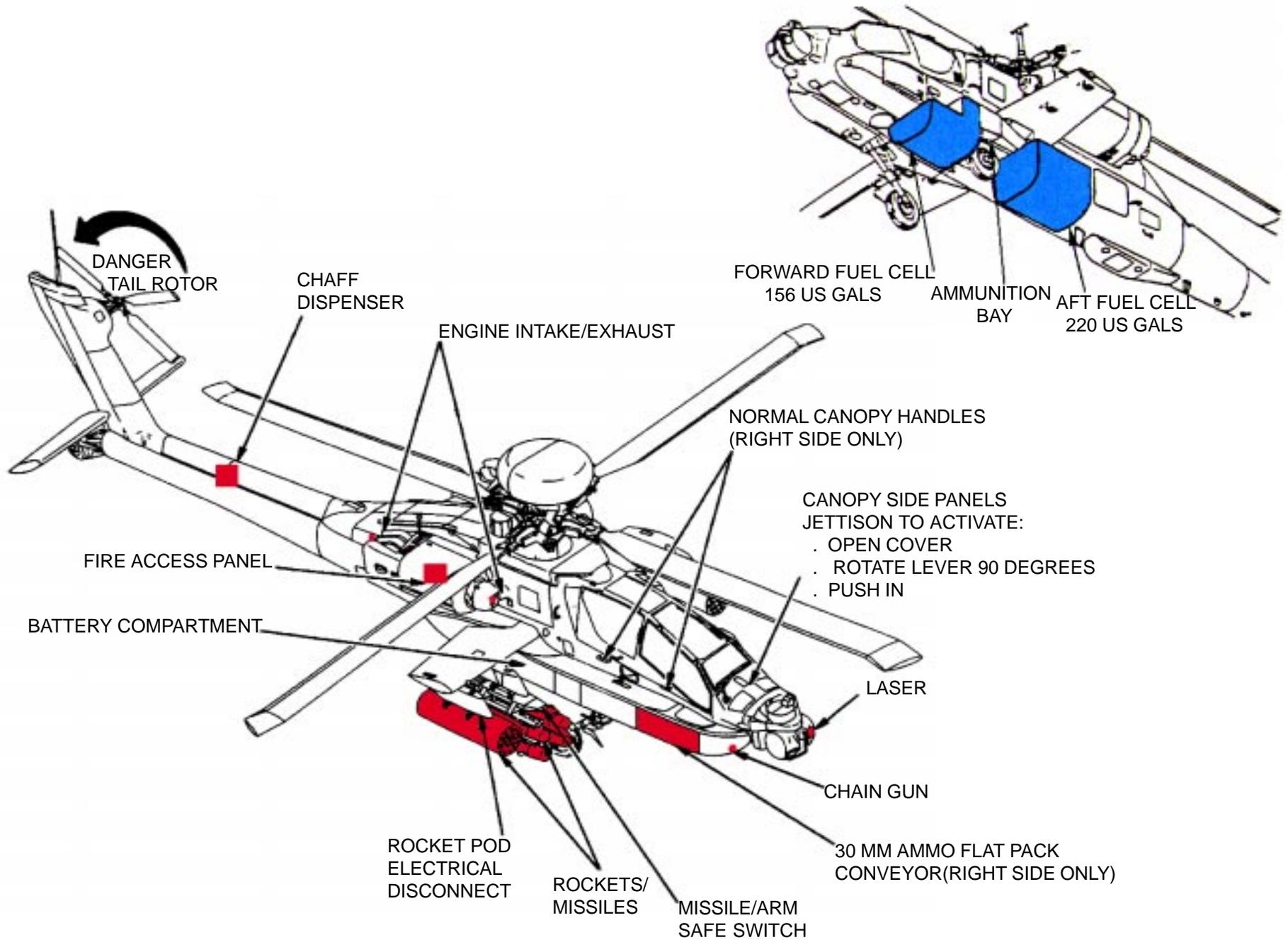
ENGINE EXHAUST AND MAIN ROTOR DISC AREA



CANOPY JETTISON AREA



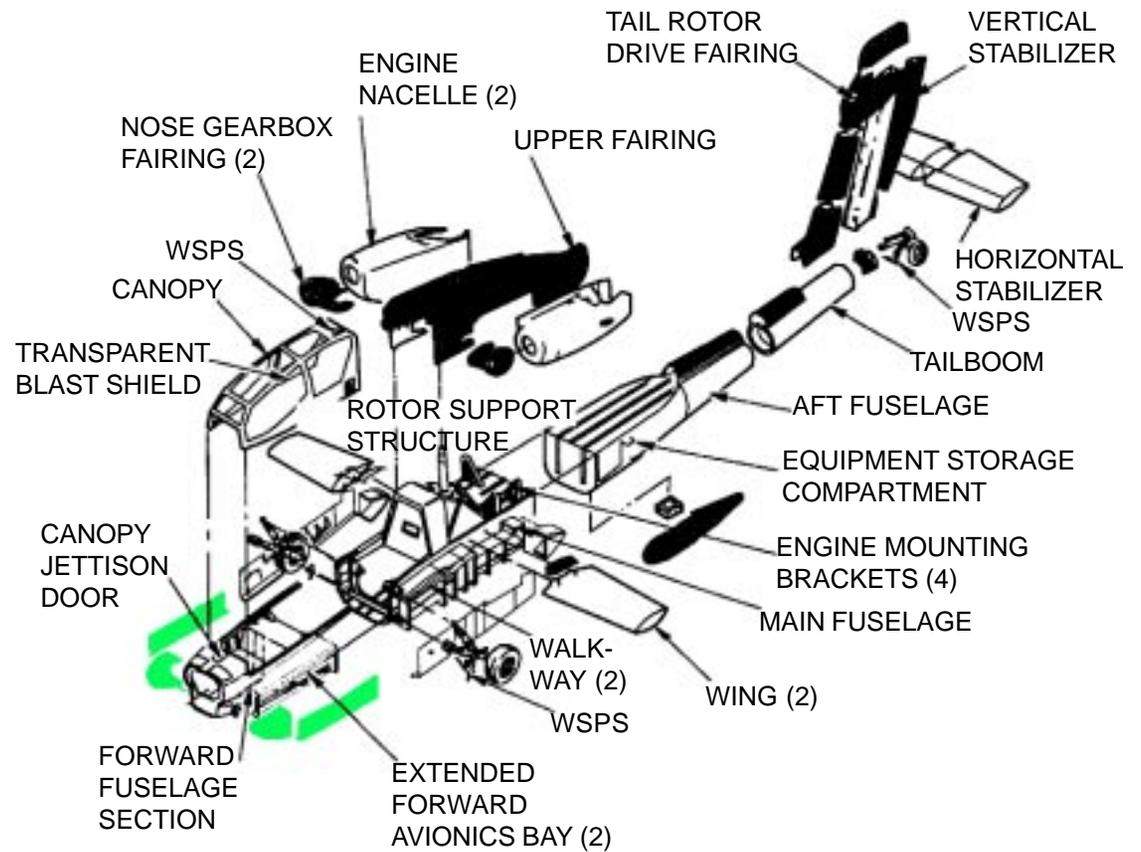
AIRCRAFT HAZARDS-Continued



AIRFRAME MATERIALS

1. AIRFRAME MATERIALS

- a. Main Rotor Blades (not pictured) are constructed of stainless steel, aluminum, fiberglass, and nomex honeycomb.
- b. Cockpit flooring (not pictured) is constructed of Boron armor.
- c. Crew seats (not pictured) are constructed of Kevlar/Boron carbide and nylon.
- d. Tail Rotor hub forks (not pictured) are constructed of Titanium.
- e. Both aircraft engines (T700-GE-701-C) are constructed with Titanium/Carbon/Nickel Graphite.
- f. Battery (not pictured), located on the right side is a Fiber Nickel-Cadmium battery.



LEGEND

- Graphite Composite
- Kevlar/epoxy Composite

SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
Crash Ax

AIRCRAFT ENTRY

1. NORMAL ENTRY

NOTE:

Entry can only be accomplished from the right side of the aircraft.

- a. Rotate canopy unlock handle counterclockwise, located on the forward lower corner of each cockpit, up to unlock position and raise canopy door to maximum height.
- b. Rotate handle back to the horizontal position to lock canopy door open.

2. EMERGENCY ENTRY

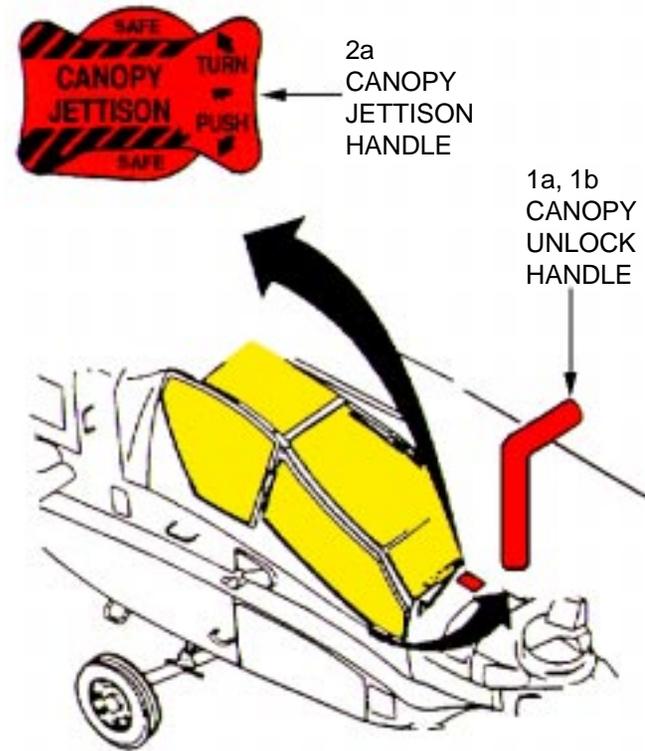
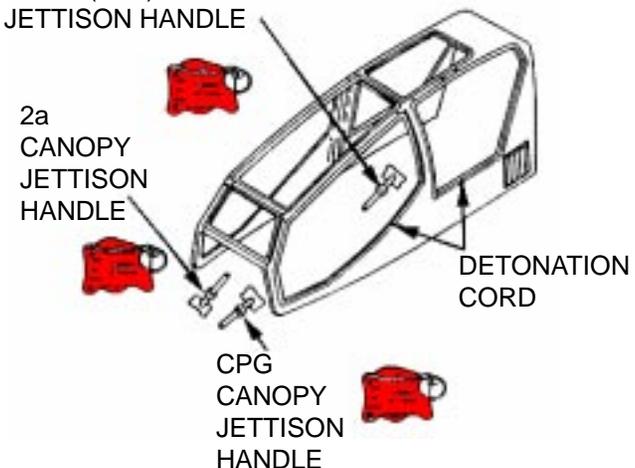
WARNING

Activating the canopy jettison system, internally or externally, propels fragments and debris from all four windows at a high velocity up to 50 feet on each side of the aircraft. All personnel must remain clear during canopy jettison. Personnel activating the canopy jettison handle must wear full protective clothing and eye protection to avoid serious injury.

- a. Open access door, located on the nose of the aircraft directly in front of the CPG (fwd) cockpit, rotate canopy jettison handle 90 degrees counterclockwise and push in to jettison canopy side panels.
- b. Once inside, if the need arises to activate canopy jettison internally, the internal canopy jettison handle is located on the side of instrument panel in both cockpits.

NOTE:

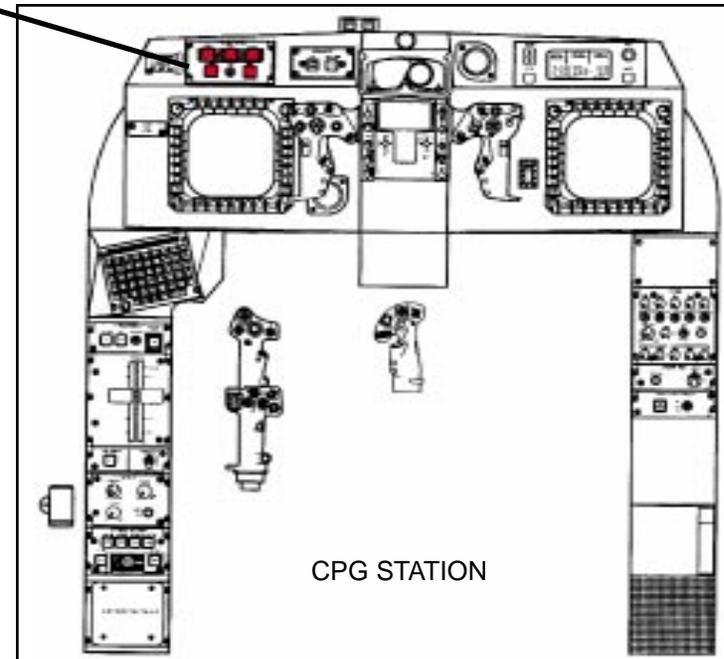
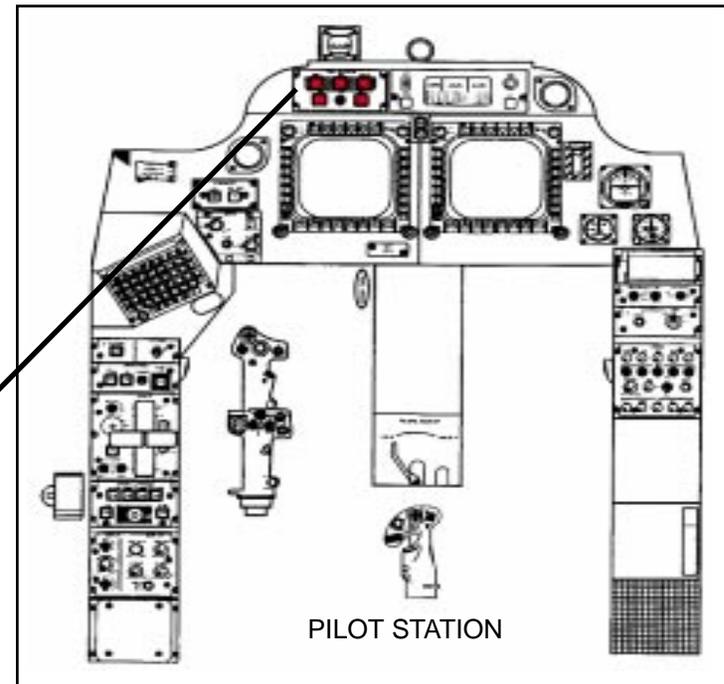
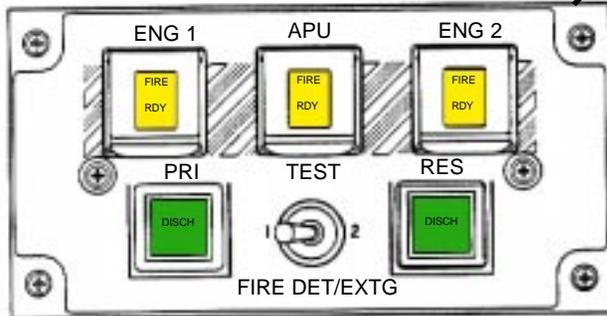
Windshield and first overhead window is glass, all other windows are Plexiglas.

2b
PILOT (AFT) CANOPY
JETTISON HANDLE

ENGINE AND APU FIRE DETECTION AND SUPPRESSION CONTROLS

1. EMERGENCY SHUTDOWN

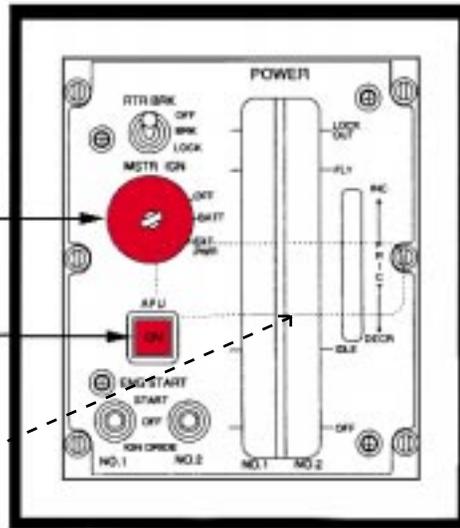
- a. The FIRE pushbutton is used to isolate a fire and arm that area's fire extinguishing system. When sensors detect a fire in either engine nacelle or the APU compartment, the FIRE pushbutton legend associated with that area will illuminate in both crew stations along with the master warning light and voice warning. Pushbuttons have hinged cover guards to prevent inadvertent actuation.
- b. Push the associated pushbutton for that area. There are two fire bottles (PRI (primary) and RES (reserve) each containing a nitrogen precharge, located on engine #1 firewall, with an indicator disk.



ENGINE SHUTDOWN

1. NORMAL ENGINE SHUTDOWN

- 1c MASTER IGNITION SWITCH
- 1b APU SWITCH
- 1a POWER CONTROL LEVERS



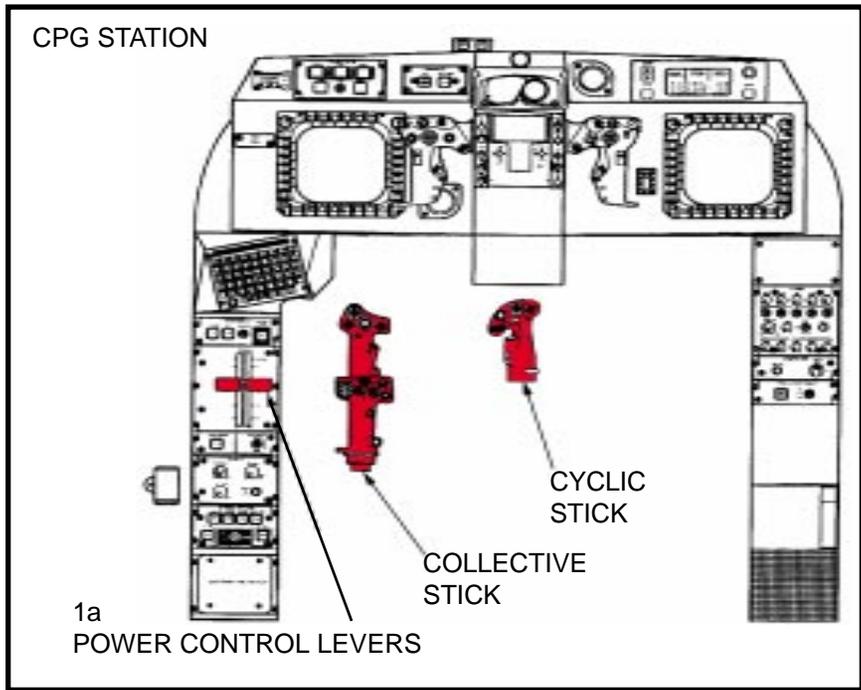
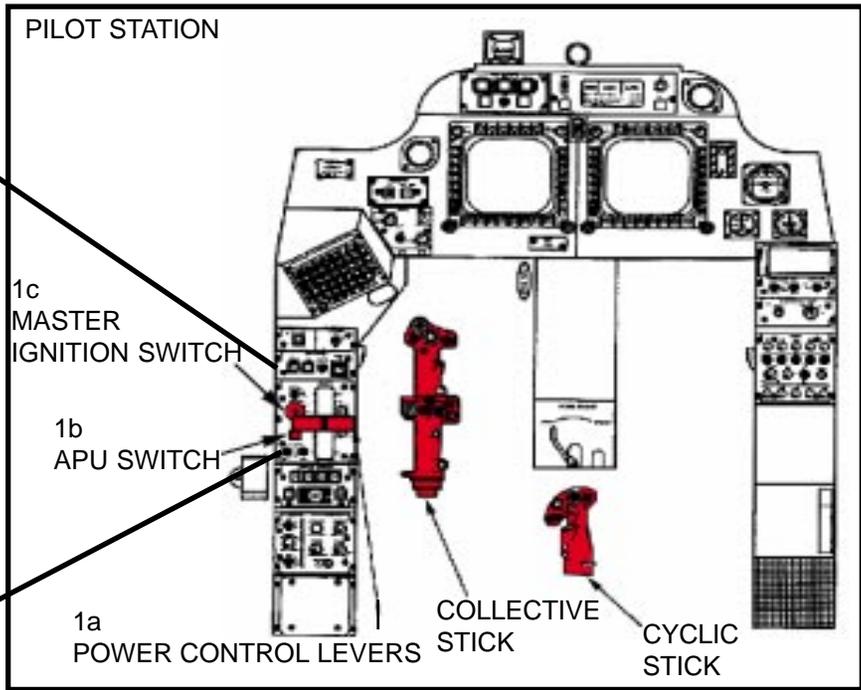
PILOT'S LEFT CONSOLE

NOTE:
Normal engine shutdown can be accomplished only from the pilot's cockpit (aft).

WARNING

If emergency egress is required before the rotor blades have stopped, ensure cyclic remains centered. BATTERY and FORCE TRIM switches shall be left ON to prevent rotors from striking the aircraft or personnel.

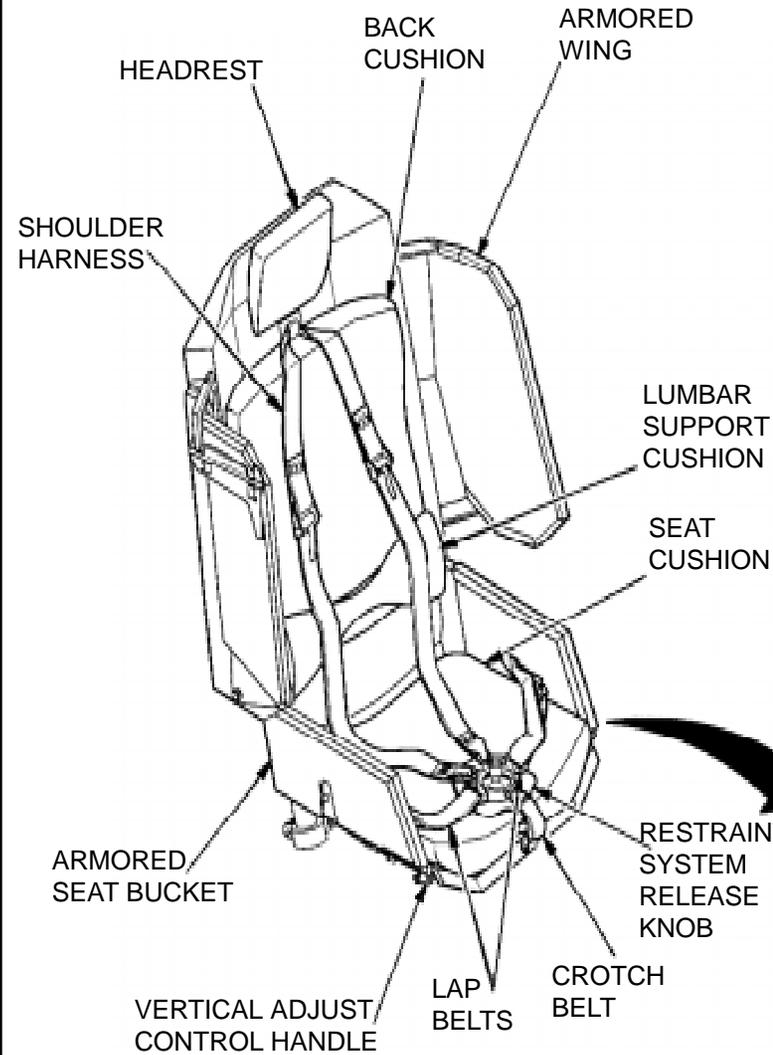
- a. Pull power control levers, located on left console, aft to idle detent.
- b. Push the APU On/ OFF switch to OFF.
- c. Place battery switch, located on the master ignition switch on left console next to the power control levers, to OFF position.



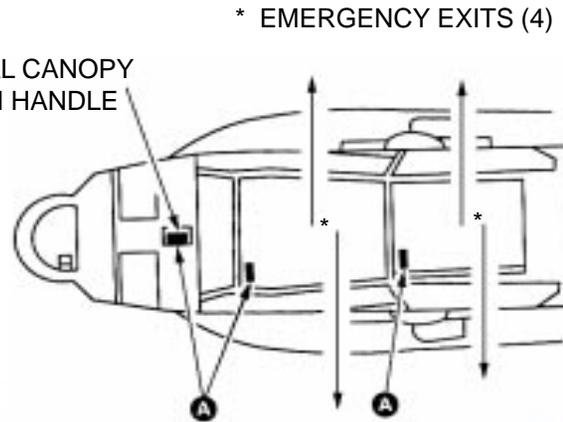
AIRCREW EXTRACTION

1. AIRCREW EXTRACTION

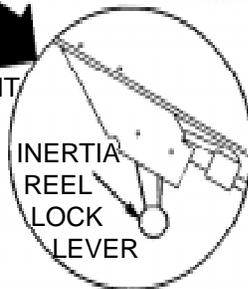
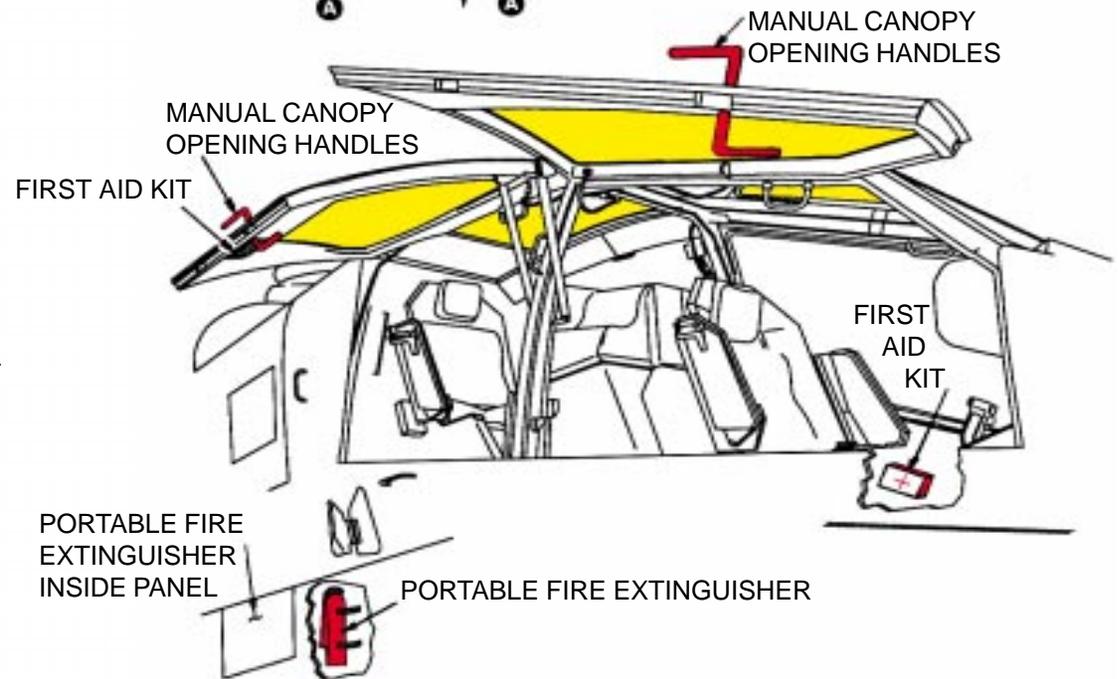
- a. Use normal or emergency entry procedures.
- b. Turn harness release knob 1/4 turn in either direction to release crewmember restraints.
- c. Use appropriate emergency exit.



EXTERNAL CANOPY JETTISON HANDLE



AH-64D

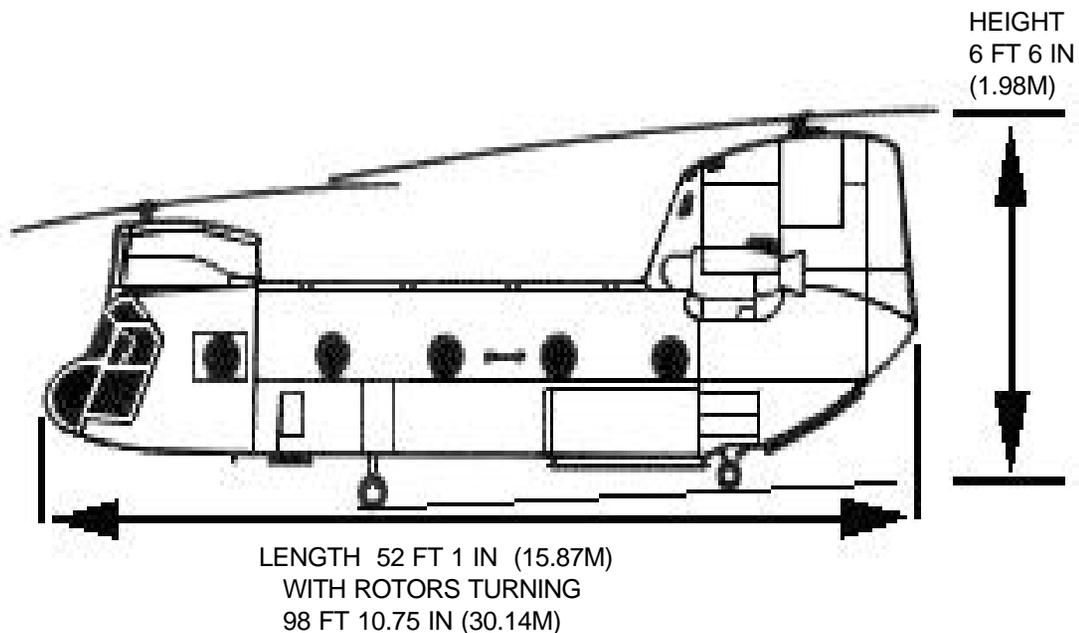
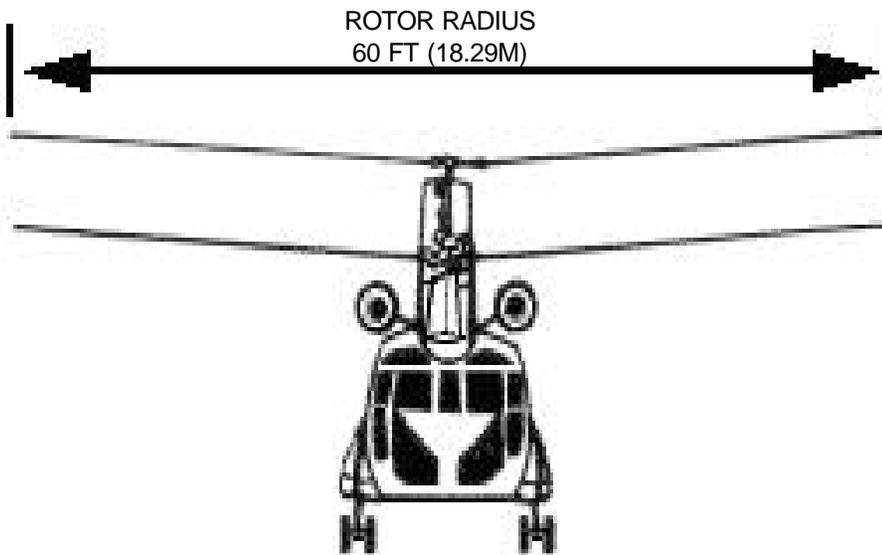
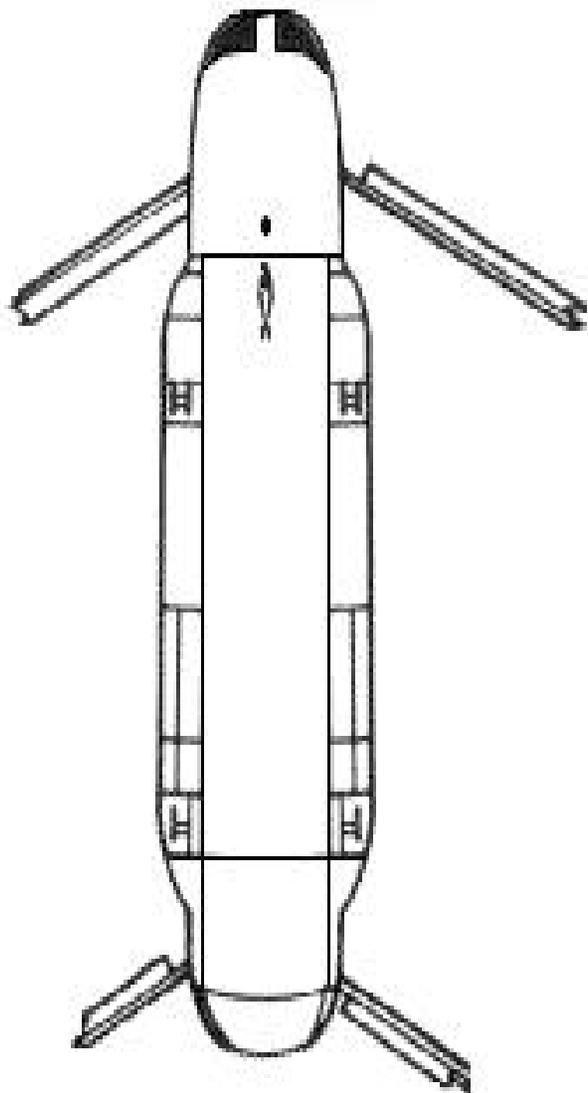


AIRCRAFT PAINT SCHEME



AIRCRAFT DIMENSIONS

CH-47D



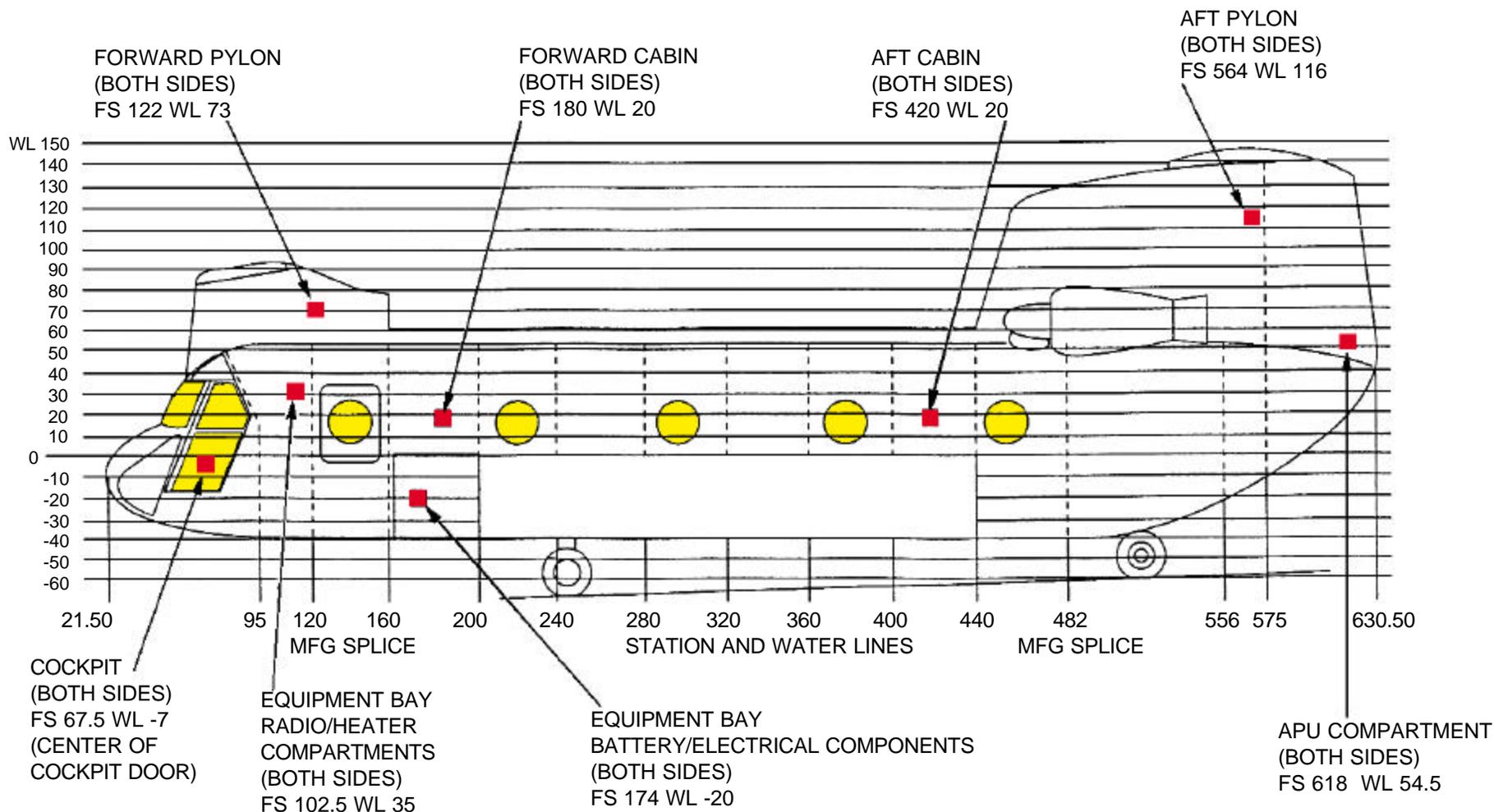
AIRCRAFT SKIN PENETRATION POINTS

WARNING

High voltage electrical equipment is located in the radio/heater and electrical compartments. Caution must be taken when penetrating these equipment bays.

WARNING

Forward blades can dip to four feet above the ground while rotating.



SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
 Dearming Tool
 Crash Ax Fire Drill II

AIRCRAFT ENTRY

1. NORMAL ENTRY

NOTE:

The pilot's (RH side) and co-pilot's doors are jettisonable doors only. The doors are not pyrotechnically equipped. The cabin entrance door is a two section door. The upper half of the door rolls up, the lower half swings out and down forming a step.

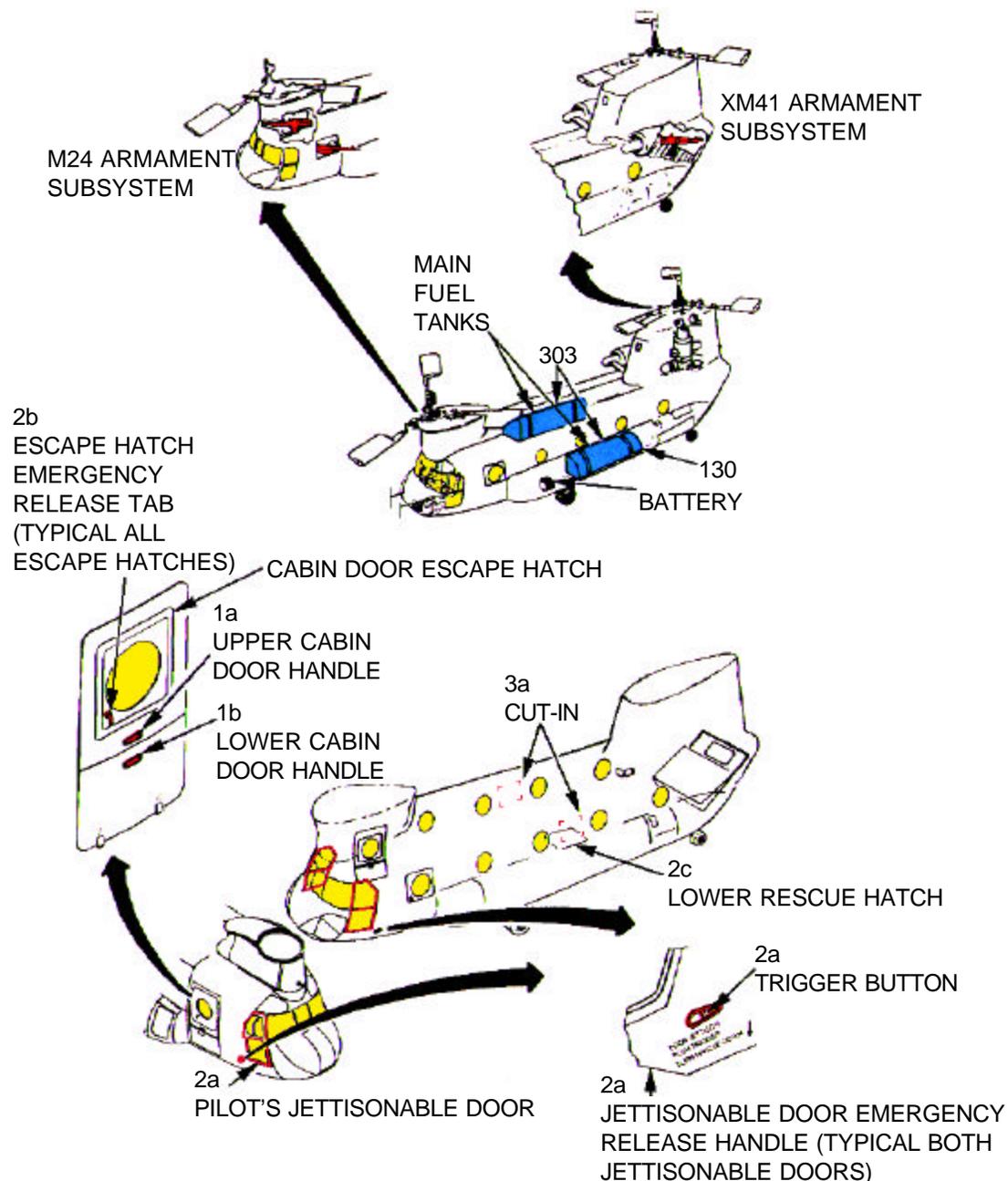
- a. Rotate handle, located on upper half of cabin door, and roll door up.
- b. Rotate handle, located on lower half of cabin door, and pull door out and down.

2. EMERGENCY ENTRY

- a. Push trigger button in center of handle and rotate emergency release handle, located below and aft of pilot's and co-pilot's jettisonable doors. If door does not fall away, then pull door away.
- b. Emergency entrance to cargo compartment is gained through cabin door or upper cabin door escape hatch, cabin escape hatch, ramp escape hatch, and cutout panels. All escape hatches can be opened by pulling the yellow tab strap out and pushing the panel in.
- c. A rescue hatch, located in floor of cargo compartment, may be used for emergency exit if lower rescue door has been previously opened.

3. CUT-IN

- a. Cut-in areas as marked in center of upper fuselage between windows on both sides.



EMERGENCY ENTRANCE AND ESCAPE ROUTES

1. EMERGENCY RAMP OPERATION

- a. Open ramp using emergency utility pressure. Locate Ramp switch, located on the HYDRAULIC PANEL in cockpit, and place in ON position.
- b. Rotate the EMERGENCY UTIL PRESS valve knob to OPEN.
- c. Operate the ramp controls to OPEN the ramp.

2. EMERGENCY RAMP RELEASE

- a. Ramp step button, located aft right side of ramp, can be selected for ramp release. Hydraulic pressure is not present. Ramp will free fall.

3. RAMP EMERGENCY EXIT HATCH

- a. An emergency exit hatch is located on the ramp door. To operate, pull handle up and over then push door out.

4. OUTER HATCH OPERATION

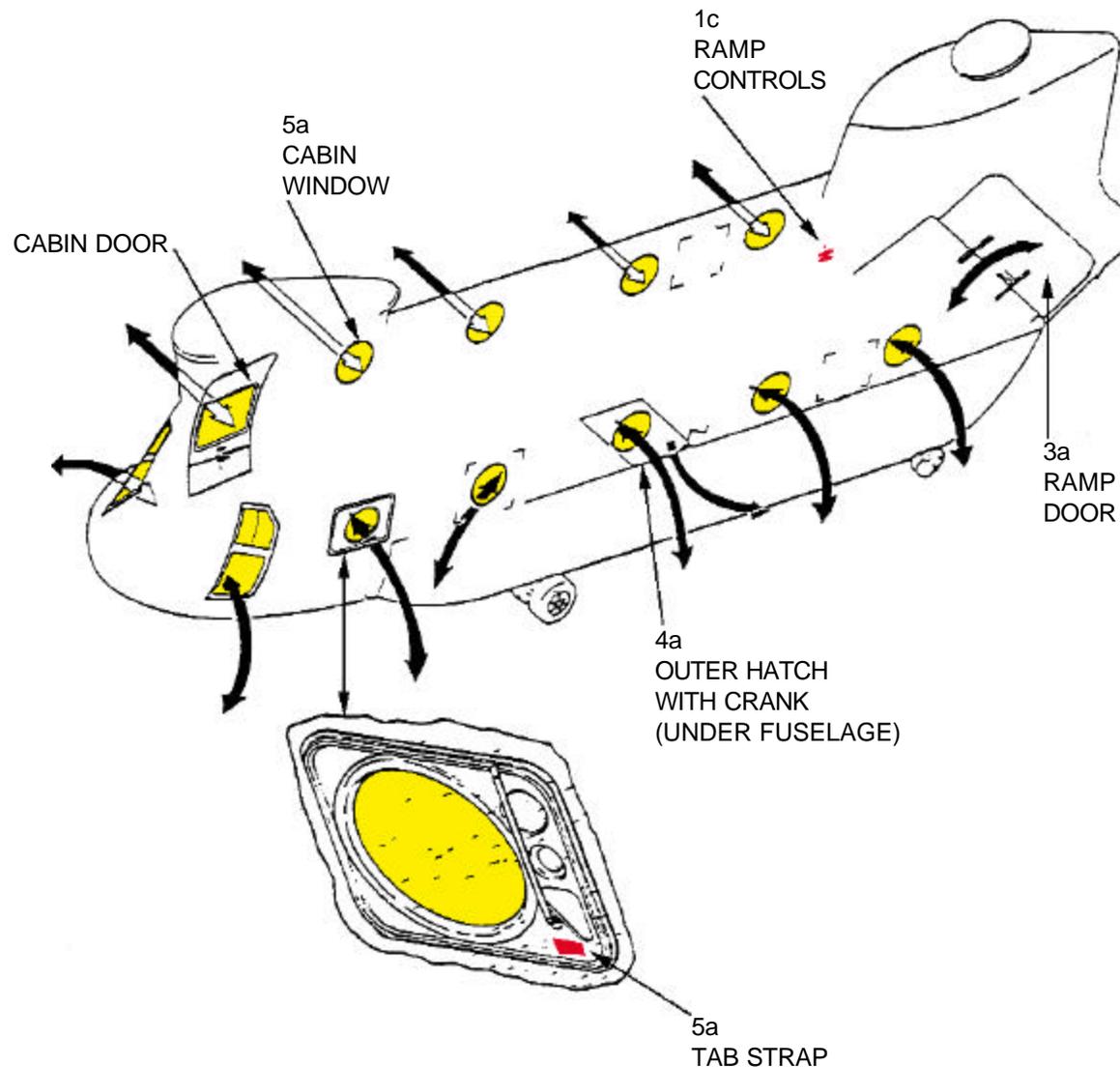
- a. Turn latch internally, by hand crank to unlock and lock outer hatch. Use CAUTION to unlock before turning crank to open hatch.

