surface and by adjacent stenciled description. A manually operated drain valve is frequently mounted below the tank to permit daily withdrawal of water and sediment from the tank bottom. During tank filling, draining, or overflow due to expansion of fuel within a filled tank, liquid fuel or vapor may discharge from these outlets and remain on the ground surface. These discharges are a constant fire hazard.

f. A selector valve permits the selection of the fuel tank desired for engine fuel supply or completely cuts off the fuel supply from the engine or engines. The selector valve may have an indicating dial showing two OFF positions. Either position cuts off the fuel supply from engine or engines.

g. In firefighting operations, it may become necessary to isolate the fuel supply to each engine in an effort to determine the source of fuel flow. This can be done by placing the cross feed valve, located adjacent to the pilots position, in OFF position. When switched to ON position, the discharge lines of the two main fuel pumps are interconnected and the pump remaining in operation supplies fuel to both engines.

h. The main fuel pump is engine driven and is located in the accessory section. A booster pump is an auxiliary fuel pump in the fuel line at some point between the fuel tank and the main fuel pump. Booster pumps may be manually or electrically operated. Switching the master or the booster pump switch to OFF will shut off the booster pump. The priming pumps are used to supply fuel to the cylinder head or manifold for engine starting. Excessive priming is a cause of fires during engine starting. Liquid fuel or rich vapor may be discharged into the exhaust system and ignited, or ignite in the cylinder and return through the intake, spreading flame through the induction system to the carburetor and air scoop.

i. Carburetor, throttle, and mixture controls are usually mounted on the control quadrant. If the engine is still running after a crash, the fuel supply can be cut off on float type carburetors by moving the mixture control to the IDLEOFF position. On injection fuel systems the fuel may be cut off by moving the mixture control to the MAXIMUM LEAN position, or by placing the idle cutoff switch in the OFF position, depending on the type of fuel injection system.

5–10. Oil System

a. Lubricating Oil. Lubricating oil commonly used for aircraft engines has viscosity ratings corresponding to SAE No. 40, 50, and 60. These oils do not vaporize at ordinary temperatures and their ignition temperature is higher than that of fuel; therefore, the fire hazard is relatively less than that of fuel. When lubricating oil is combined with fuel, as frequently happens in aircraft crashes, the fuel is readily ignited. The heat from the ignited fuel vaporizes and ignites the oil, producing an intense flame. The high viscosity of oil makes it more difficult to remove from a surface or from saturated debris. While oil is most readily ignited when combined with fuel, oil alone may be ignited by contact with hot engine parts, arcing electrical connections, or other sources of high temperature.

b. Oil Tanks. Tanks are of metal construction, ranging in capacity from 1 gallon (3.785 liters) to 45 gallons (170.3 liters). The oil tank may be located at various points in the wings or fuselage, but most commonly is immediately to the rear of the engine accessory section, just forward of the rear firewall. Filler necks and level cocks are installed on the tank for filling and determining oil level within the tank. The location of the filler neck is indicated by stenciling on a nearby surface.

c. Oil Cooler. Many aircraft engines have oil coolers to lower the temperature of the oil in high temperature operation. The most common type, of cooler is a system of tubes or a cellular radiator through which the oil is circulated. This cooler is usually located within the engine nacelle.

d. Oil Pump. The oil pump is in the accessory section of the engine and is engine driven. Normal operating pressures do not usually exceed 100 psi (7 kilograms per square centimeter) and may be much less. Pressure is indicated by a gage on the pilot's instrument panel.

5-11. Oxygen System

All aircraft intended for operation at high altitudes are equipped with breathing *oxygen* for each crew member and passenger. Oxygen lines run from a permanently mounted storage tank, or tanks, to crew and passenger positions.

a. Tanks, Tubing, and Controls.

(1) The actual quantity of oxygen carried on an aircraft is of only secondary interest to the firefighters. They must be as cautious with a small quantity as with a large quantity.

(2) Oxygen storage tanks usually are painted

green. Tubing from main oxygen storage tanks to outlet stations generally contains oxygen at all times. Master control valves normally are kept in the open position.

(3) Oxygen is stored up to 1,800 psi (126 kilograms per square centimeter). This pressure exists throughout the distribution tubing system down to the outlet stations. Rupture of tubing anywhere between these points will free oxygen under high pressure.

b. Fire Hazard.

(1) Two hazards might occur from oxygen equipment : explosion, and released oxygen feeding the fire.

(a) Explosion may occur from rapid heating and expansion of the cylinders or from any traces of grease or oil that may come in contact with oxygen. The explosion may disrupt other equipment and cause a fire by breaking fuel lines, electrical cables, etc.

(b) Release of oxygen during a fire results in acceleration of burning and great intensity of heat. Escape of oxygen during crash fires results in rapid spread of fires and resistance to extinguishing agents.

(2) Every precaution must be taken to protect oxygen equipment from damage during forcible-entry operations, and if possible, to protect oxygen from exposure to heat or fire. Firefighters should be familiar with the location and operation of oxygen master control valves, and if possible, should close these valves during fire.

WARNING

DO NOT HANDLE OXYGEN EQUIPMENT OF ANY KIND WITH GREASY OR OILY RAGS OR HANDS. OXYGEN UNDER PRESSURE, IN CONTACT WITH GREASE OR OIL, WILL CAUSE AN EXPLOSION OR FIRE.

5-12. Electrical System

The electrical system on an aircraft supplies current for lights, booster pumps, hydraulic pumps, propeller or rotor pitch gears, electronic equipment, etc.

a. *Electrical Wiring.*

(1) All aircraft have an extensive wiring system. The principal fire hazard is the danger of a short circuit or arcing.

(2) In a crash, it is probable that a large number of electric wires will be torn apart or damaged. Movement of an aircraft after a crash may produce a spark large enough to ignite fuel vapors. A crashed aircraft should be moved only when necessary for rescue operations, or when a fire is of such proportions that the additional danger from a short circuit is immaterial.

b. Batteries.

(1) The location of batteries varies with the type of aircraft. The batteries may be in the fuselage, wings, or engine nacelles. Special equipment, such as certain types of radar, is provided with separate batteries. These auxiliary batteries are not usually located in the same compartment as the main batteries.

(2) Before an aircraft is moved after a crash or after a fuel spill, disconnect the batteries and tape the leads, if possible, as a precautionary measure against arcing or short circuits. The proper way to disconnect a battery is to disconnect the ground wire first in order to eliminate the danger of arcing. Improper disconnection may produce an arc that will ignite fuel vapors.

c. *Ignition.*

(1) On reciprocating engine aircraft, the ignition switch usually means the magneto switch. In almost all reciprocal engines the ignition siwtch is operated by magnetos. Most aircraft are equipped with dual magnetos.

(2) If the aircraft engines are not running after a crash or fuel spill, the position of the ignition switch is of no importance to firefighters since the magnetos are driven by the engine and stop when the engine stops. If the engine is running after an accident, it is usually safe from a fire hazard viewpoint to stop the engine by first cutting off the fuel at the mixture control or fuel valve before cutting off the ignition switch. The ignition switch usually is separate from the master switch. Aircraft fire rescue personnel should always check the position of the master switch and beware of a hot magneto. A “hot mag” can cause the engine to fire even if the master switch is in off position.

(3) The battery switch usually is referred to as the master switch. The master switch is the principal electrical swtich on an aircraft. All electrically operated units are connected to the power source through the master switch. The master switch is independent of separate equipment switches and may be used to cut off electric current simultaneously from all cables and equip-

ment. In a crashed aircraft and in case of fuel spill, it is important that the master switch is immediately placed in OFF position.

d. Auxiliary Powerplants.

(1) Some aircraft have auxiliary power-plants which are used to start the aircraft engine or engines. The axuiliary powerplants may be operated after takeoff to furnish an additional source of electrical power. The unit consists of an engine and an engine-driven generator.

(2) There is little fire hazard from the auxiliary powerplant electrical equipment but a fire hazard exists because of the engine. The auxiliary powerplant generator is mounted on the engine.