5. FUSELAGE WINDOW OPERATION

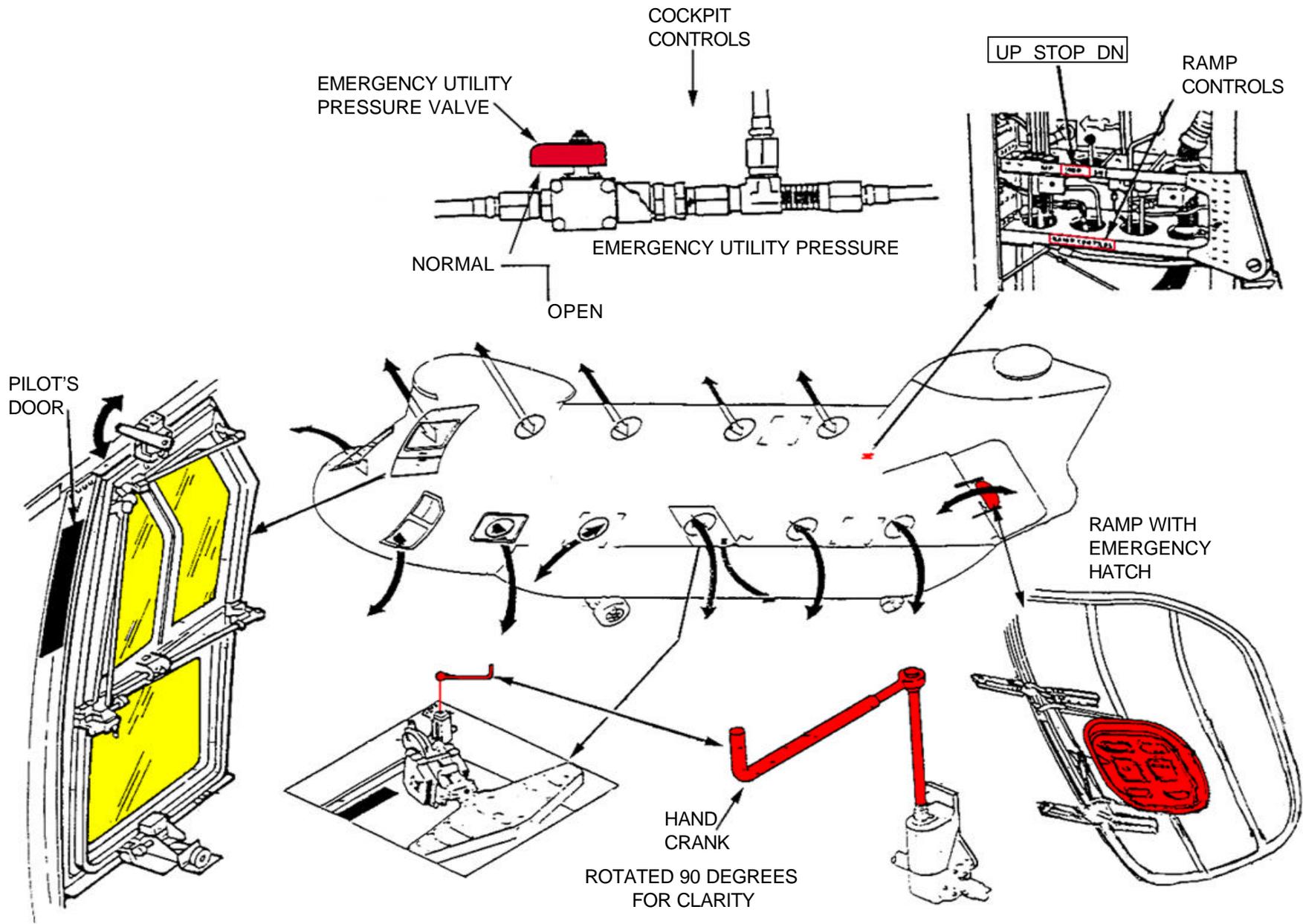
- a. Pull window tab strap to release retainer and push window out. This applies to all nine cabin windows.

CAPACITY:
 4 CREW
 33 PASSENGERS OR
 24 LITTERS WITH
 3 MEDICAL ATTENDANTS

CH-47D



EMERGENCY ENTRANCE AND ESCAPE ROUTES-Continued



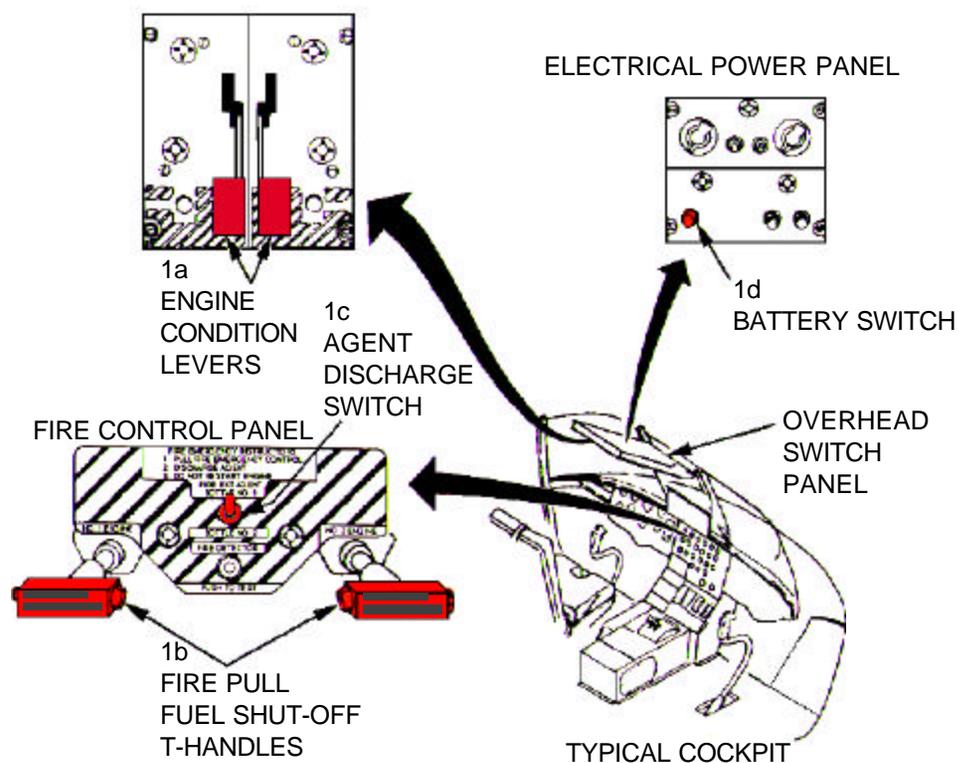
ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. NORMAL SHUTDOWN

- a. Position engine condition levers, located on overhead panel, to STOP.
- b. Pull fire T-handles, located at top center of instrument panel, OUT to shut off fuel.
- c. ONLY IN CASE OF ENGINE FIRE - Place agent discharge toggle switch UP to fire bottle number 1 and DOWN to fire bottle number 2.
- d. Position battery switch, located on overhead switch panel, to OFF.

2. AIRCREW EXTRACTION

- a. Unlatch seat belts and remove shoulder harness from crewmember(s).
- b. Disconnect personnel leads.
- c. Adjust seat(s) for ease of extraction.



AIRCRAFT CONFIGURATION - MH-47E

1. MH-47E CONFIGURATION

NOTE:

The MH-47E has the same composite materials, engine control levers, rescue doors, and rescue cut-out points common to the CH-47D. The operational enhancements to the MH-47E are as follows:

- a. Extended-range fuel system that holds 2,068 gallons of fuel in two external integral tanks. The aircraft can also carry up to three internal auxiliary Robertson long-range tanks containing 800 gallons each.
- b. The aerial refueling probe extends 16 feet 4 inches forward of the right side of the cockpit nose. It is constructed of a graphite composite material.
- c. The rotor brake, located in front of the combining transmission, is just forward of the aft pylon. The disk brake assembly contains beryllium. Beryllium dust may be harmful to health. If skin contact is made, wash affected area immediately with soap and water. Remove clothing that comes in contact with beryllium and wash affected area as described above.
- d. The inside of the turret FLIR unit glass window, located under the nose of the aircraft, has a radioactive coating. If the TFU glass window is broken, avoid personal contact with the broken glass. Use forceps or gloves made of rubber or polyethylene to pick up contaminated materials. Place the material and gloves in a plastic bag, seal the bag, and dispose of it as radioactive waste in accordance with AR 385-11 and TM 3-261. Refer to TB 43-0108.
- e. Weapon systems are carried in the forward right cabin door and the forward left cabin window of the aircraft. They are 7.62 mm electrically-driven mini-guns with ammunition cans located just aft of the guns.
- f. Flare buckets on both sides of the aircraft are located in the same area as a CH-47D. Chaff dispensing buckets are located forward of the flare buckets on both sides of the aircraft.
- g. The Multi-Mode Radar unit on the forward left side of the aircraft has a pressurization unit that contains a reservoir of high pressure dry nitrogen.
- h. The battery is a sealed unit that is carried in the forward left avionics compartment. Additionally, the last time we spoke, you asked me about personnel onboard our aircraft during refuel.

CH-47D



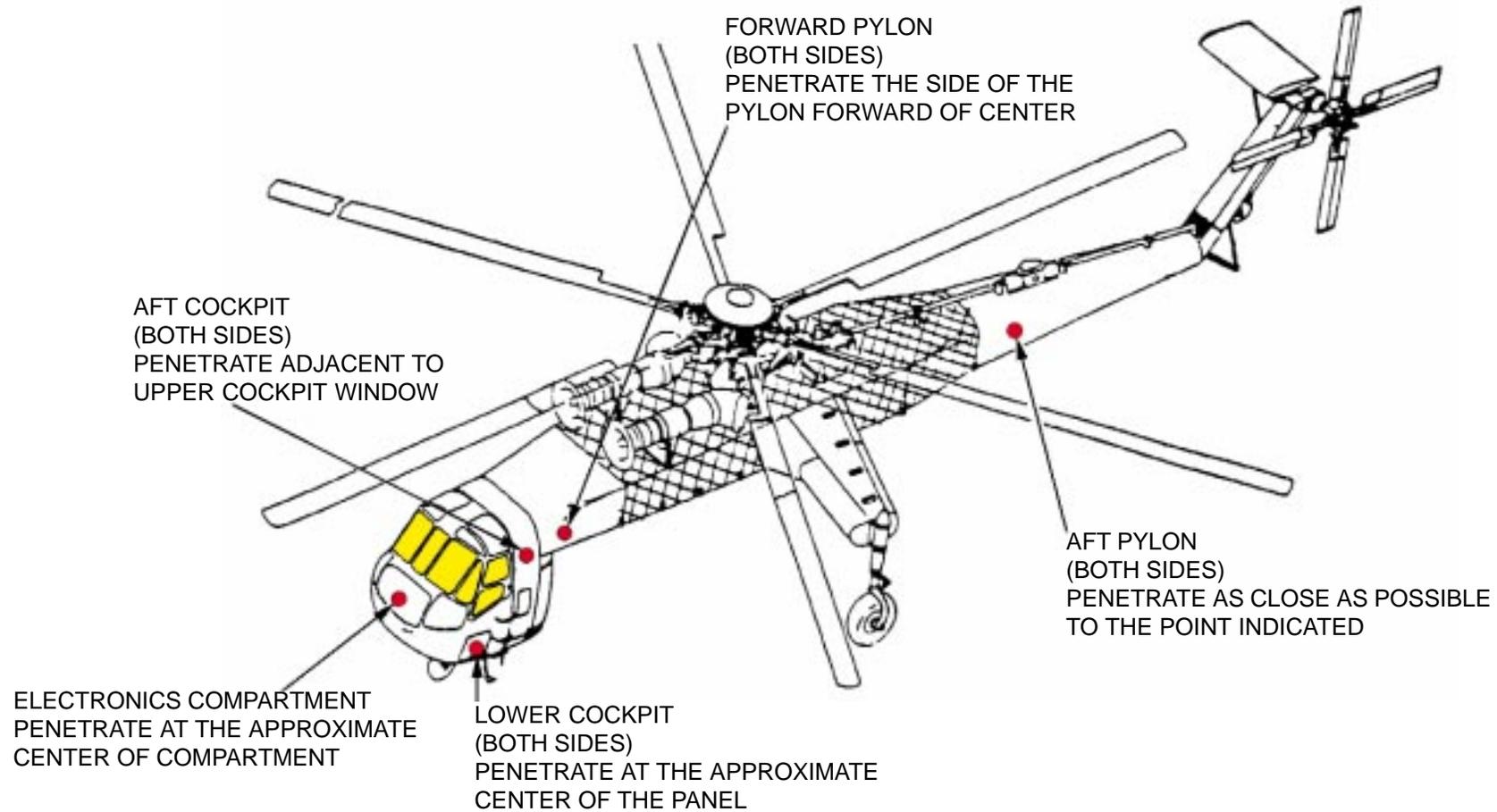
NOTE:

Additionally, some personnel are onboard during refuel. During some modes of operation, there could be up to six crewmembers performing duties.

AIRCRAFT SKIN PENETRATION POINTS

WARNING

Penetrate the forward and aft pylons cautiously.
The area between the pylons contain fuel cells.



AIRCRAFT ENTRY

1. NORMAL ENTRY

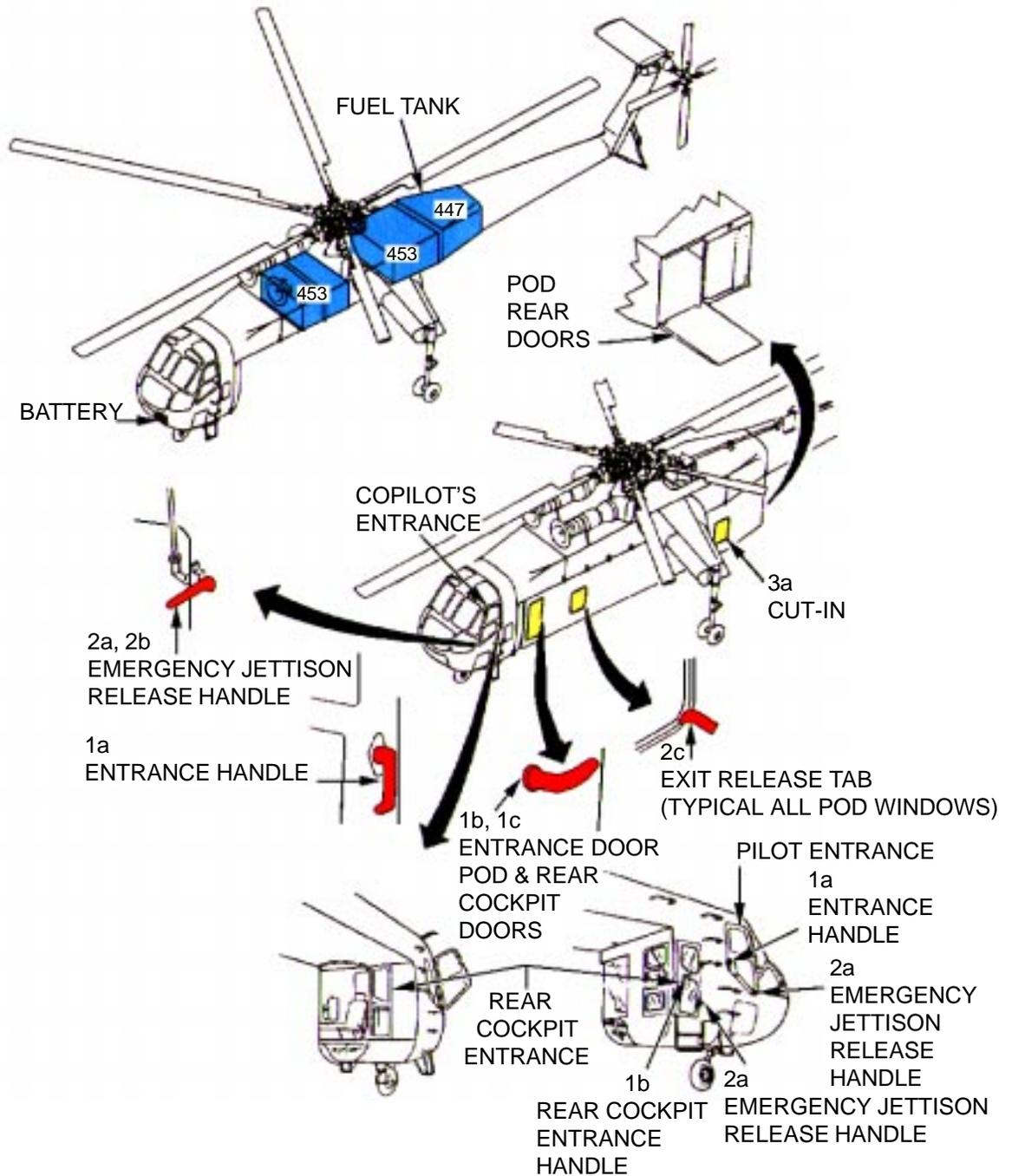
- a. Rotate entrance handle, located on aft edge of pilot's and co-pilot's entrance door, and swing door out.
- b. Rotate entrance handle, located on aft edge of rear cockpit entrance door on right side of crew compartment, and swing door out.
- c. Rotate entrance handle, located on aft edge of pod access doors, and swing door out.

2. EMERGENCY ENTRY

- a. Rotate emergency jettison release handle, located at forward lower corner of pilot's and co-pilot's entrance door, and pull door out.
- b. Rotate emergency jettison release handle, located at forward lower corner of rear cockpit entrance door on right side of crew compartment, and pull door out.
- c. Pull exit release tab, located lower aft corner of each pod window, out and remove window.

3. CUT-IN

- a. Cut around windows and access doors of pod as marked.



ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

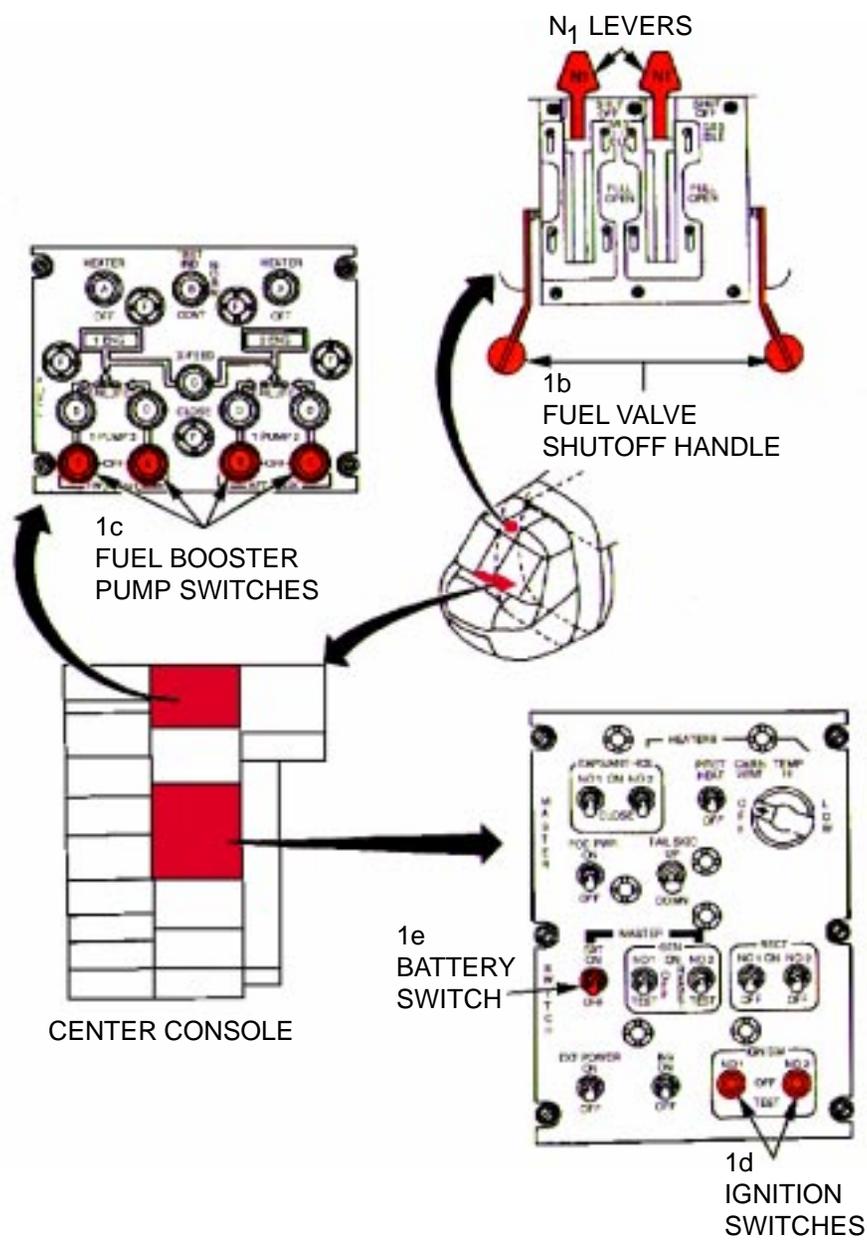
NOTE:

N1 levers have a detent in GRD IDLE position. To pass through the detent to SHUTOFF position, and pull out levers.

- Place N1 levers, located on overhead control quadrant, to SHUTOFF position.
- Place fuel valve shutoff handle, located on overhead control quadrant, in CLOSED position.
- Place fuel booster pump switches, located in upper panel of center console, to OFF position.
- Place ignition switches, located in center panel center console, to OFF position.
- Place battery switch, located in center panel of center console, to OFF position.

2. AIRCREW EXTRACTION

- Unlatch lap belts and remove shoulder harness from crewmember(s).



UNIVERSAL MILITARY POD

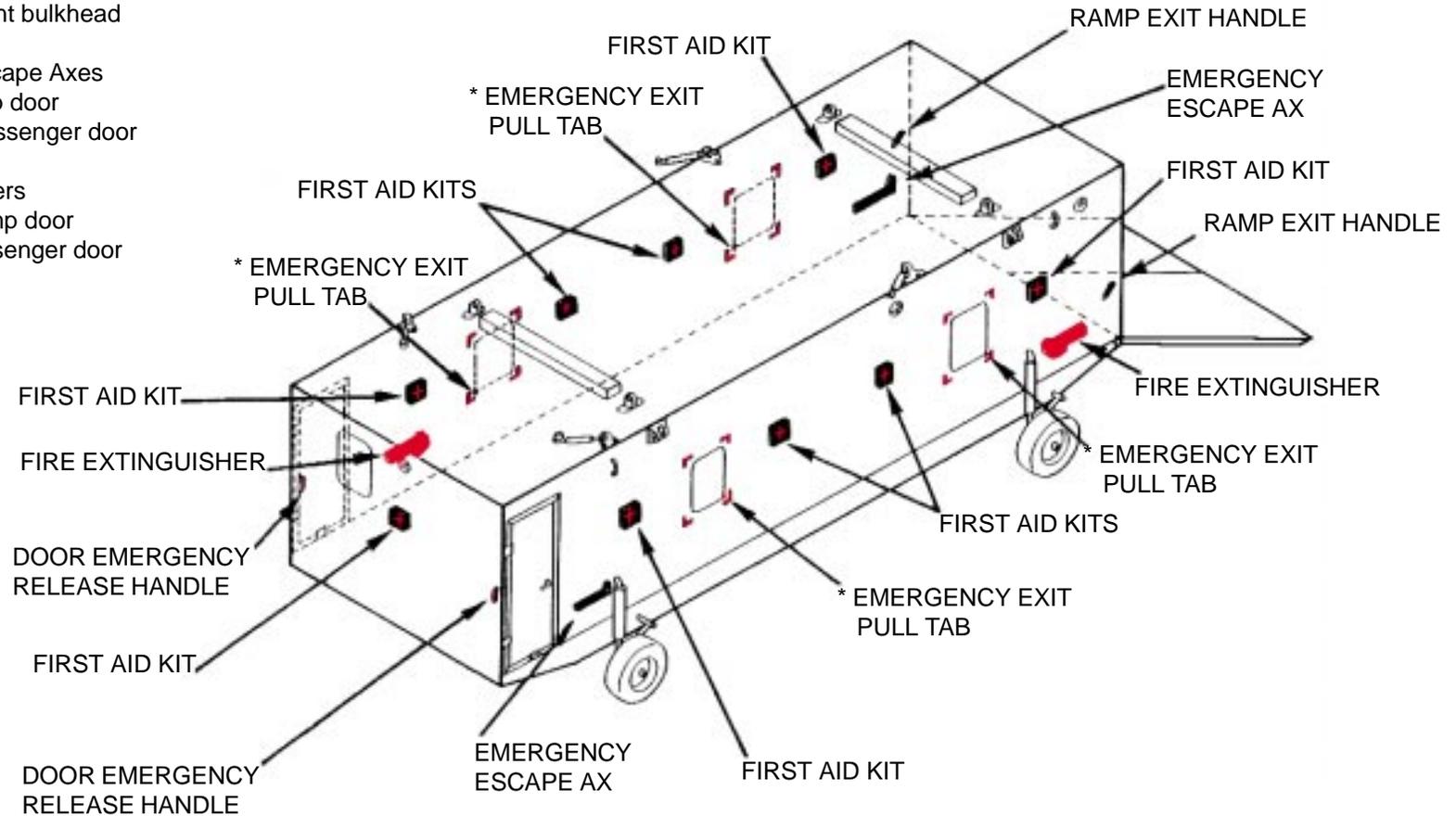
- The universal military pod has a rear-loading door. Two forward doors, one on each side of the pod, are jettisonable and can be opened from both inside and outside. Four windows, two on each side, are installed using a push-out type seal and can be removed from both the inside and outside of the pod.

POD CONTENTS

- 9 First Aid Kits
 - 4 on each side
 - 1 center on front bulkhead
- 2 Emergency Escape Axes
 - 1 left rear ramp door
 - 1 front right passenger door
- 2 Fire Extinguishers
 - 1 right rear ramp door
 - 1 front left passenger door

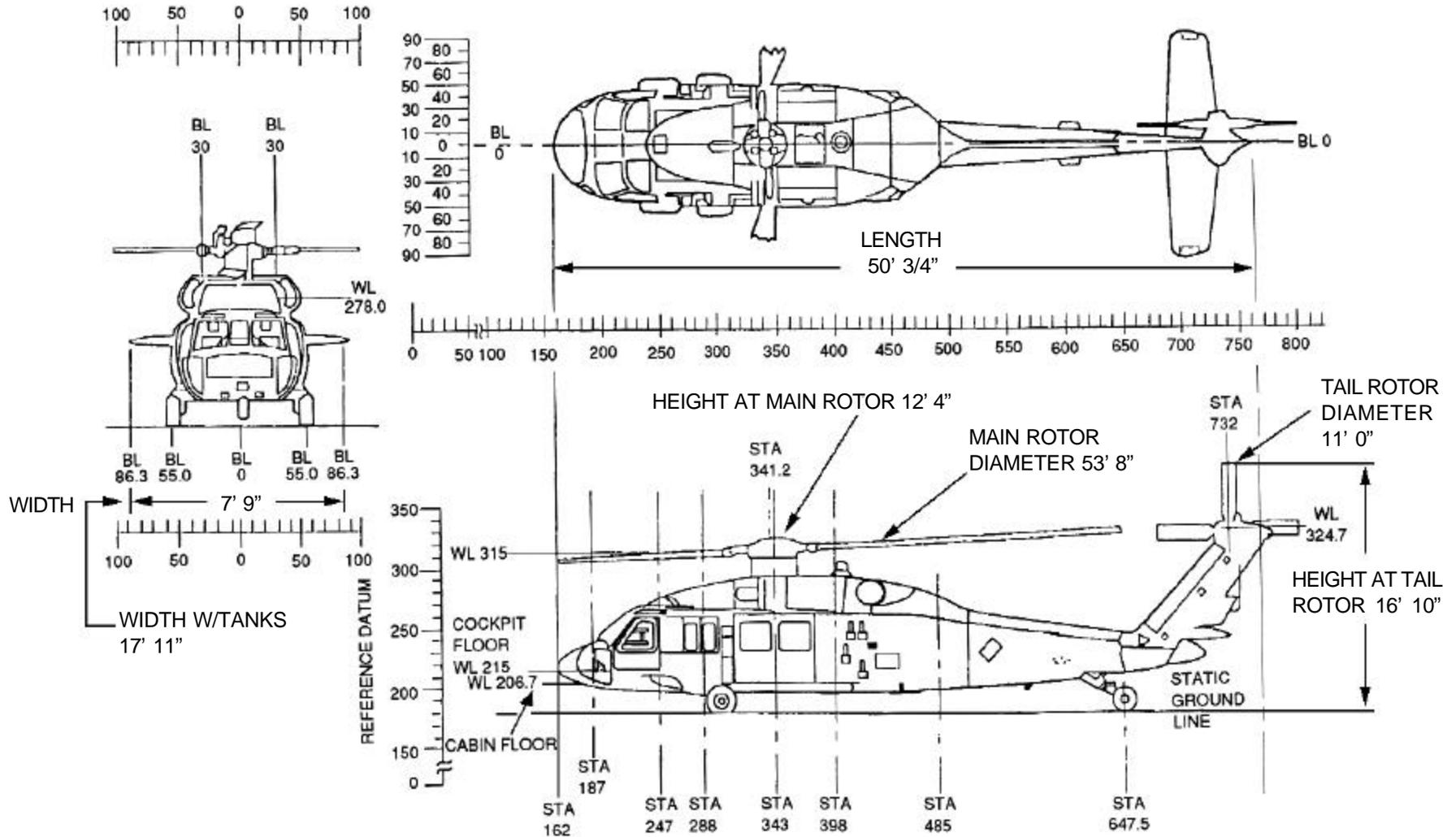
* NOTE:

Seat backs will obstruct window exits. To remove, lift and push forward center of pod, then drop.





AIRCRAFT DIMENSIONS



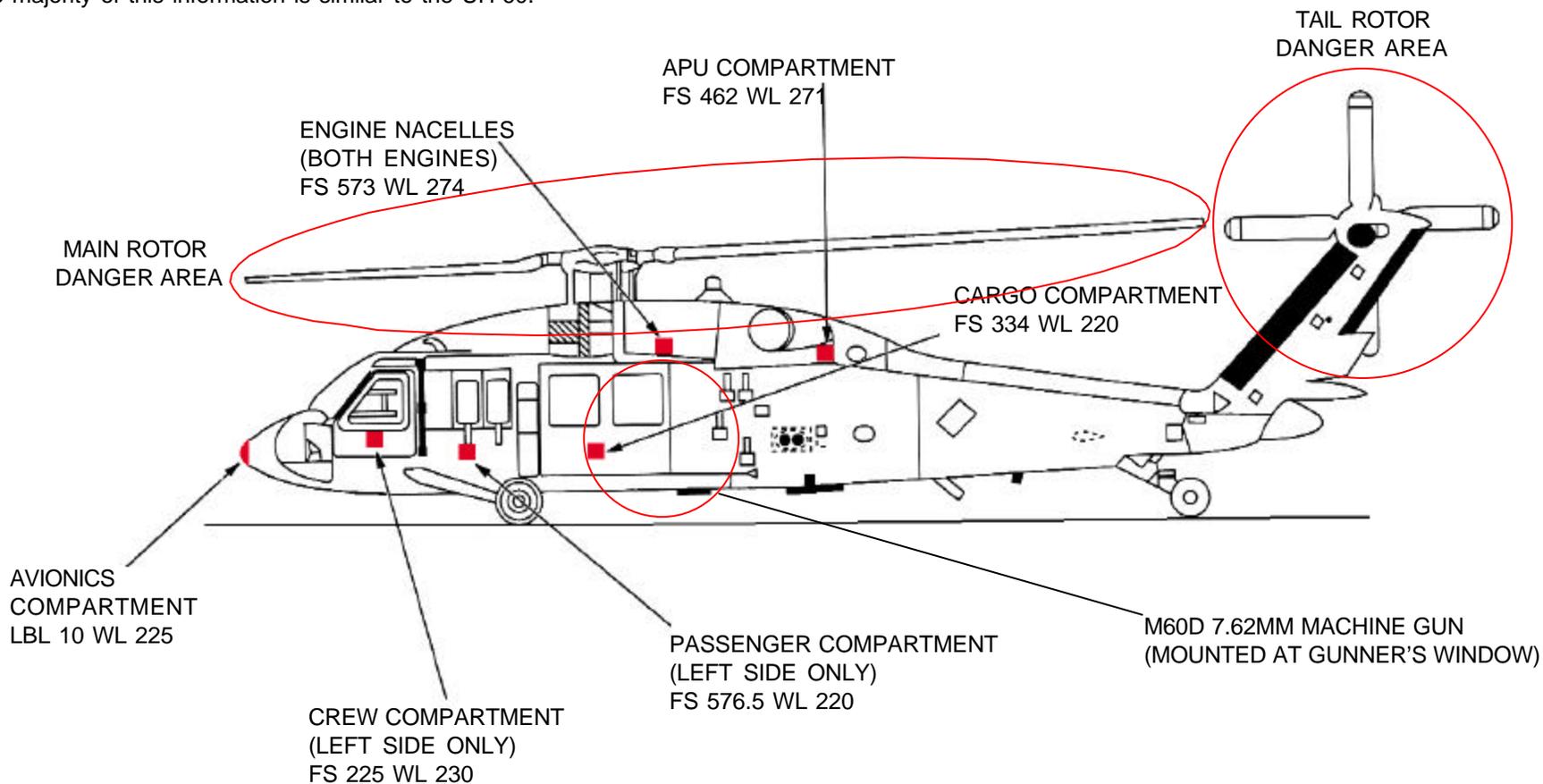
SKIN PENETRATION POINTS AND DANGER AREAS

EFFECTIVITY:

HH-60 is considered a Special Operations aircraft used by the Joint Services.

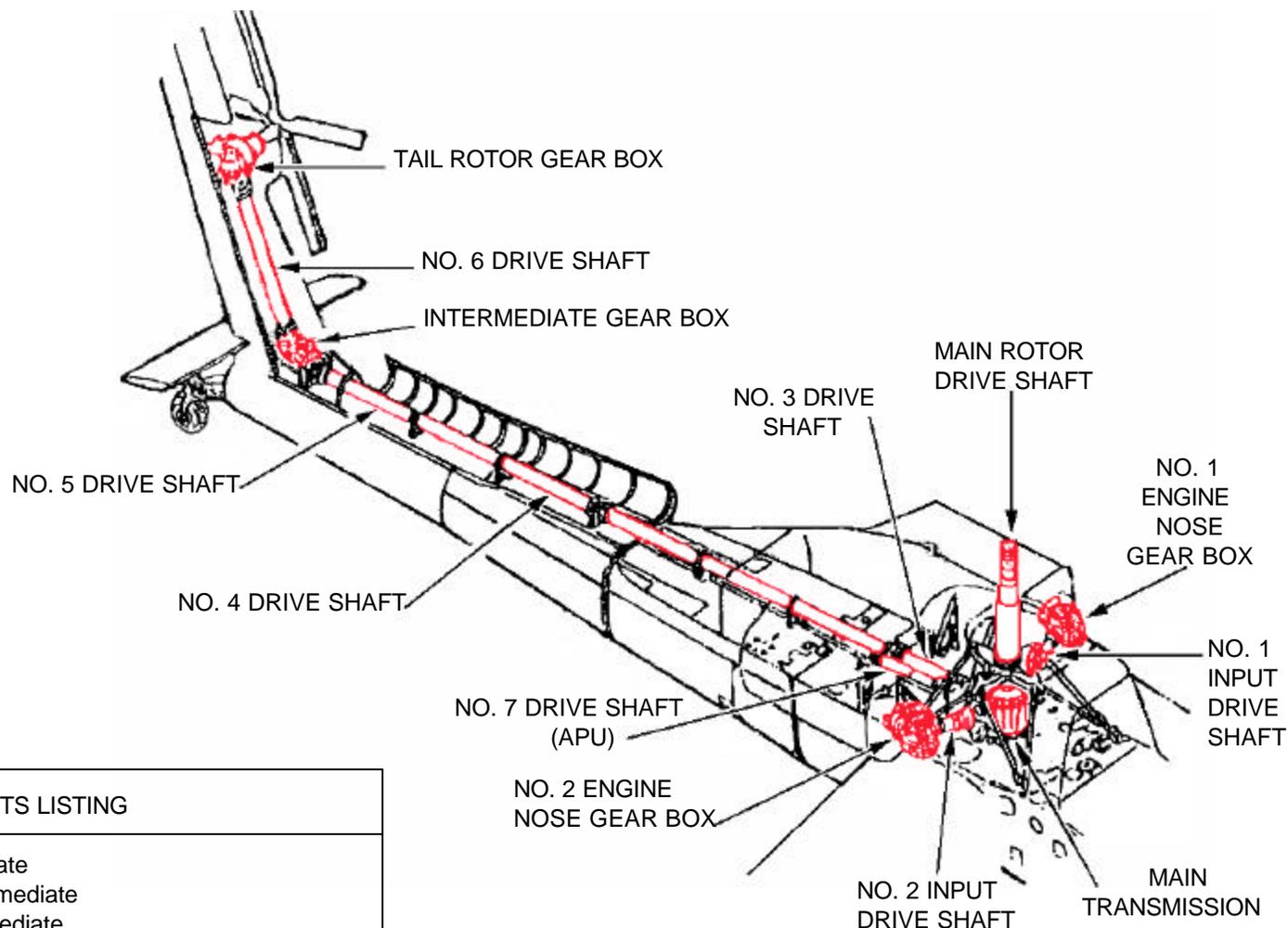
NOTE:

The majority of this information is similar to the UH-60.



AIRCRAFT MAGNESIUM PARTS

HH-60



MAGNESIUM PARTS LISTING

1. Housing Assembly: Gearbox Intermediate
2. Adapter-Output Bearing: Gearbox Intermediate
3. Housing-Input Bearing: Gearbox Intermediate
4. Retainer Bearing: Tail Rotor and Intermediate Gearbox
5. Housing Assembly: Tail Rotor Gearbox
6. Cover Assembly, Gearbox: Tail Rotor
7. Retainer, Oil Seal - Input, Nose Gearbox Left and Right
8. Housing Assembly: Nose Gearbox Left and Right
9. Cover Assembly, Engine Nose Gearbox Left and Right
10. Retainer, Duplex Bearing, Output - Engine Nose Gearbox, Left and Right
11. Housing Assembly - Main Transmission
12. Housing Assembly - Input, Main Transmission
13. Support, Gear - Intermediate Stage Main Transmission
14. Accessory Cover, Main Transmission

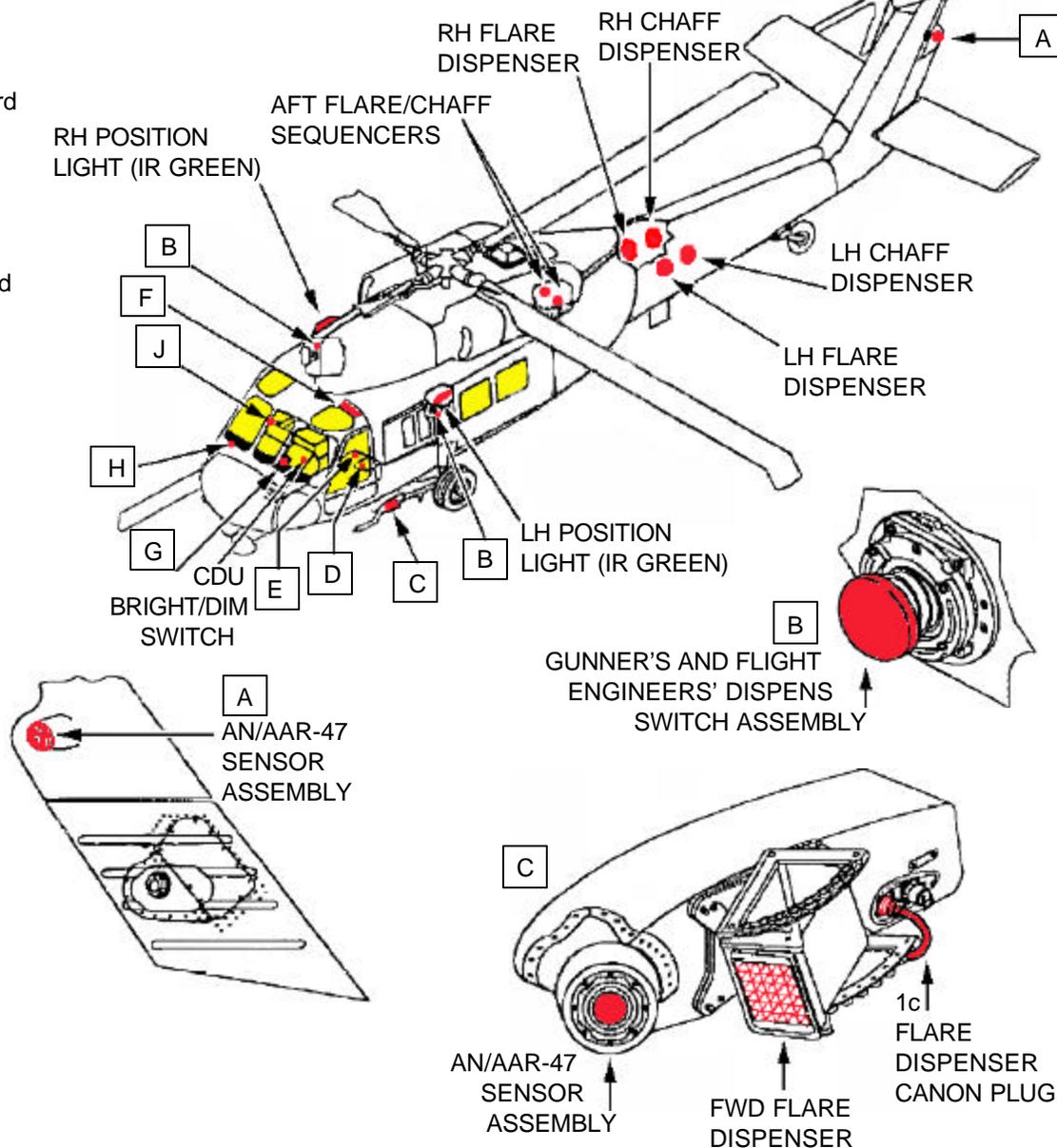
AIRCRAFT HAZARDS

1. SAFING THE ALE-47 FLARE DISPENSERS

WARNING

The flare dispenser system mounted on the HH-60G aircraft, places rescue crews at risk by placing them in front of the forward firing flares from all three dispenser positions to safe the system from the cockpit. Injury or death may occur if flare dispensers are ignited. Flares are 3 inches long and burn at 3,000⁰ F. **Do not enter the cockpit, use the following safing procedures.**

- Approach the aircraft from the rear at 45⁰ angles on the right and left side of the aircraft. This will prevent personnel from entering the Danger Zone of the tail rotor blades and allow maximum height below the blades.
- The aircraft uses the ALE-47 Countermeasure Set. This Set is normally safed by a weight-on-wheels switch and internally by the crew. There are three dispensers mounted on the aircraft that are electrically actuated to ignite the Set. There is no externally mounted safe switch for rescue crews to deactivate the Set.
- In case of Set malfunction: to safe the system externally, there are two methods: (1) install a ball lock pin in each of the three dispensers (OR) (2) disconnect the canon plug from each of the three dispensers to disconnect the voltage source for the explosives, by turning the canon plug counter-clockwise. The canon plug is a twist and lock type.
- If canon plugs are disconnected and time permits, place a non-metallic protective cover over the exposed electrical pins at the connector on the dispenser. This prevents stray voltage from actuating the explosives. Place a protective cover over the disconnected plug to prevent FOD.
- IN CASE OF FIRE: If dispensers are accessible, [1]remove the canon plugs, [2] remove the fasteners from the magazine assembly, [3] disconnect the electrical connector from the magazine assembly, [4] remove fasteners from the dispenser assembly, and [5] remove magazine assembly to a safe area.

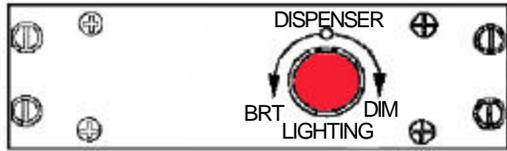


AIRCRAFT HAZARDS - Continued

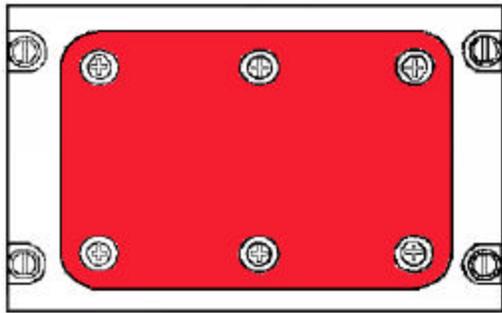
1. SAFING THE ALE-47 FLARE DISPENSERS - Continued

NOTE:

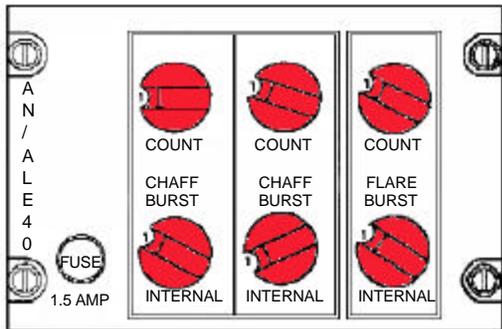
Refer to page HH-60.5 for call-out orientation.