5-13. Anti-Icing System

a. The anti-icing system prevents the formation of ice on the propellers, carburetor, and windshield. For propellers and windshield, nonflammable fluids are used in combat zones, but in noncombat zones, alcohol (85 percent) and glycerine (15 percent) are used. For the carburetor, alcohol alone is used.

b. Locations and sizes of tanks containing anti-icing fluids vary with the type of aircraft. Separate tanks are provided for alcohol and alcohol-glycerine mixtures. Tubing extends from the tank to the forward part of the aircraft.

c. To prevent icing of propellers, anti-icing fluid is pumped from the tank to a slinger ring at the base of the propeller. The liquid then runs down the blades by centrifugal force. A similar arrangement is used to prevent icing of windshields. Icing of a carburetor occurs inside the carburetor; therefore, alcohol is routed directly to the carburetor and mixed with the fuel.

d. The fire hazard of anti-icing fluids is less than the fire hazard of aircraft fuel, but they should be treated with caution in the event of an aircraft crash. The most important points for the firefighter to know are the location of tanks, and the fact that the tank and tubing carry flammable liquids.

5-14. Heater System

In the combustion type heater, a fuel vapor-air mixture is burned in a hermetically sealed chamber. Fuel for the heater is routed from the main fuel system to the heater. The heater is usually located in the center fuselage section. The fuel vapor-air mixture is ignited by an electric igniter, and is controlled by the heater control panel. The fire hazard from the combustion type heater results from the small quantity of fuel vapor-air mixture present in the heater.

5-15. Crew Entrapment

The controls for ailerons, rudder, elevators, trim tabs, rotors, and rotor blades are usually in the form of cables, mechanical levers, or rod linkages which pass from the pilot's position through the wings or fuselage to the control surfaces. These controls are actuated by a pilot's control stick or a wheel and drum type control. A crash will sometimes jam the cables or mechanical linkages in a fixed position, so that the control stick or wheel pins the pilots within the pilot's compartment. In such cases it may be necessary to cut the cables or mechanical linkages in order to release entrapped personnel.

5-16. Rockets

Rockets still on their launchers are extremely dangerous. Every precaution should be taken to stand clear both fore and aft of rocket installations. Rocket flash which occurs upon ignition is usually fatal at short ranges behind the rocket. The auto-ignition temperature of solid rocket propellants is about 392° to 575° F. (200°—300° C.).

a. The effects of a propellant explosion are minor. The usual result is a split motor tube and an ejection of flame and gas from the motor through the nozzles and the split. The exhaust gases from the burning propellant are about 4,000°F. (2,204°C.) and will add to the intensity of the existing fire. If the high temperature gas is directed against the aircraft surface, penetration may occur. This adds to the fire hazard due to the fact that fuel tanks may be ruptured or fire spread to other sections of the aircraft.

b. Ignition of the propellant could cause the rocket to fire. The rocket will probably follow a normal path and be armed when it stops. Extreme care must be taken in handling rockets fired in this manner.

5-17. Pyrotechnics

a. Pyrotechnics are used for signals, warnings, lighting for photography, bombing or landing, or other special purposes. They consist of various types of flares, signal lights, smoke grenades, and similar devices.

b. Pyrotechnics contain rapid-burning powder, magnesium, or flammables which are readily discharged or ignited. Pyrotechnics may contain small explosive charges that will spread fire quickly throughout the aircraft.

c. Pyrotechnics may be located anywhere on the aircraft. In single-seated aircraft, hand-launched pyrotechnics are located conveniently for the pilot. Parachute flares are released by remote controls located in the pilot's compartment and are normally carried in special compartments in the side of the fuselage.

d. Whenever possible, pyrotechnics should be promptly removed from a crashed aircraft. Failure to do so may result in the discharge of these flares and signals with great increase in the intensity of an existing fire, or in the ignition of a fire which otherwise might not have occurred.