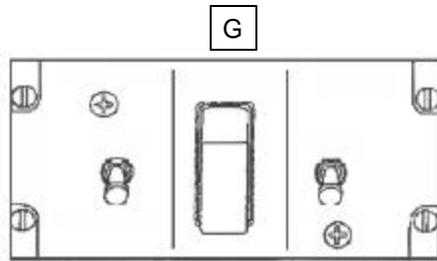
D DISPENSE SWITCH DIMMER CONTROL



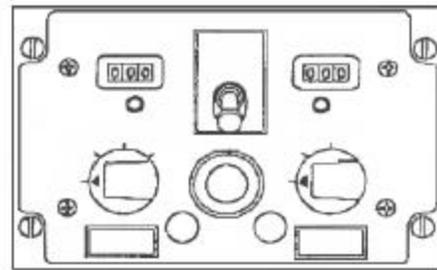
E AN/ALE-47 PROGRAMMER UNIT (DOOR CLOSED)



E AN/ALE-47 PROGRAMMER UNIT (DOOR OPENED)

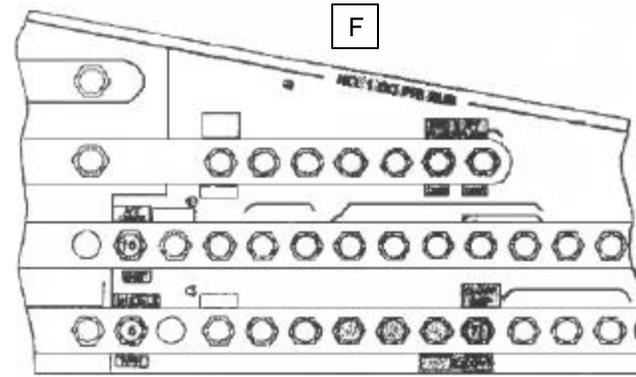
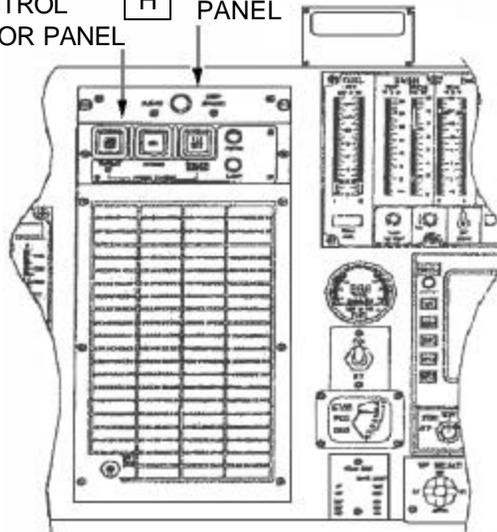


G AN/ALE-40 INTERFACE SWITCH PANEL

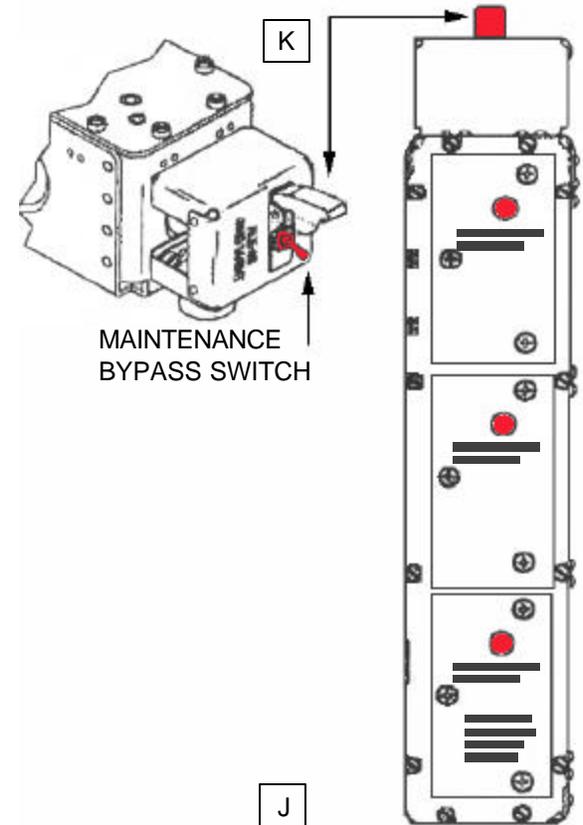


COCKPIT CONTROL UNIT

AN/ALE-40 DISP ARMED INDICATOR PANEL
H CONTROL INDICATOR PANEL



F COPILOT OVERHEAD CIRCUIT BREAKER PANEL (VIEW LOOKING AFT)



J CHAFF/FLARE SAFETY SWITCH AND MAINTENANCE BYPASS SWITCH

AIRCRAFT HAZARDS - Continued

2. THE ALE-47 COMPONENT LOCATIONS

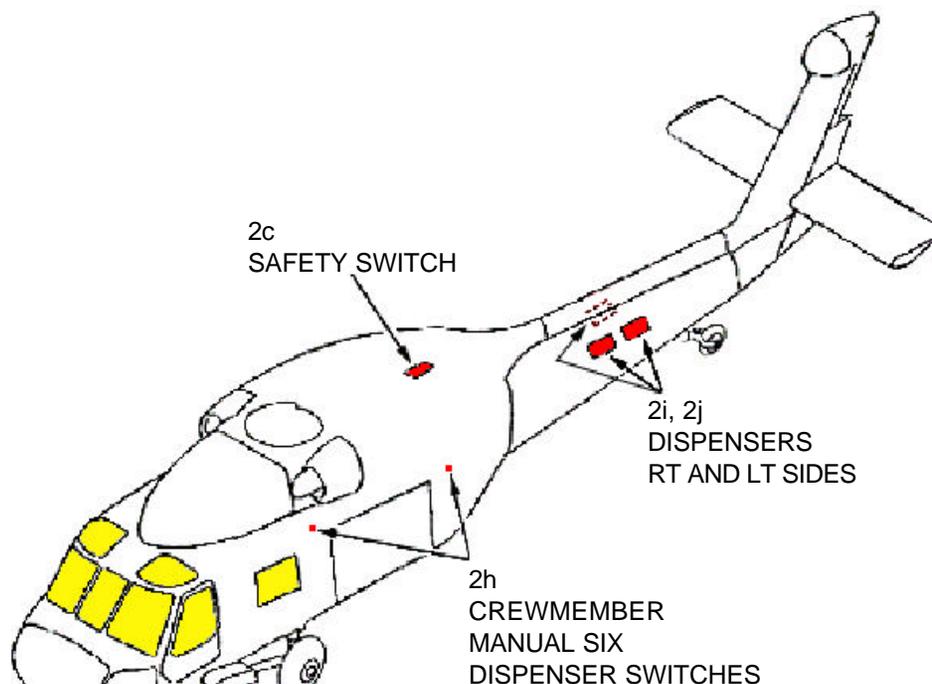
NOTE:

Refer to pages HH-60.5, 6 and 7 for orientation.

WARNING

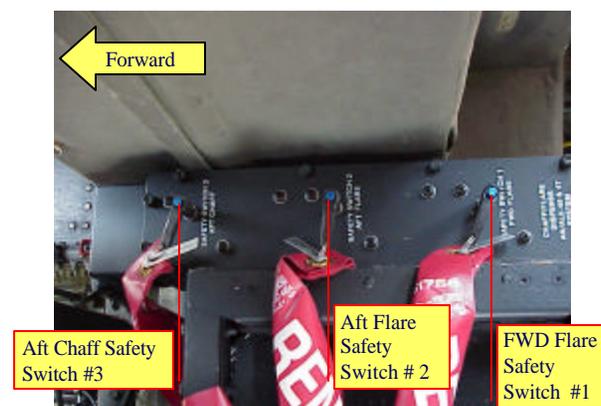
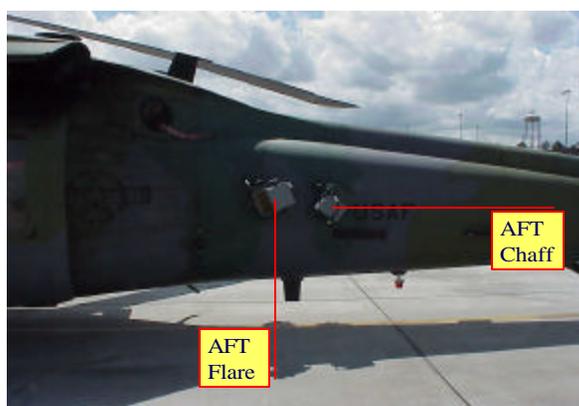
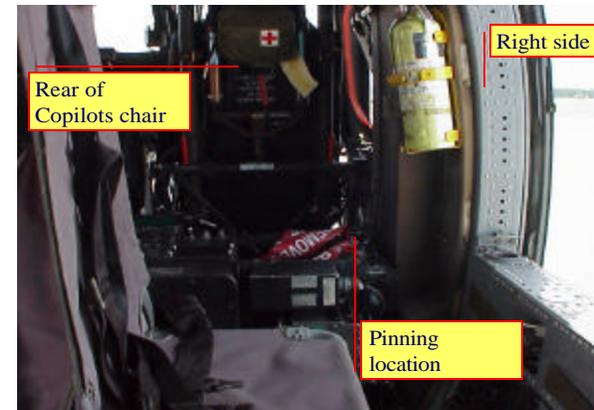
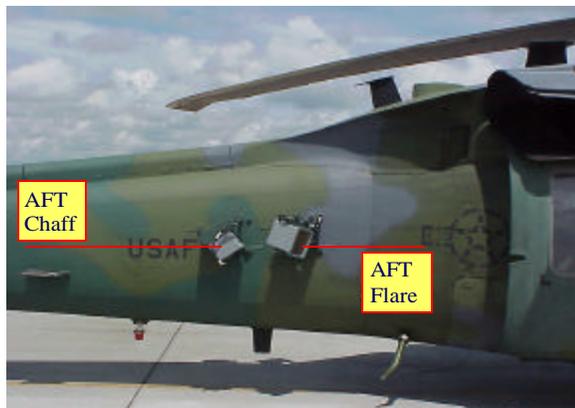
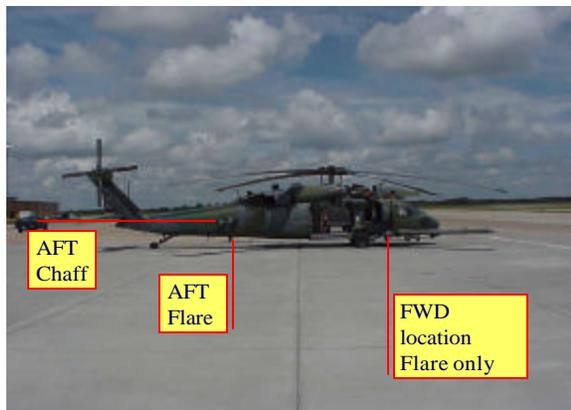
Injury to personnel will result if chaff is accidentally fired. System must be in safe prior to working on chaff system. Make sure safety pin is inserted into electronic module and chaff control panel jettison switch is in safe position.

- a. The ALE-47 CCU is located on the instrument panel.
- b. The programmer is located in the transition area on the outside of the left wall of the avionics rack.
- c. The safety switch is located on the ceiling of the cabin area just behind the transmission drip pan.
- d. The two sequencers are located above the programmer on outside of the left wall of the avionics rack.
- e. The dispenser address assembly sits just ahead of the programmer in the transition area.
- f. The indicator dispense ready lights are attached under the glare shield in front of the pilot and the copilot.
- g. The collective dispenser consent switch is located on the pilot and copilot's collective control.
- h. The crewmember manual six dispense switches are located just below the ceiling on the wall panel between the cargo door and gunner's window.
- i. The dispenser assemblies. Two are located half way back on the left side of the tail boom and one is located on the right side about half way back.
- j. The magazine assemblies are located in the dispenser assemblies.



AIRCRAFT HAZARDS - Continued

2. THE ALE-47 FLARE SYSTEM PICTORIAL



SPECIAL TOOLS/EQUIPMENT

- Power Rescue Saw
- Crash Ax
- Fire Drill II
- Flare Dispenser
- Safety Pins

AIRCRAFT ENTRY

1. NORMAL ENTRY

- a. Turn cockpit door handle counterclockwise to the open position to open door.
- b. Turn cabin door handle counterclockwise to the open position and slide door aft.

2. EMERGENCY ENTRY

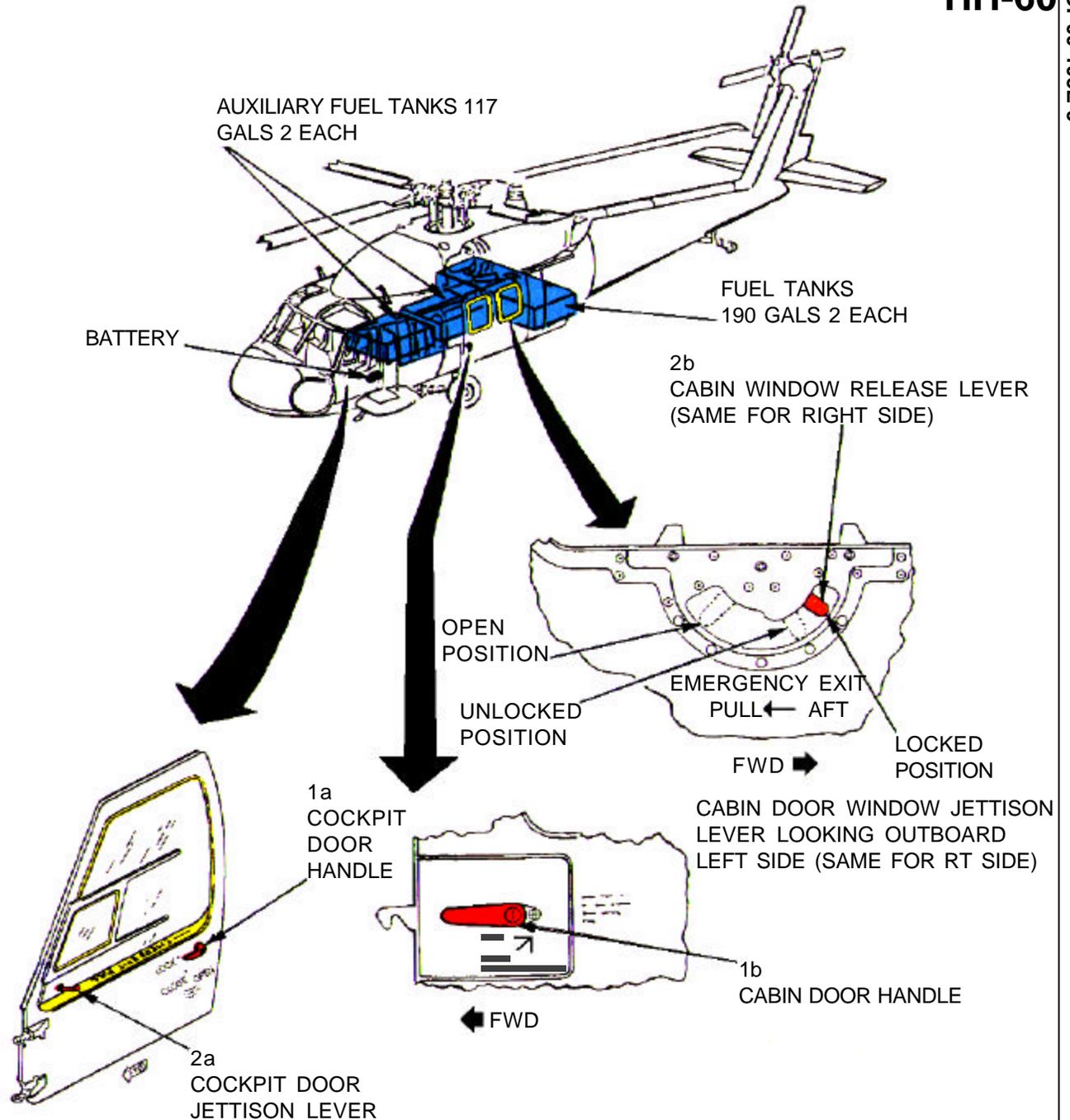
NOTE:

Doors are not pyrotechnically equipped.

- a. Break window in cockpit door and pull jettison lever aft to release door hinges.
- b. Break window in cabin door and rotate emergency handle, located below forward window, to the aft open position. Push bottom of window out to remove window. Both cabin windows on side operate this way.

3. CUT-IN

- a. Break window or windshield as required.



ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

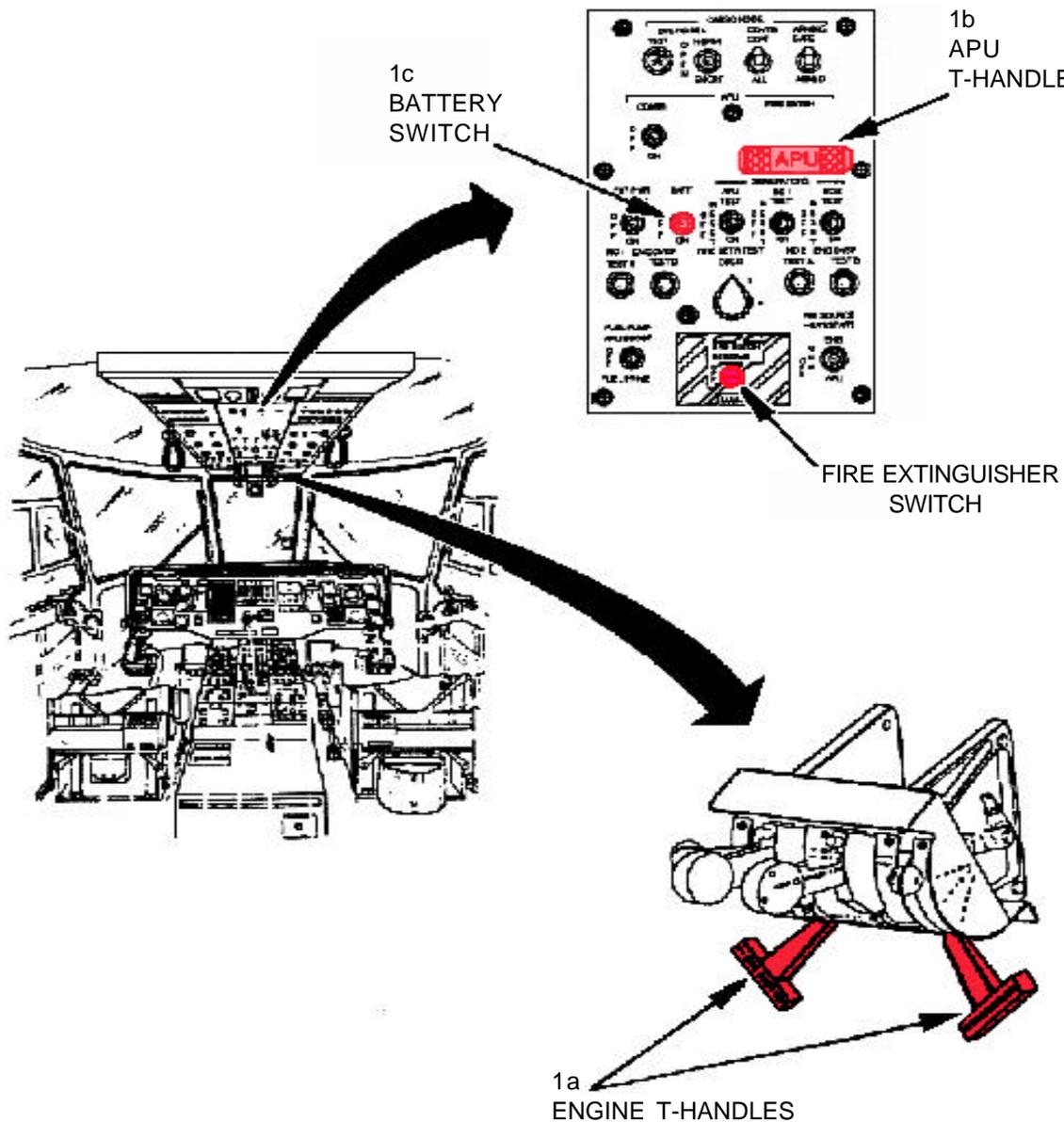
NOTE:

Battery switch must be in the ON position. To activate the installed fire extinguishing system, one T-handle must be pulled (agent is discharged to last T-handle pulled). Then, reposition the fire extinguisher switch from OFF to MAIN or RESERVE.

- Pull engine emergency T-handles, located on control quadrant, FULL AFT, to cut off fuel flow.
- Pull APU T-handle, located on overhead console, DOWN.
- Place battery switch, located on overhead console, to the OFF position.

2. AIRCREW EXTRACTION

- Release all lap belts and shoulder harnesses from aircrew. All aircrew seats have a complete lap belt and dual torso restraint shoulder harness centrally attached to a rotary release buckle or a pull-up release lever.
- Disconnect personnel leads from aircrew.
- Release all lap belt and shoulder harnesses from troop seats occupants. All troop seats have a lap belt and shoulder harness centrally attached to a rotary release buckle.

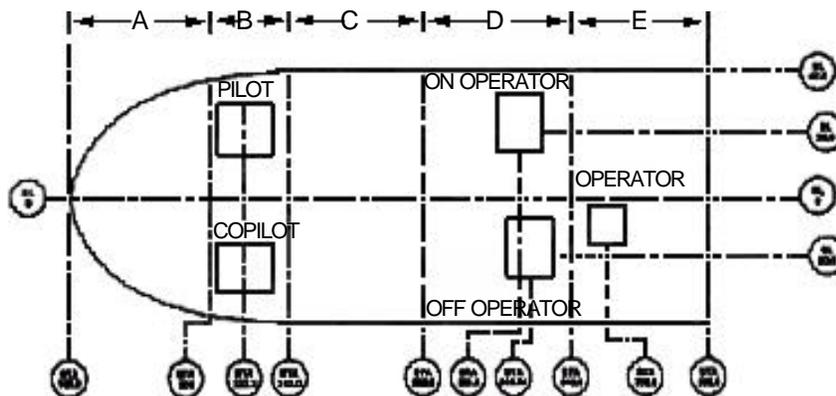


CABIN CONFIGURATIONS

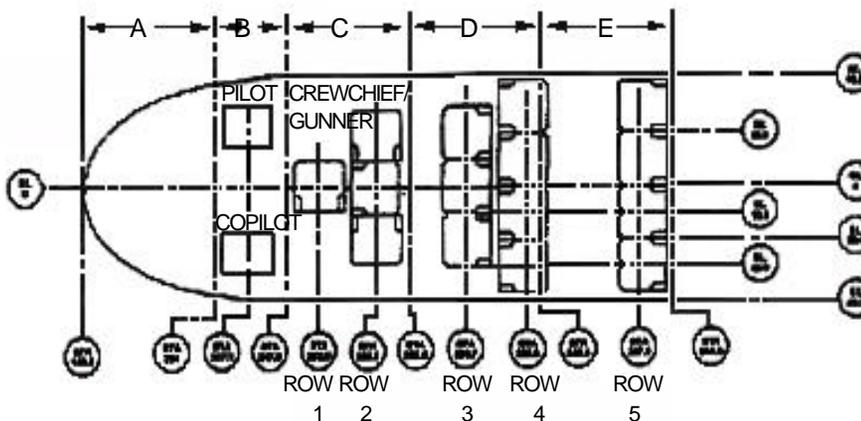
NOTE:

Some configurations may or may not apply to this version.

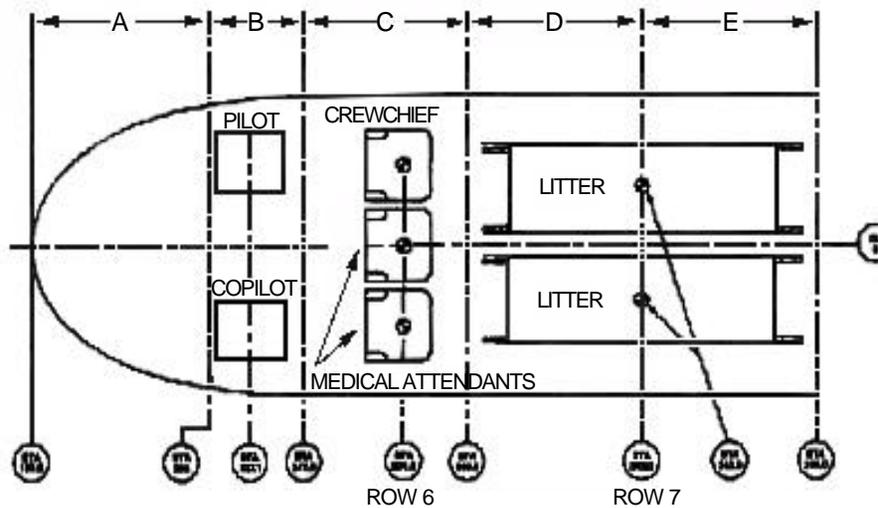
ELECTRONIC CONFIGURATION

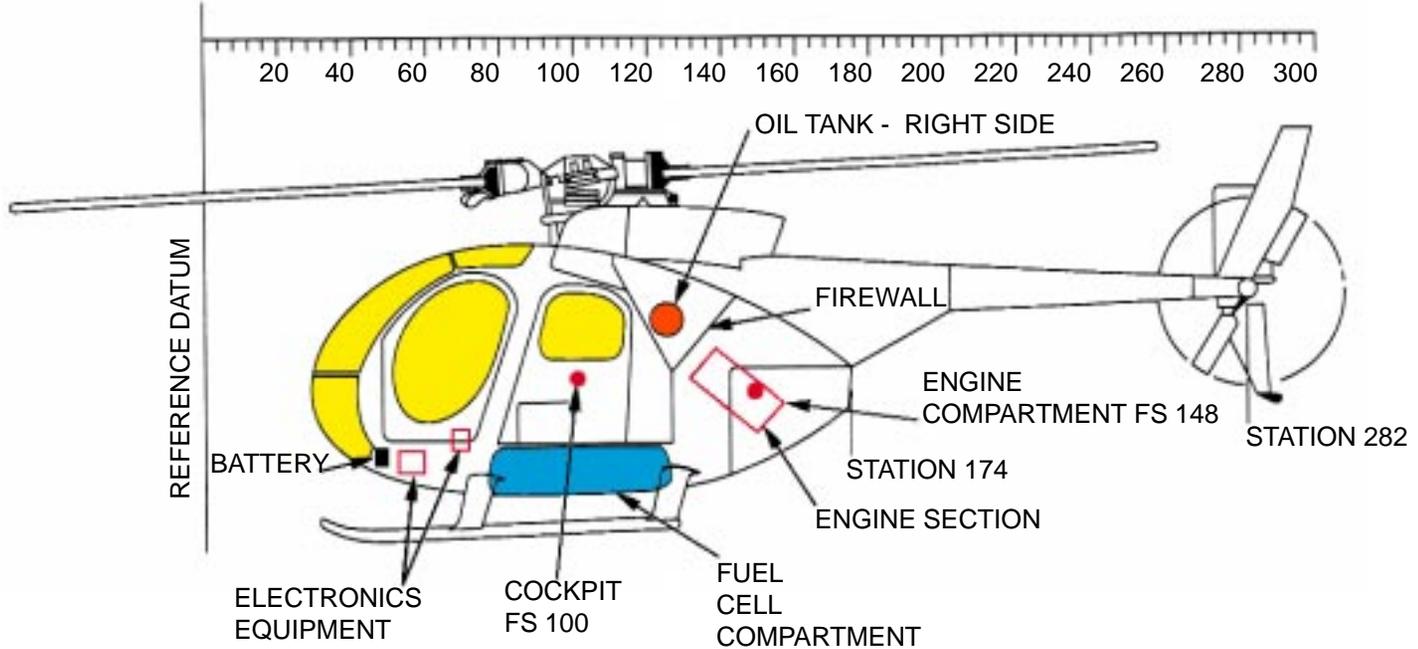


TROOP CONFIGURATION



MEDEVAC CONFIGURATIC
(LITTERS ROTATE)





SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
Crash Ax
Fire Drill II

WARNING

Any rotation of gun barrels
will cause gun to fire!

AIRCRAFT ENTRY

1. NORMAL ENTRY

NOTE:

Two doors are located on each side of fuselage. Entry is basically identical for each of the four doors.

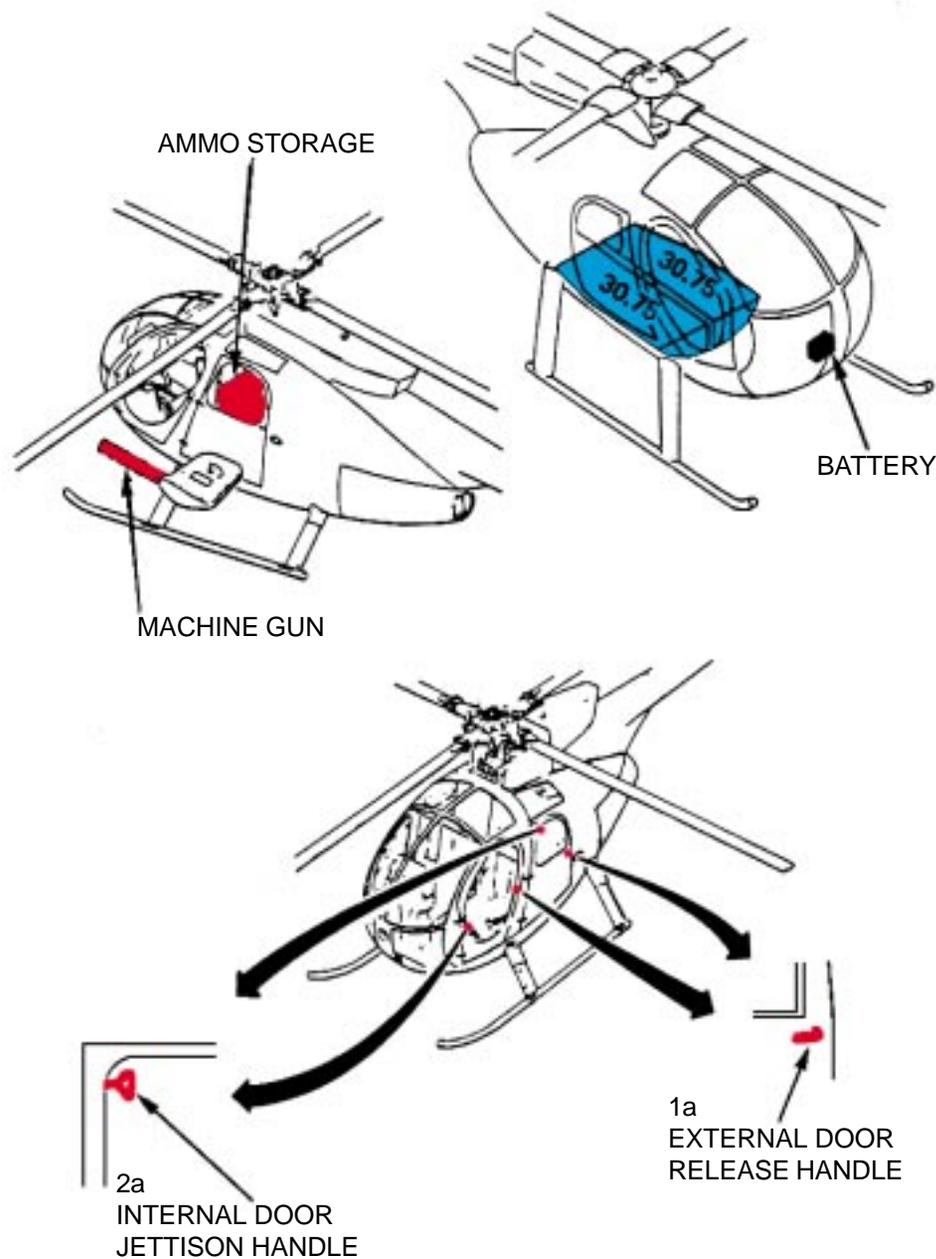
- a. Rotate external door release handle and open door.

2. EMERGENCY ENTRY

NOTE:

Jettisonable doors are not pyrotechnically equipped.

- a. If external release handle does not open door, leave handle in open position, break door window, and pull internal door jettison handle to disengage hinge pins.
 - b. Pull to jettison door.
3. CUT-IN
- a. Cut-in cabin enclosure as required.



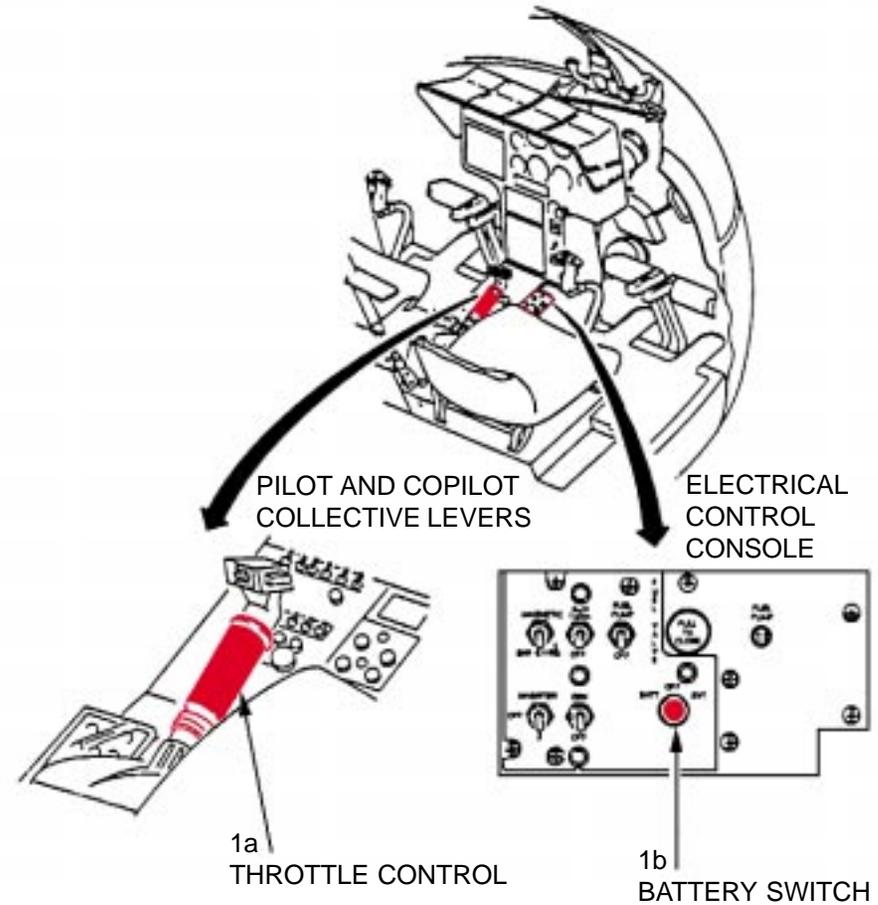
ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

- a. Rotate throttle control, located on pilot and co-pilot collective levers, to FUEL CUTOFF position.
- b. Place battery switch, located on electrical control console, to OFF position.

2. AIRCREW EXTRACTION

- a. Unlatch lap belt and remove shoulder harness from crewmember(s).



SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
Fire Drill II

OH-58A/C/D

AIRCRAFT ENTRY

WARNING

Any rotation of gun barrel will cause gun to fire!

1. NORMAL ENTRY

- a. All four doors identically operate the same. Rotate door handles, located on center aft edge of each door, clockwise and swing doors forward.

2. EMERGENCY ENTRY

- a. If door(s) fail to open, cut window(s) in door(s).

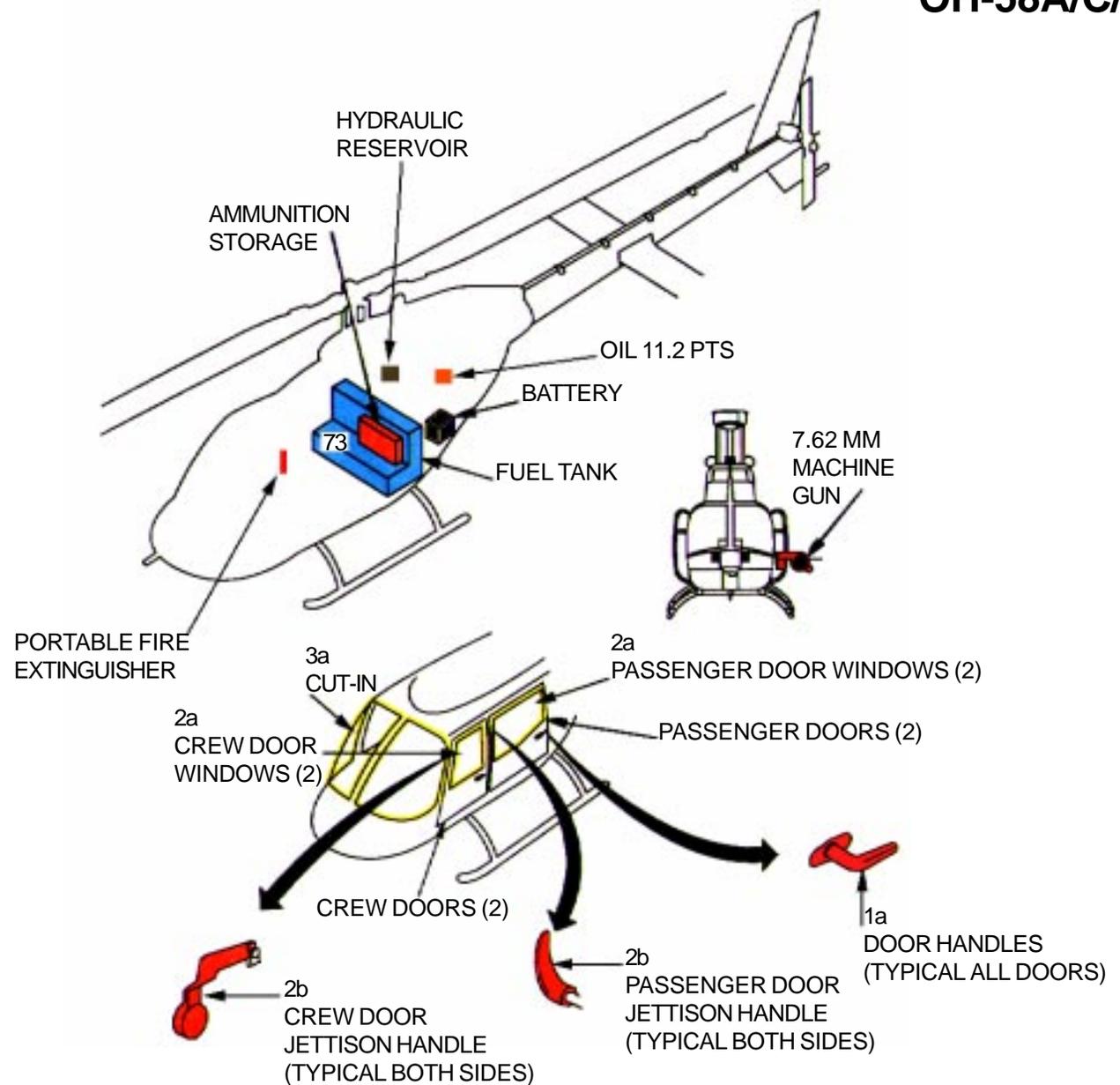
NOTE:

Doors are not pyrotechnically equipped.

- b. Pull door jettison handle(s), located inside on door upper forward support(s) and pull door(s) out.

3. CUT-IN

- a. Cut-in windows and windshields as necessary.



ENGINE SHUTDOWN AND AIRCREW EXTRACTION

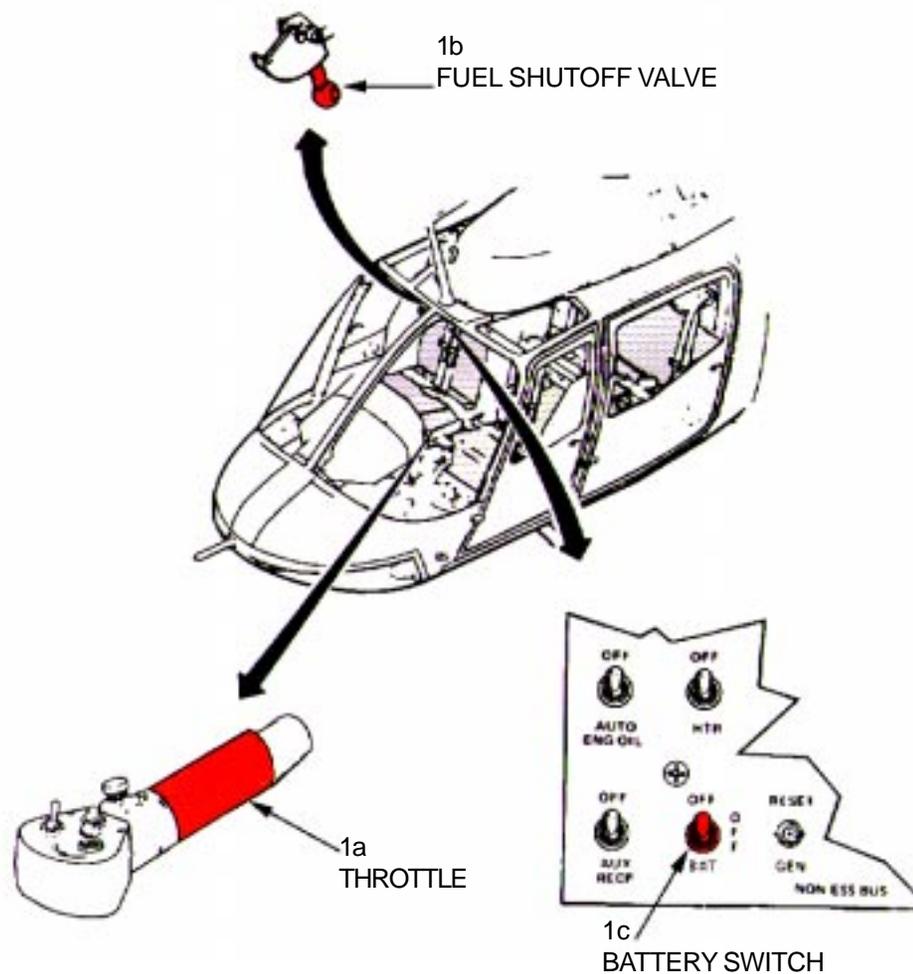
OH-58A/C/D

1. ENGINE SHUTDOWN

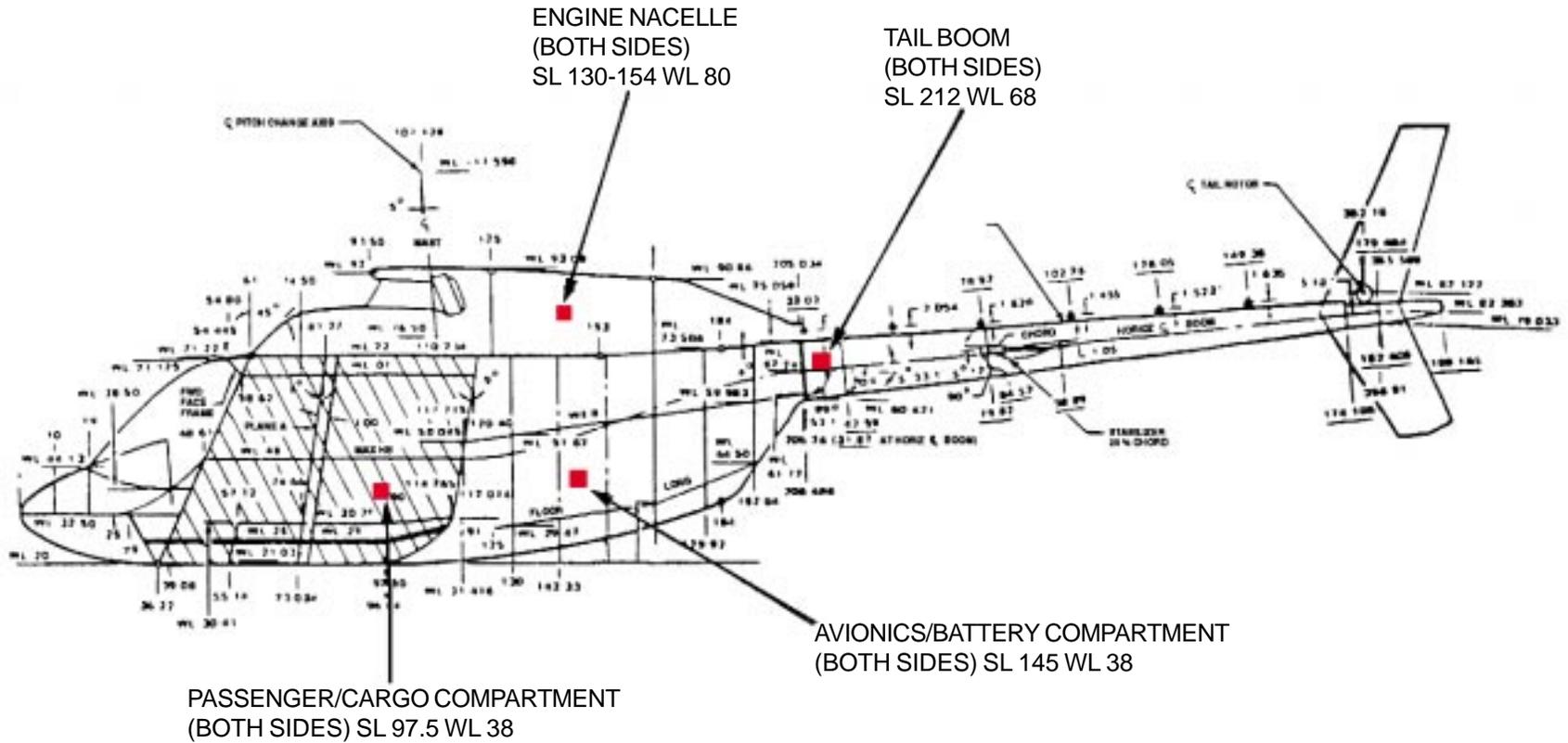
- Rotate throttle, located on pilot's collective pitch stick, to OFF position.
- Pull fuel shutoff valve, located overhead in crew compartment, aft to OFF position.
- Place battery switch, located on overhead switch panel, in OFF position.

2. AIRCREW EXTRACTION

- Unlatch lap belts and remove shoulder harnesses from crewmember(s).
- Unlatch restraints from passengers or troops as applicable to cabin arrangement.