Section III. EMERGENCY PROCEDURES

5-18. Traffic Pattern

a. The traffic pattern prescribes direction and altitude, so that aircraft landing or taking off will follow prescribed courses, thereby avoiding confusion and collisions. The traffic pattern is shifted according to the direction of the wind. A typical traffic pattern is shown in figure 5-8.

b. Movement within the traffic pattern is al-

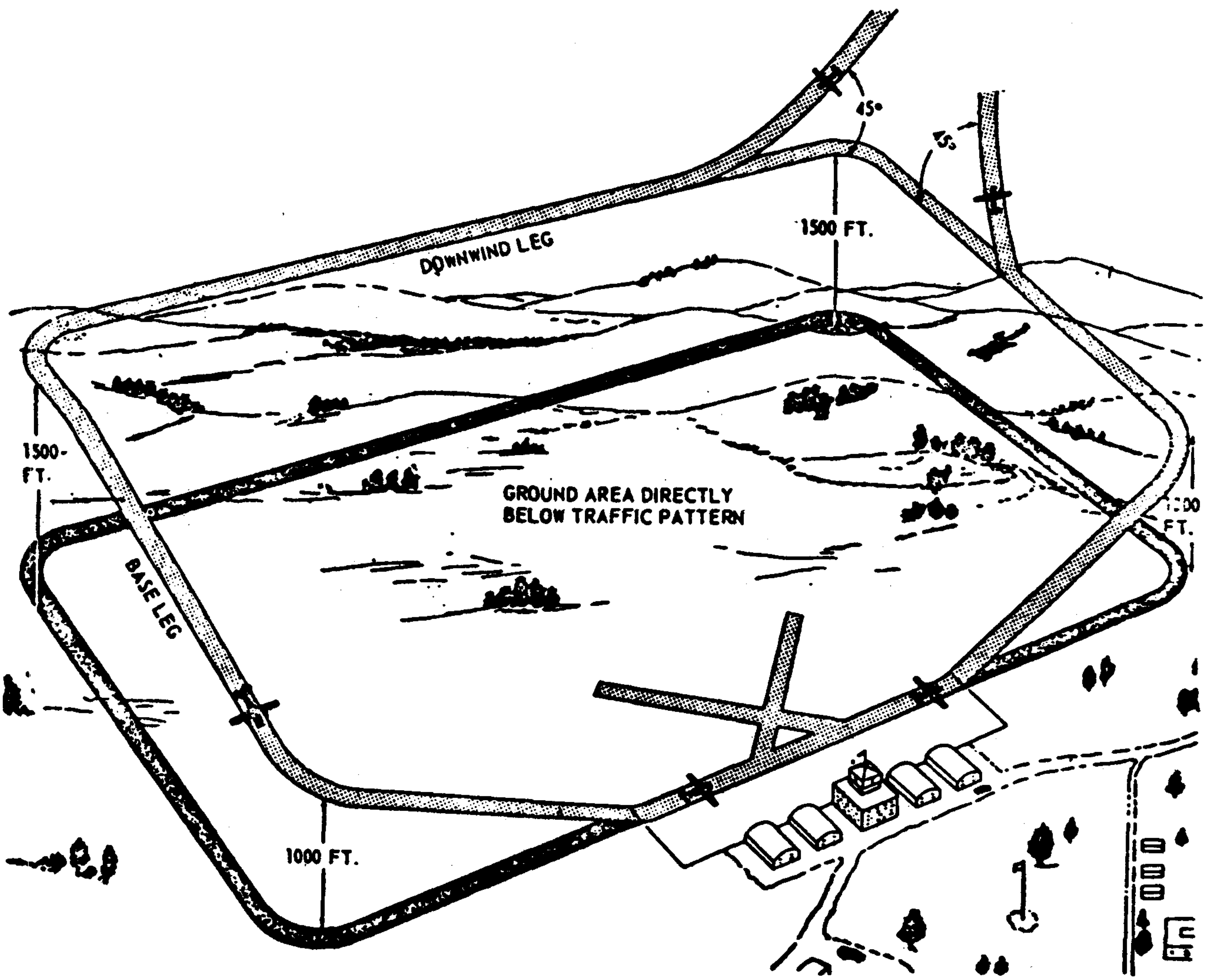


Figure 5-8. Typical traffic pattern.