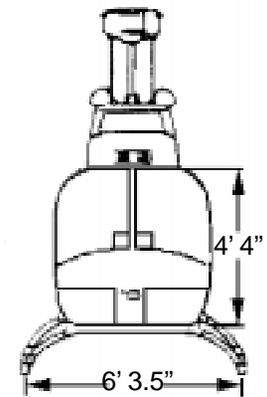
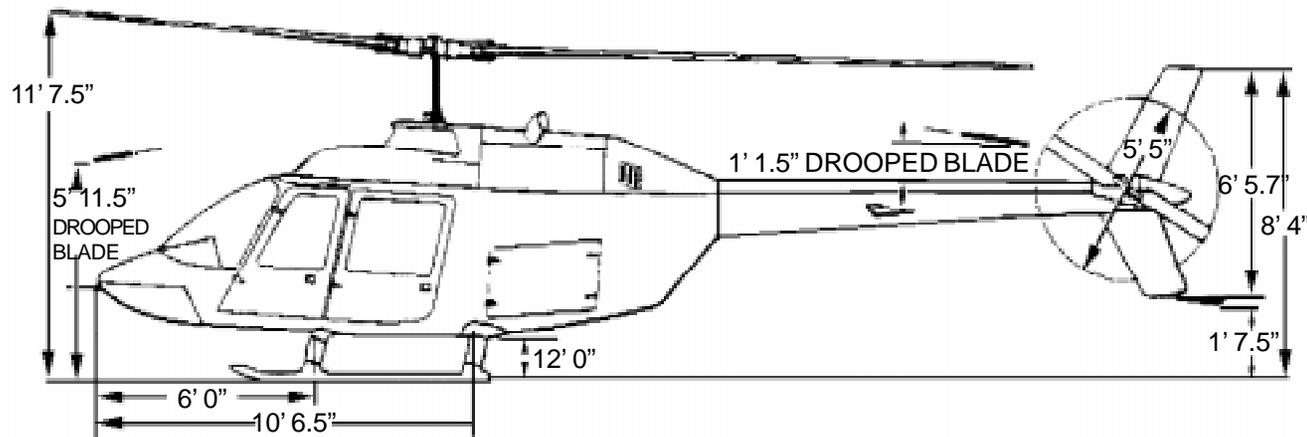
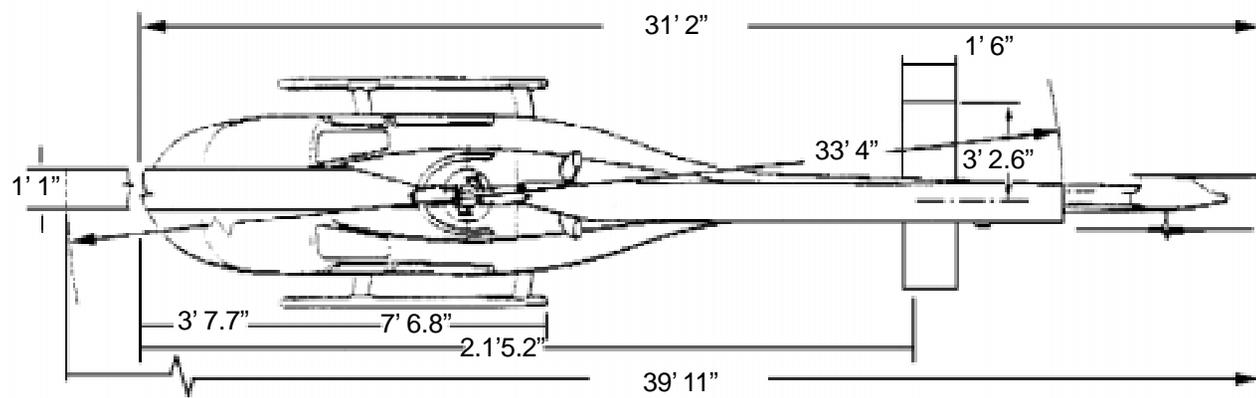


AIRCRAFT SKIN PENETRATION POINTS

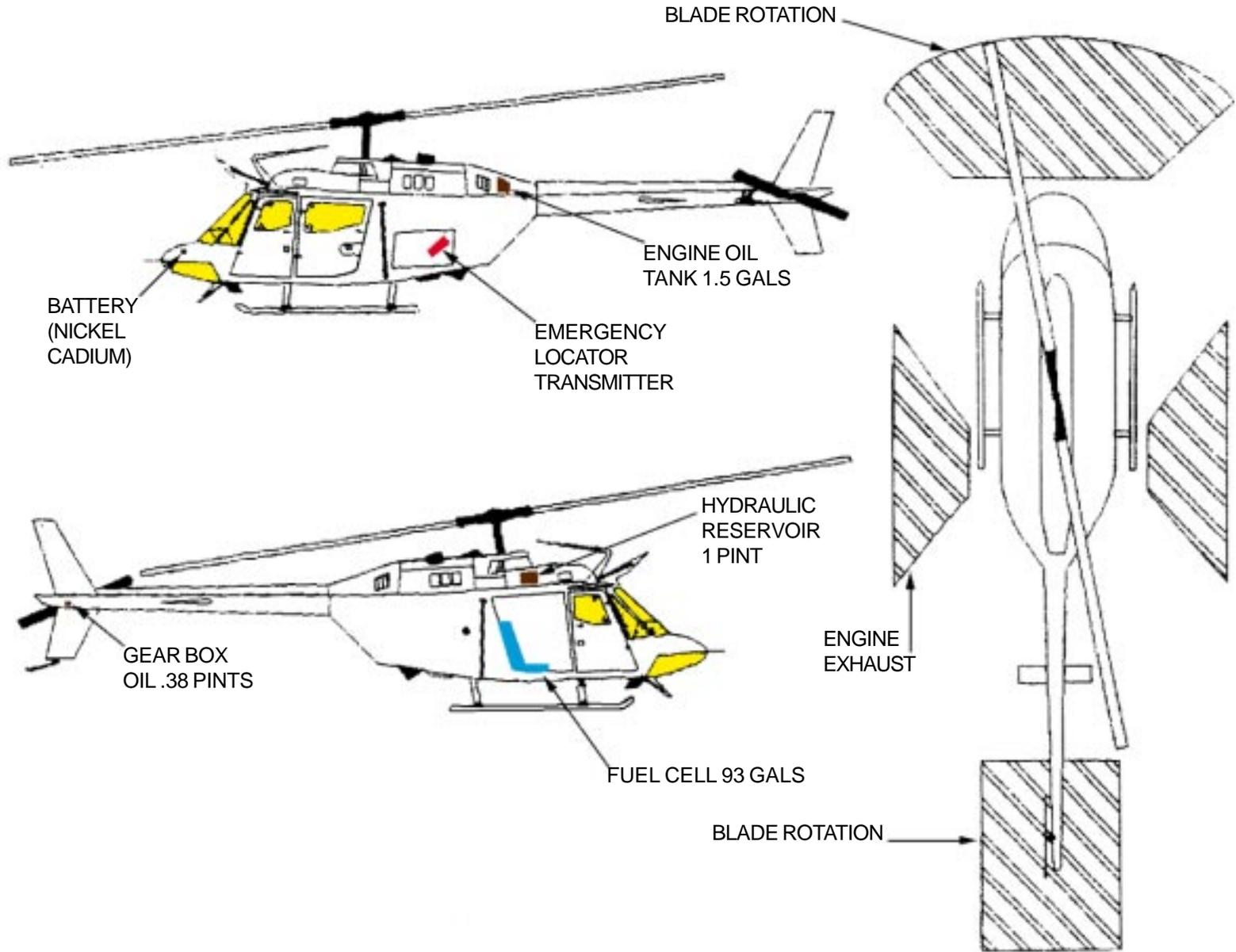


AIRCRAFT DIMENSIONS

TH-67



AIRCRAFT HAZARDS



SPECIAL TOOLS/EQUIPMENT
Power Rescue Saw

CAPACITY:
2 CREW
2 PASSENGERS

TH-67

AIRCRAFT ENTRY

NOTE:

This aircraft is similar to the OH-58 pertaining to the doors for entry.

1. NORMAL ENTRY

- All four doors identically operate the same. Rotate door handles, located on center edge of each door, clockwise and swing doors forward.

2. EMERGENCY ENTRY

- If door(s) fail to open, cut window(s) in door(s).

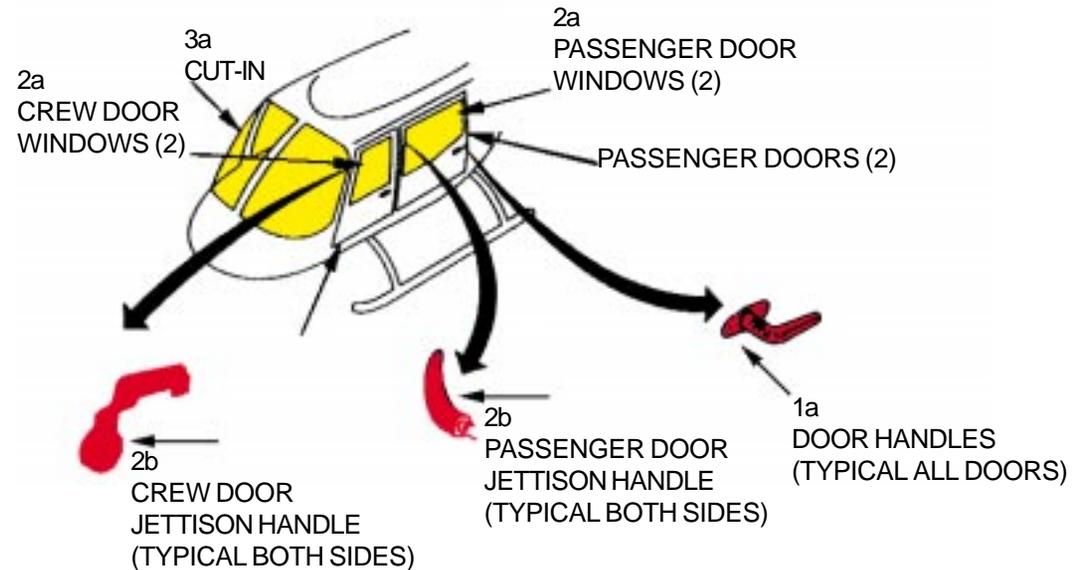
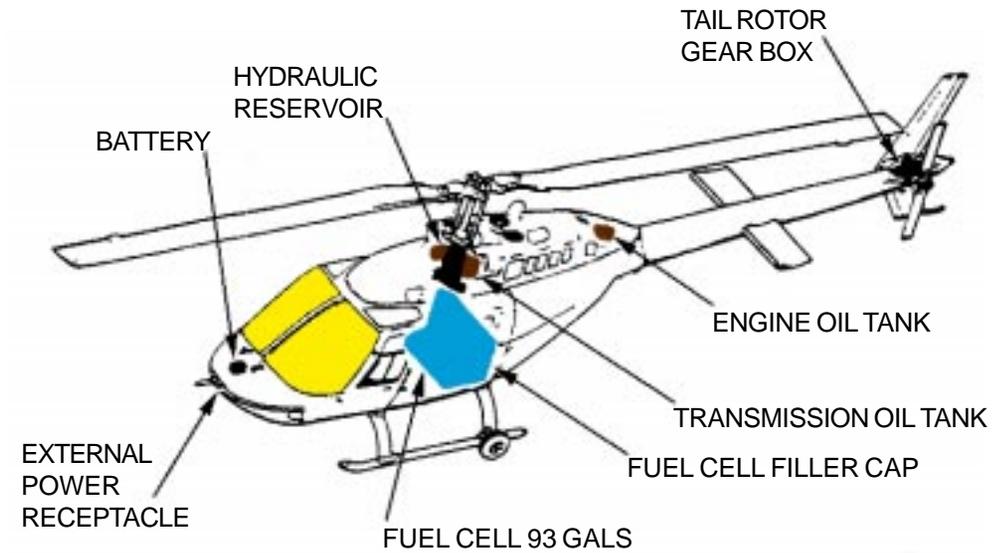
NOTE:

Doors are not pyrotechnically equipped.

- Pull door jettison handle(s), located inside on door upper forward support(s) and pull door(s) out.

3. CUT-IN

- Cut-in windows, doors, and windshields as necessary.



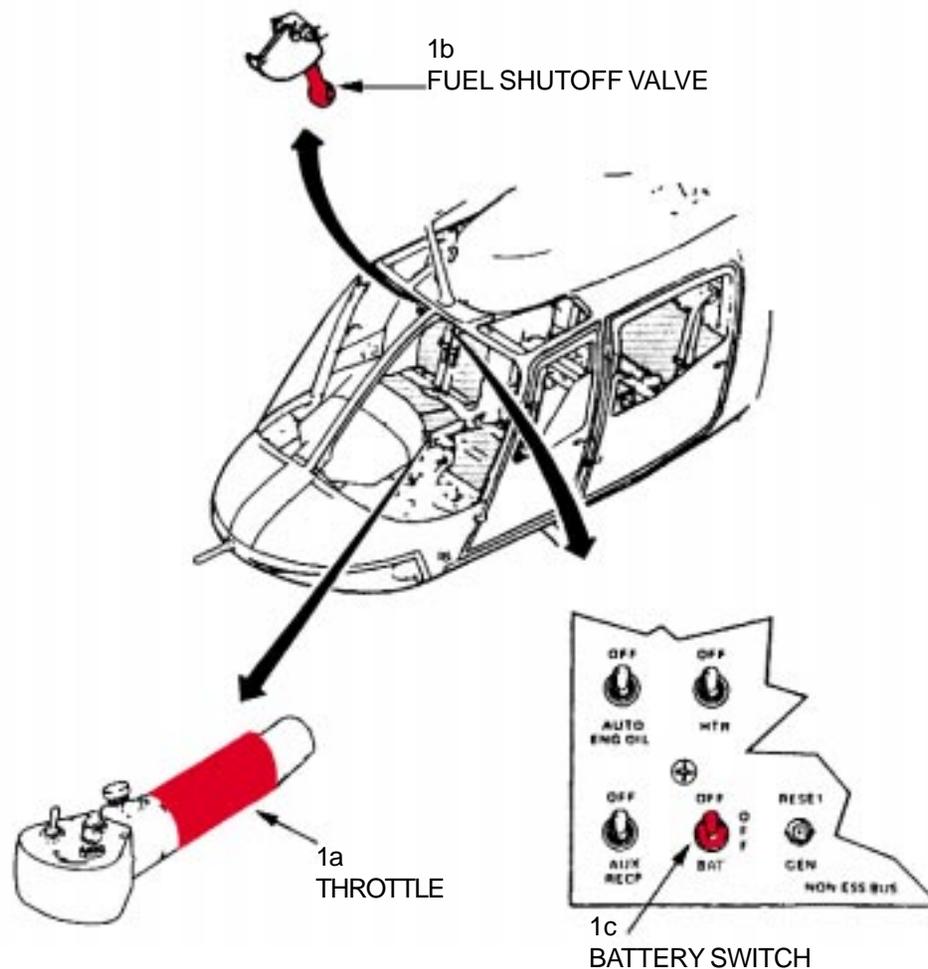
ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

- a. Rotate throttle, located on pilot's collective pitch stick, to OFF position.
- b. Pull fuel shutoff valve, located overhead in crew compartment, aft to OFF position.
- c. Place battery switch, located on overhead switch panel, in OFF position.

2. AIRCREW EXTRACTION

- a. Unlatch lap belts and remove shoulder harnesses from crewmember(s).
- b. Unlatch restraints from passengers or troops as applicable to cabin arrangement.

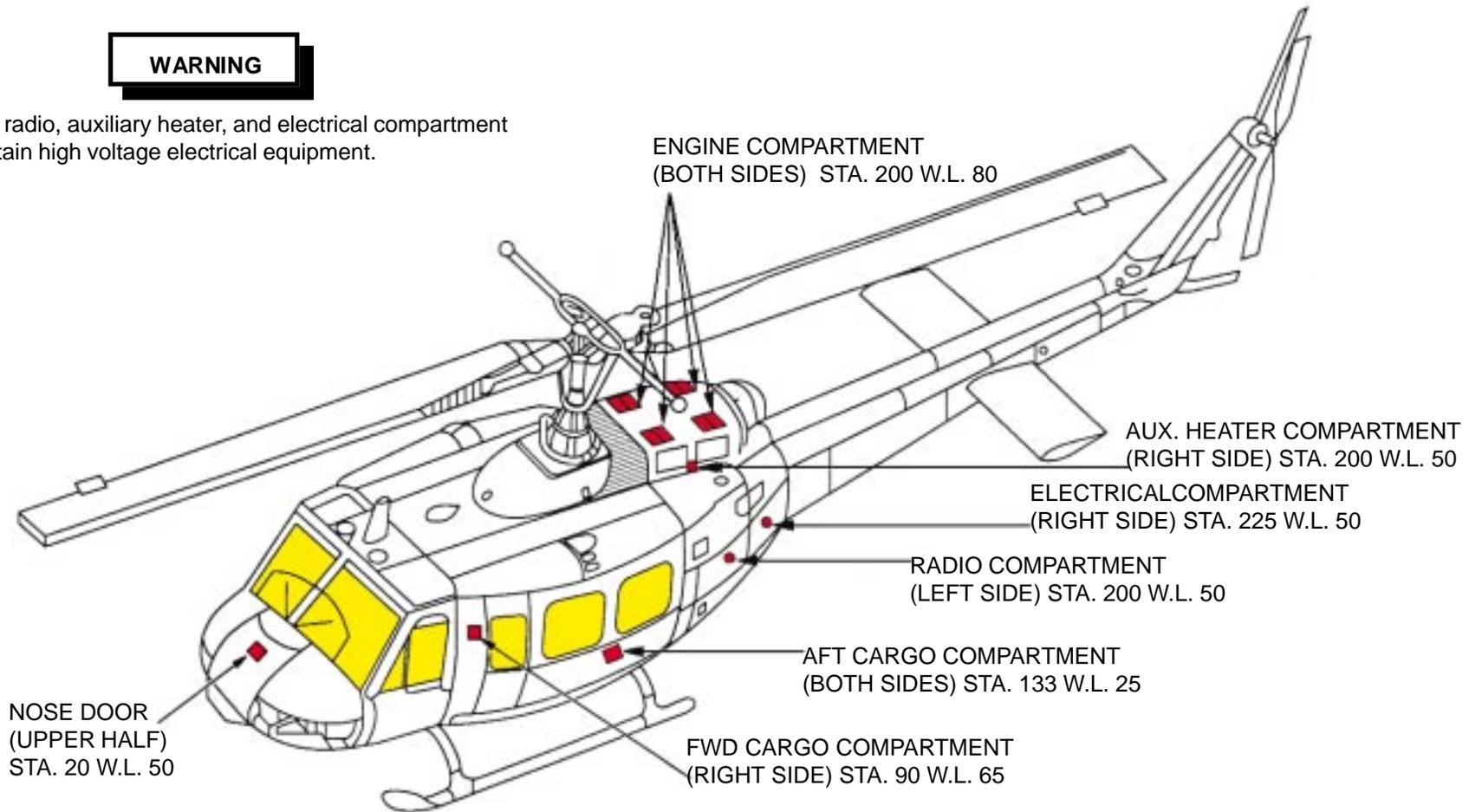


AIRCRAFT SKIN PENETRATION POINTS

EFFECTIVITY: A/B/C/D/H MODELS

WARNING

The radio, auxiliary heater, and electrical compartment contain high voltage electrical equipment.



SPECIAL TOOLS/EQUIPMENT
Power Rescue Saw

AIRCRAFT ENTRY

WARNING

Caution must be exercised when entering rotor blade area. Entry must be from side of aircraft.

1. NORMAL ENTRY

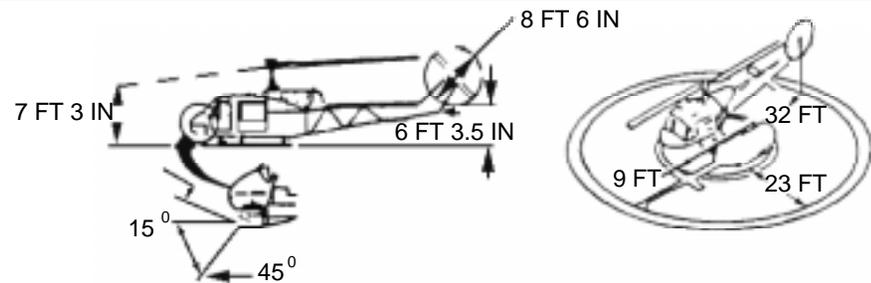
- a. Rotate crew door handle, located left and right forward fuselage, counterclockwise to unlatch door. Pull out and forward to open position.
- b. Pull passenger-cargo door handle, located left and right fuselage, down to unlatch and release door. Slide door aft to open position.

2. EMERGENCY ENTRY

- a. Slide, break or cut crew door window, located left and right forward fuselage.
- b. Reach inside door and pull emergency release handles, located forward of right and left crew door frames, aft to release doors.
- c. Pull doors outward and place away from exits.

3. CUT-IN

- a. Cut plastic windows and glass windshield to gain entry.



NOTE:

UH-1N and HH-1H fuel tank differences are:

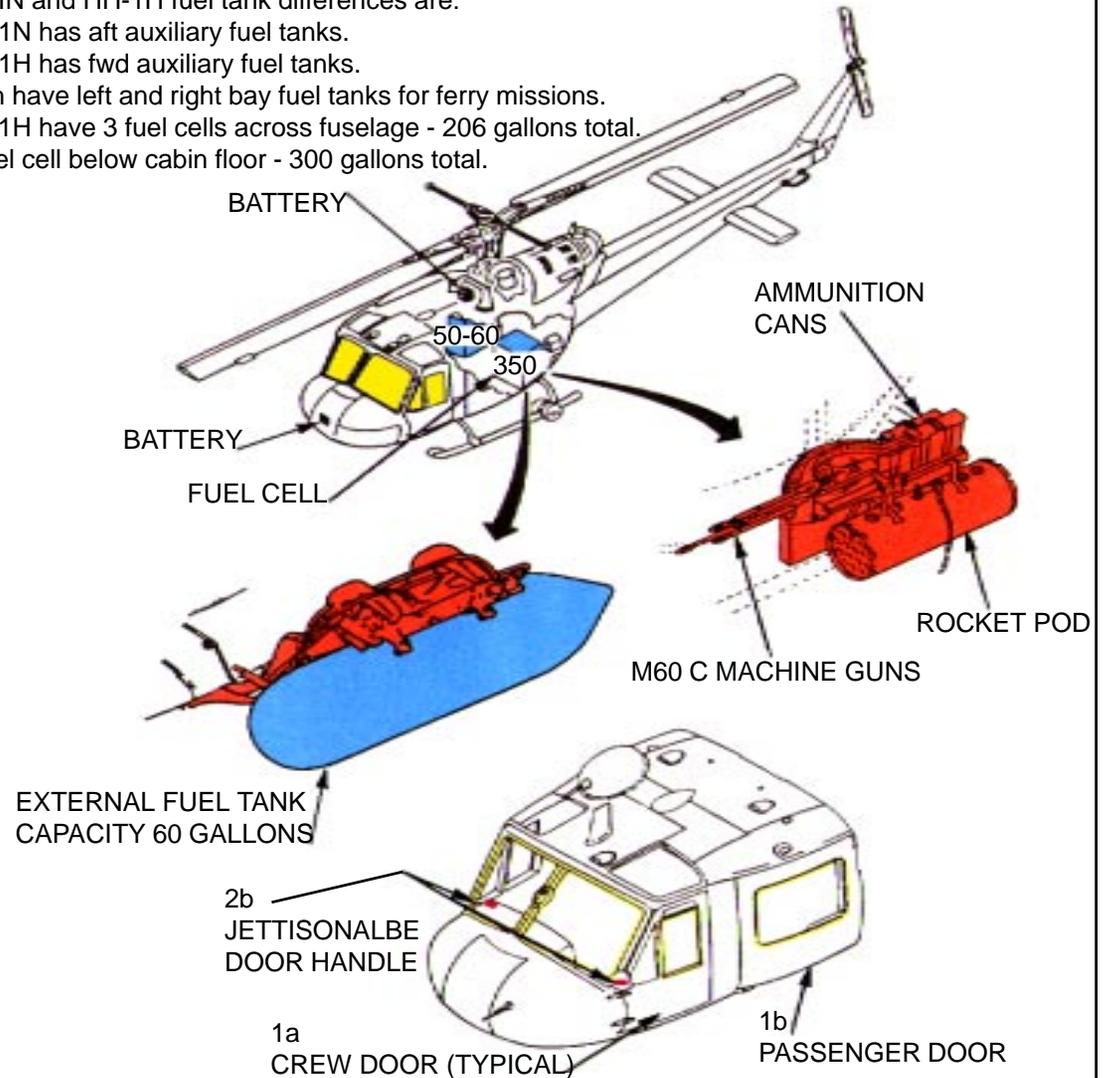
UH-1N has aft auxiliary fuel tanks.

HH-1H has fwd auxiliary fuel tanks.

Both have left and right bay fuel tanks for ferry missions.

HH-1H have 3 fuel cells across fuselage - 206 gallons total.

2 fuel cell below cabin floor - 300 gallons total.



ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

- a. Place fuel switches, located on pedestal console, to OFF position.

WARNING

For VIP models only. Do not apply rotor brake above 130 RPM. Doing so could cause brake disc failure resulting in uncontrolled movement of the aircraft or disintegration of the brake disc. Application of the rotor brake when the aircraft is on ice may also result in uncontrolled movement.

- b. Apply rotor brake (if installed), located overhead on right side of cabin roof, down and forward to lock.
- c. Turn battery switch to OFF position.

2. AIRCREW EXTRACTION

NOTE:

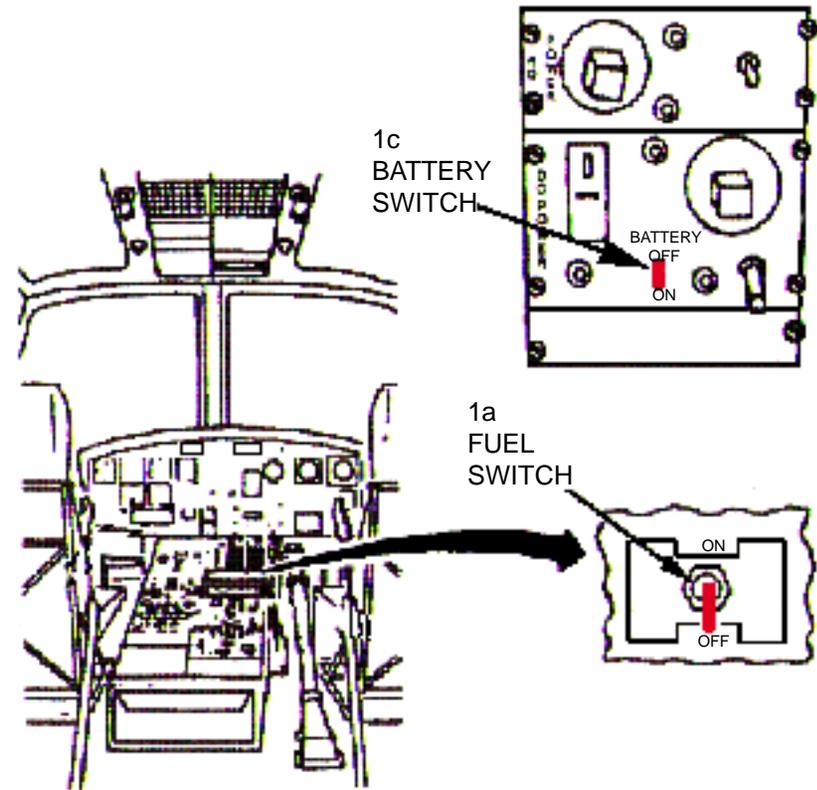
Aircrew seats are equipped with shoulder harness and lap belts. Troop seats are equipped with lap belts only.

- a. Unlatch lap belts and remove shoulder harness from crewmembers.

NOTE:

Red handles under each seat can be pulled downward to tilt seat backward. Seat is very heavy, hand assist seat back is necessary.

- b. Unlatch lap belts from passengers (if applicable).





UH-60A.2 **AIRCRAFT SKIN PENETRATION POINTS**

UH-60A

T.O. 00-105E-9

EFFECTIVITY:

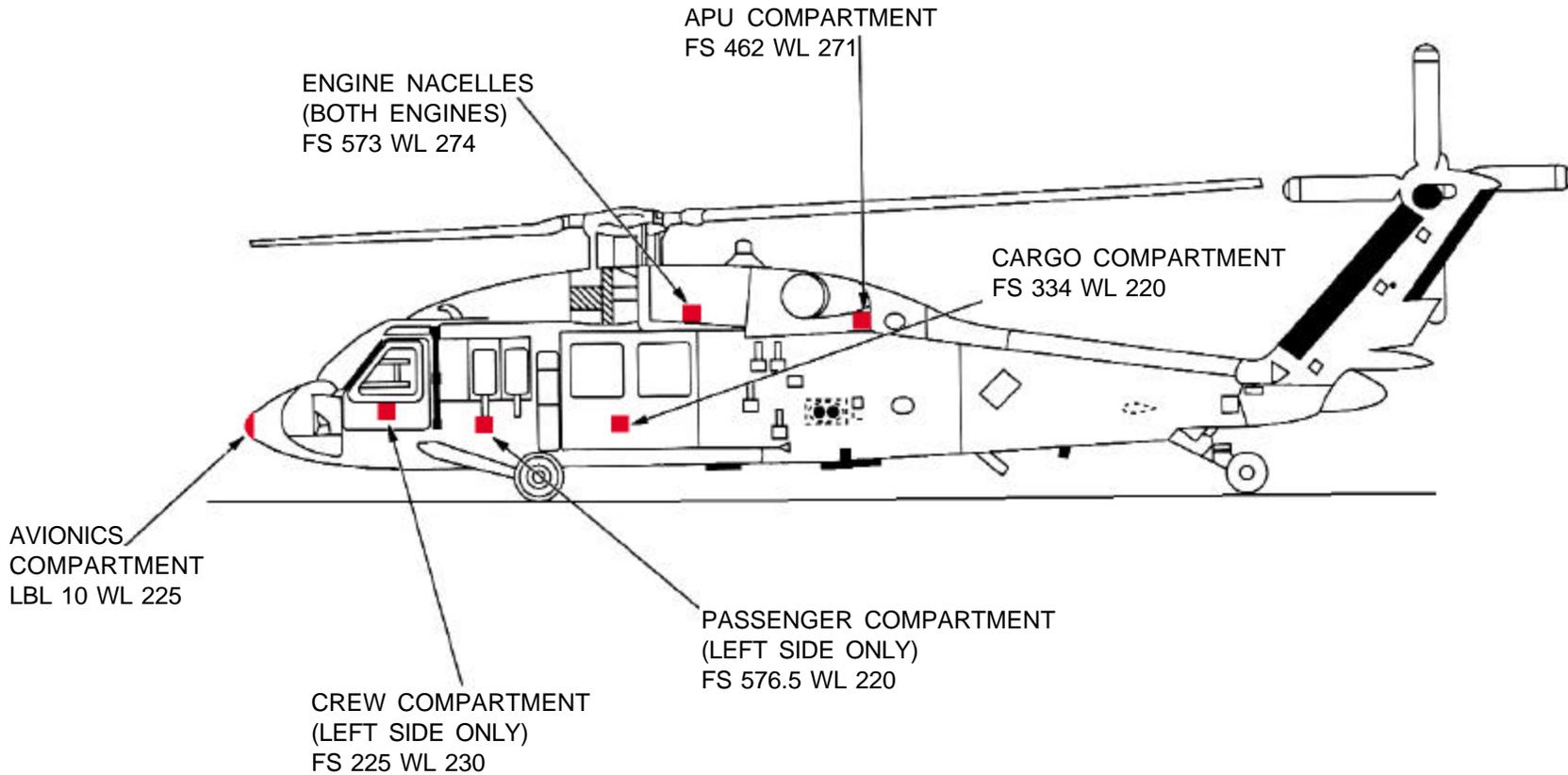
EH-60A "QUICK FIX" (Electronic)

EH-60B "SOTAS"

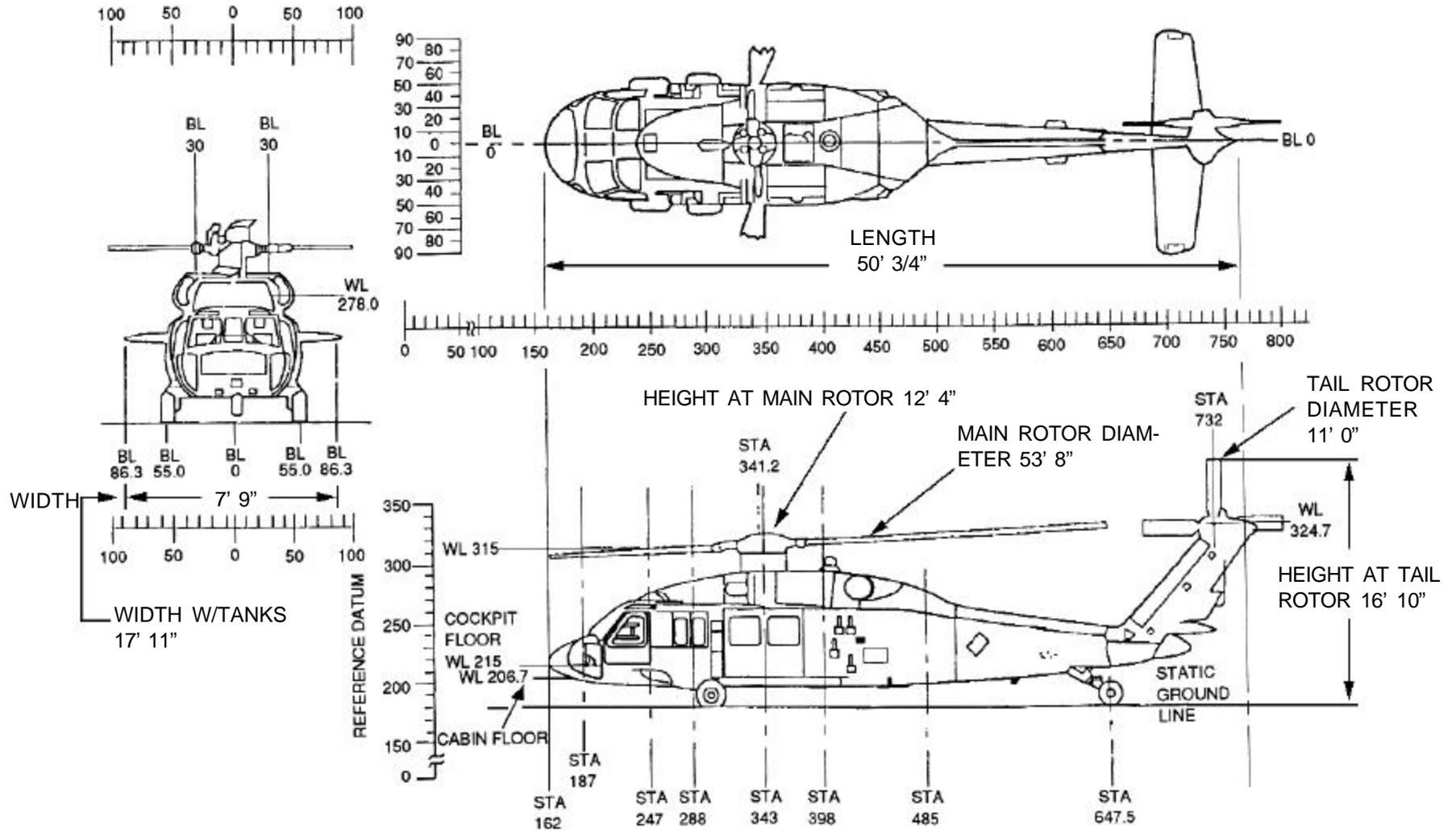
UH-60L Medical Evacuation or Troop Carrier

UH-60Q "DUST OFF" (Medical Evacuation)

MH-60K Special Operations (with refueling nose boom)



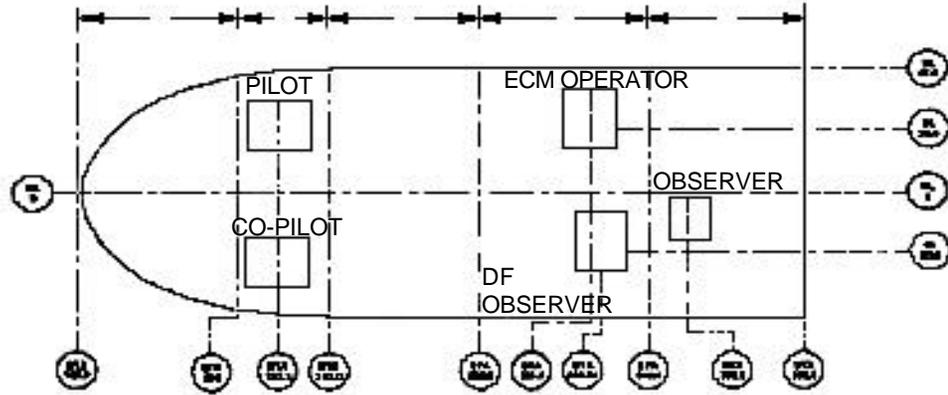
AIRCRAFT DIMENSIONS



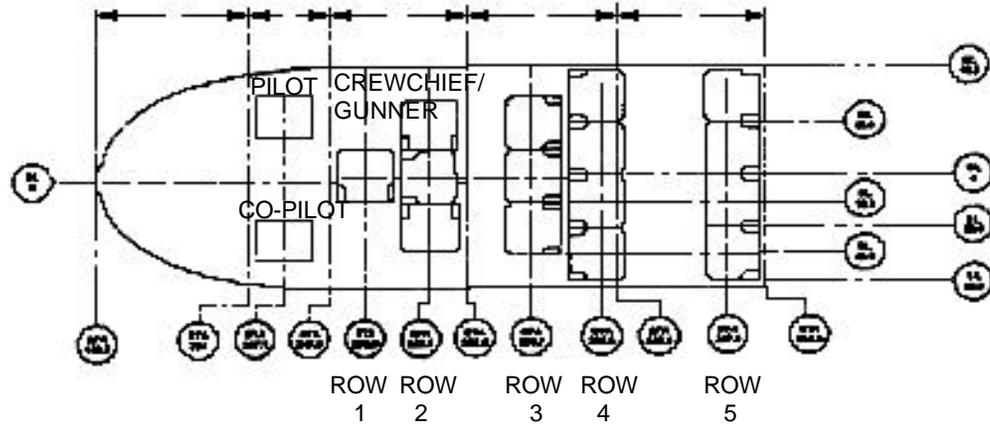
CABIN CONFIGURATIONS

JH-60A

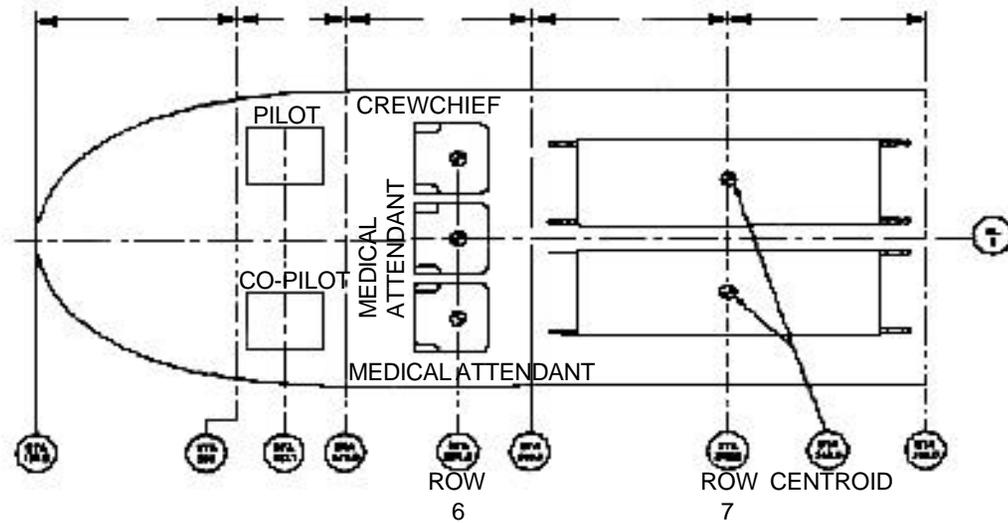
ELECTRONIC CONFIGURATION



TROOP CONFIGURATION



MEDEVAC CONFIGURATION (LITTERS ROTATE)



SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
Crash Ax
Fire Drill II

UH-60A

AIRCRAFT ENTRY

1. NORMAL ENTRY

- a. Turn cockpit door handle counterclockwise to the open position to open door.
- b. Turn cabin door handle counterclockwise to the open position and slide door aft.

2. EMERGENCY ENTRY

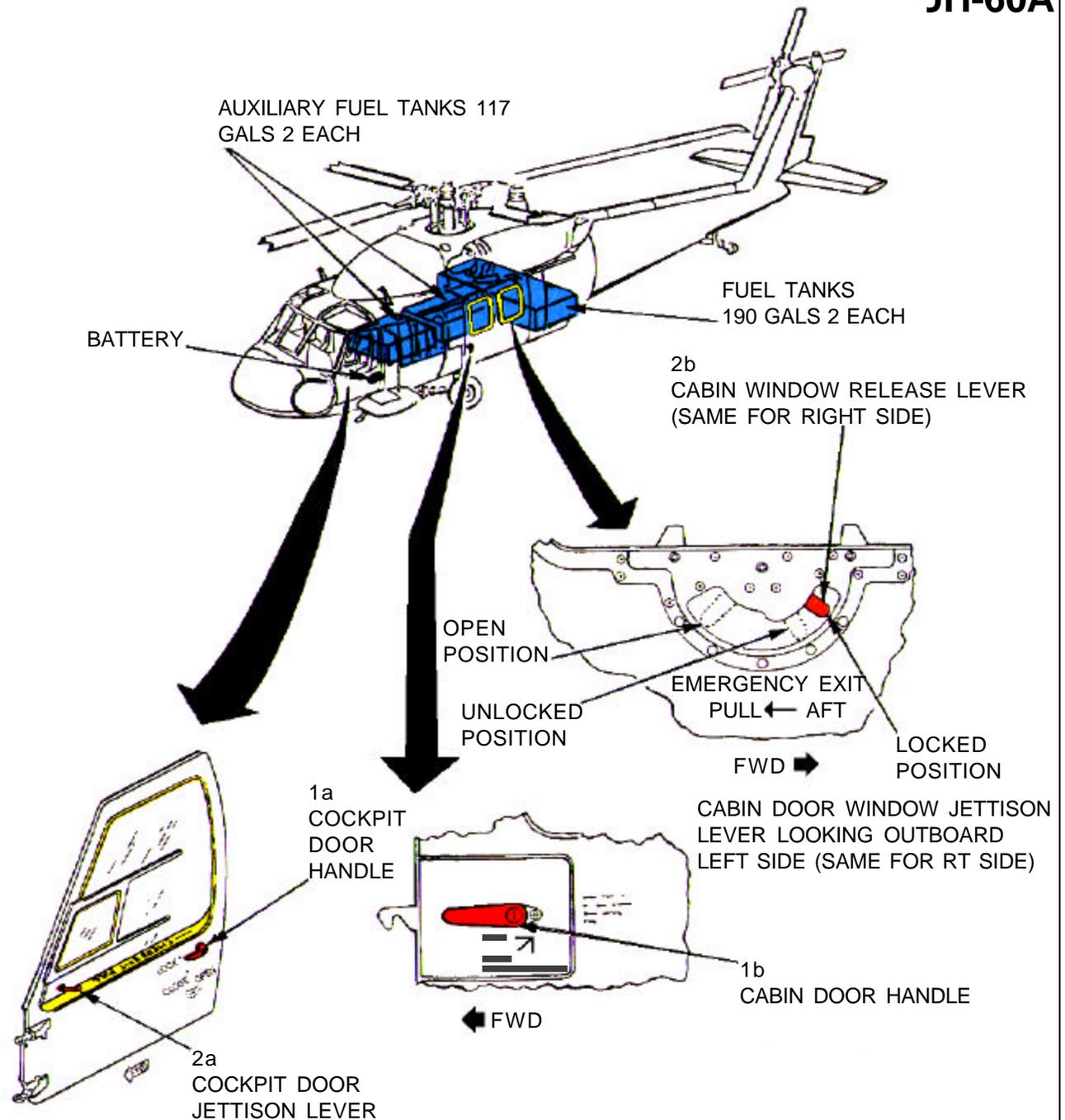
NOTE:

Doors are not pyrotechnically equipped.

- a. Break window in cockpit door and pull jettison lever aft to release door hinges.
- b. Break window in cabin door and rotate emergency handle, located below forward window, to the aft open position. Push bottom of window out to remove window. Both cabin windows on side operate this way.

3. CUT-IN

- a. Break window or windshield as required.



ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

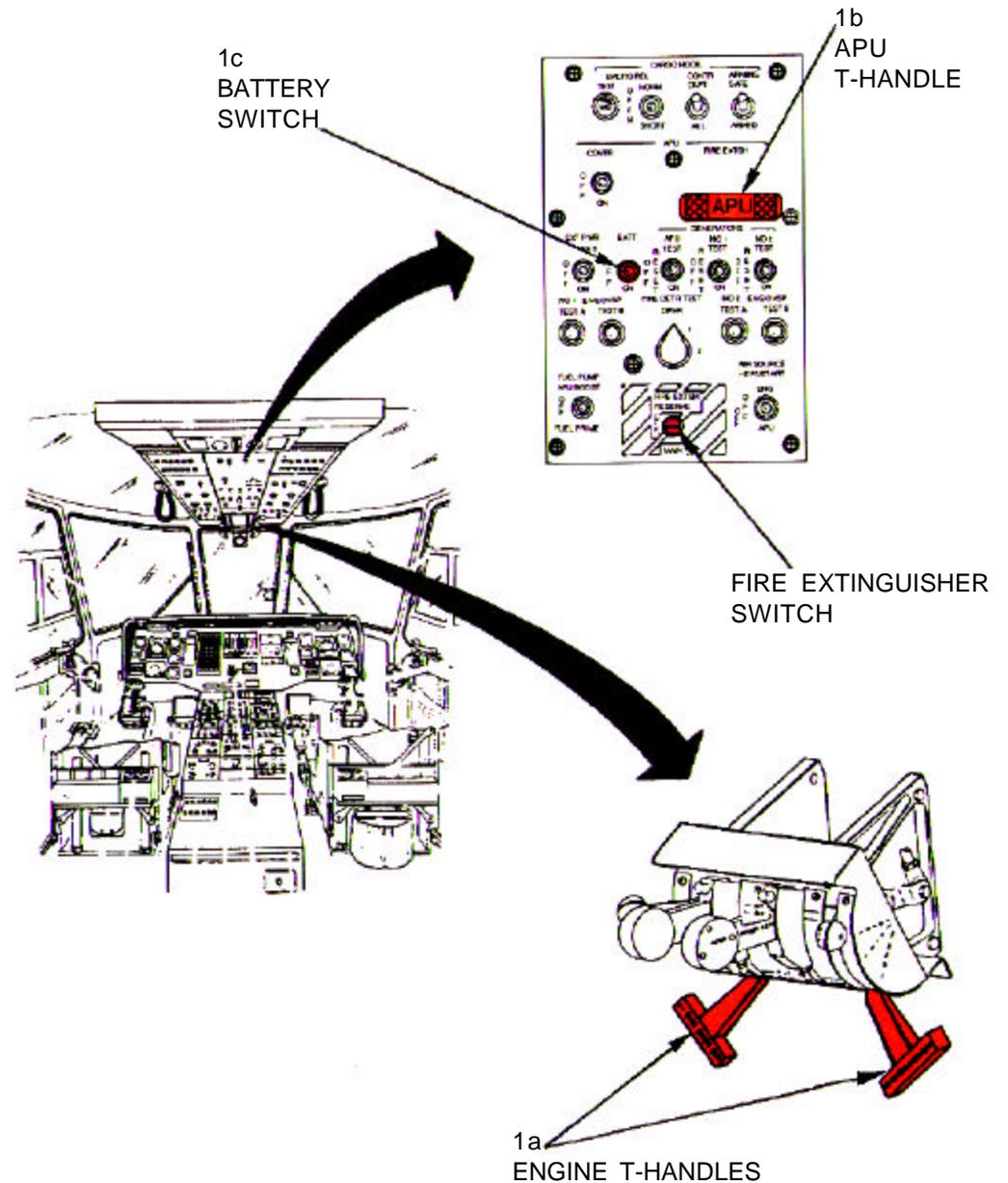
NOTE:

Battery switch must be in the ON position. To activate the installed fire extinguishing system, one T-handle must be pulled (agent is discharged to last T-handle pulled). Then, reposition the fire extinguisher switch from OFF to MAIN or RESERVE.

- Pull engine emergency T-handles, located on control quadrant, FULL AFT, to cut off fuel flow.
- Pull APU T-handle, located on overhead console, DOWN.
- Place battery switch, located on overhead console, to the OFF position.

2. AIRCREW EXTRACTION

- Release all lap belts and shoulder harnesses from aircrew. All aircrew seats have a complete lap belt and dual torso restraint shoulder harness centrally attached to a rotary release buckle or a pull-up release lever.
- Disconnect personnel leads from aircrew.
- Release all lap belt and shoulder harnesses from troop seats occupants. All troop seats have a lap belt and shoulder harness centrally attached to a rotary release buckle.



COCKPIT AIR BAG SYSTEM (CABS)

UH-60A

WARNING

Gas generators contain pyrotechnic propellant. The propellant can be ignited by electrostatic discharge (ESC) and can cause severe injury or loss of life. When working directly on these devices, PPE and grounding straps must be worn. Equipment, technician and ordnance items must be grounded to the airframe.

NOTE:

CABS are activated upon hard impact. The CABS have been installed to protect crewmembers from colliding with control stick.

NOTE:

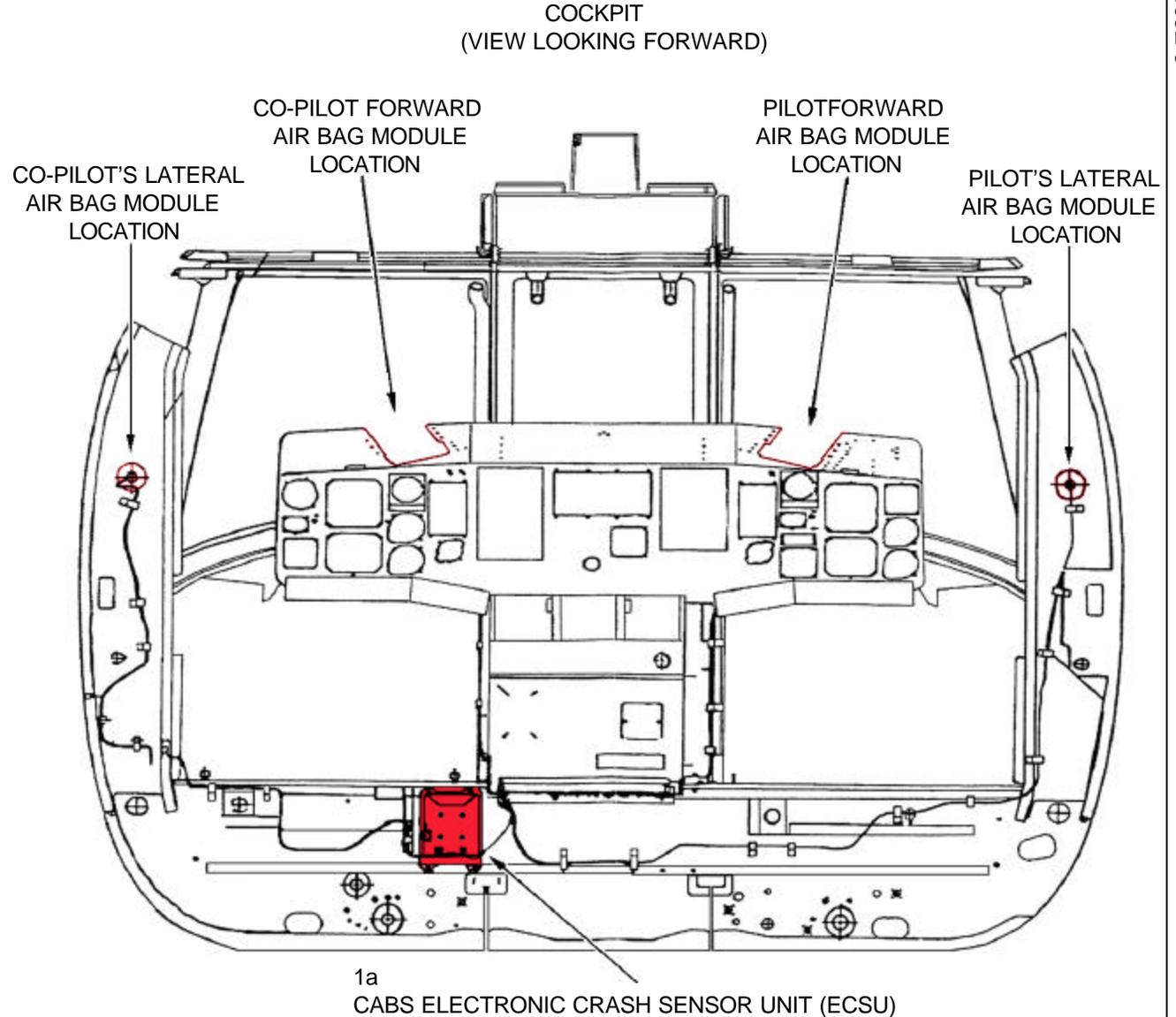
The CABS ECSU is located on a bracket mounted aft on the co-pilot's (left) seat.

1. SAFETYING THE CABS

WARNING

Prior to entry, visually check to see if the CABS have been activated. If the CABS have not been activated and rescue is required, safe the CABS prior to aircrew extraction. If the CABS activate during the rescue procedure, rescue personnel may be injured during air bag inflation.

- a. Locate the ESCU and disconnect the pin connectors for all four (4) air bags. If connectors can not be disconnected, dike the wires at the connectors.
- b. If the CABS have been activated, puncture the inflated air bags allowing room for aircrew removal.



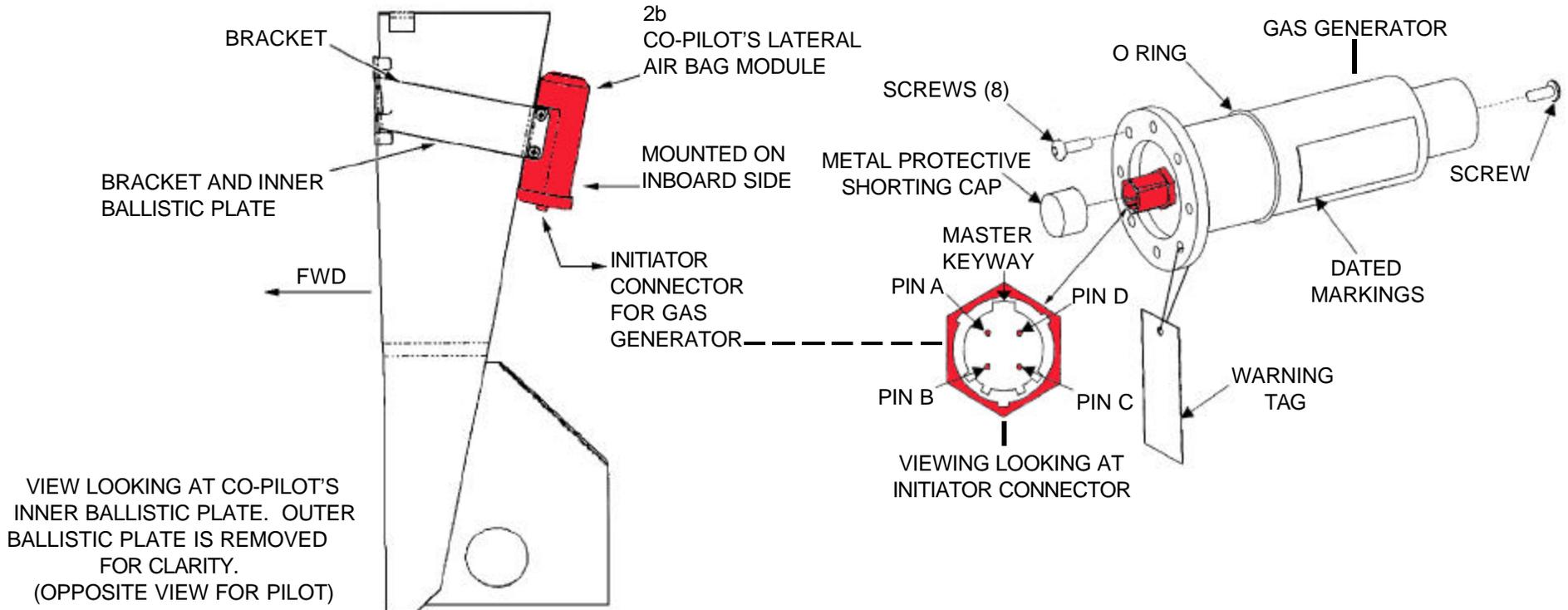
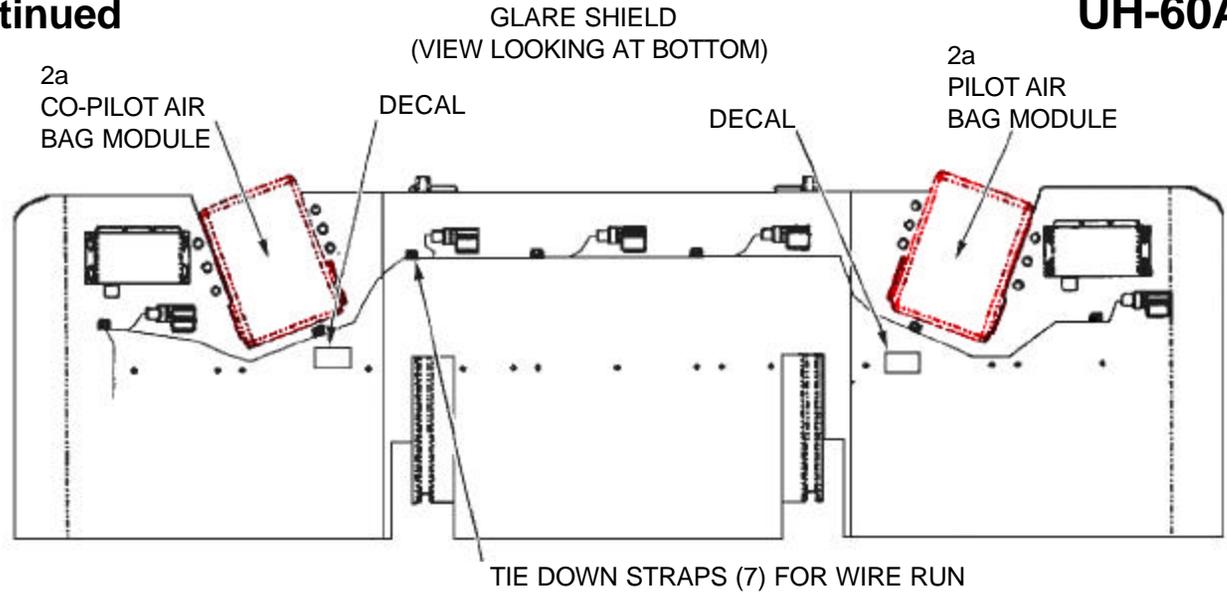
COCKPIT AIR BAG SYSTEM-Continued

2. CABS AIR BAG LOCATIONS

NOTE:

The four gas generators are located inside each air bag module manifold. The connector will be the only visible indication that the gas generator is installed.

- Forward air bag modules are located on the forward glare shield underneath. Modules do not obstruct view of the crewmembers.
- The lateral air bags are located at the left shoulder for the co-pilot and right shoulder for the pilot.



NOTE

Chapter 14 contains emergency rescue and mishap response information for the following aircraft:

USA
USA

T-41
T-42A

CHAPTER 14**U.S. ARMY****TRAINER****AEROSPACE EMERGENCY RESCUE
AND MISHAP RESPONSE INFORMATION****14-1. INTRODUCTION AND USE.**

14-2. This section contains emergency rescue and mishap response information illustrations in alpha-numerical order relative to type and model of aircraft. This arrangement of illustrations is maintained from Chapter 4 throughout the remainder of the publication.

14-3. GENERAL ARRANGEMENT.

14-4. Aircraft type designation has been positioned in the upper right corner of the horizontal illustration for rapid identification. Additional aids to rapid orientation are:

a. Recent technological advances in aviation have caused concern for the modern firefighter. Aircraft hazards, cabin configurations, airframe materials, and any other information that would be helpful in fighting fires, the locating and rescue of personnel will be added as the information becomes available.

b. Suggested special tools/equipment are listed in the upper left corner, on the Aircraft/Entry page of each listed aircraft.

c. Procedural steps covering emergency/normal entrances, cut-ins, engine/APU shutdown, safetying ejection/escape systems, and aircrew extraction are outlined on the left side of each page with coordinated illustrations on the right.

d. Illustrations located on right side of pages are coordinated with text by numerals and small letters depicting both paragraph and subparagraph on the page.

e. Each illustration is consistently colored and/or pattern keyed to highlight essential emergency rescue information.

f. Details are pulled directly from the illustration to highlight an area, thus eliminating unnecessary searching for desired information.

NOTE:

The US Army aircraft T-41 is the same as the USAF T-41. Refer to Chapter 11, pages T-41.1 thru T-41.3 for complete procedures.

AIRCRAFT ENTRY**1. NORMAL ENTRY**

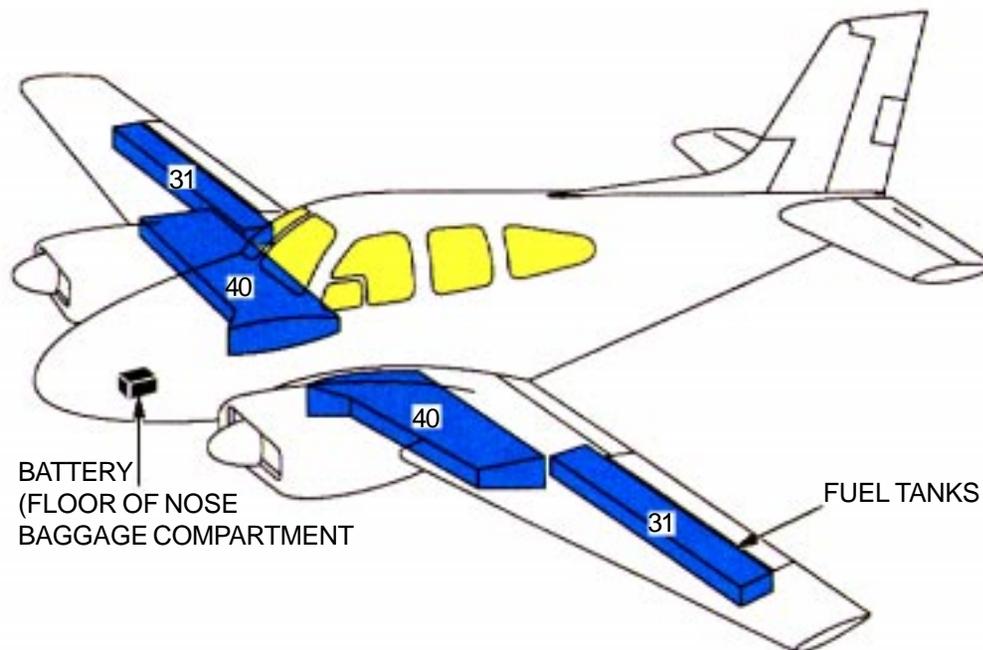
- a. Push aft end of recessed cabin door handle, grasp forward end of handle and pull out, swing door forward.

2. EMERGENCY ENTRY

- a. Press baggage door handle latch release, located on right side of fuselage behind wing, and grasp latch handle and swing door forward.
- b. Cut-in center cabin window on either side of cabin, reach inside window, pull emergency release safety pin forward to remove pin.
- c. Pull emergency release bar, located below center window, up and swing window up.

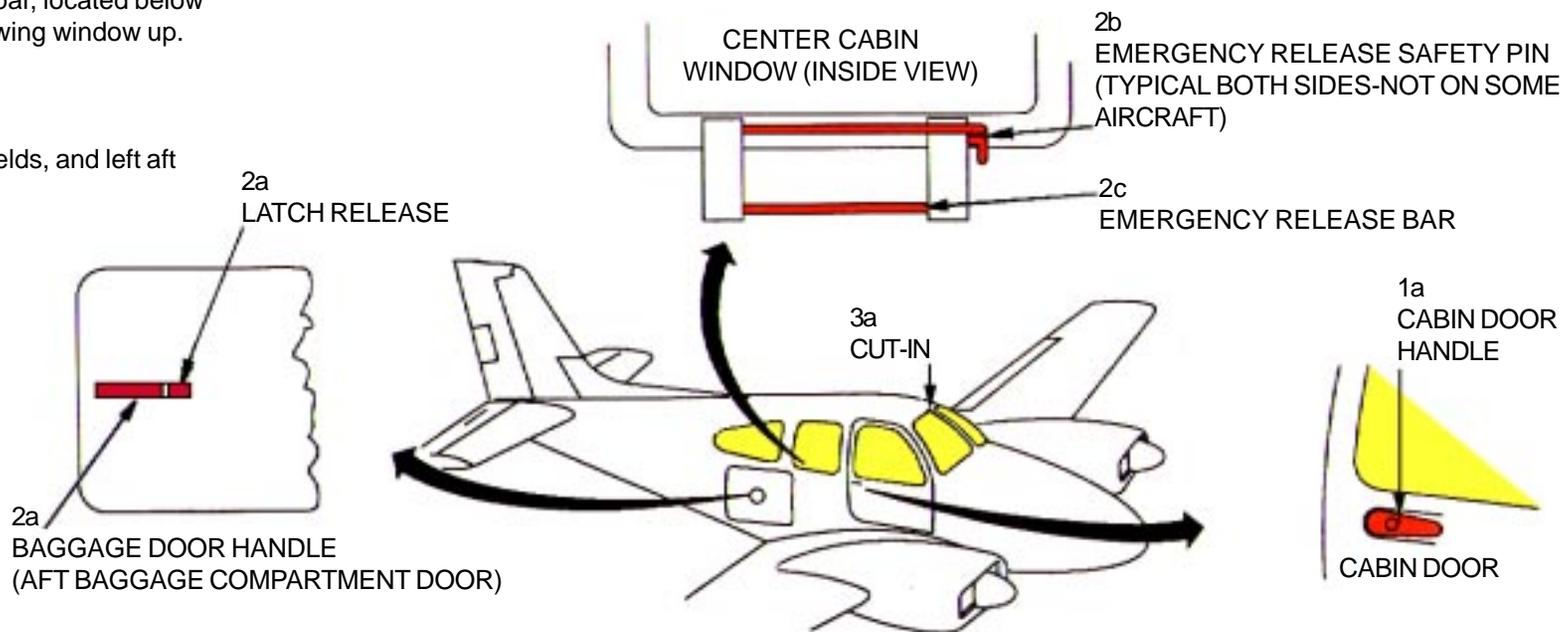
3. CUT-IN

- a. Cut-in windows, windshields, and left aft fuselage as required.



BATTERY
(FLOOR OF NOSE
BAGGAGE COMPARTMENT)

FUEL TANKS



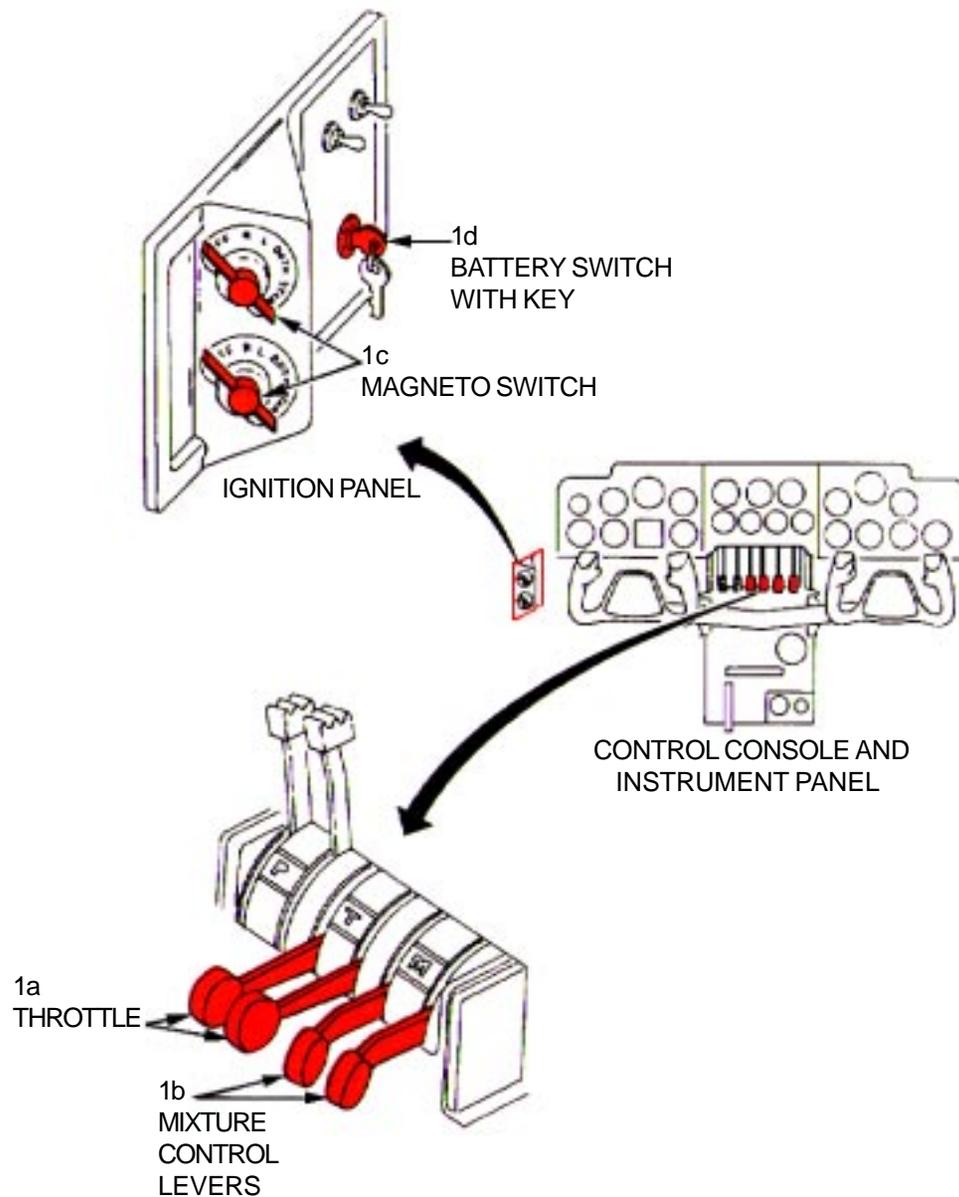
ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

- a. Pull throttles, located on control console, aft to CLOSED position.
- b. Pull mixture control levers, located on control console, aft to IDLE CUTOFF position.
- c. Rotate magneto switches, located on left hand cockpit side panel, to OFF position.
- d. Position battery switch, located on left hand cockpit side panel, to OFF position.

2. AIRCREW EXTRACTION

- a. Remove personal restraints such as lap belts and shoulder harnesses from crew and passengers.
- b. Remove personal leads from crew.
- c. Remove crew and passengers through safest exit.



NOTE

Chapter 15 contains emergency rescue and mishap response information for the following aircraft:

USA
USA
USA
USA
USA

U-8F
U-9
U-10
UV-20A
U/RU-21

CHAPTER 15

U.S. ARMY

UTILITY

AEROSPACE EMERGENCY RESCUE AND MISHAP RESPONSE INFORMATION

15-1. INTRODUCTION AND USE.

15-2. This section contains emergency rescue and mishap response information illustrations in alpha-numerical order relative to type and model of aircraft. This arrangement of illustrations is maintained from Chapter 4 throughout the remainder of the publication.

15-3. GENERAL ARRANGEMENT.

15-4. Aircraft type designation has been positioned in the upper right corner of the horizontal illustration for rapid identification. Additional aids to rapid orientation are:

a. Recent technological advances in aviation have caused concern for the modern firefighter. Aircraft hazards, cabin configurations, airframe materials, and any other information that would be helpful in fighting fires, the locating and rescue of personnel will be added as the information becomes available.

b. Suggested special tools/equipment are listed in the upper left corner, on the Aircraft/Entry page of each listed aircraft.

c. Procedural steps covering emergency/normal entrances, cut-ins, engine/APU shutdown, safetying ejection/escape systems, and aircrew extraction are outlined on the left side of each page with coordinated illustrations on the right.

d. Illustrations located on right side of pages are coordinated with text by numerals and small letters depicting both paragraph and subparagraph on the page.

e. Each illustration is consistently colored and/or pattern keyed to highlight essential emergency rescue information.

f. Details are pulled directly from the illustration to highlight an area, thus eliminating unnecessary searching for desired information.

SPECIAL TOOLS/EQUIPMENT
Power Rescue Saw

CAPACITY:
CREW - 2
PASSENGERS-4

AIRCRAFT ENTRY

1. NORMAL ENTRY

- a. Rotate handle, located on aft cabin door, forward and swing door down.

2. EMERGENCY ENTRY

NOTE:

The aft cabin door may be internally secured in closed position with safety chain. If door will not swing down after being unlatched, cut or break chain.

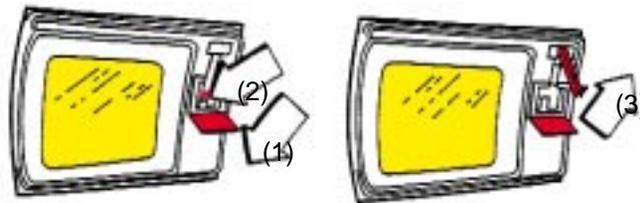
- a. Rotate handle, located on aft cabin door, forward and swing door down.
- b. If door fails to open, break windows.
- c. After entry is accomplished, escape hatch, located on right aft fuselage, may be jettisoned.

NOTE:

Escape hatch is not pyrotechnically equipped.

d. To jettison escape hatch:

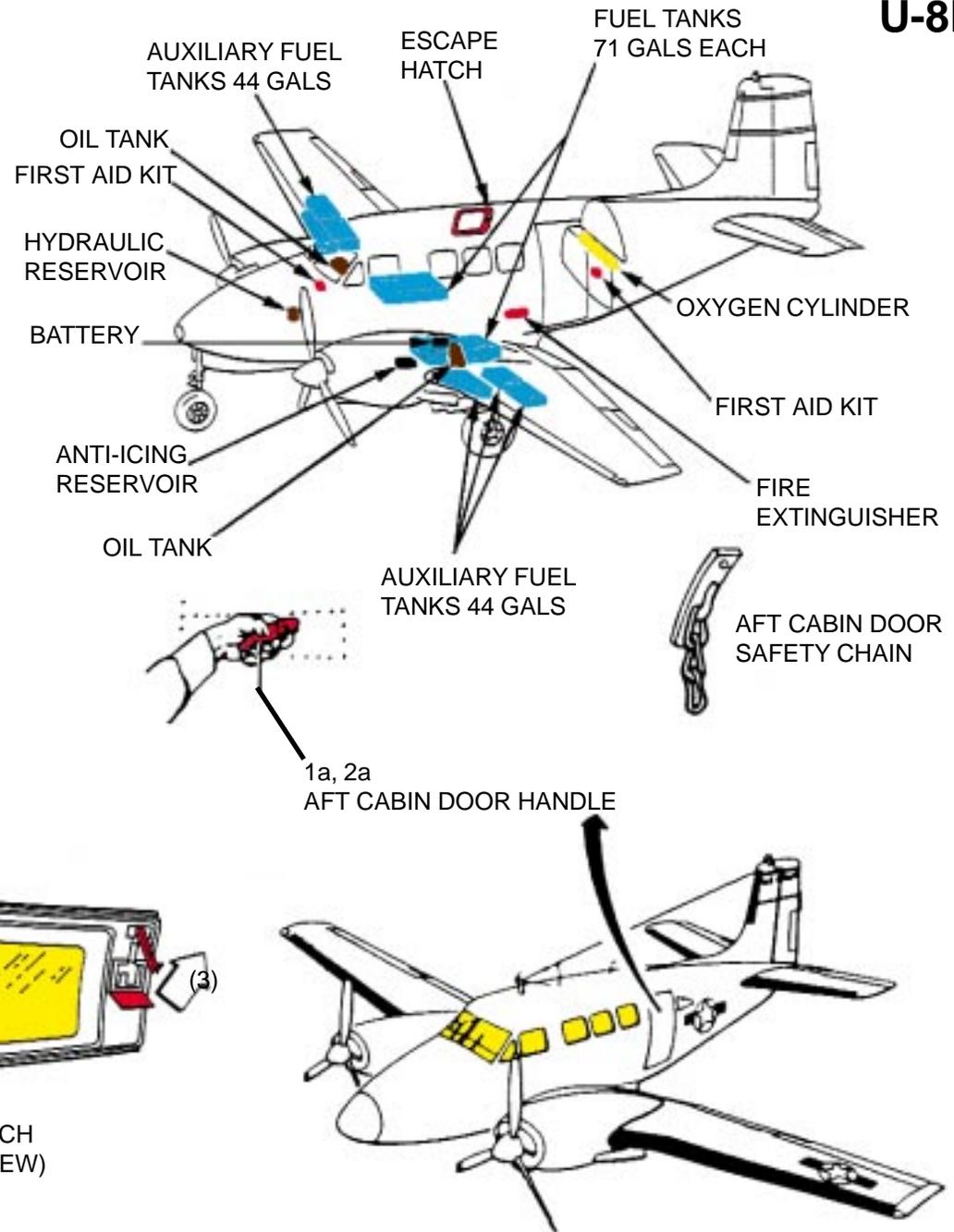
- (1) pull down red cover over handle
- (2) push red button to release handle
- (3) pull up on handle and push outward on hatch.



ESCAPE HATCH
(INTERNAL VIEW)

3. CUT-IN

- a. Cut-in door, windows, and windshield as required.



ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

- Retard throttle levers, located on column console, to CLOSED position.
- Position idle cut-off switches, located left subpanel, to OFF position.
- Position magneto switches, located on left subpanel, to OFF position.
- Position battery master switch, located on right subpanel, to OFF position.

2. AIRCREW EXTRACTION

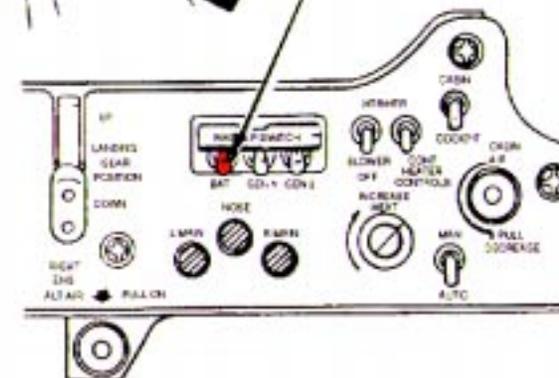
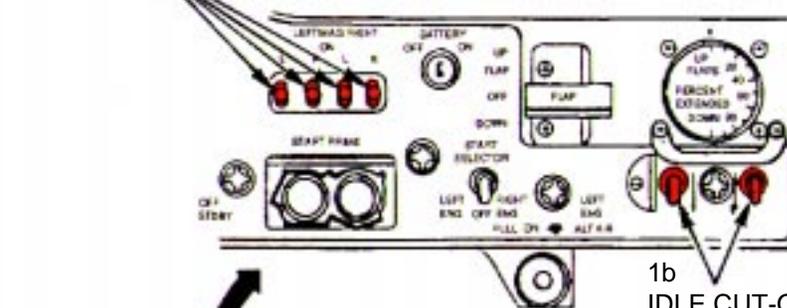
- Unlatch lap belts and remove shoulder harness from crewmember(s).

1a
THROTTLES

1c
MAGNETO
SWITCHES

1b
IDLE CUT-OFF
SWITCHES

1d
BATTERY
SWITCH



SPECIAL TOOLS/EQUIPMENT
Power Rescue Saw
Crash Ax

AIRCREW ENTRY

1. NORMAL ENTRY

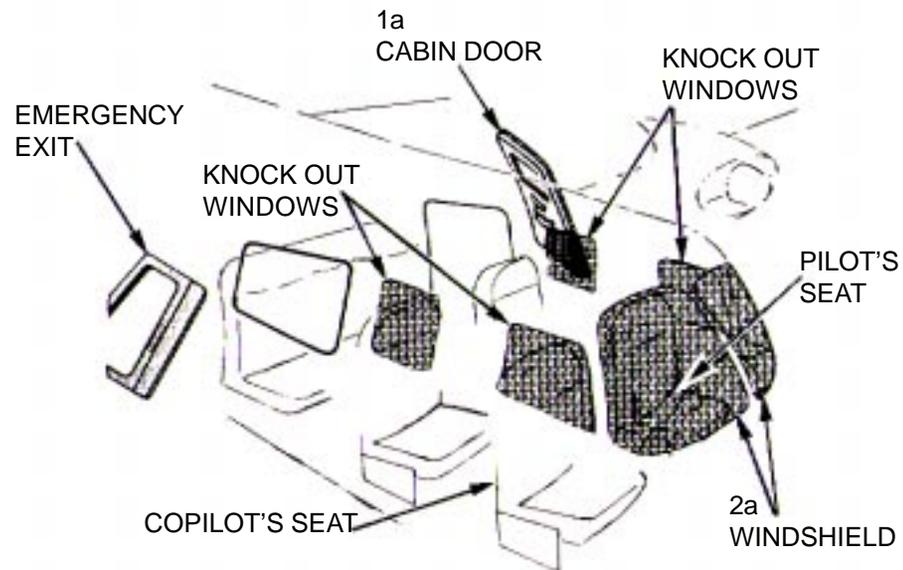
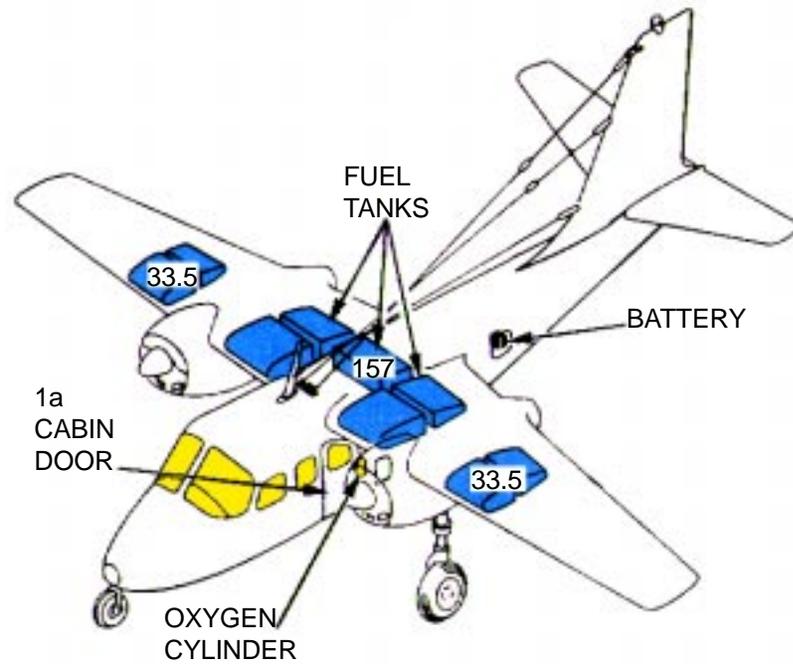
- a. Unlatch cabin door, located left forward side of fuselage, and pull door outward.

2. EMERGENCY ENTRY

- a. Break windshield or windows if entrance cannot be gained through cabin door.

3. CUT-IN

- a. Cut cabin enclosure as required.



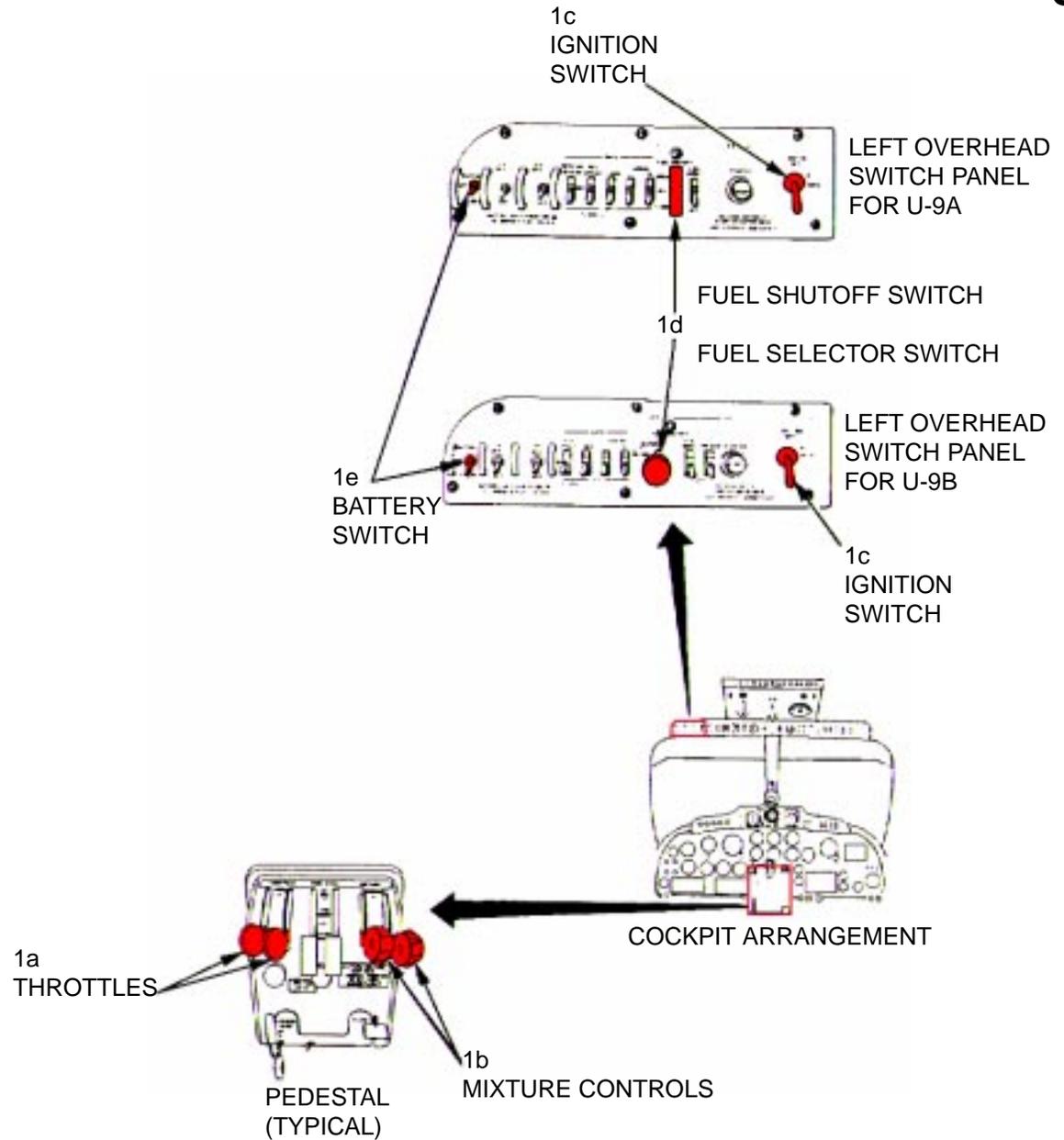
ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

- a. Retard throttle levers, located on pedestal, to full CLOSED position.
- b. Retard mixture levers, located on pedestal, full aft to IDLE CUTOFF position.
- c. Rotate ignition switches, one each located on left and right switch panels, to OFF position.
- d. Place fuel shutoff valve switches to CLOSE for A models or place fuel selector switches to OFF for B models, located on left and right switch panels.
- e. Place battery switches, located on left and right switch panels, to OFF position.

2. AIRCREW EXTRACTION

- a. Unlatch lap belts from crewmember(s).



SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
Rescue Crash Ax

AIRCRAFT ENTRY

1. NORMAL ENTRY

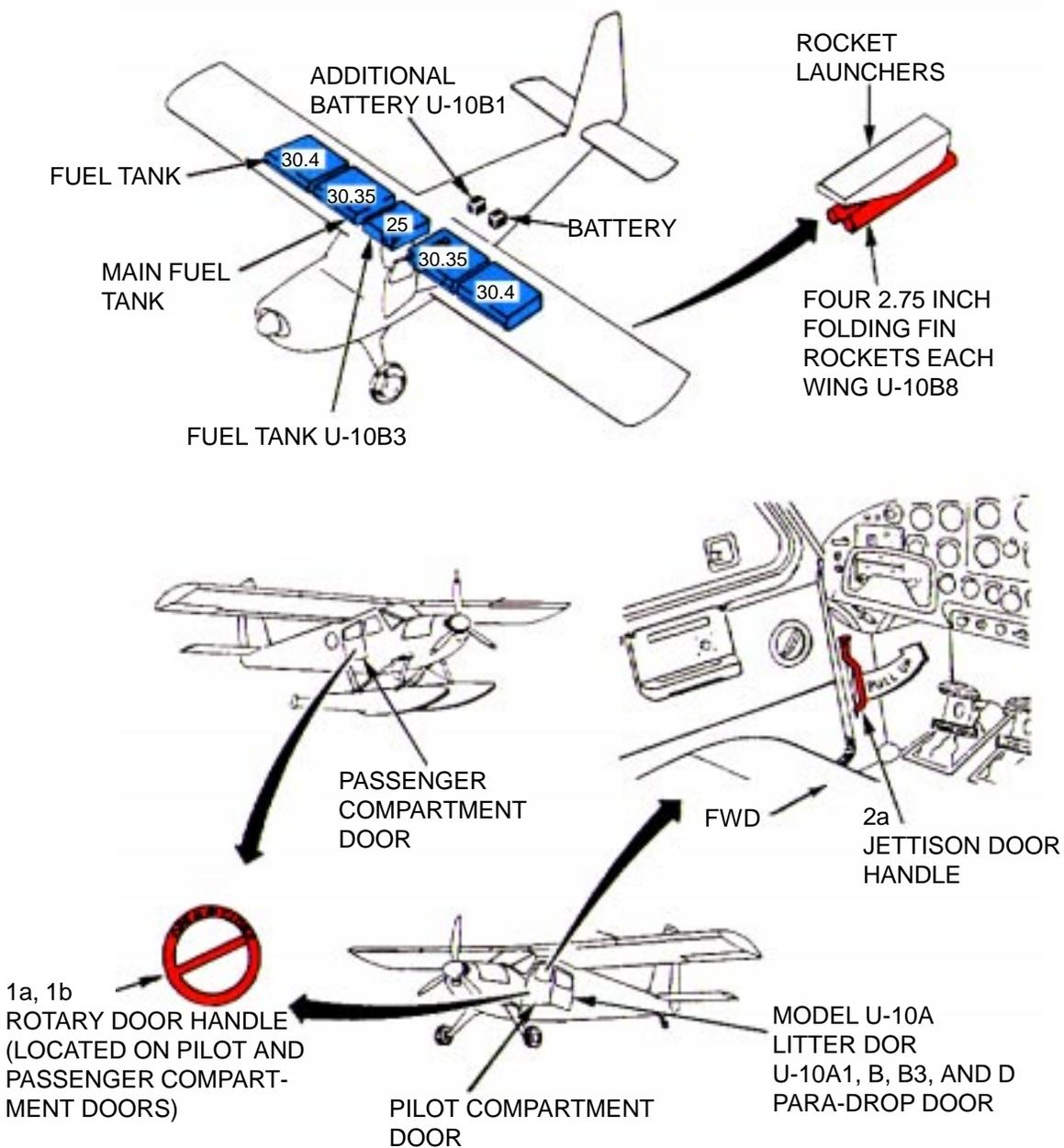
- a. Rotate pilot's compartment door handle, located left forward side fuselage, counterclockwise; and open outward.
- b. Rotate passenger compartment door handle, located right rear fuselage, counterclockwise; and open outward.

2. EMERGENCY ENTRY

- a. Break pilot's compartment door window, pull jettison door handle, located on forward door frame below forward console, up and remove door.

3. CUT-IN

- a. Same as normal entry. Windows may be broken if pilot and passenger entry fails.



ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

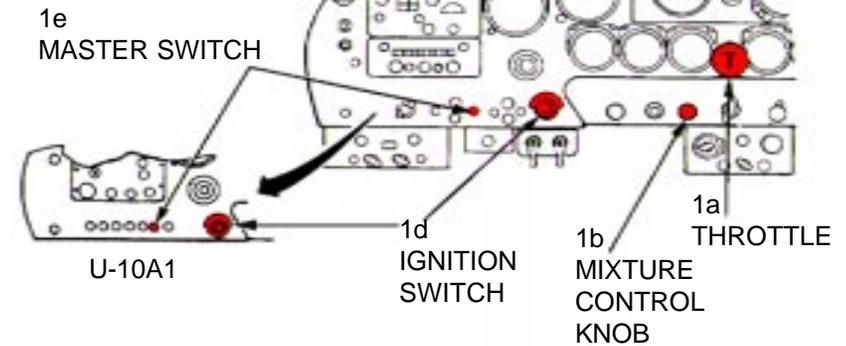
- a. Pull throttle knob, located on lower left center of instrument panel, aft to CLOSED position.
- b. Rotate mixture control knob, located on lower left center of instrument panel, counterclockwise and push in to IDLE CUTOFF position.
- c. Place fuel selector handles, located on overhead panel, to OFF position.
- d. Rotate ignition switch, located lower left center of instrument panel, to OFF position.
- e. Place master switch, located lower left corner of instrument panel, in OFF position.

2. AIRCREW EXTRACTION

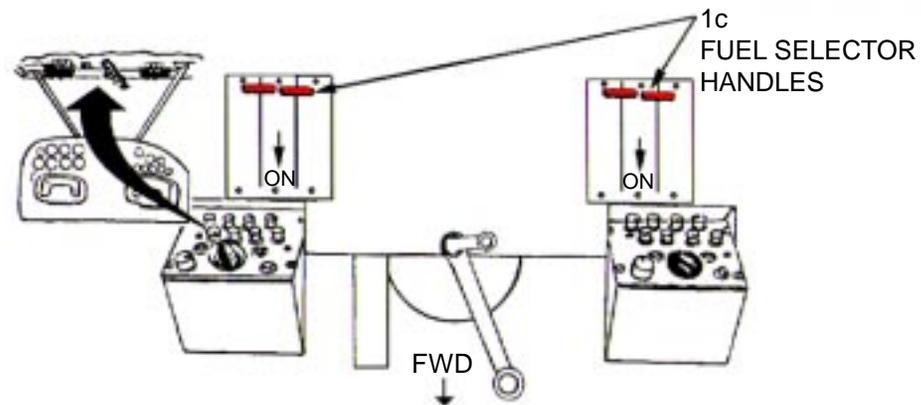
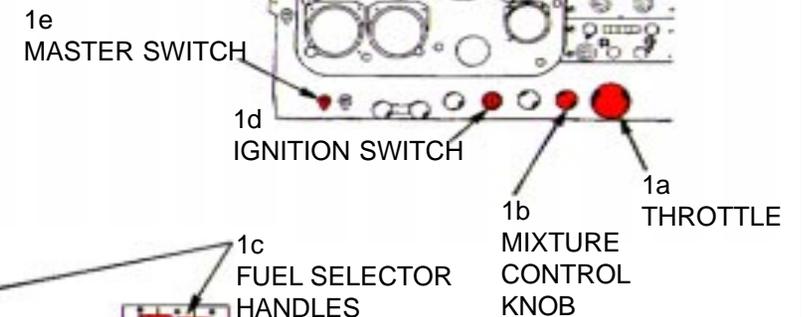
- a. Unlatch lap belt and remove shoulder harness from crewmember(s).

U-10

INSTRUMENT PANEL
U-10A, B, B4 AND B8



INSTRUMENT PANEL
U-10D1, D2, AND D3



AIRCRAFT ENTRY

1. NORMAL ENTRY

- a. Rotate cockpit door handles up to "open".
- b. Pull forward cabin door handle, located on left side, to open door, then rotate aft door handle to "open" and pull door open.
- c. Rotate sliding door (if installed) handle, located on right side, to "open", then slide door aft to open door.

2. EMERGENCY ENTRY

NOTE:

Cockpit doors are not pyrotechnically equipped.