ways in the same direction regardless of arrival or departure from the airfield, because landings and takeoffs are both made into the wind. A typical traffic pattern has dimensions of 3 miles (4.8 kilometers) at 1,500-foot (457.5meter) altitude, but other dimensions and altitudes may be used, established according to local conditions.

c. The typical traffic pattern consists of a counterclockwise rectangular flow of aircraft about the airfield. One side consists of the runway, takeoff leg, and approach leg along the line of the runway nearest the prevailing wind direction. The takeoff leg continues with a 90° turn, which is crosswind. On the crosswind leg an aircraft departing the traffic pattern would turn 45° away from the flow of traffic. To continue in the traffic pattern, another 90° turn is then made and this places the aircraft parallel to the runway and forms the downwind leg. An aircraft arriving at the airfield would enter the pattern at a 45° angle to the downward flow of traffic. The landing aircraft continues with a 90° turn, forming the base leg. At this point the aircraft normally begins to descend. The final 90° turn is then made to place the aircraft in a position to land on the runway. The traffic pattern will occasionally be clockwise or as published by the airfield.

5-19. Coordination Between Military, Civil, and Municipal Organizations

Coordination and cooperation between local military, civil airfield, and municipal firefighting organizations is most desirable. Mutual assistance agreements between responsible activities are encouraged. Local commanders should cooperate fully with Forest Service, state, and local fire officials in developing plans to furnish assistance in firefighting and rescue to an extent which would not impair the safety of the military installation involved.

5-20. Emergency Communications System

a. An emergency aircraft rescue communications system must be provided to permit rapid and reliable notification of impending and actual aircraft accidents to firefighting and rescue crews, ambulance crews, and other personnel requiring such notification. The system must be capable of conveying full initial information on the emergency so that crash trucks and ambulances can be dispatched quickly and efficiently. They system must also provide continuing intercommunication between mobile units and the fixed control stations throughout the emergency.

b. A complete emergency communications system should consist of the following:

(1) Principal fire truck and ambulance fixed control stations.

(2) Provisions for monitoring communications between aircraft and control tower.

(3) Direct emergency wire intercommunication between control tower and principal crash truck and crash ambulance fixed control stations.

(4) Secondary emergency telephone or similar wired system for notifying essential supporting personnel.

c. Operation of the two-way radio sets is simplified to the extent that the driver of the fire truck can operate them. A qualified radio operator is not necessary.

5-21. Training

Maintenance, refuleing, and servicing personnel on the flight line, supporting aircraft operation, will be instructed in the types of extinguishers and their operation, care, and proper application ofr extinguishment of fires. Firefighters assigned to aircraft fire rescue work must become thoroughly familiar with and have a working knowledge of the requirements contained in AR 95-26 and AR 95-1.

5-22. On-The-Airfield Emergency

Normally the control tower operator will obtain the first information of impending emergencies or accidents. He immediately notifies the fire rescue crew of the situation, giving exact information on the location and status of the event together with any pertinent details. Upon receipt of this notification, all crash crews and ambulances on alert will respond immediately. If the situation is an impending emergency, they assume standby positions at predetermined locations alongside, but clear of, the runway.

NOTE

Notification by the control tower operator does not relieve fire rescue crews on alert of the responsibility of maintaining constant observation since, particularly during active flying periods, many instances may escape the initial notice of the tower operator.