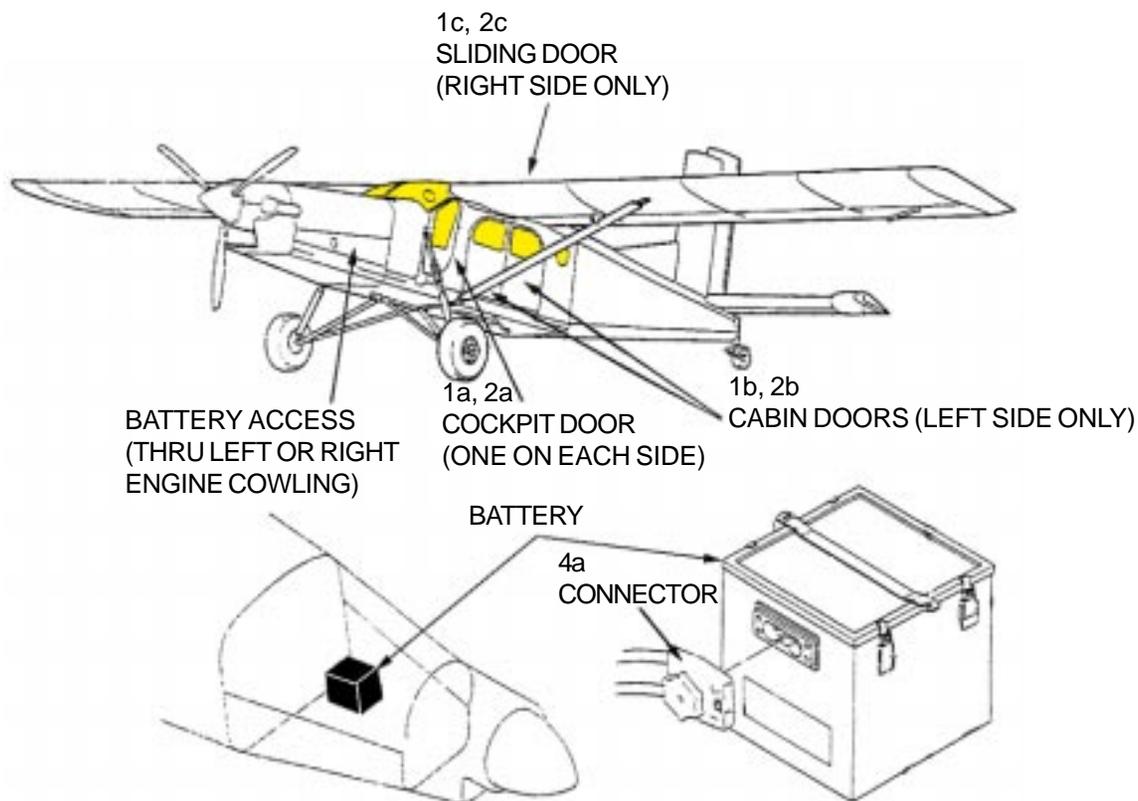
- a. Rotate cockpit door handles up to "open", pull "Door Jettison" handles on door frame, and push door outwards and away from aircraft.
- b. For cabin door, use step 1b above.
- c. For sliding door, use step 1c above.

3. CUT-IN

- a. Cut-in doors, windows, and windshield as required.

4. BATTERY DISCONNECT

- a. Disconnect battery by turning connector counterclockwise until connector separates from battery.



FUEL SYSTEM, ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. FUEL SYSTEM

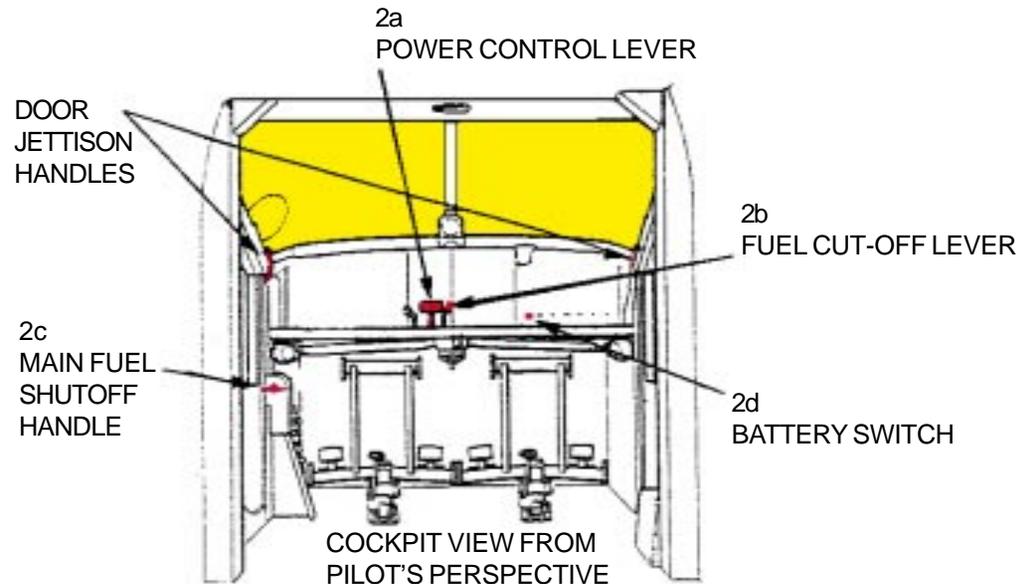
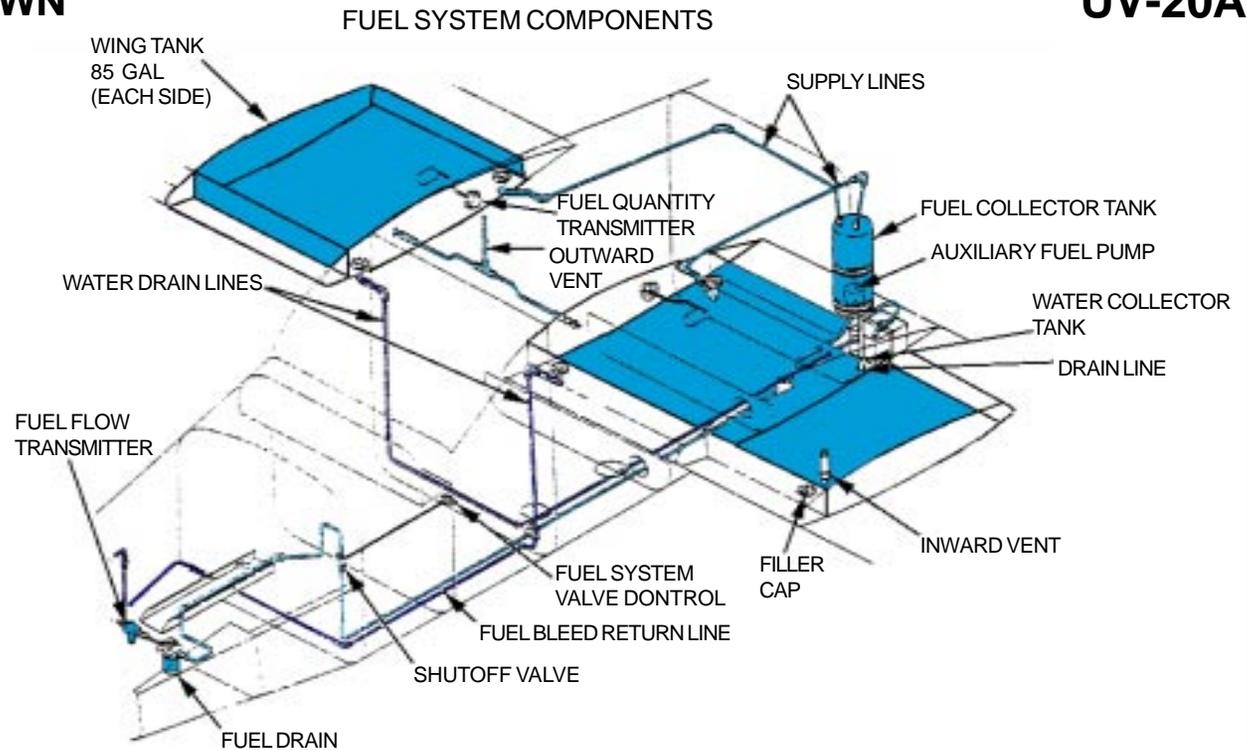
- Aircraft consists of two fuel tanks that are integral with the inboard section of each wing. Each tank has a capacity of 85 US gallons.
- Underwing pylon tanks may be fitted outboard of the wing struts.
- The wing tanks feed the fuel collector tank mounted in the aft fuselage compartment. The fuel collector tank has a capacity of 3 US gallons.

2. ENGINE SHUTDOWN

- Pull the power control lever, located at center of forward instrument panel, back to IDLE position.
- Place the slide detent of the fuel cut-off lever, located to the right of the power control lever, to the left, pull lever up and back to shut off engine.
- Rotate the main fuel shutoff handle, located on the left side cockpit door frame next to the pilot's left knee, counterclockwise approximately one-fourth of a turn to the vertical position to close the fuel shutoff valve.
- Press battery switch guard, located on pilot's right forward instrument panel, down to OFF position.

3. AIRCREW EXTRACTION

- Unlatch lap belts and remove shoulder harnesses from crewmembers.



SPECIAL TOOLS/EQUIPMENT
Power Rescue Saw

CAPACITY:
CREW - 2
PASSENGERS - 6
AIR AMULANCE AND STAFF
TRANSPORT (LITTERS - 3)
TROOP TRANSPORT - 10

AIRCRAFT ENTRY

1. NORMAL ENTRY

a. Rotate handle, located in center of cabin entrance door on left side of aircraft, down and swing door down.

2. EMERGENCY ENTRY

NOTE:

The main entrance door may be internally secured in closed position with safety chain. If door will not swing down after being unlatched, and cut or break chain.

a. Use entry procedures for cabin entrance door.

b. Emergency hatch may be opened by breaking in window glass of first large square window forward of "cut here for emergency rescue" area.

c. Pull down yellow cover.

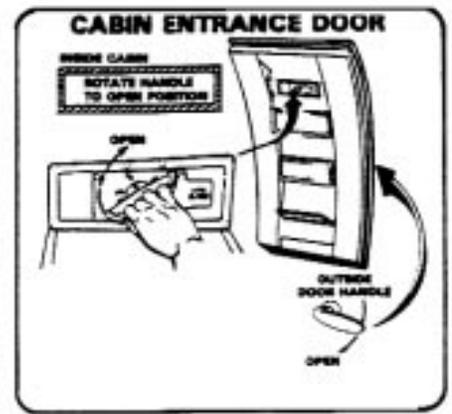
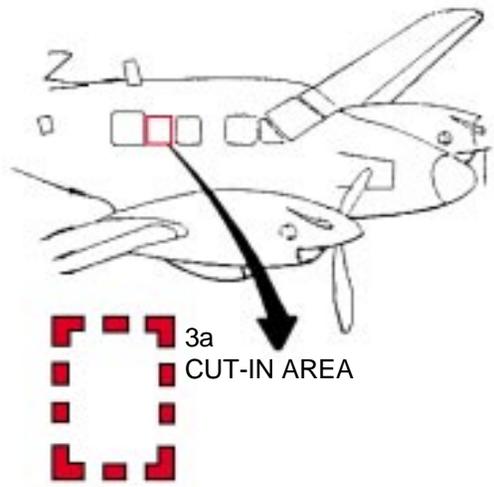
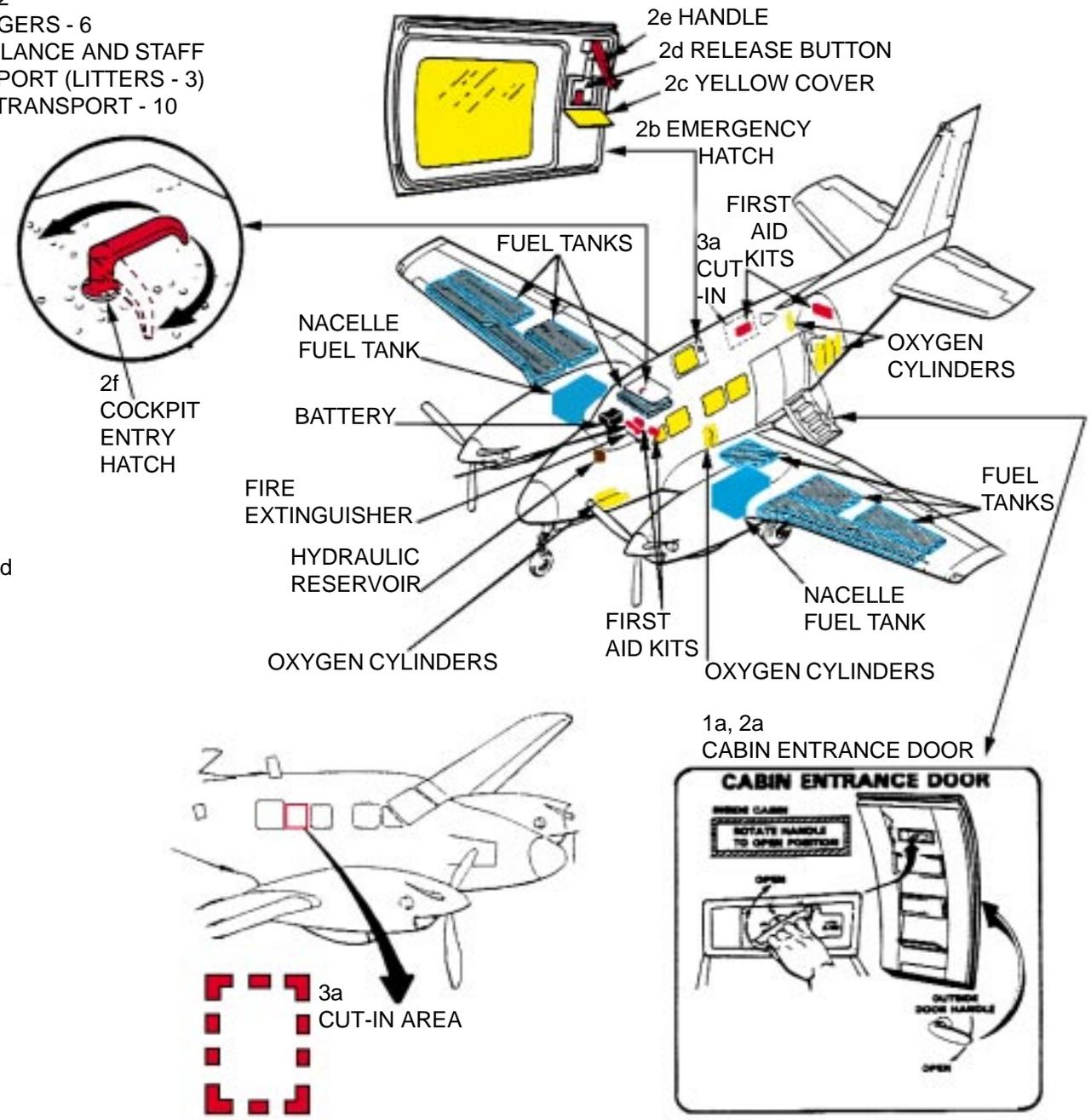
d. Press red button to release handle.

e. Pull up on handle and pull hatch out.

f. Open cockpit entry hatch, located over cockpit, by turning external handle and pulling hatch out.

3. CUT-IN

a. Cut-in forward of aft window on right side of fuselage as marked.



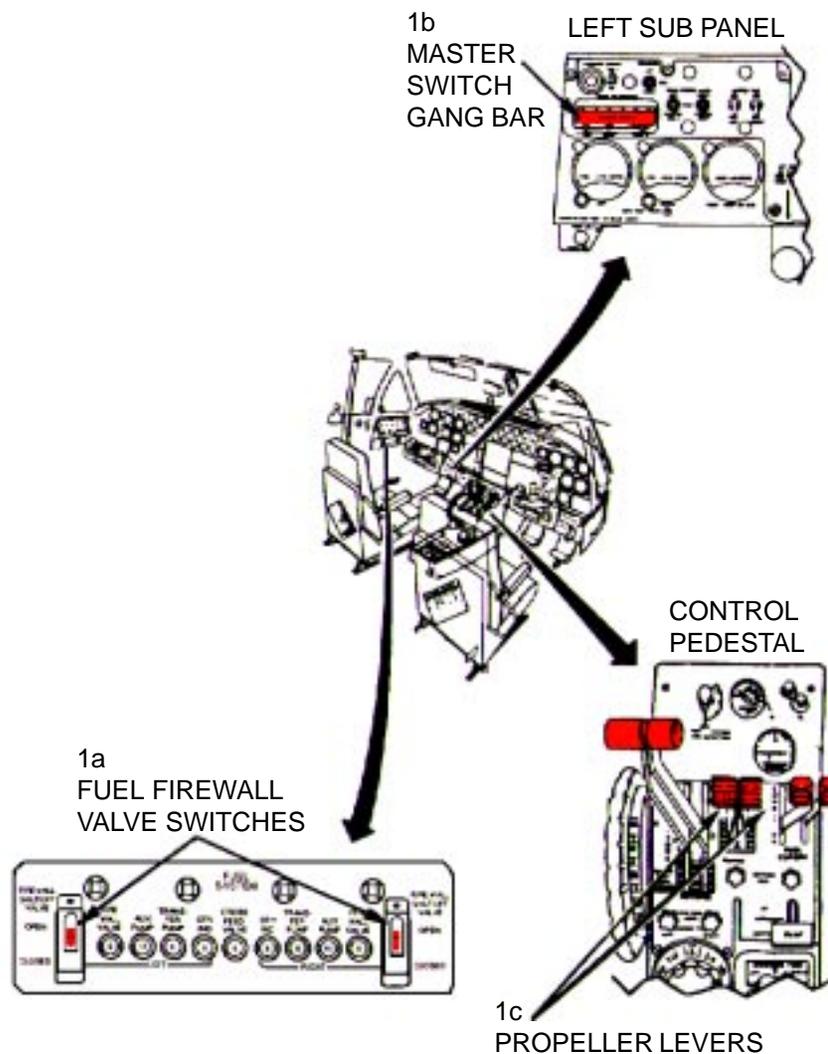
ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

- a. Position fuel firewall valve switches, located below the fuel management panel, down to OFF position.
- b. Push master switch gang bar, located on left subpanel, down to OFF position.
- c. Pull propeller levers, located in center of control pedestal, aft to FEATHER position.

2. AIRCREW EXTRACTION

- a. Unlatch lap belts and remove shoulder harnesses from crewmember(s).
- b. Unlatch restraints from liters, passengers, or troops as applicable to cabin arrangement.



NOTE

Chapter 16 contains emergency rescue and mishap response information for the following aircraft:

USA	C-8A
USA	C-12A/C
USA	C-20H
USA	C-21
USA	C-22B
USA	C-23A
USA	C-31A
USA	DASH 7
USA	OV-1

CHAPTER 16**U.S. ARMY****V/STOL/CARGO/TRANSPORT/PARATROOP/OBSERVATION/RECONNAISSANCE****AEROSPACE EMERGENCY RESCUE
AND MISHAP RESPONSE INFORMATION****16-1. INTRODUCTION AND USE.**

16-2. This section contains emergency rescue and mishap response information illustrations in alpha-numerical order relative to type and model of aircraft. This arrangement of illustrations is maintained from Chapter 4 throughout the remainder of the publication.

16-3. GENERAL ARRANGEMENT.

16-4. Aircraft type designation has been positioned in the upper right corner of the horizontal illustration for rapid identification. Additional aids to rapid orientation are:

a. Recent technological advances in aviation have caused concern for the modern firefighter. Aircraft hazards, cabin configurations, airframe materials, and any other information that would be helpful in fighting fires, the locating and rescue of personnel will be added as the information becomes available.

b. Suggested special tools/equipment are listed in the upper left corner, on the Aircraft/Entry page of each listed aircraft.

c. Procedural steps covering emergency/normal entrances, cut-ins, engine/APU shutdown, safetying ejection/escape systems, and aircrew extraction are outlined on the left side of each page with coordinated illustrations on the right.

d. Illustrations located on right side of pages are coordinated with text by numerals and small letters depicting both paragraph and subparagraph on the page.

e. Each illustration is consistently colored and/or pattern keyed to highlight essential emergency rescue information.

f. Details are pulled directly from the illustration to highlight an area, thus eliminating unnecessary searching for desired information.

AIRCRAFT HAZARDS

FUEL:

- 2,108 gallons
- Inner wing tanks are integral
- Outer wing tanks are interconnected rubber tanks (5 each wing)

OIL:

- 12 gallons

AIRFRAME MATERIAL:

- Aluminum Alloy

ENGINES:

- Turbo Propellers

ATMOSPHERE:

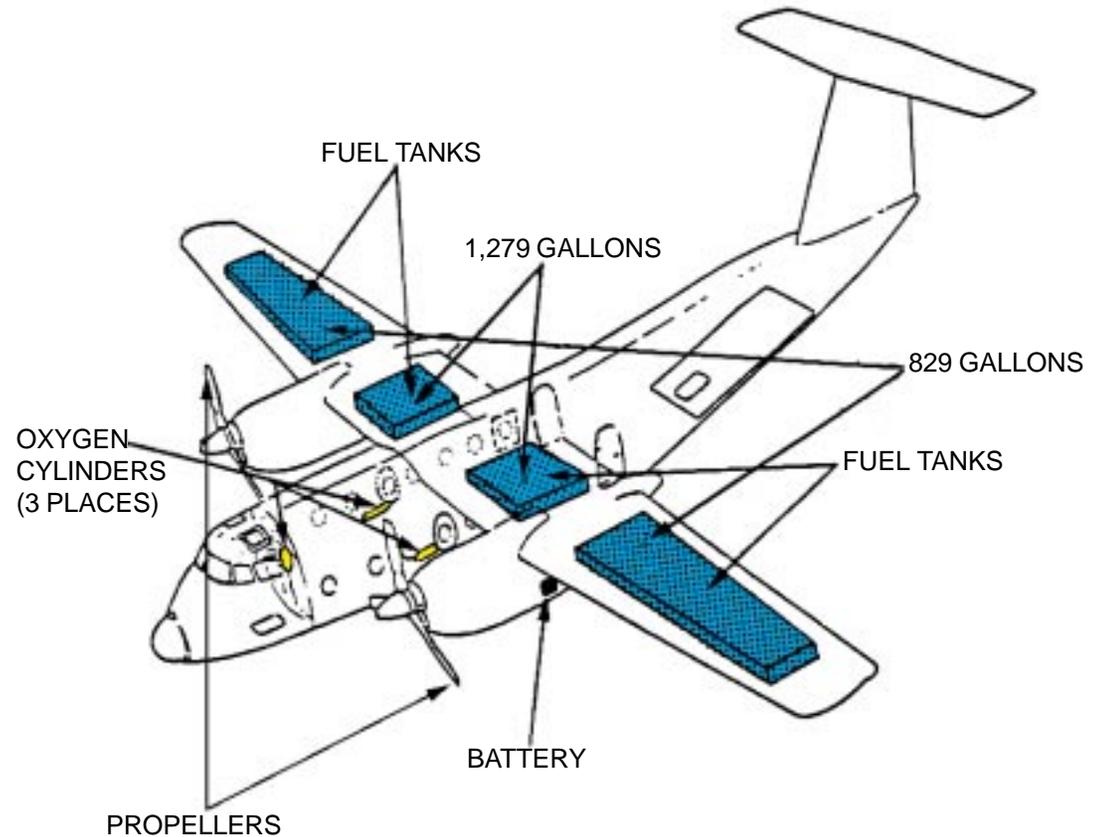
- Non pressurized

NOTE:

This aircraft is capable of transporting personnel, cargo, or both for STOL missions. It may also be used as a Utility aircraft. When used as a cargo transport, it may be equipped with the Low Altitude Parachute Extraction System or LAPES.

DIMENSIONS

Wing Span 96 FT
Height 28 FT 8 INS
Length 79 FT



SPECIAL TOOLS/EQUIPMENT

Power Rescue Tool
Fire Drill II
35 Foot Ladder

NOTE:

The C-8A is a Canadian
CC-115 or a DHC-5D model.

CREW: 3

CABIN: 41 Combat Equipped Troops
35 Paratroopers
24 Stretchers with 6 Seats

C-8A

AIRCRAFT ENTRY

1. NORMAL ENTRY

- a. Use cabin doors, located on each side of forward fuselage, for flightdeck and cargo area access.
- b. Use passenger doors, located on each side of aft fuselage, for cargo and passenger access. To open door, press button on door handle and turn handle clockwise.

2. EMERGENCY ENTRY

NOTE:

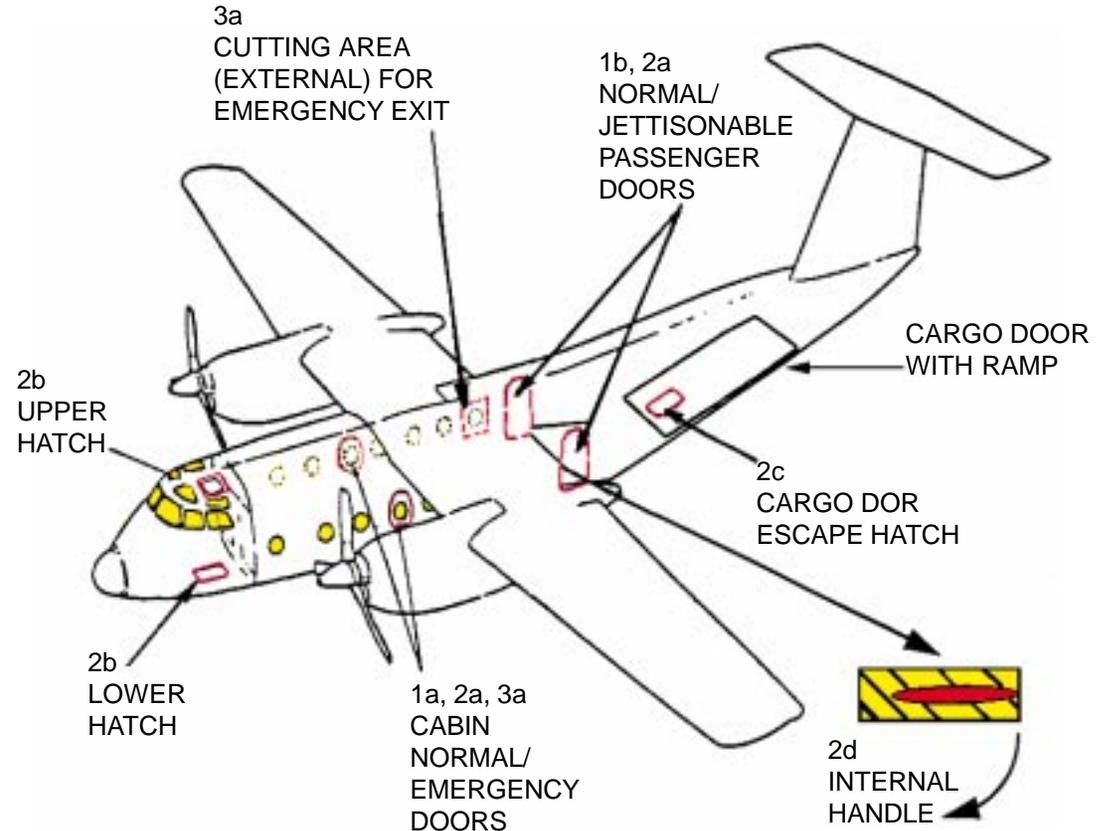
Doors are used in order of preference for time critical rescue operations.

- a. Use cabin and passenger doors.

WARNING

Passengers may jettison passenger doors for escape. Contact with a jettisoned door may cause injury or death.

- b. Use upper and lower hatches for entry and extraction if cabin and passenger doors are inaccessible.
 - c. Cargo door has an escape hatch that may be used for entry and extraction if all other entry points are inaccessible.
 - d. If internal jettison for passenger doors is selected, use the yellow and black handle on upper left corner, pull and push out door.
3. CUT-IN
- a. Cut-in area is around right side emergency exit, forward of right passenger door.



ENGINE SHUTDOWN AND AIRCREW EXTRACTION

C-8A

1. ENGINE SHUTDOWN

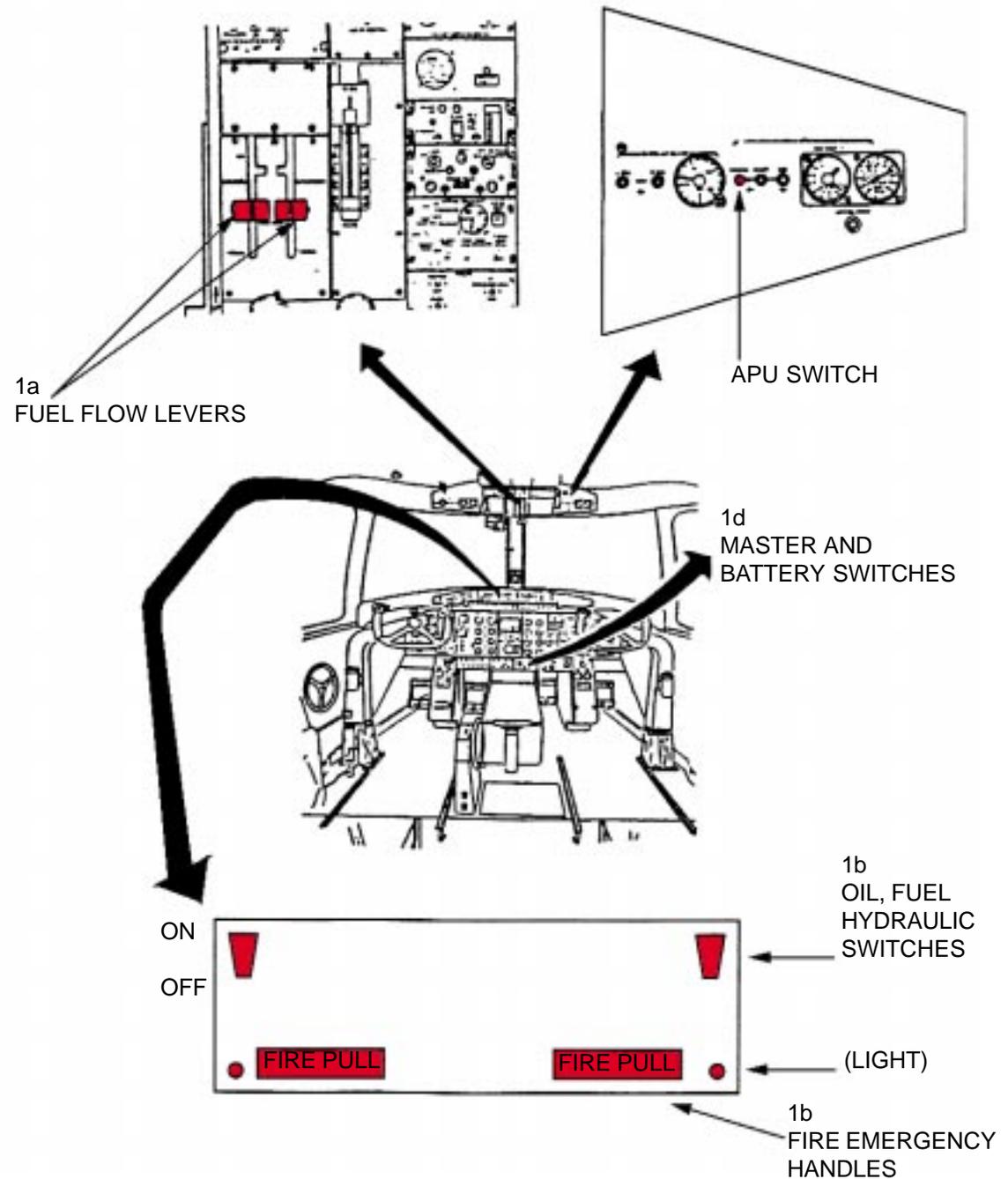
- Place fuel flow levers, located on overhead console, aft and push detents (2) to move levers to the OFF position.
- Switch oil, fuel hydraulic switches, located on center front console, to the OFF position.
- Pull left or right fire emergency handles, located on center front console, for first shot. For second shot, push in and rotate 90 degrees clockwise and pull again.
- Turn master and battery switches, located on center console, to OFF position.

NOTE:

If APU is running, select APU master switch to the OFF position.

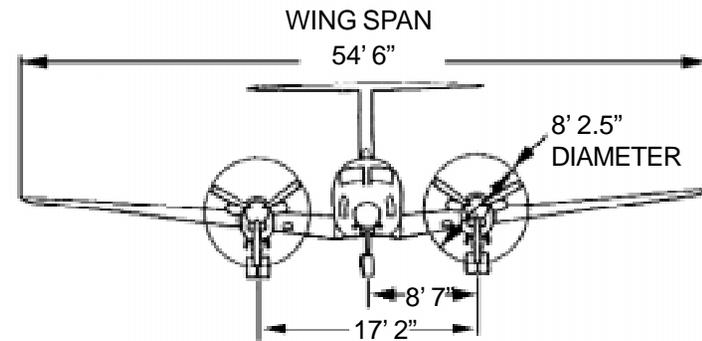
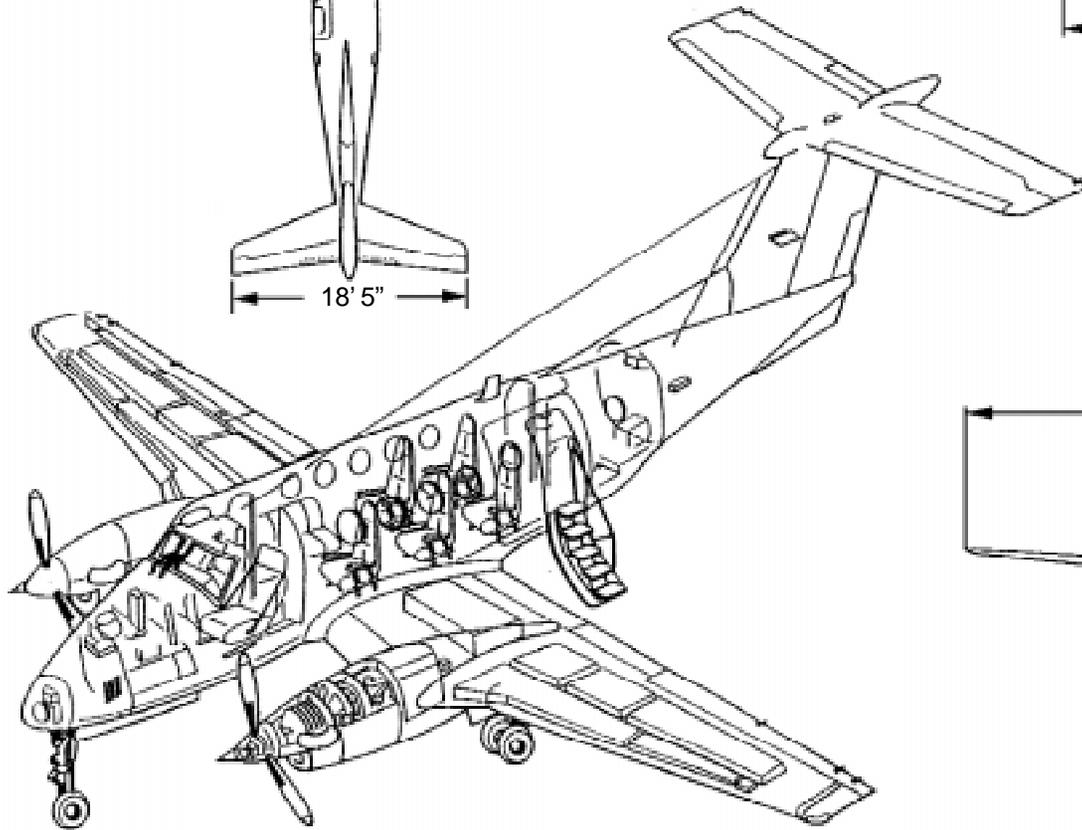
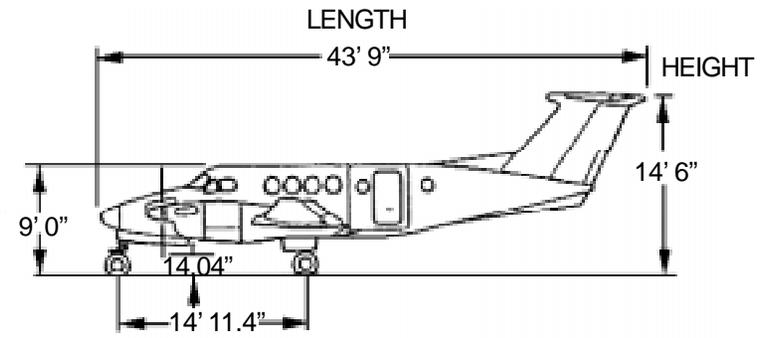
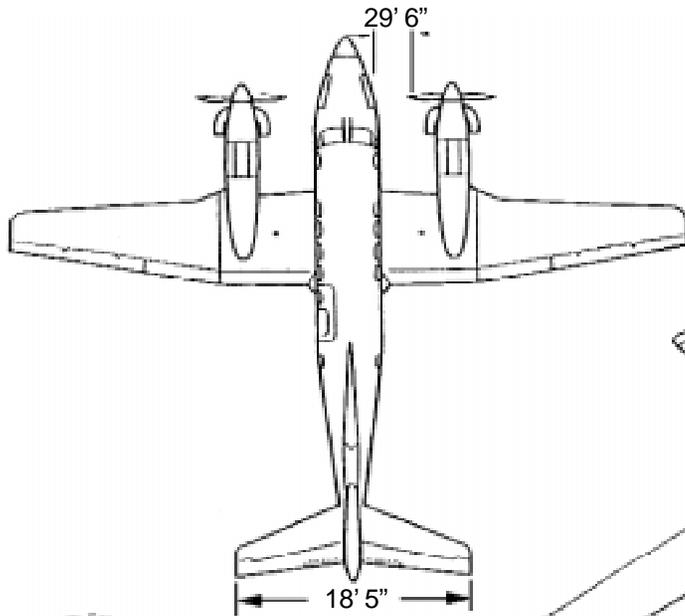
2. AIRCREW EXTRACTION

- Unlatch and remove lap belts and shoulder harnesses from crewmember(s).
- Unlatch and remove lap belts and any other restraints from passengers.



AIRCRAFT DIMENSIONS

C-12A/C



CABIN ARRANGEMENT: CAPACITY 8 TO 15 PASSENGERS

SPECIAL TOOLS/EQUIPMENT
 Power Rescue Saw

C-12A/C

AIRCRAFT ENTRY

1. NORMAL ENTRY

NOTE:

A keylock prevents external entry through passenger door and cabin emergency hatch. Cabin emergency hatch is locked from inside while passenger door is locked from outside.

- a. Use passenger door on left side of fuselage. Insert key and unlock door. Depress button adjacent to door handle in center of door.
- b. Rotate handle clockwise and swing door down.

NOTE:

Difficulty in opening door with engine(s) running may be caused by inflated door seal.

2. EMERGENCY ENTRY

NOTE:

Hatch may be locked with key from inside of aircraft.

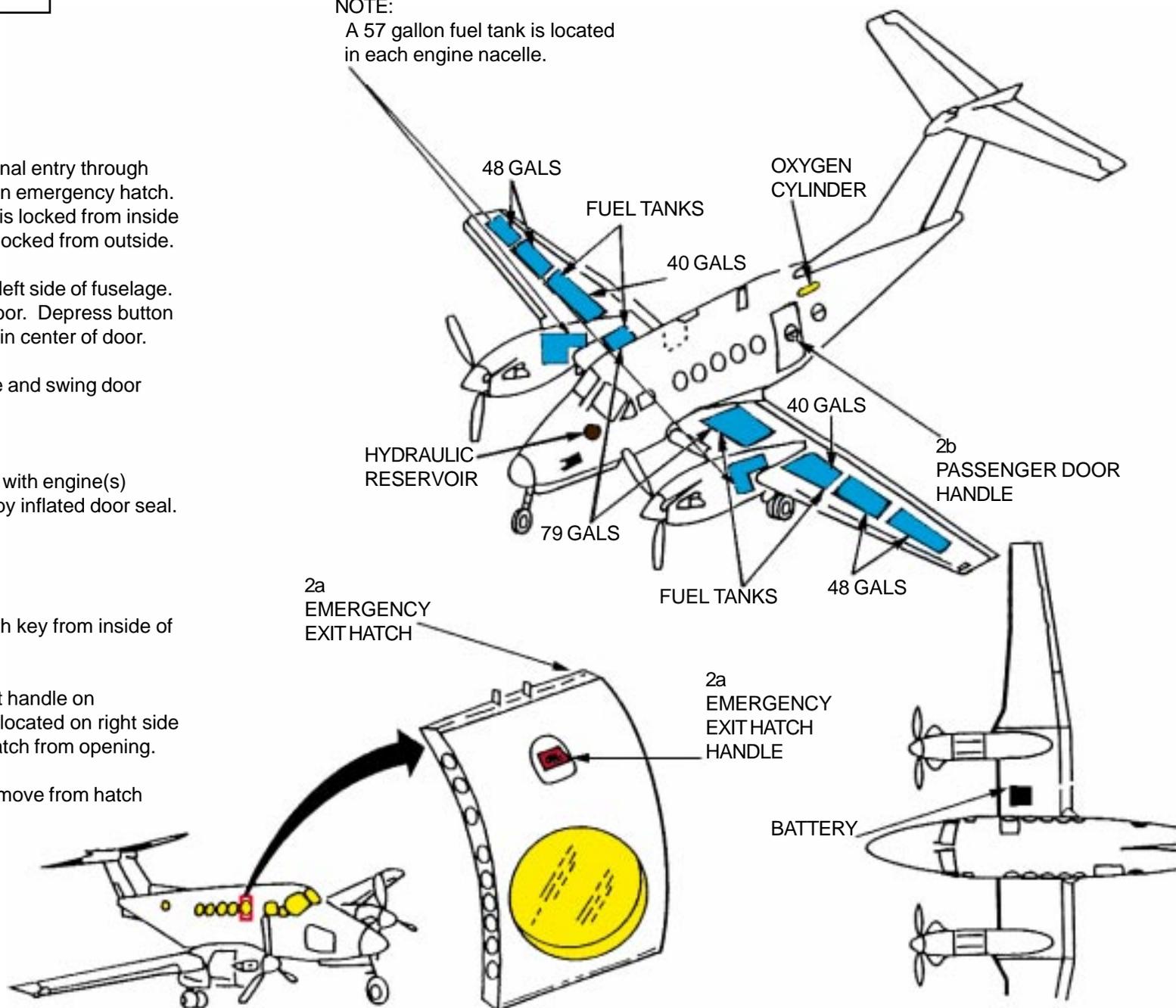
- a. Push button and pull out handle on Emergency Exit Hatch, located on right side of fuselage to release hatch from opening.
- b. Push in on hatch and remove from hatch opening.

3. CUT-IN

- a. Cut-in cabin enclosure as required.

NOTE:

A 57 gallon fuel tank is located in each engine nacelle.



ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

- a. Retard condition levers, located on right side of pilot's control pedestal, past detent to FUEL CUT OFF position.
- b. Pull engine fire shutoff T-handles, located on upper portion of pilot's instrument panel.

NOTE:

If fire T-handles are illuminated indicating an engine fire, actuate Fire Extinguisher Push Button, located between Fire T-handles.

- c. Place master switch, located on pilot's overhead control panel, by moving gang bar aft to OFF position.
- d. Turn keylock switch, located on pilot's overhead control panel, to OFF position.

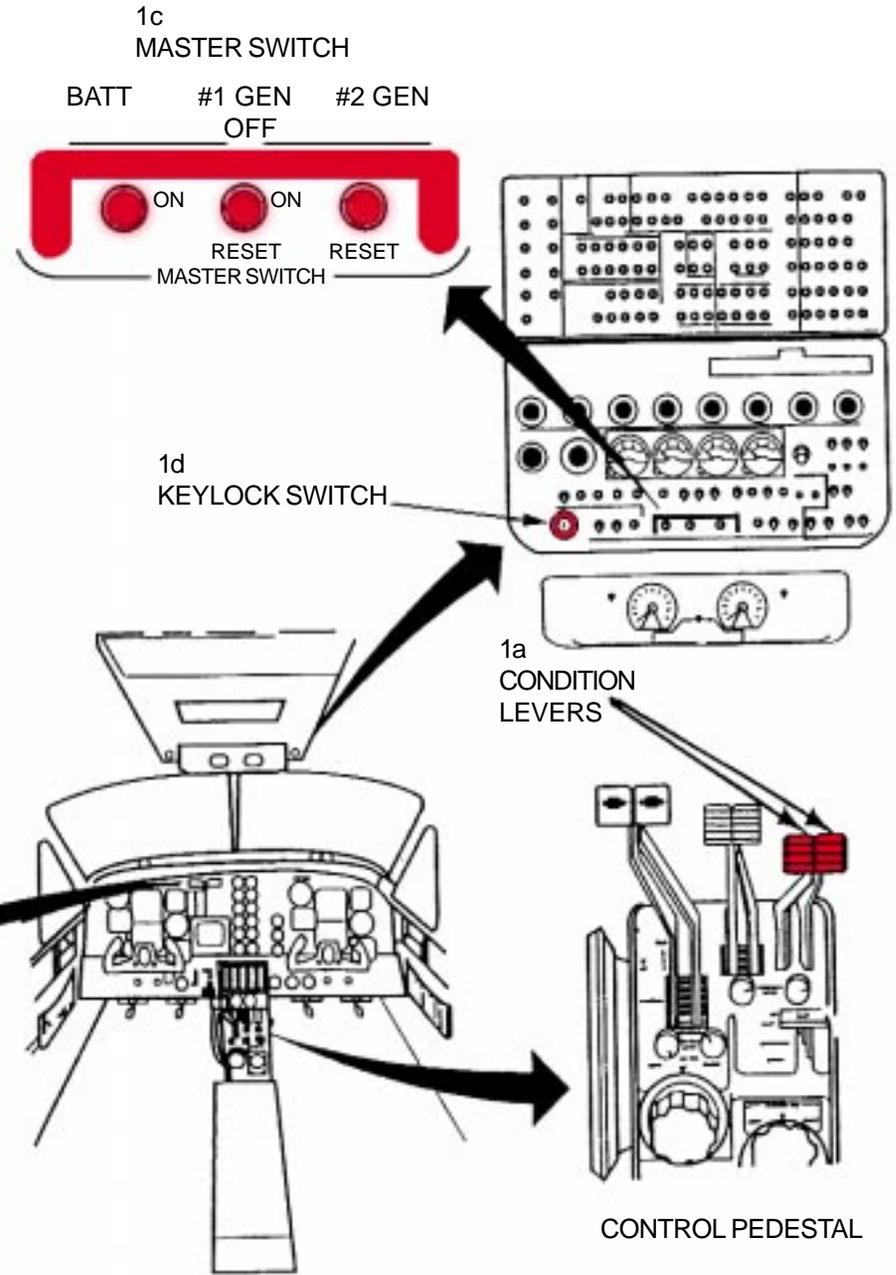
2. AIRCREW EXTRACTION

- a. Unlatch lap belt and remove shoulder harness from crewmember(s).
- b. Unlatch lap belt from passenger(s).

1b
ENGINE FIRE
SHUTOFF
T-HANDLES



EXTINGUISHER
PUSH BUTTON



NOTE:

The US Army aircraft C-20H is the same as the USAF C-20H. Refer to Chapter 6, pages C-20.1 and C-20H.1 thru C-20H.8 for complete information and procedures.

NOTE:

The US Army aircraft C-21 is the same as the USAF C-21. Refer to Chapter 6, pages C-21.1 thru C-21.2 for complete information and procedures.

NOTE:

The US Army aircraft C-22B is the same as the USAF C-22B. Refer to Chapter 6, pages C-22B.1 and thru C-22B.11 for complete information and procedures.

NOTE:

The US Army aircraft C-23A is the same as the USAF C-23A. Refer to Chapter 6, pages C-23A.1 and thru C-23A.3 for complete information and procedures.

SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
24 Foot Ladder

DIMENSIONS

Length 77' 3.5"
Wing Span 95' 2"
Height 28' 7.25"

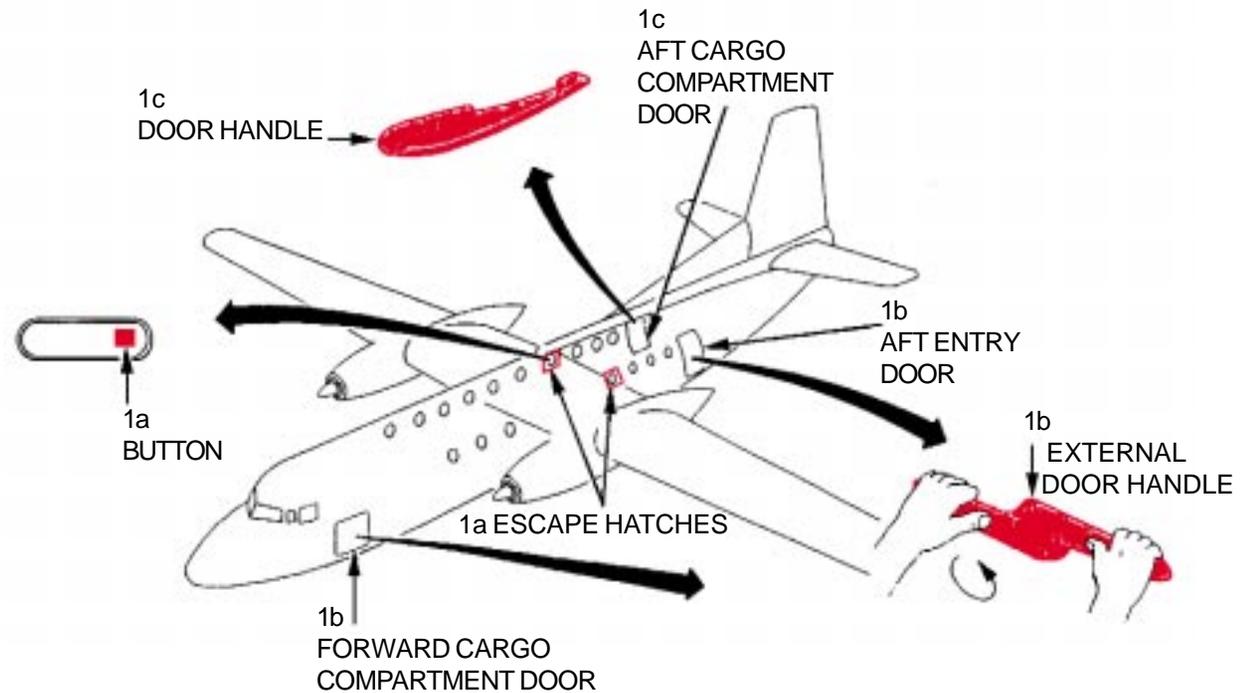
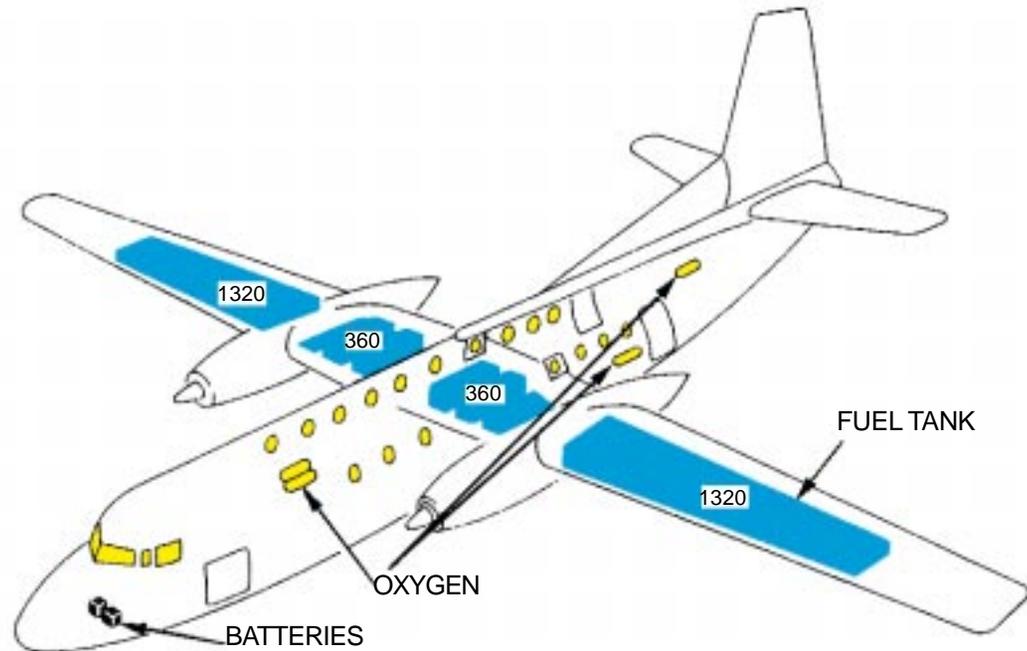
AIRCRAFT ENTRY

1. NORMAL/EMERGENCY ENTRY

- a. Push button and rotate handle, located on overwing escape hatches both sides, counterclockwise and push hatches inward.
- b. Pull handles from recessed position, located on left forward cargo compartment door and aft entry door, and rotate counterclockwise. Raise doors to stowed position.
- c. Rotate handle, located on right aft cargo door, counterclockwise and pull door outward.

2. CUT-IN

- a. Cut along window lines as last resort.



ENGINE SHUTDOWN AND AIRCREW EXTRACTION

1. ENGINE SHUTDOWN

- Retard throttles, located on center console, to IDLE CUTOFF position.
- Retard mixture levers, located on pilot's center console, to full aft position.
- Place ignition switches, located on left overhead panel, to OFF position.
- Place turbine start switch, located on APU panel, to OFF/STOP position.
- Place battery switches, located on right overhead panel, to OFF position.

2. IN CASE OF ENGINE FIRE

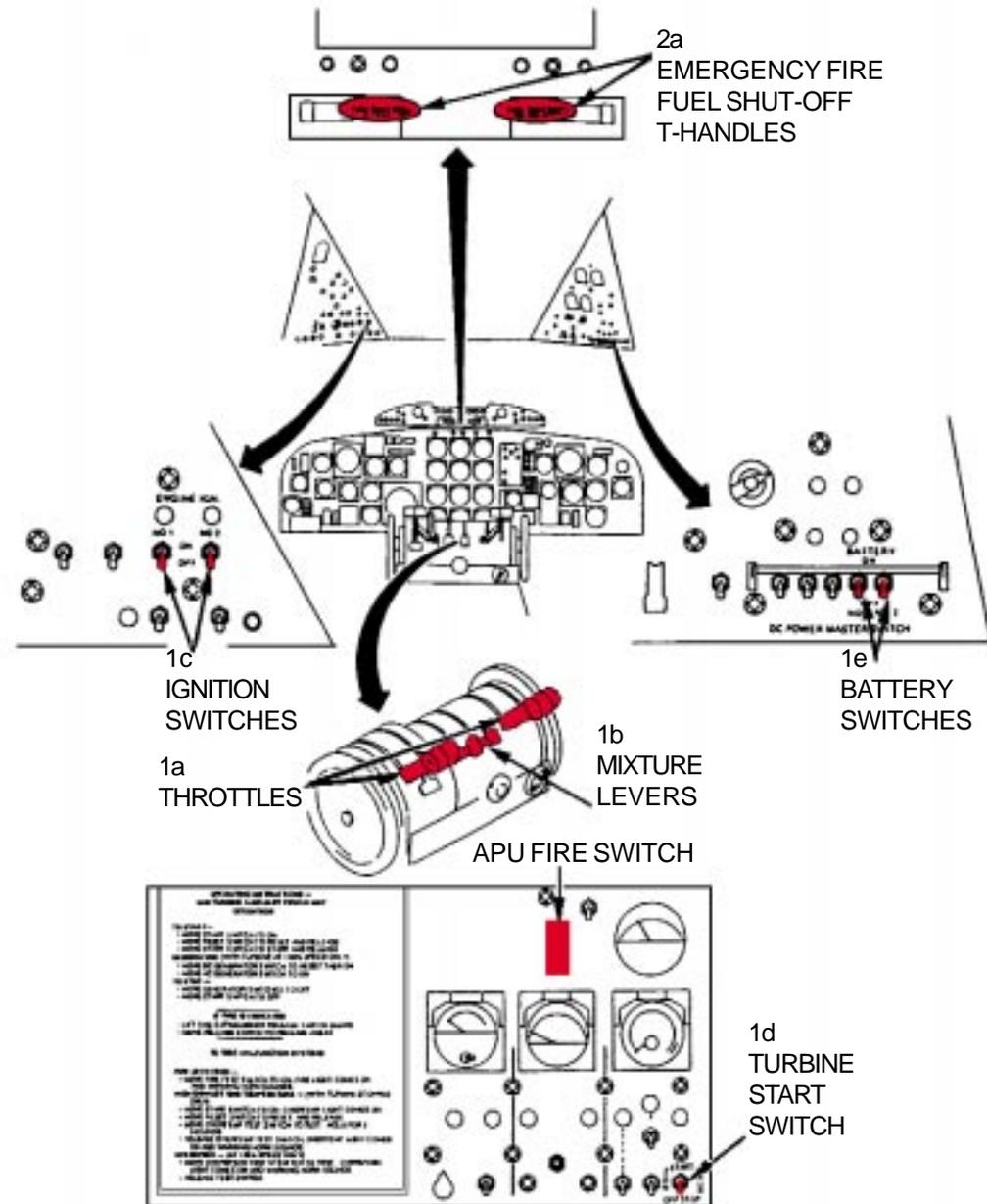
- If engines fail to shutdown, pull emergency fire fuel shutoff T-handle, located on pilot's forward instrument panel.

3. AIRCREW EXTRACTION

- Unlatch lap belts and remove shoulder harness from crewmember(s).
- Unlatch lap belt from passengers.

NOTE:

If seat tracks are not damaged during crash landing, use adjustable seat control to retract seats to aft position.



AIRCRAFT DANGER AREAS

 PROPELLER WAKE DANGER AREA

 PROPELLER DANGER AREA

WARNING

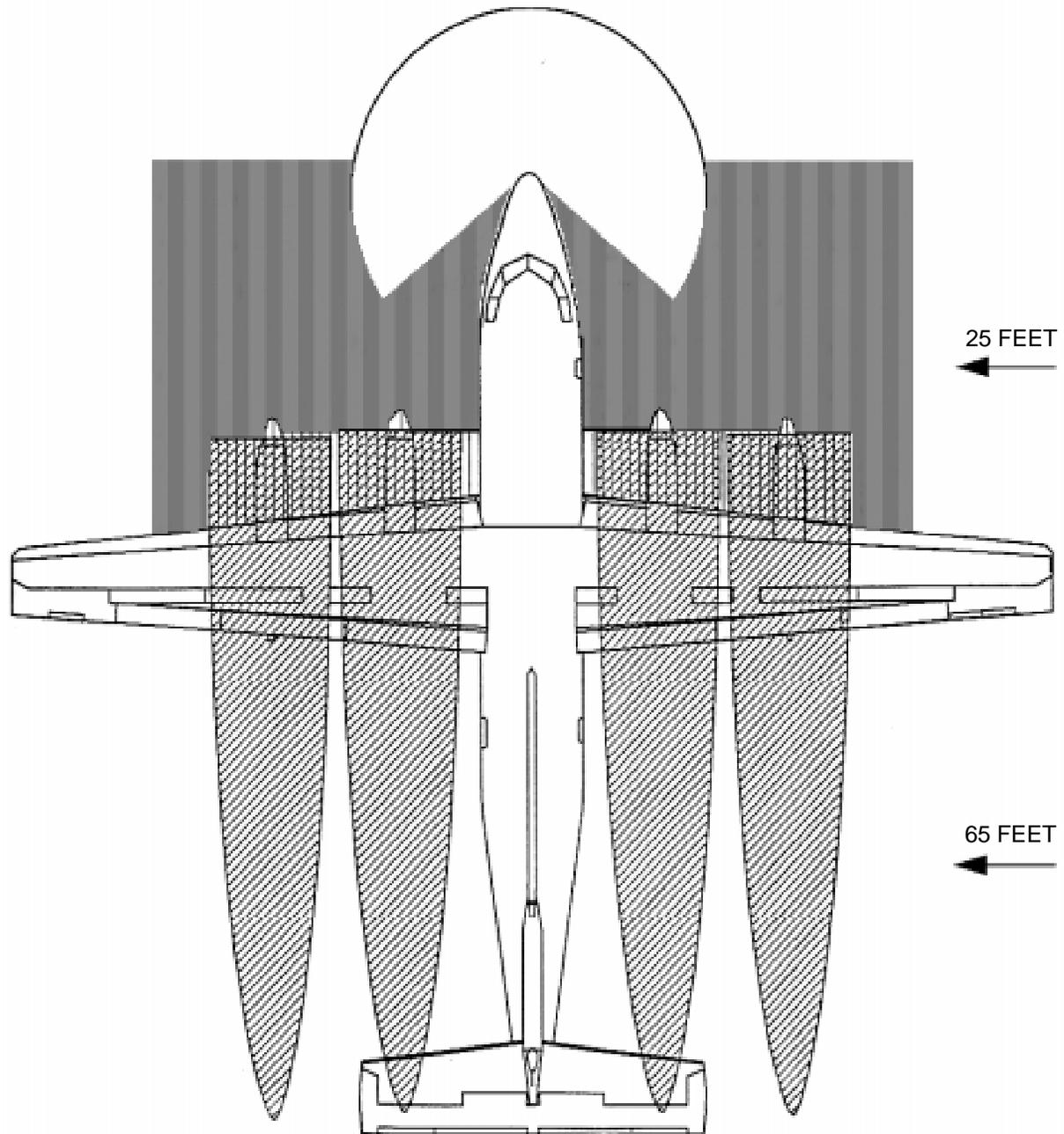
- If the radar system is to be operated in any mode other than standby while the aircraft is on the ground, direct the nose of the aircraft so that the antenna scan sector is free of large metallic objects such as hangars or other aircraft for a distance of 100 feet or 30 meters.
- Do not operate during refueling of aircraft or defueling operation within 100 feet or 30 meters.
- Do not operate if personnel are standing within 5 feet or 1.5 meters of the 270 degree forward sector of the aircraft.

 RADAR DANGER AREA

- Do not allow personnel within 6 feet or 1.8 meters of the nose of the aircraft when the aircraft's weather radar is transmitting.
- Serious injury could result from exposure to high energy radar emissions.
- Do not turn on the aircraft's weather radar when the nose of the aircraft is within 6 feet or 1.8 meters of flammable or explosive material, or in the vicinity of refueling operations. Serious injury and equipment damage could result from exposure to high energy radar emissions.

COMPOSITE MATERIALS EXTERNAL LOCATIONS:

- 1) Radome section on the nose
- 2) A.S.E. sensor pods both sides fore and aft
- 3) Flare/chaff dispenser pods mounted under wings on side of fuselage
- 4) Sensor elevator doors (3 ea.) on the underside of the fuselage



DASH 7

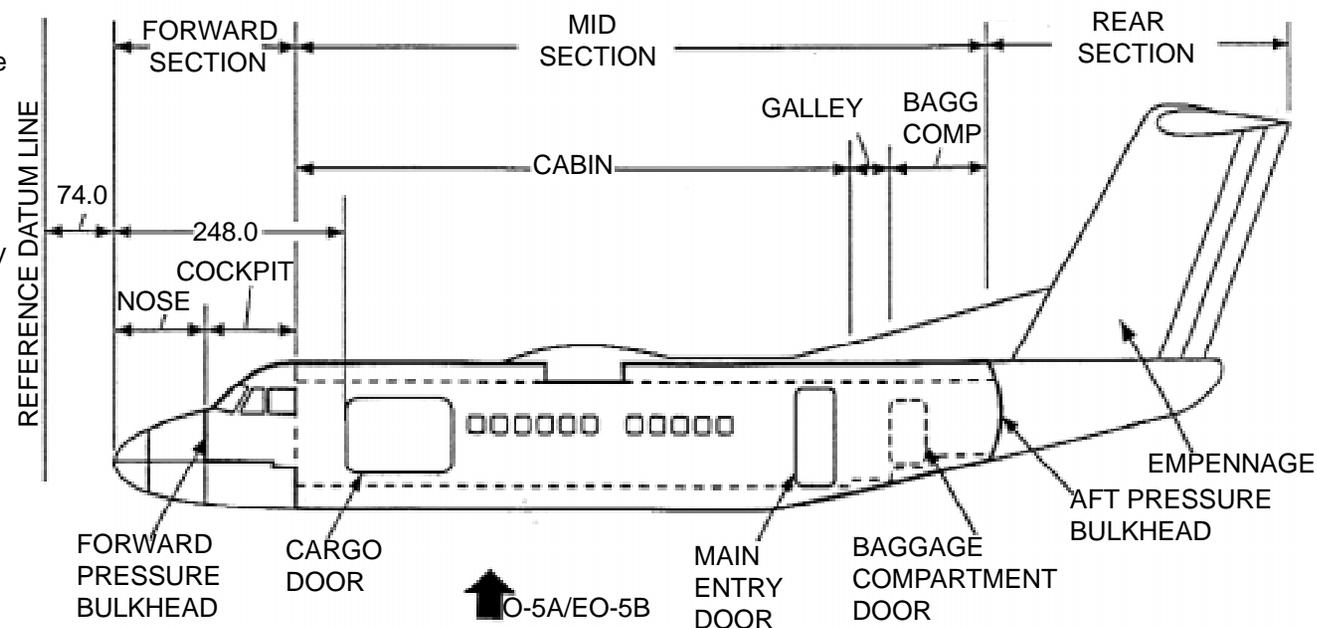
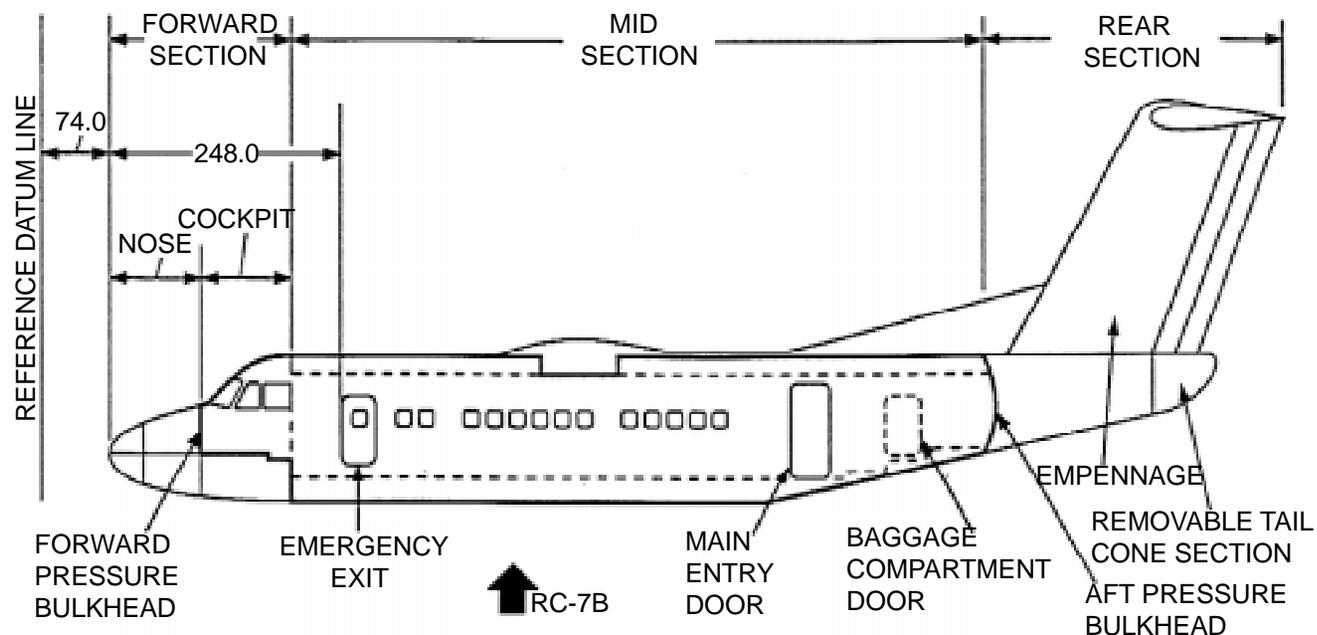
GENERAL ARRANGEMENT

FOR RC-7B, O-5A, AND EO-5B MODELS

COMPOSITE MATERIALS INTERNAL LOCATIONS:

- 1) Armor plating located beneath and on the sides of the seats for the pilots and the workstations.
- 2) Avionics Auxiliary Rack located in the right forward portion of cabin area.
- 3) The left forward bulkhead in the cabin area.
- 4) Equipment racks within the main cabin area.
- 5) For the RC-7B, the wall panels around the portable lavatory.
- 6) For the RC-7B, the food storage/heating/cooling unit located in the aft portion of the cabin area (that area normally considered the baggage compartment).
- 7) For the RC-7B, the spare lavatory tank storage unit located in the aft portion of the cabin area (that area normally considered the baggage compartment).
- 8) Avionics support structure located in the far aft portion of the cabin area (that area normally considered the baggage compartment).

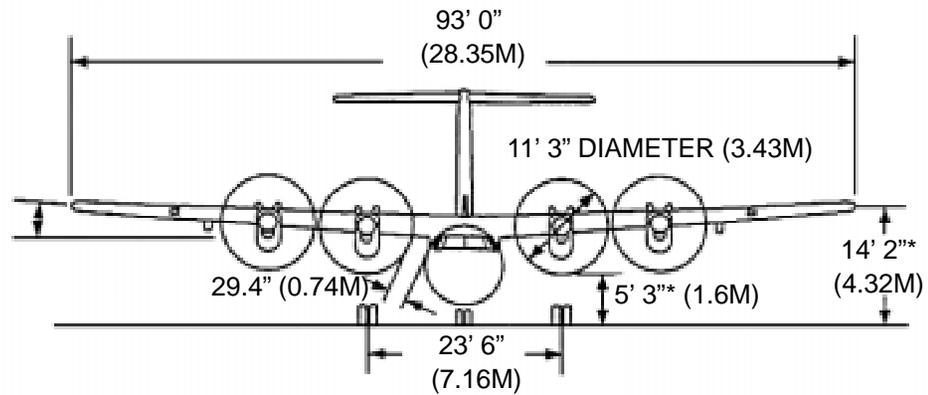
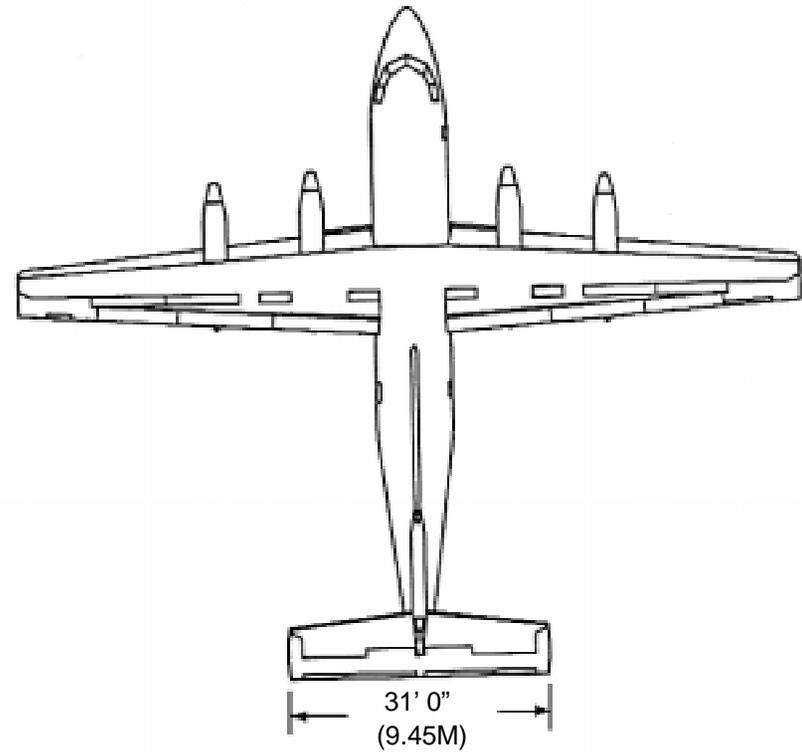
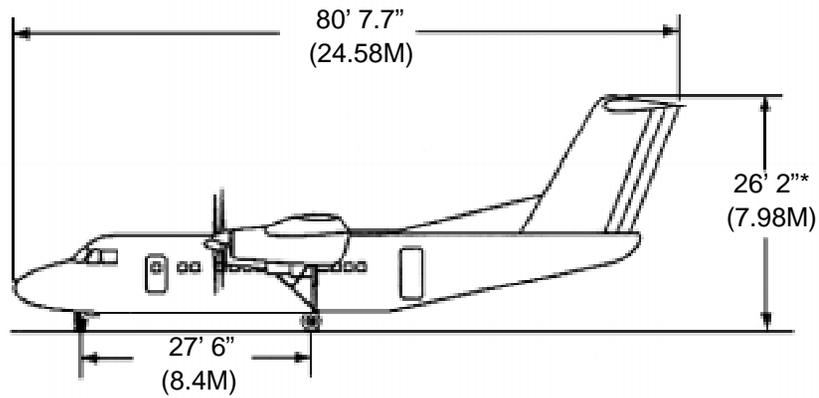
DASH 7



AIRCRAFT DIMENSIONS

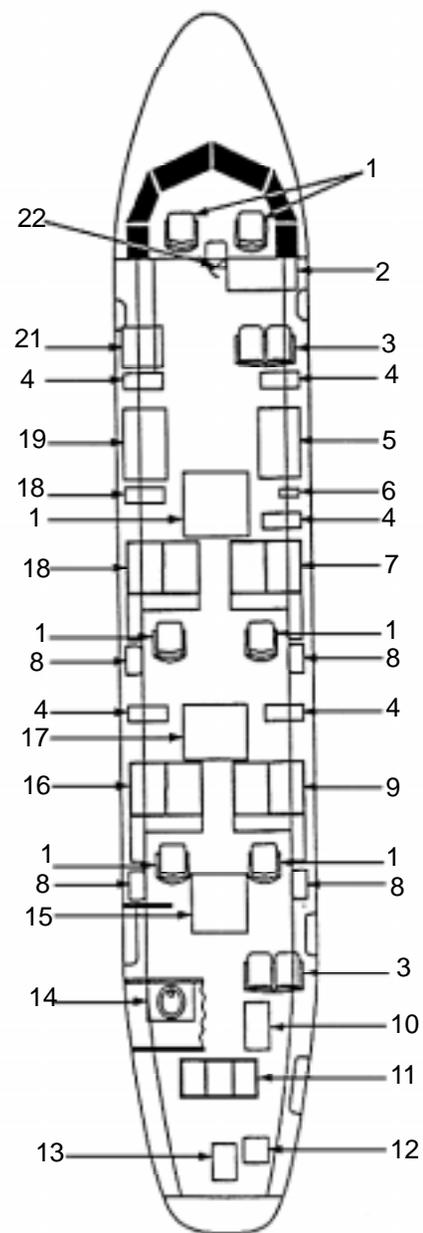
NOTE:

* Dimensions will vary with aircraft configurations and landing conditions.



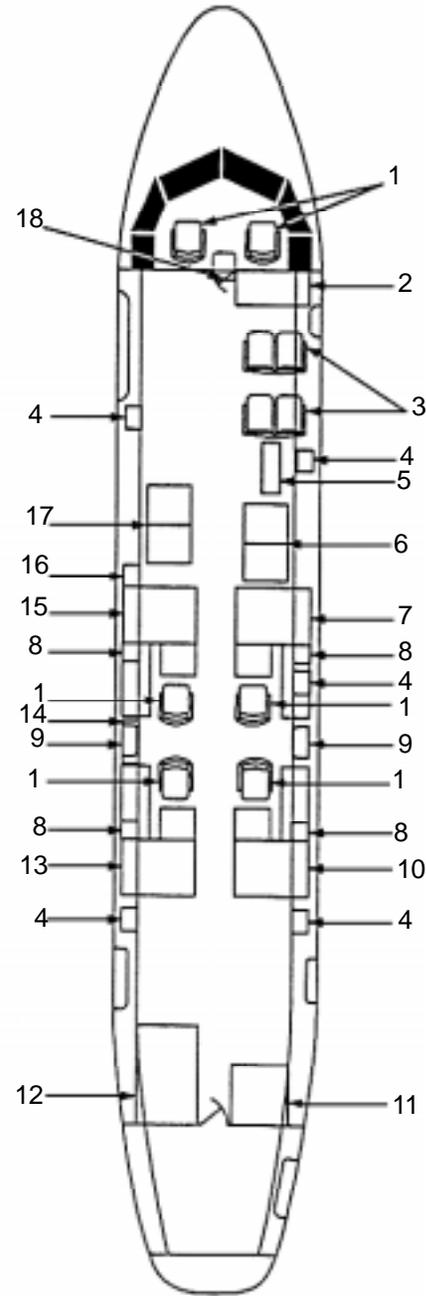
RC-7B INTERIOR ARRANGEMENT

1. FLIGHTDECK AND MISSION POSITION SEATS
2. AUXILIARY AVIONICS RACK
3. MAIN CABIN SEATS
4. INTERFACE PANEL (IFP)
5. PM2 RACK (PRIMARY MISSION)
6. EMERGENCY HYDRAULIC SENSOR PUMP HANDLE
7. WORKSTATION #2
8. CREW MISSION POSITION JUMP SEATS
9. WORKSTATION #4
10. PM1 RACK COMPRESSOR
11. FOOD HEATING/COOLING UNIT
12. SPARE LAVATORY TANK
13. COMPOSITE MATERIAL AVIONICS SUPPORT STRUCTURE (CMASS)
14. LAVATORY
15. INFRARED LINE SCANNER COVER
16. WORKSTATION #3
17. FORWARD LOOKING INFRARED SENSOR COVER
18. WORKSTATION #1
19. DAYLIGHT IMAGING SYSTEM SENSOR COVER
20. PM1 RACK (PRIMARY MISSION)
21. PM3 RACK (PRIMARY MISSION)
22. OBSERVER'S STATION



EO-5B INTERIOR ARRANGEMENT

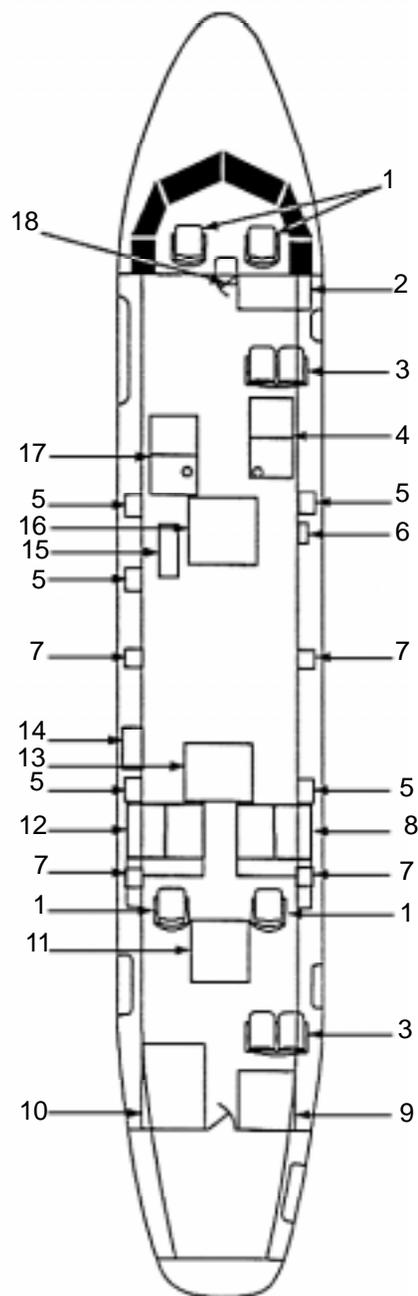
1. FLIGHTDECK AND MISSION POSITION SEATS
2. AUXILIARY AVIONICS RACK
3. MAIN CABIN SEATS
4. INTERFACE PANEL (IFP)
5. INERTIAL NAVIGATION UNIT
6. COMMUNICATIONS RACK
7. WORKSTATION #2
8. AUDIO PANEL
9. CREW MISSION POSITION JUMP SEAT
10. WORKSTATION #4
11. GALLEY
12. LAVATORY
13. WORKSTATION #3
14. AUDIO JUNCTION BOX
15. WORKSTATION #1
16. RF PROCESSOR AND IFP
17. AUXILIARY RACK (MISSION)
18. OBSERVER'S STATION



O-5A INTERIOR ARRANGEMENT

DASH 7

1. FLIGHTDECK AND MISSION POSITION SEATS
2. AUXILIARY AVIONICS RACK
3. MAIN CABIN SEATS
4. INTERFACE PANEL (IFP)
5. INERTIAL NAVIGATION UNIT
6. COMMUNICATIONS RACK
7. WORKSTATION #2
8. AUDIO PANEL
9. CREW MISSION POSITION JUMP SEAT
10. WORKSTATION #4
11. GALLEY
12. LAVATORY
13. WORKSTATION #3
14. AUDIO JUNCTION BOX
15. WORKSTATION #1
16. RF PROCESSOR AND IFP
17. AUXILIARY RACK (MISSION)
18. OBSERVER'S STATION



SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
Fire Drill II

DASH 7

AIRCRAFT ENTRY FOR RC-7B

1. NORMAL ENTRY

- a. To open the lower half of the passenger/crew door, located left side of fuselage, externally, pull the recessed external handle (forward of the door) out to the limit of its travel to unlock and displace the door outward.
- b. Step to the side. The door opens under its own weight and the handrails unfold. Deflation of the door seal is automatic.

2. FORWARD EMERGENCY ENTRY

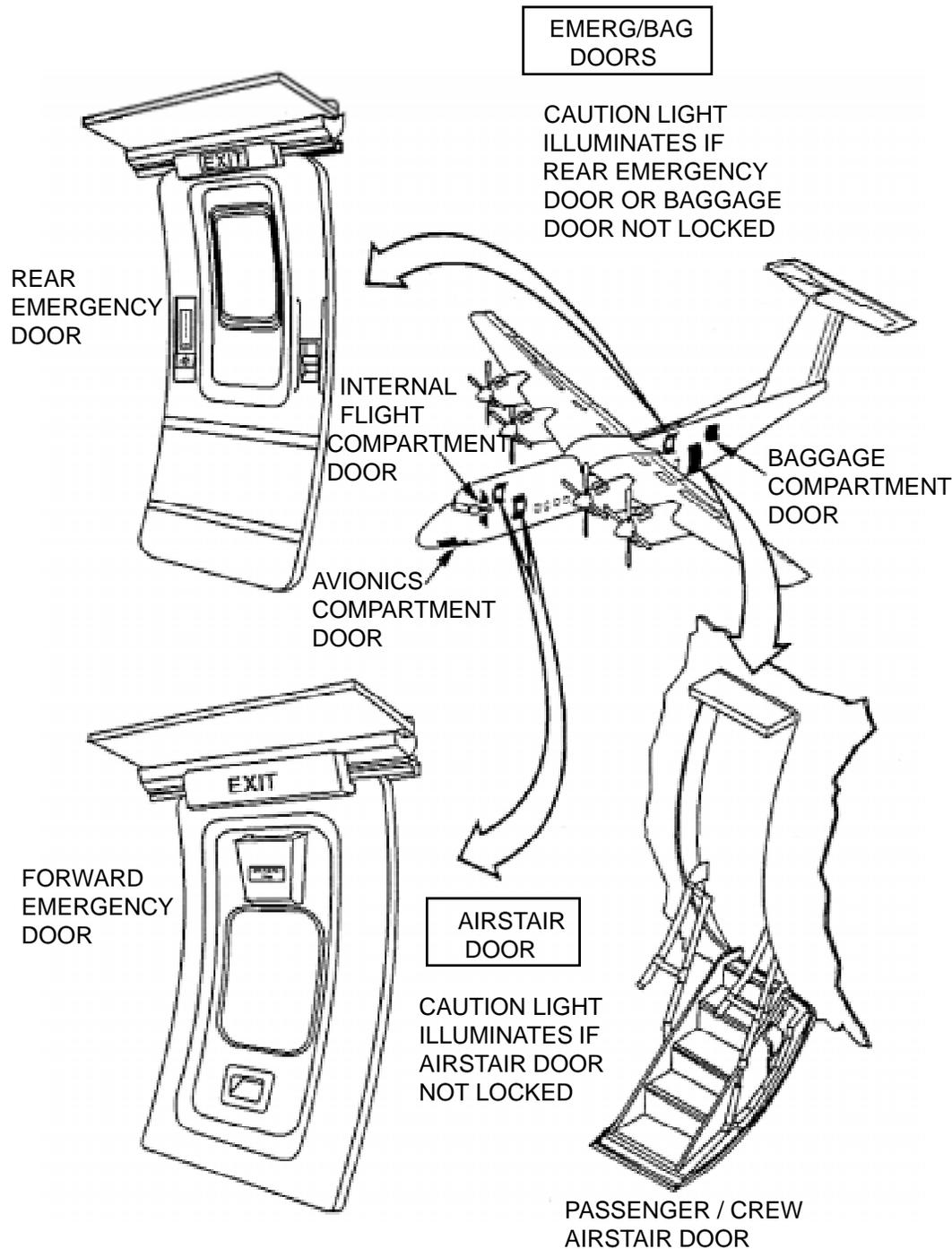
NOTE:

Opening only the forward doors will depressurize the aircraft.

- a. To open the forward emergency door, press the handle release button.
- b. Turn the handle downward.
- c. Push door inward. The door will fall away from its locking pin.

3. REAR EMERGENCY ENTRY

- a. To open the rear emergency door, press the handle release button.
- b. Rotate the external handle in an upward direction. Initial door movement will deflate door seal.
- c. Subsequent movement of the door will displace the door outward.



SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
Fire Drill II

AIRCRAFT ENTRY FOR EO-5B AND O-5

1. NORMAL ENTRY

- a. To open the lower half of the passenger/crew door, located left side of fuselage, externally, pull the recessed external handle (forward of the door) out to the limit of its travel to unlock and displace the door outward.
- b. Step to the side. The door opens under its own weight and the handrails unfold. Deflation of the door seal is automatic.

2. FORWARD EMERGENCY ENTRY

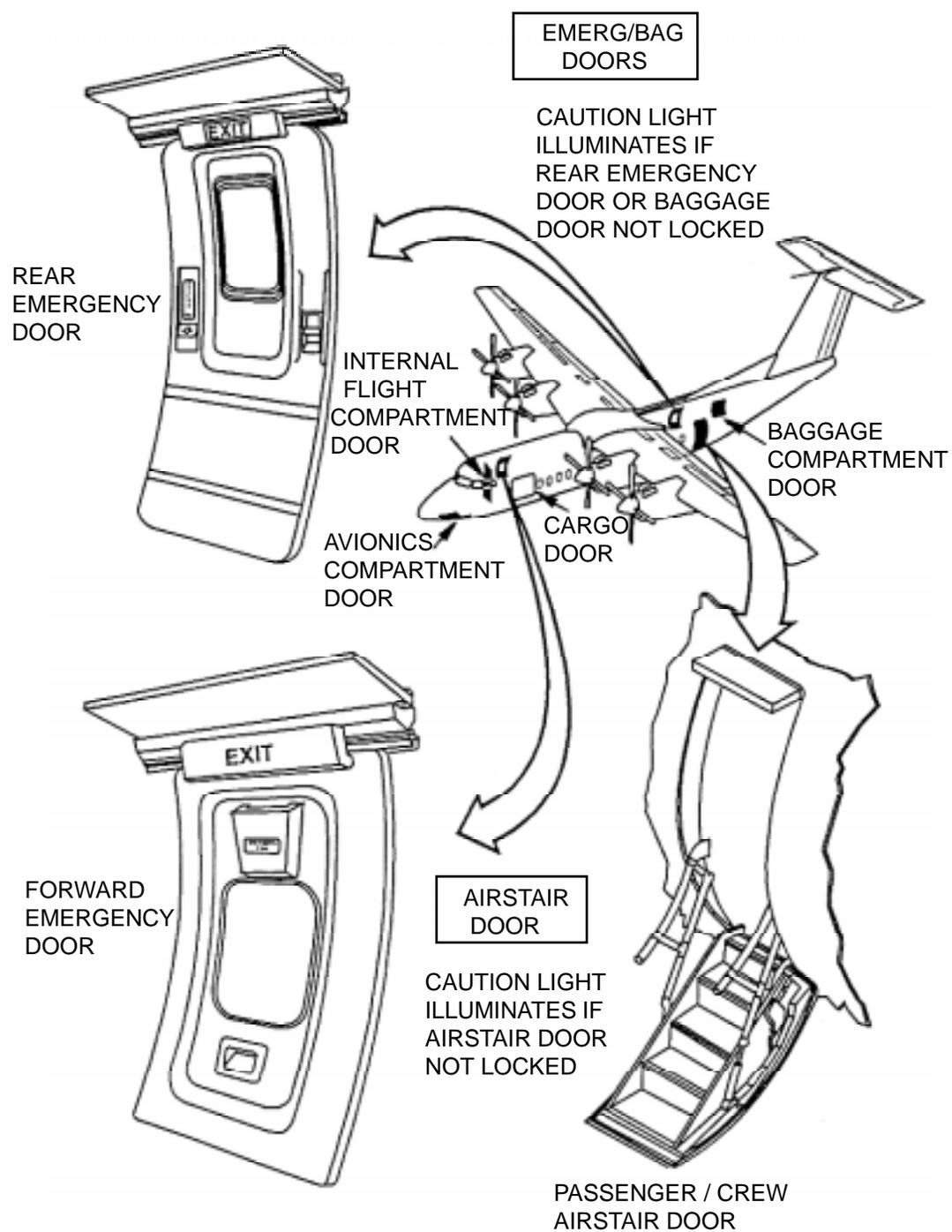
NOTE:

Opening only the forward doors will depressurize the aircraft.

- a. To open the forward emergency door, press the handle release button.
- b. Turn the handle downward.
- c. Push door inward. The door will fall away from its locking pin.

3. REAR EMERGENCY ENTRY

- a. To open the rear emergency door, press the handle release button.
- b. Rotate the external handle in an upward direction. Initial door movement will deflate door seal.
- c. Subsequent movement of the door will displace the door outward.



SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
Fire Drill II

AIRCRAFT ENTRY FOR EO-5B

1. NORMAL ENTRY

- a. To open the lower half of the passenger/crew door, located left side of fuselage, externally, pull the recessed external handle (forward of the door) out to the limit of its travel to unlock and displace the door outward.
- b. Step to the side. The door opens under its own weight and the handrails unfold. Deflation of the door seal is automatic.

NOTE:

This model has the cargo door placed where the forward left emergency door was. Two additional doors are placed mid fuselage.

2. FORWARD EMERGENCY ENTRY

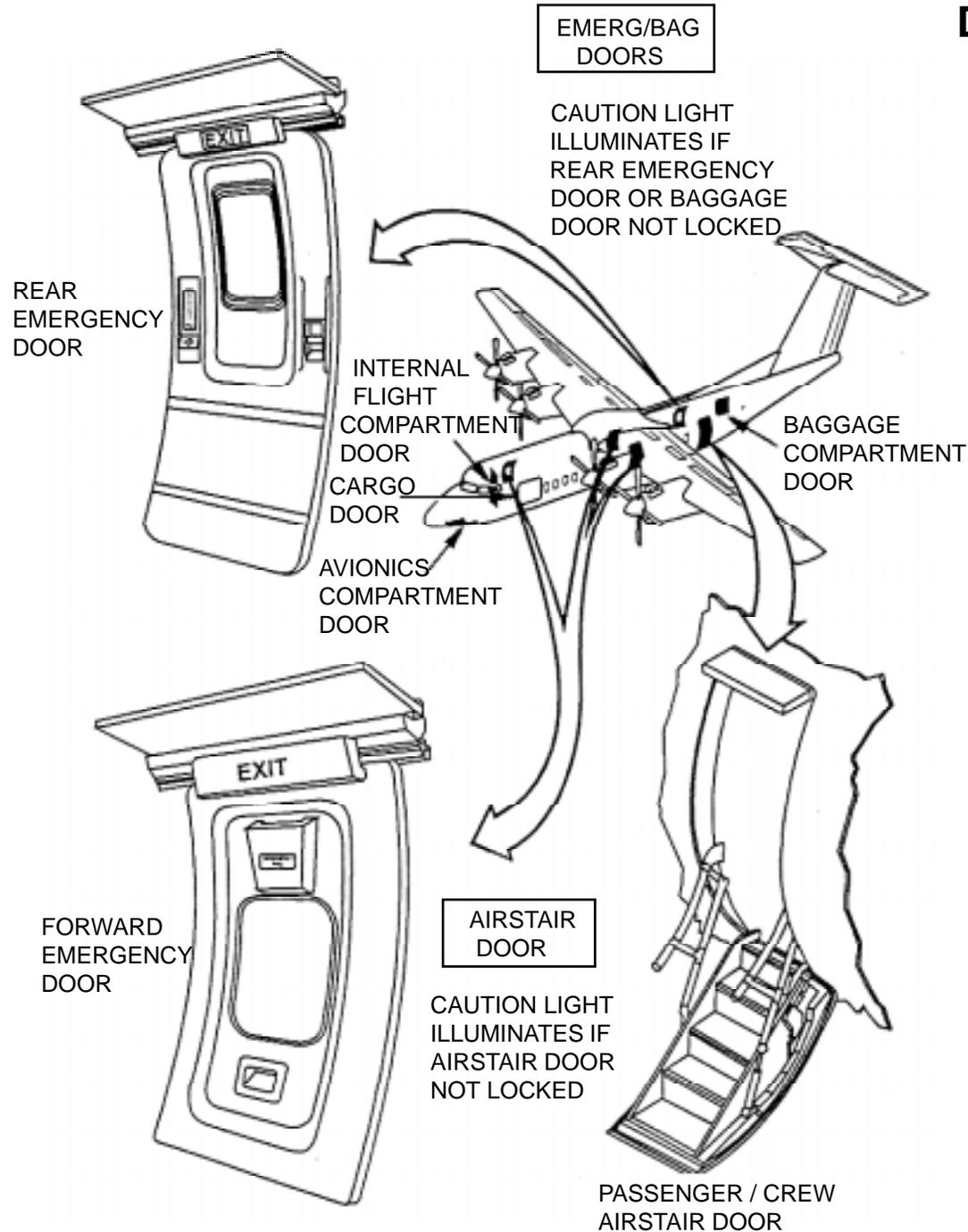
NOTE:

Opening only the forward doors will depressurize the aircraft.

- a. To open the forward emergency door, press the handle release button.
- b. Turn the handle downward.
- c. Push door inward. The door will fall away from its locking pin.

3. REAR EMERGENCY ENTRY

- a. To open the rear emergency door, press the handle release button.
- b. Rotate the external handle in an upward direction. Initial door movement will deflate door seal.
- c. Subsequent movement of the door will displace the door outward.