5-23. Off-The-Airfield Emergency

a. Maps of the installation and surrounding area of about 15-mile (24-kilometer) radius

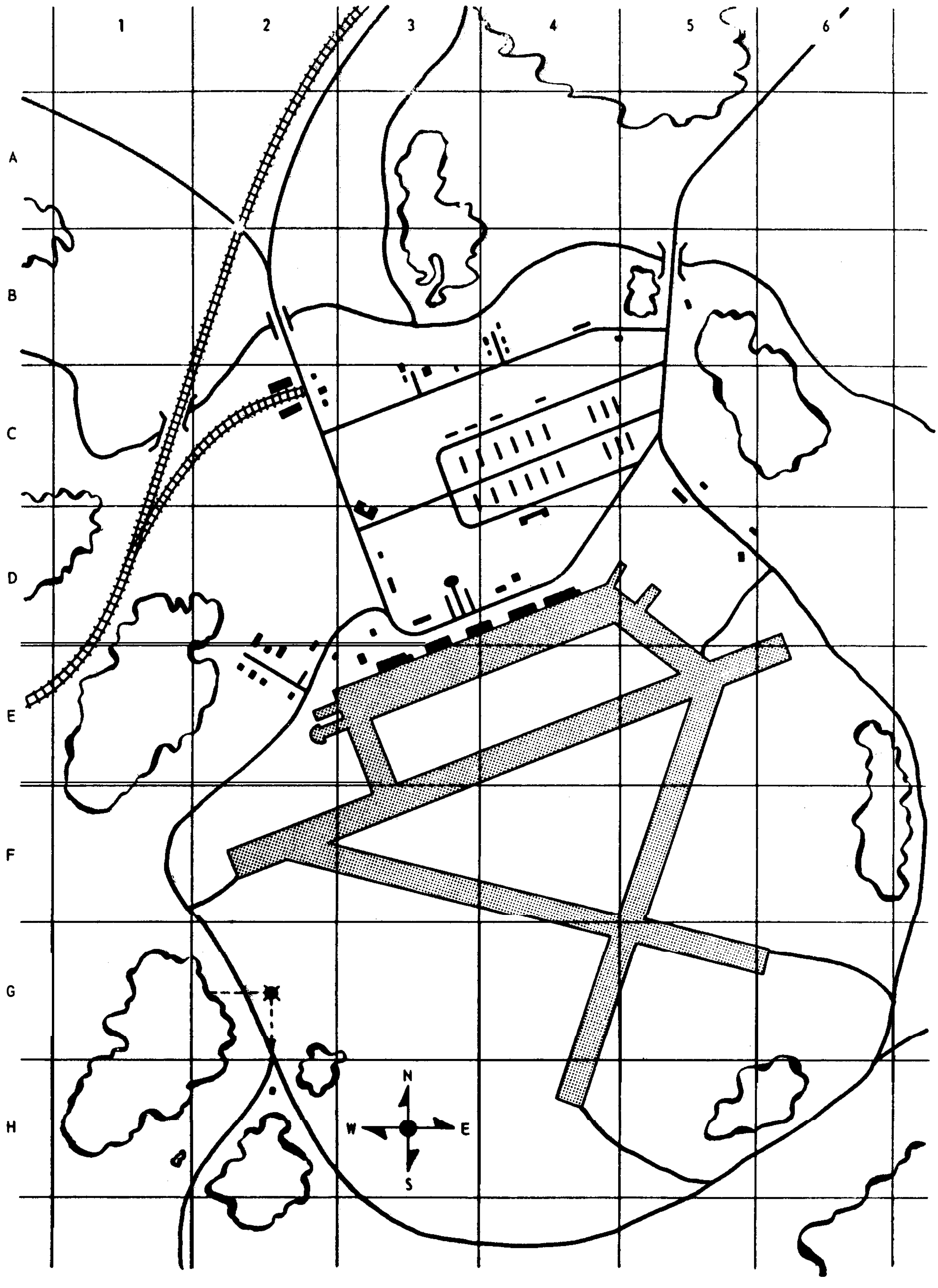


Figure 5-9. Grid map.

should be available. These maps should be ruled off in numbered grids, and compass headings marked on them generally as shown in figure 5-9. This will make it easier to locate any point within the map area.

b. When necessary, an aircraft will be used to locate and guide firefighting and rescue trucks to the scene.

c. Aircraft are guided by radio contact and visual and audible signals.

d. When not directing fire rescue trucks, aircraft will circle crashed aircraft until relieved, fuel supply permitting.