AIRCRAFT ENTRY-Continued

FOR EO-5B AND O-5A

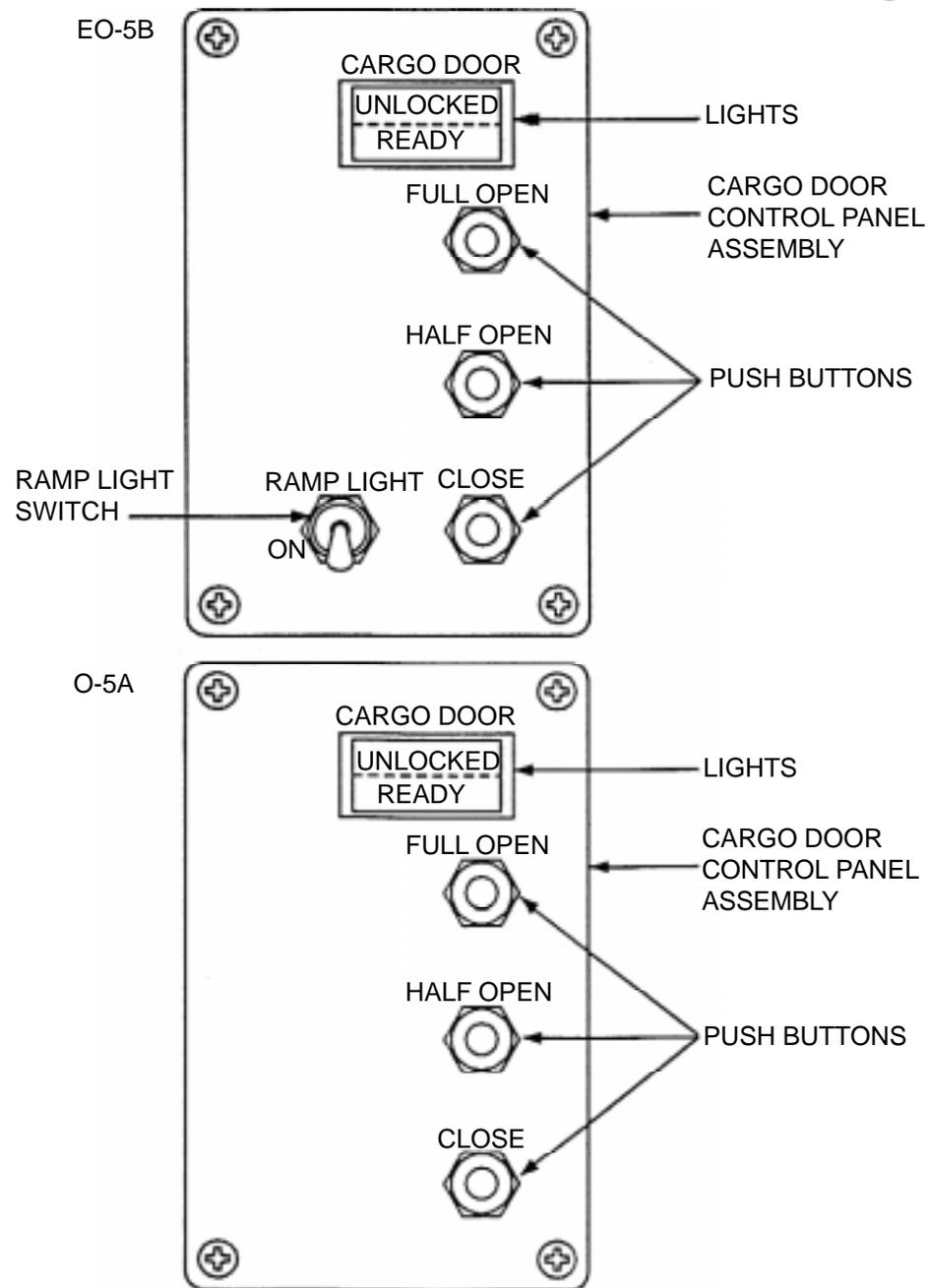
1. CARGO DOOR ENTRY

NOTE:

The cargo door, located on the left side fuselage, can not be opened externally. In order to use the cargo door for additional entry, the cargo door must be opened internally. The opening can then be used for additional rescue and extraction. **Power must be on.**

- a. To open the cargo door, pull down the safety lock retaining handle to approximately 90 degrees. This unlocks the door and opens the vent door, causing the cargo door and unlock light to come on. A relay is also actuated which releases the actuator motor brake.
- b. Rotate the cranking handle approximately 16 turns counter clockwise.
- c. The draw in handle is then released from a spring clip and must be swung inboard and upward to the vertical position.
- d. Upon door release, power is supplied to HALF OPEN and FULL OPEN push-button switches. The cargo door can now be opened by pressing and holding the HALF OPEN and FULL OPEN button switches.
- e. HALF OPEN- When selected the cargo door will open to a 90 degree opening. Upon reaching the 90 degree opening, the brake actuator will automatically engage and restrain the door from closing.
- f. FULL OPEN- When selected the cargo door will open to a 180 degree opening. Upon reaching 174 degrees, the brake actuator will automatically engage and restrain the door from closing.
- g. HALF OPEN to FULL OPEN- This is accomplished by pressing and holding the FULL OPEN button switch.

DASH 7



ENGINE, APU, AND BATTERY SHUTDOWN

1. ENGINE SHUTDOWN

- a. Place power levers, 4 each located on left side of center console throttle quadrant, to Flight Idle position.

NOTE:

If the power levers are aft of this position, step may or may not be possible due to linkage binding.

- b. Place condition levers, 4 each located on right side of center console throttle quadrant, to Fuel Shutoff position.

NOTE:

As the levers are retarded to the full aft position, they must be pulled upward to bypass the stops associated with MIN RPM and START/FEATHER positions.

- c. Pull Fuel Pull Off T Handle(s), located on the aft portion of the overhead panel and illuminate in event of a fire.

NOTE:

Pulling these handles will arm the squibs which enables the firing of the Engine Fire Extinguisher(s). To actually fire the extinguisher once the T handle is pulled, the "EXTG" switch must be selected to the FWD-BTL/AFT-BTL position.

- d. Place the Master Battery switch, located on the right forward portion of the overhead control panel, to OFF.

2. APU SHUTDOWN FOR RC-7B

NOTE:

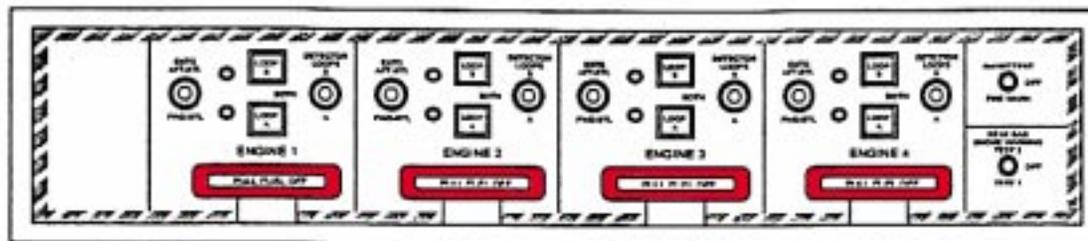
The APU is located in the removable tail cone section.

- a. To shutdown the APU by pushing the APU STOP button.
- b. In the event of an APU fire, push the APU FIRE PUSH switch light, to arm the extinguisher squib.
- c. Lift guarded APU FIRE BOTTLE switch and activate.
- d. Place Master Battery switch, located on the right forward portion of the overhead control panel, to OFF.

3. BATTERY SHUTDOWN

- a. Two batteries are located in the avionics compartment. This compartment is accessible from a swing down door which opens forward of the nose gear on the underside of the nose section. Both aircraft batteries can be found in the forward portion of the avionics compartment.
- b. The two batteries can be disconnected by turning the connector counterclockwise to disconnect.

FIRE PROTECTION PANEL



EXTINGUISHER ARMED LIGHTS (MOD 7/1735)

When FUEL OFF handle is pulled initially, both lights come on to indicate forward and aft extinguisher circuits are armed. When EXTG switch is selected to AFT-BTL or FWD-BTL; appropriate light goes out to indicate discharge.

FIRE EXTINGUISHER SWITCH (MOD 7/1735)

Both armed lights come on when PULL FUEL OFF handle is pulled. FWD-BTL is normally selected to discharge first extinguisher. If fire persists, switch is selected to AFT-BTL to discharge second extinguisher.

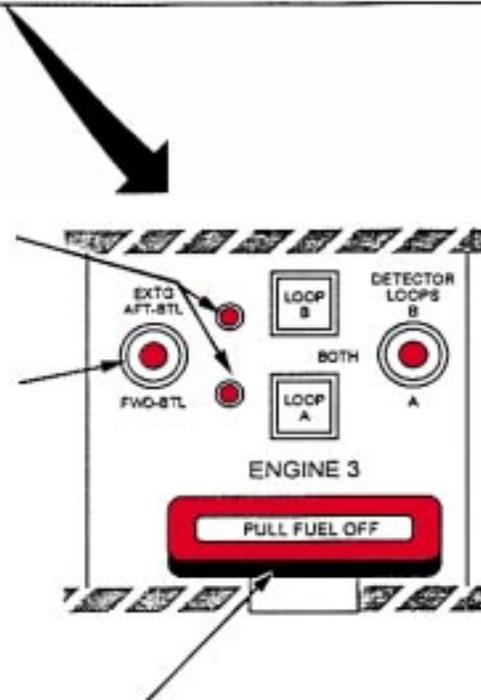
PRE-MOD 7/1735 AIRCRAFT

When PULL FUEL OFF handle is pulled initially, both lights come on bright to indicate forward and aft extinguisher circuits are armed. When EXTG switch is selected to AFT-BTL or FWD-BTL, appropriate light goes dim to indicate discharge.

PULL FUEL OFF handle should remain out after first bottle discharge to retain light indication of which bottle has been discharged. (If handle is pushed in and pulled again, both lights come on bright.)

CAUTION

On Pre-mod 7/1735 aircraft extinguisher armed lights must not be relied upon for pre-flight check of contents of fire extinguishers. Indicating discs on outboard nacelles provide the only reliable check of extinguisher condition.



PULL FUEL OFF HANDLE

Operates fuel and hydraulic shutoff valves and arms fire extinguisher circuits (indicated by extinguisher armed lights on.).

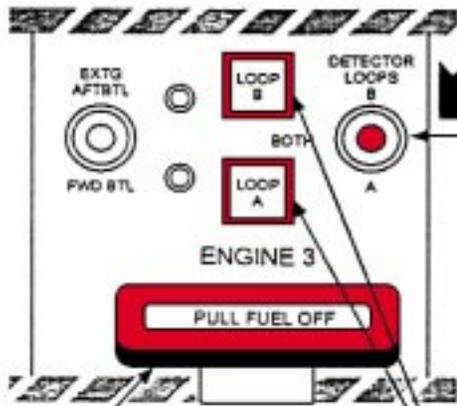
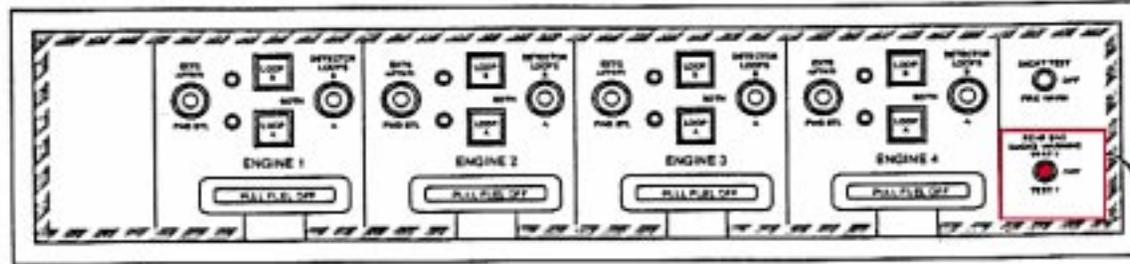
FIRE DETECTION CONTROLS AND INDICATORS

ENGINE FIRE
PRESS TO RESET

← ENGINE FIRE WARNING LIGHT
Flashes red to indicate in any engine. May be depressed to cancel light but remains armed for any subsequent engine fire.

MASTER CAUTION
PRESS TO RESET

← MASTER CAUTION LIGHT
Flashes amber concurrently with ENGINE FIRE warning light or AFT BAG SMOKE caution light.



DETECTOR LOOPS SWITCH

BOTH - Both A and B detector loops are armed
A - Loop A only is armed
B - Loop B only is armed

A single loop is selected only when a fault has occurred to the other loop (CHECK FIRE DET caution light on). The defective loop is deactivated, but the selected loop retains full fire detection capability.

LOOP LIGHTS

PULL FUEL OFF HANDLE
Illuminates red when engine fire is detected.

With DETECTOR LOOPS switch at BOTH, but LOOP A and LOOP B lights come on (together with other fire warning lights) to indicate fire in affected nacelle.

With A or B selected, only selected loop is armed and will illuminate.

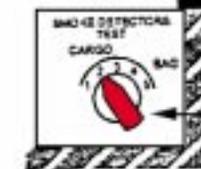
CHECK FIRE
DET

← CAUTION LIGHT

Illuminates to indicate detector loop fault, and if fire in engine is detected.



Test 1 Function inoperative due to aircraft configuration.



EO-5B
(SN 104 ONLY)

OXYGEN SHUTOFF, FUEL CAPACITIES, AND SERVICING

1. FLIGHT DECK OXYGEN SHUTOFF

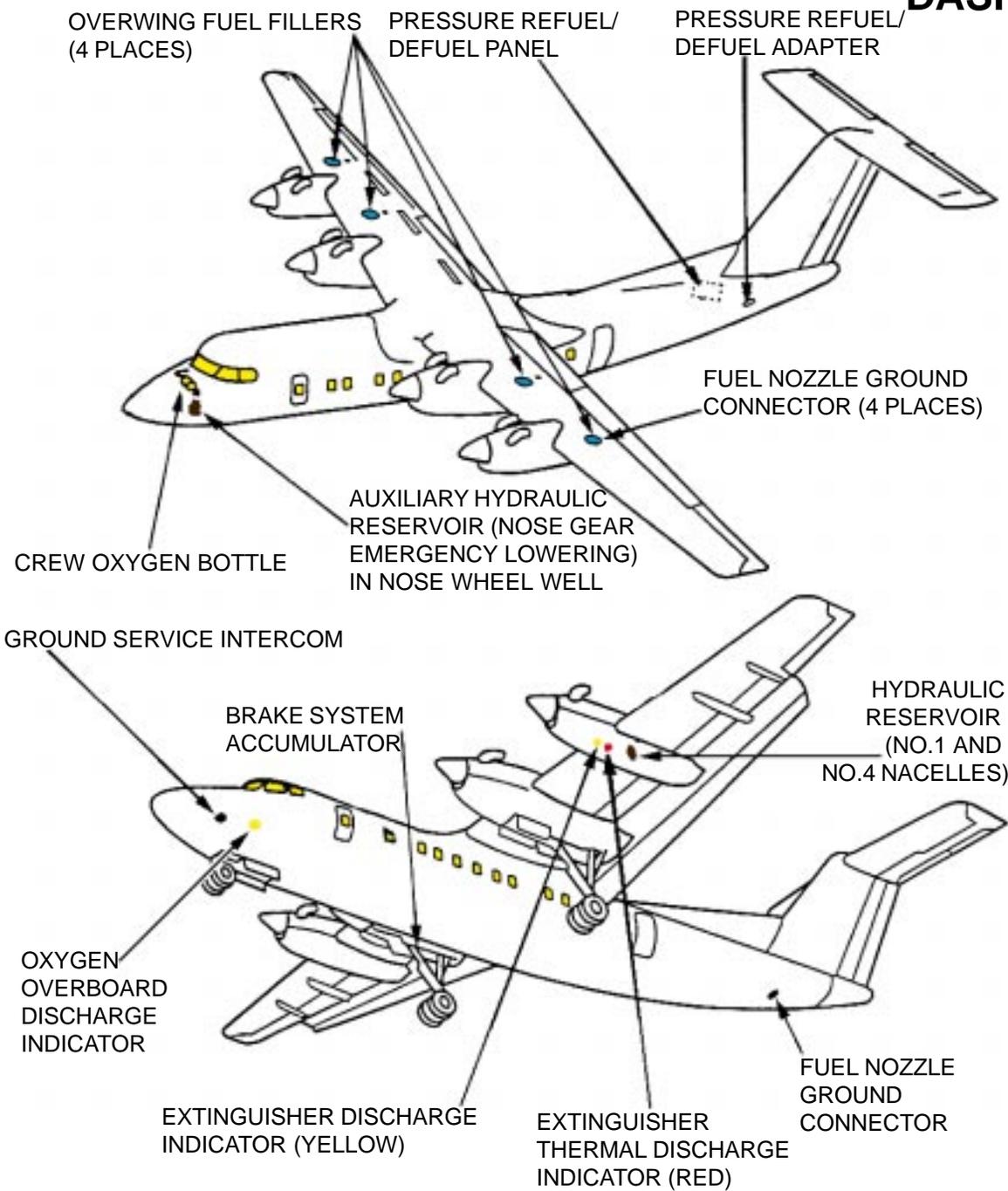
- a. The only oxygen bottle that cannot be accessed from inside the aircraft, is located in the avionics compartment.
- b. The avionics compartment is accessible from a swing door which opens forward and is forward of the nose gear on the underside of the nose section.
- c. The oxygen bottle can be located in the aft portion of the avionics compartment.
- d. This bottle does not have an ON/OFF valve, but has two quick disconnect supply lines. This bottle supplies emergency oxygen to the flight deck.

2. INTERIOR OXYGEN SHUTOFF

- a. Additional portable oxygen bottles are within the interior of the aircraft. All bottles have ON/OFF valves on the top of the bottle.

3. FUEL TANK CAPACITIES

FUEL TANK CAPACITIES (Usable Fuel)		
Fuel Tank	Capacity	
	US Gals	Liters
No. 1 (Left Outer)	420	1,590
No. 2 (Left Inner)	310	1,173
No. 3 (Right Inner)	310	1,173
No. 4 (Right Outer)	420	1,590
Left Auxiliary	589	2,228
Right Auxiliary	589	2,228
Total Fuel	2,638	9,982



AIRCREW EXTRACTION

DASH 7

1. AIRCREW EXTRACTION

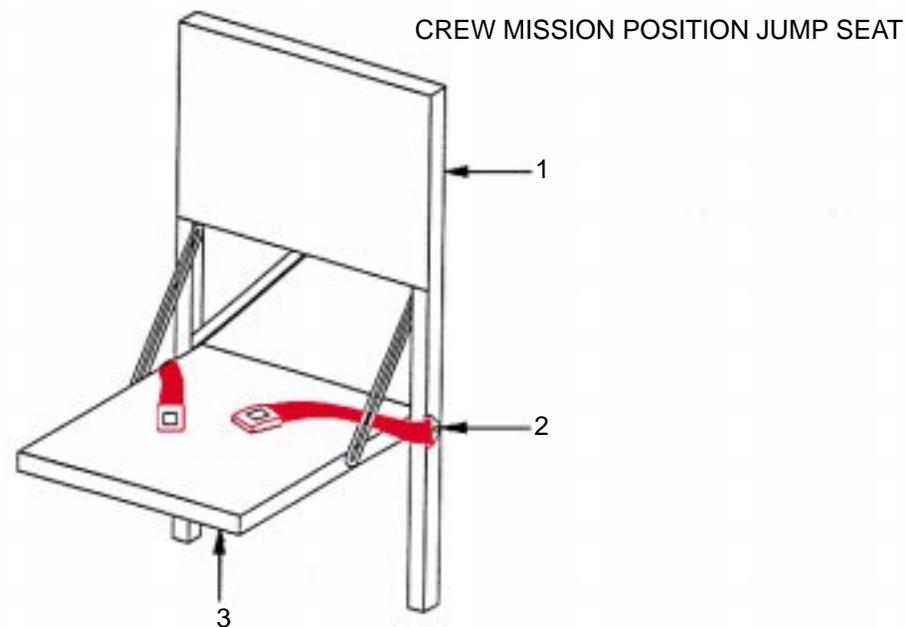
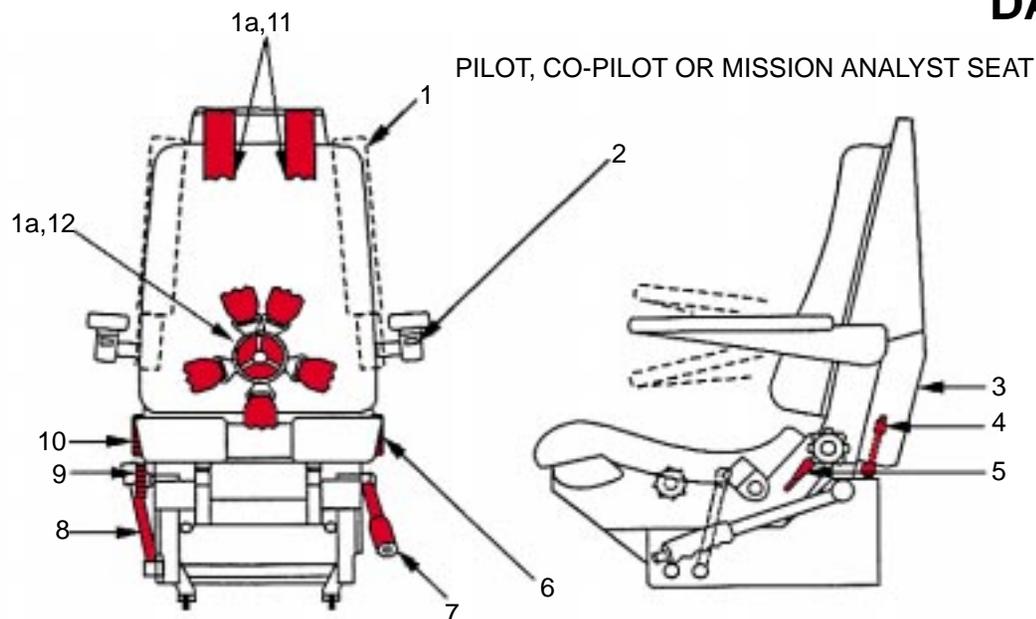
- Release lap belt and shoulder harness from crewmember by rotating the central buckle, in either direction, to release restraints.
- Disconnect any personnel leads.
- The Pilot, Co-Pilot, and Mission Analyst's seats are adjustable. These adjustments should be used when removing aircrew during rescue procedures.
- Adjustments are recline, vertical, horizontal, armrest, and headrest. See graphic for locations.

- ARMREST STOWED
- ARMREST ADJUSTMENT CONTROL
- DOCUMENT STOWAGE
- HARNESS RESET LOCK CONTROL
- RECLINE CONTROL
- LUMBAR SUPPORT CONTROL IN/OUT
- VERTICAL ADJUSTMENT CONTROL
- HORIZONTAL ADJUSTMENT CONTROL
- THIGH SUPPORT CONTROL
- LUMBAR SUPPORT CONTROL UP/DOWN
- SHOULDER HARNESS (2)
- RESTRAINT SYSTEM WITH ROTARY RELEASE

2. CREW MISSION POSITION JUMP SEATS

- The crew mission jump seats are equipped with lap belts only. Locate connecting buckle to disconnect.
- Jump seats are not adjustable, but are collapsible.

- BACK REST
- SAFETY BELT
- COLLAPSIBLE SEAT



AIRCREW EXTRACTION-Continued

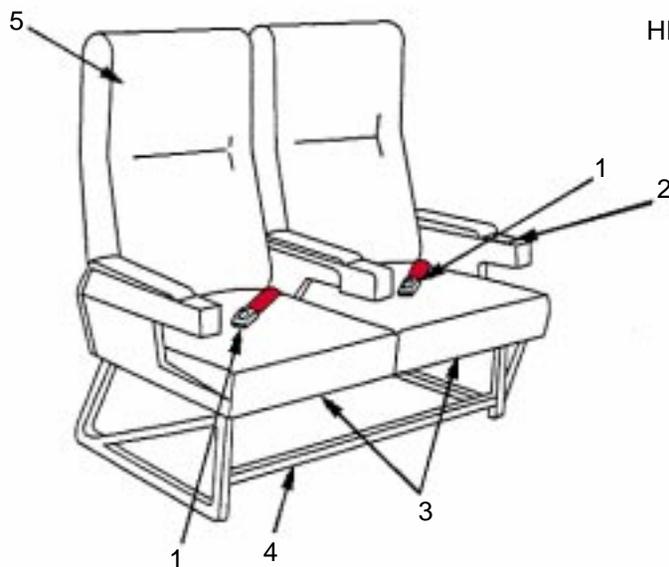
3. FLIGHT DECK JUMP SEAT-RC-7B and EO-5B

- The flight deck jump seat, located forward of the flight deck door, and is equipped with one cross over chest harness and seat belt. Locate connecting buckle at left hip to disconnect occupant.
- Disconnect any personnel leads.
- Jump seat is non-adjustable.

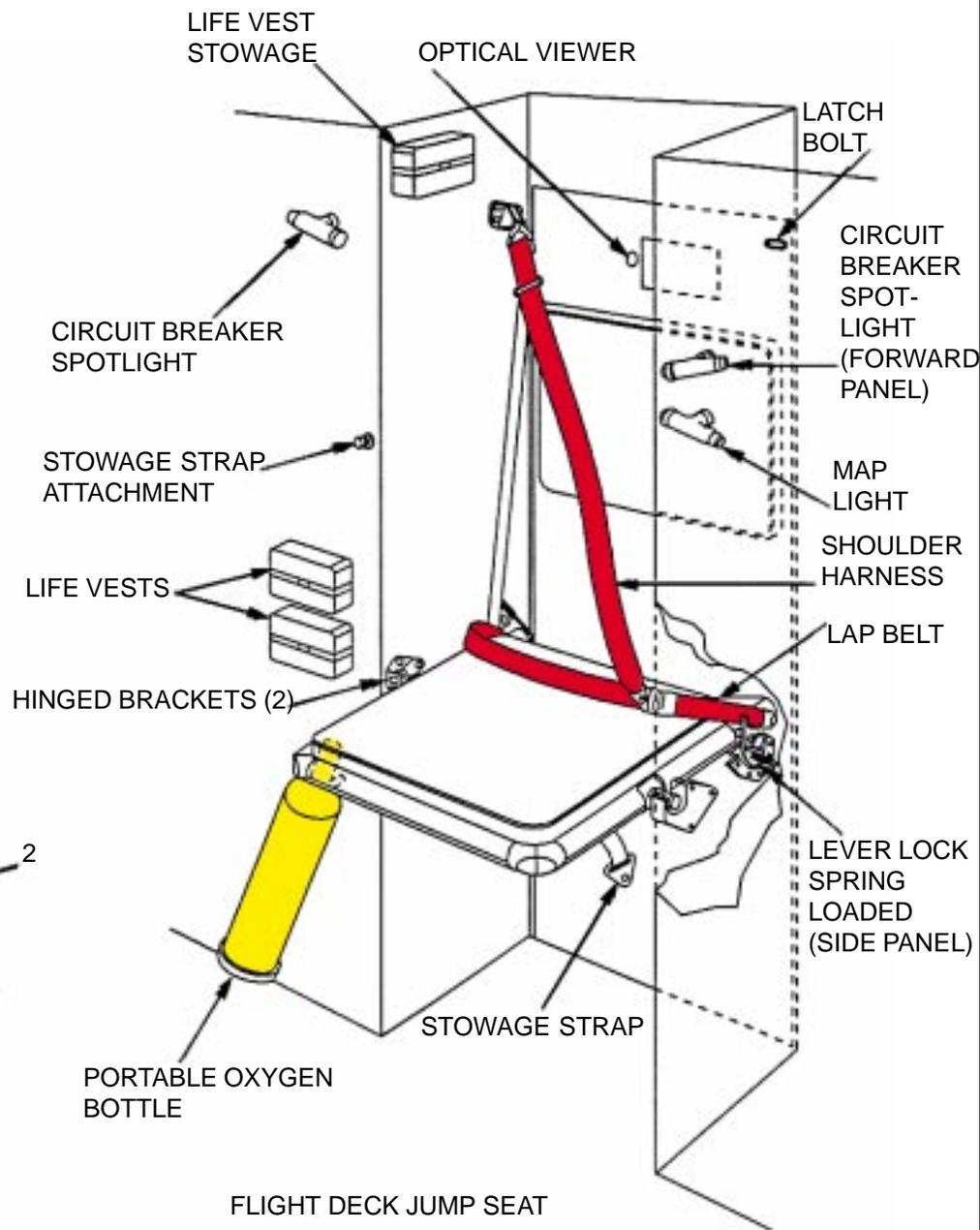
4. MAIN CABIN SEATS

- Main cabin seats are equipped with seat belts only.
- Locate central buckle to release occupant from seat.

- QUICK RELEASE SEAT BELTS
- ASH TRAY
- FLOTATION CUSHIONS
- BAGGAGE RESTRAINT BAR
- HEADREST



MAIN CABIN SEATS



AIRCREW EXTRACTION-Continued

DASH 7

5. DIRECT VISION (DV) WINDOW

NOTE:

Graphic shows pilot's window. Copilot's window is similar.

- Pilot and copilot sides of the flight deck are equipped with a sliding direct vision window that can be used for ventilation and emergency exit.
- The locking mechanism is operated with two distinct motions.
- To open the window, (1) the lock release button is pushed in; (2) simultaneously the operating handle is pulled straight back (against an internal spring) to release the window locks.
- (3) Rotate the handle downwards (away from window) which rotates the window free from the window opening.
- To close and lock the window, reverse opening procedure.

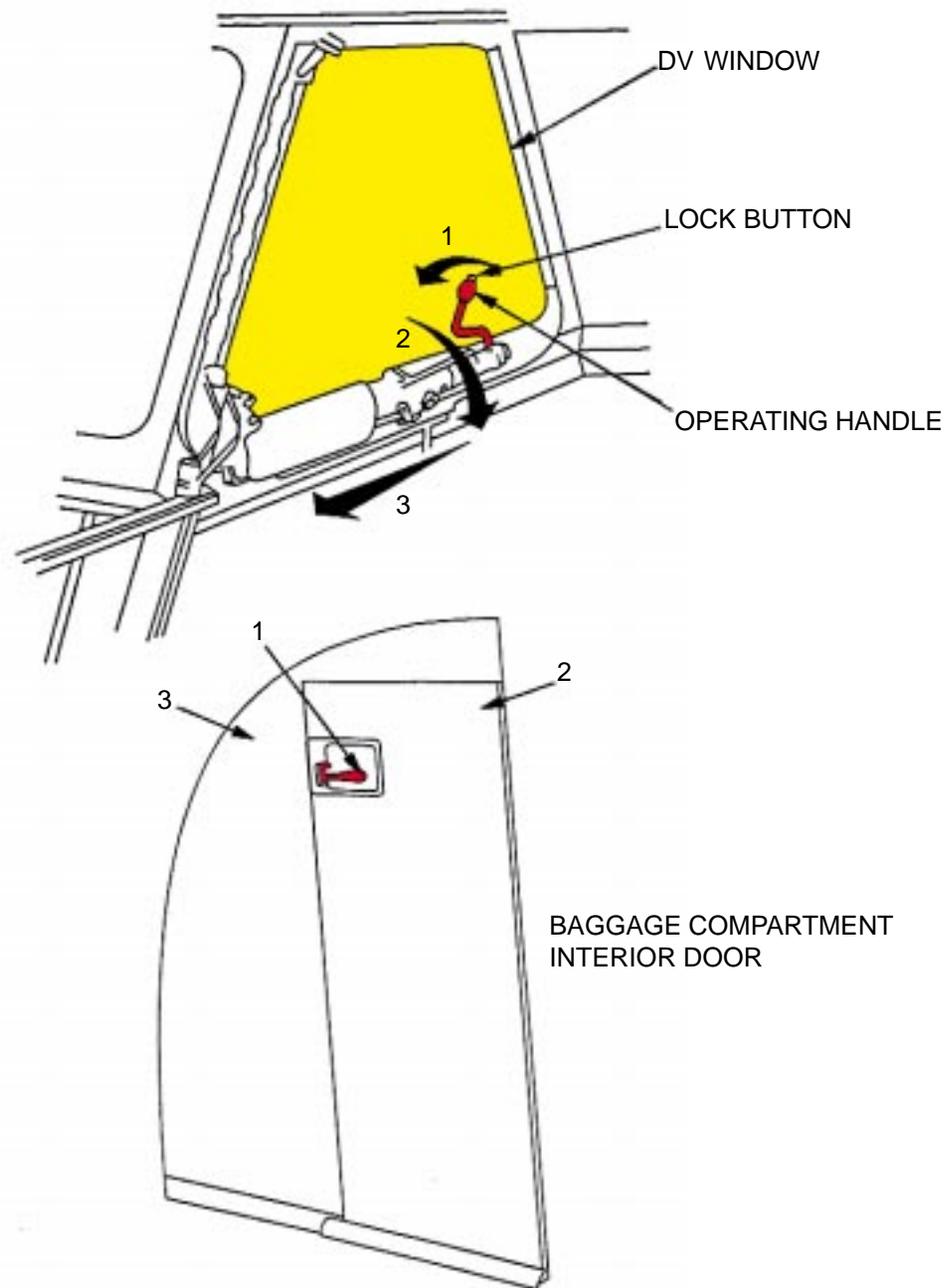
6. BAGGAGE COMPARTMENT INTERIOR DOOR - EO-5B and O-5A MODELS

- The forward face of the baggage compartment door may be equipped with either a flight attendant's seat or beverage stowage rack.
- The baggage compartment is large enough to accommodate occupants and should be checked during a rescue operation.

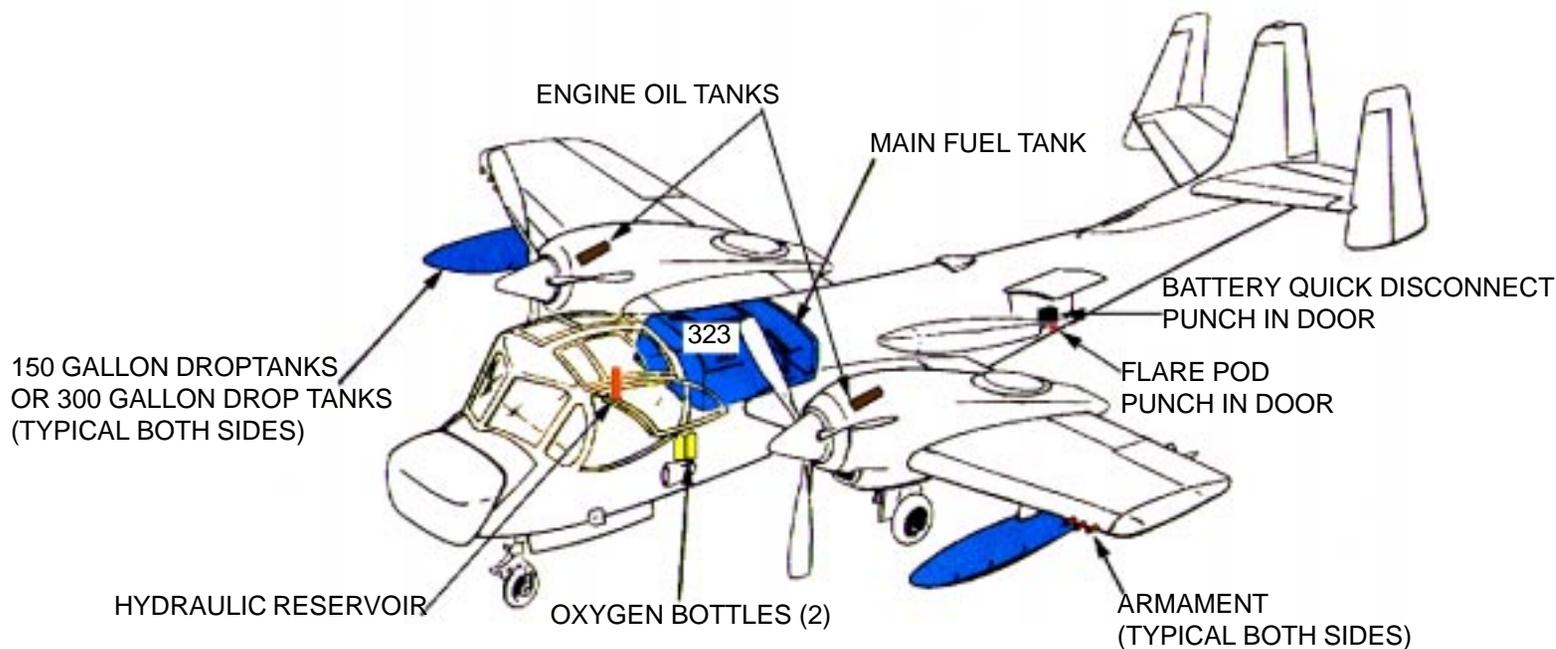
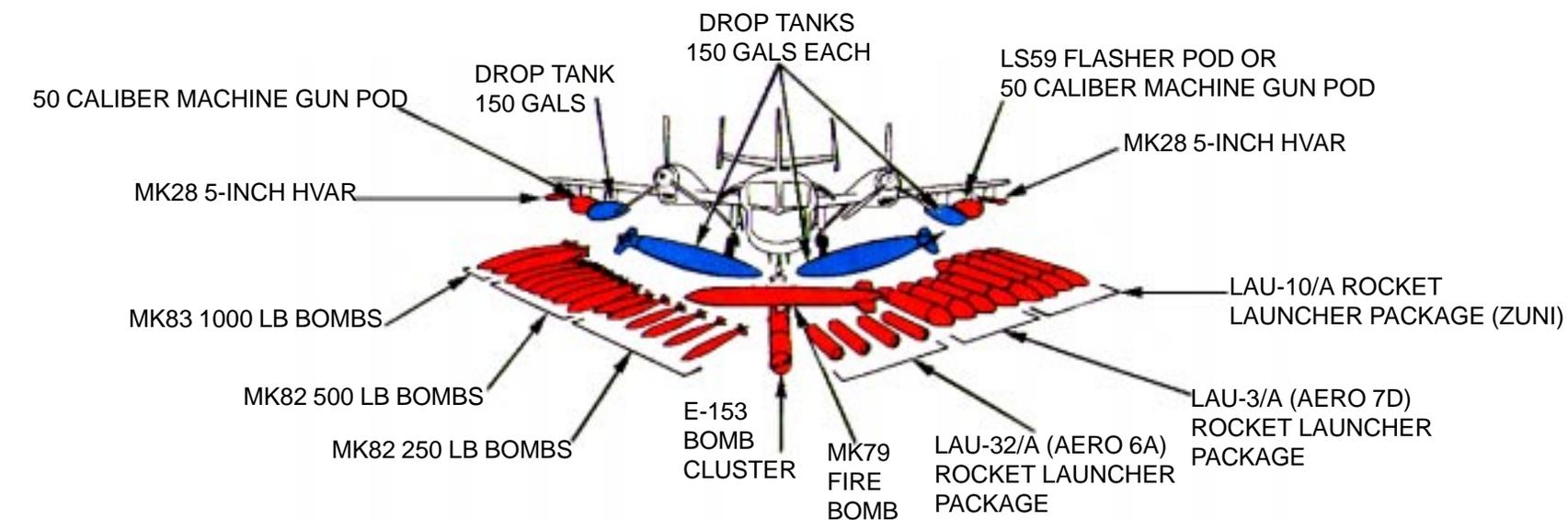
- BAGGAGE DOOR LATCH
- BAGGAGE COMPARTMENT DOOR
- BULKHEAD

7. BAGGAGE COMPARTMENT EXTERNAL DOOR

- Door is accessible through a hinged door on the right hand side (this door can only be opened from outside of the aircraft).



AIRCRAFT HAZARDS



SPECIAL TOOLS/EQUIPMENT

Power Rescue Saw
Dearing Tool

AIRCRAFT ENTRY

WARNING

Approach aircraft cautiously when engines are opening.
Rotating blades are difficult to see.

1. NORMAL ENTRY

- a. Push ladder release, located on lower fuselage below entrance hatches, IN (this releases boarding ladder). Do not stand in front of ladder while releasing.
- b. Lift exit release lock ring, located at bottom forward corner of pilot's and observer's entrance hatch, and rotate counterclockwise to unlock hatch.
- c. Push forward end of hatch handle, located on bottom edge of hatch, IN at forward end and pull OUT on aft end of handle.
- d. Lift entrance hatch to full up position.

2. EMERGENCY ENTRY

- a. Lift exit release lock ring, located at bottom forward corner of pilot's and observer's entrance hatch, and rotate counterclockwise to unlock hatch.
- b. Push forward end of hatch handle, located on bottom edge of hatch, IN at forward end and pull OUT on aft end of handle.
- c. Lift entrance hatch to full open position.

NOTE:

Pulling the exit release lock ring accomplishes two operations, it unlatches the escape hatch and fires an air bottle which forcibly ejects the hatch.

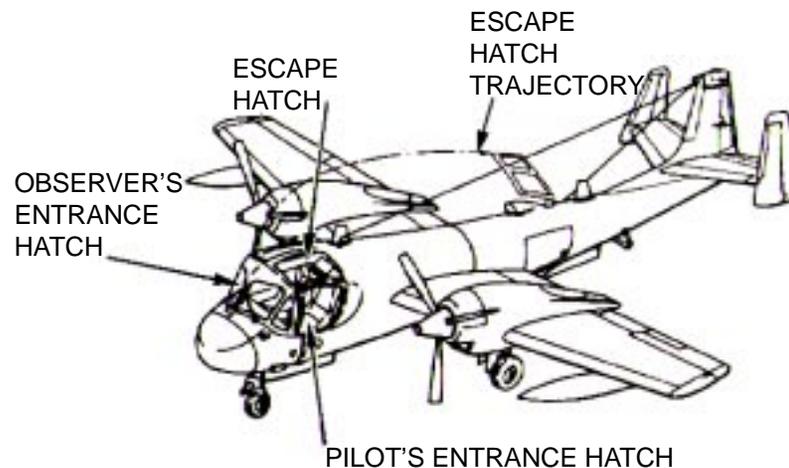
WARNING

Make sure all personnel are clear of escape hatch trajectory and impact area.

- d. Grasp exit release lock ring and rotate 90 degrees clockwise and pull to jettison canopy.

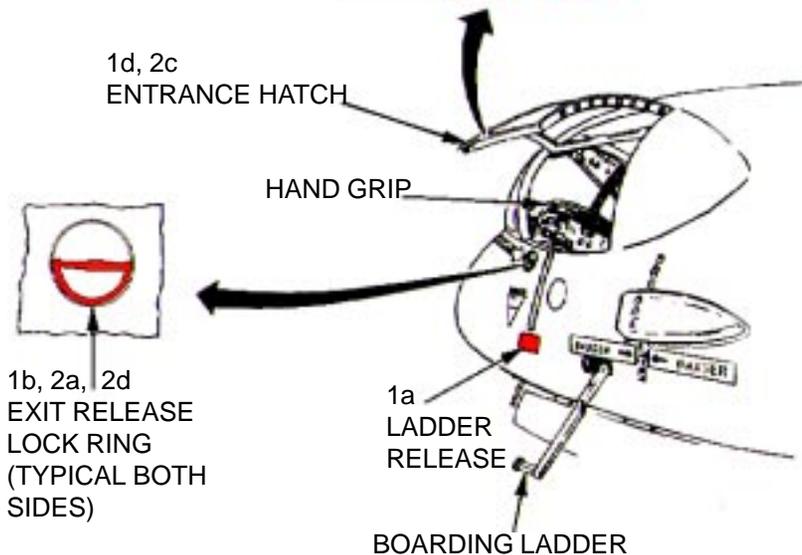
3. CUT-IN

- a. Cut-in around edge of cockpit access door Plexiglas as necessary.



1c, 2b

HATCH HANDLE
(TYPICAL BOTH SIDES)



ENGINE SHUTDOWN

WARNING

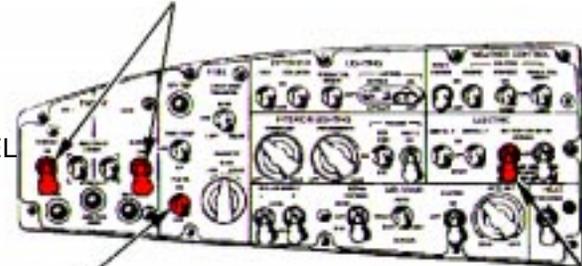
Do not touch any switches painted red or with red cover guards other than stores selector power and photo control salvo and power. Serious personnel injury could result.

1. ENGINE SHUTDOWN

- a. Retard power levers, located on control pedestal, to IDLE position.
- b. Pull propeller levers, located on control pedestal, aft to FEATHER position.
- c. Position engine master switches, located on left overhead control panel, down to OFF position.
- d. Position fuel pump switches, located directly below master switches, to OFF position.
- e. Pull out fire emergency control handles, located above center control panel, to shut off all fluids at engines.
- f. Set fire extinguisher switch, located under guard of fire emergency control handle, to relative engine if fire exists.
- g. Position battery switch, located on left overhead control panel, to OFF position.

1c ENGINE MASTER SWITCHES

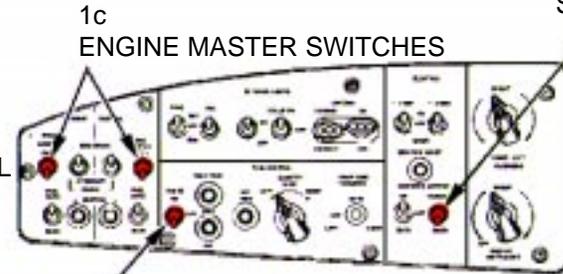
OVERHEAD CONTROL PANEL FOR OV-1D MODELS



1d FUEL PUMP SWITCH

1e BATTERY SWITCH

OVERHEAD CONTROL PANEL FOR OV-1B/C MODELS

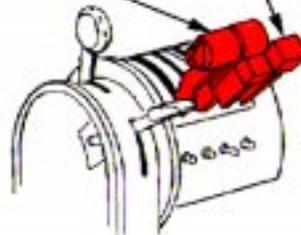


1c ENGINE MASTER SWITCHES

1d FUEL PUMP SWITCH

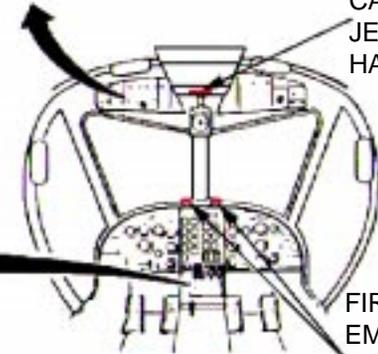
EMERGENCY CANOPY JETTISON HANDLE

1a POWER LEVERS
1b PROPELLER LEVERS



CONTROL PEDESTAL

COCKPIT ARRANGEMENT (FACING FORWARD)



FIRE EMERGENCY CONTROL HANDLES

SAFETYING EJECTION SYSTEM AND AIRCREW EXTRACTION

1. EMERGENCY SAFETYING EJECTION SEAT

- a. Lift red tab of face blind safety lock mechanism, located on top of seat, to safe upper firing handle.

WARNING

Dislodging the sear from the ejection gun firing mechanism will cause the seat to eject!

NOTE:

If safety pin is not available, a metal pin the size of a ten penny nail can be used. A threaded bolt with nut can also be substituted.

- b. Insert safety pin in ejection gun sear, located on top of seat directly aft of face blind locking mechanism.
- c. Remove safety pin from drogue gun trip rod, located on left rear of seat back, and insert safety pin in drogue gun safety pin hole located above trip rod.
- d. Lift lower firing handle safety guard, located on front center of seat, and install safety pin, to safe lower firing D-handle.

2. AIRCREW EXTRACTION

- a. Unlatch lap belt, remove shoulder harness, and survival kit belts from crewmembers.
- b. Move manual override release lever, located right side of seat, to aft position to release leg garters. If lever does not release garters, then squeeze garter buckles for manual release.
- c. Disconnect oxygen, comm, and G suit hose personnel leads, if applicable.
- d. Insure legs and feet are clear of all possible firing mechanisms during extraction process.