5-24. Emergency Rescue Procedures

a. *Aircraft Entrances.*

(1) Depending on the aircraft model, entrance doors may be found on either side or both sides of the fuselage. They usually open outward and are hinged on the forward side so the airstream tends to close the door. The opposite side is fastened by a latch which usually is operated by pulling the door handle. On most aircraft, an emergency release mechanism is installed at the hinge side of the door, and is operated by pulling the jettison handle.

(2) Escape hatches or escape panels, provided on some aircraft, are made either of plexiglas or metal. The hatches usually have an external release handle with the location and operating procedures marked on the adjacent surface of the fuselage.

(3) Emergency cut-in areas, indicated by a broken yellow line, are provided on some aircraft. This marking is a safety guide which designates a comparatively obstacle-free area where tools used for cutting fuselage skin will not meet heavy structural members or rupture fuel, electrical, or oxygen lines that can cause additional fire or an explosion. Extreme care should be used when cutting fuselage skin to prevent sparks which might ignite fuel vapors.

(4) The aircraft may have other openings intended primarily for other specific purposes, but which may be used under certain circumstances for emergency entrance.

b. Rescue of Personnel.

(1) After entrance is gained, the firefighters should first locate and determine the condition of injured personnel. If immediate hazards are beyond control, personnel should be evacuated immediately. If immediate evacuation is not possible due to wreckage or twisted controls, the firefighters should attempt to keep the fire away from the area where personnel are trapped. Extreme care should be used when removing personnel pinned in wreckage to prevent aggravating existing or causing additional injuries. If possible, medical advice should be obtained before moving injured personnel.

(2) All Army aircraft have seat safety belts and many have shoulder harnesses. The safety belts and shoulder harness are constructed of very strong, webbed material and are difficult to cut; therefore, the rescueman should be familiar with the release procedures. The safety belt and shoulder harness (fig. 5-10) are released by unlocking the inertia reel and pulling up on the'release handle. The inertia reel is unlocked by placing the inertia reel lock lever at the locked and then the unlocked position. If necessary, the safety belt and shoulder harness may be cut as shown in figure 5-11. Some aircraft, such as the UH-1C and UH-1D model helicopters, are equipped with tilt-back pilot and copilot seats to aid in extracting injured personnel from a crowded cockpit. These seats are identifiable by two red handles located at the back of each side of the seat. Both handles must be pulled down to tilt back the seat.

(3) After releasing the safety belt and shoulder harness, it may be necessary to remove the parachute from injured personnel. Three basic types of parachutes are used: the seat type, the back type, and the attachable chest type. These parachutes are strapped to the personnel by means of a parachute harness which may have either three clip-type fasteners or one quick-release box. The parachute harness with clip-type fasteners (fig. 5-12) is the most commonly used. The parachute harness may also have one or two parachute canopy release mechanisms in addition to the clip-type fasteners. The purpose of the release mechanism is to release the parachute canopy and not the entire harness. The release mechanism may be located either on the left-hand parachute canopy strap or on both straps. Typical parachute release mechanisms with operating procedures are shown in figure 5-13. The parachute harness equipped with the quick-release box provides a fast and efficient method of releasing the personnel, as shown in figure 5-14.

5-25. Portable and Fixed Fire Protection on Aircraft

Fire protection equipment installed on aircraft may consist of one or more portable fire extin-

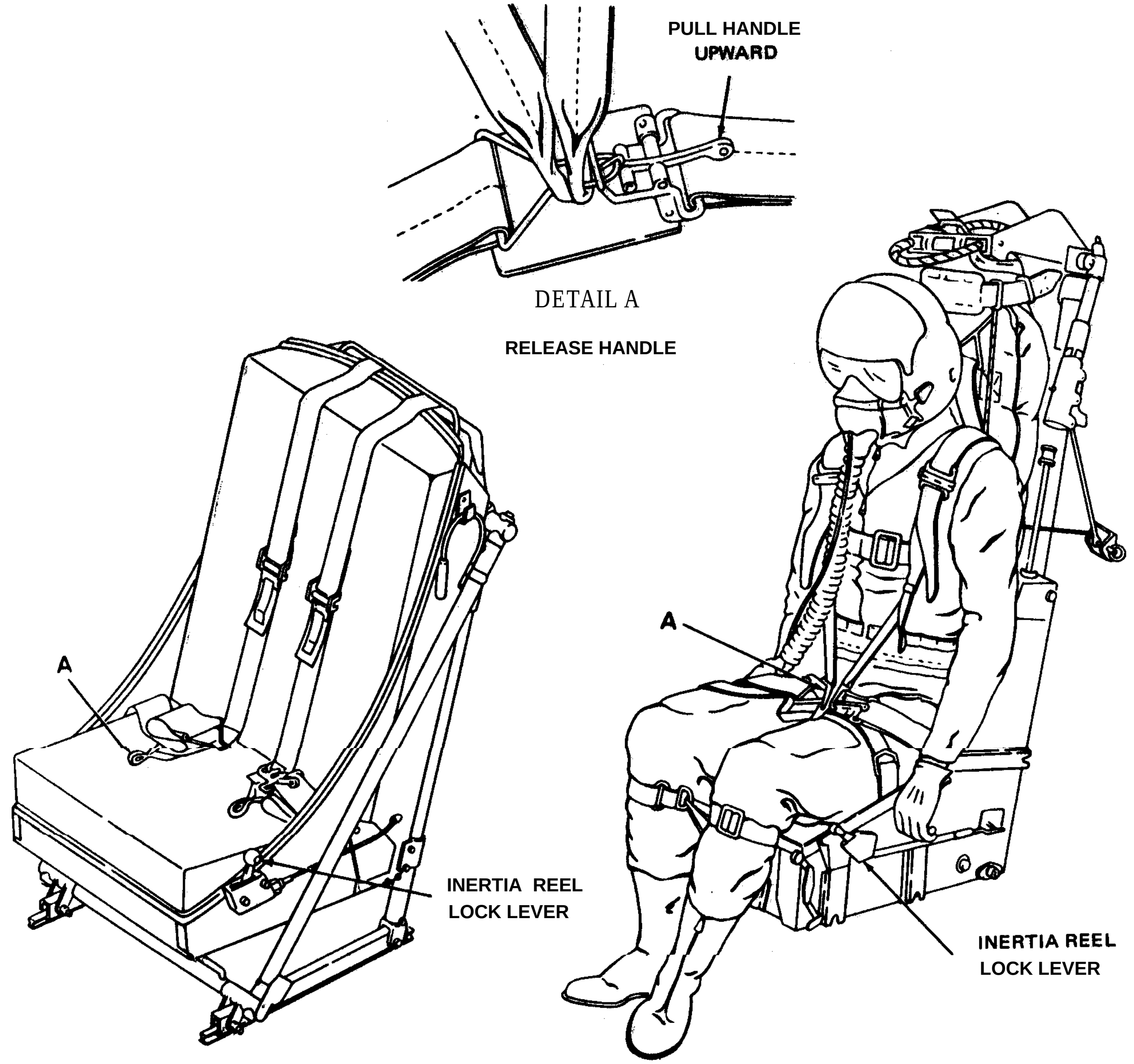


Figure 5-10. Safety belt and shoulder harness-typical.

guishers. On larger aircraft this protection may be supplemented by a fixed fire extinguisher system.

a. *Portable Fire Extinguishers.* Portable CF3Br fire extinguishers are mounted for quick access. They usually are located within the fuselage at or near crew member positions or adjacent to specific equipment hazards.

b. Fixed Fire Extinguisher System. The majority of fixed fire extinguisher systems are installed in multiengine aircraft and are usually the one-shot type. The system consists essentially of the following components:

(1) One or more cylinders for storing extinguishing agent.

(2) Distribution lines leading to protected areas.

(3) Controls for releasing extinguishing agent.

5-26. Aircraft Familiarization

a. The different types of aircraft make the job of firefighting and rescue more complex. To carry it out successfully, the firefighter should be thoroughly familiar with the following:

(1) Visual identification of various types of aircraft.

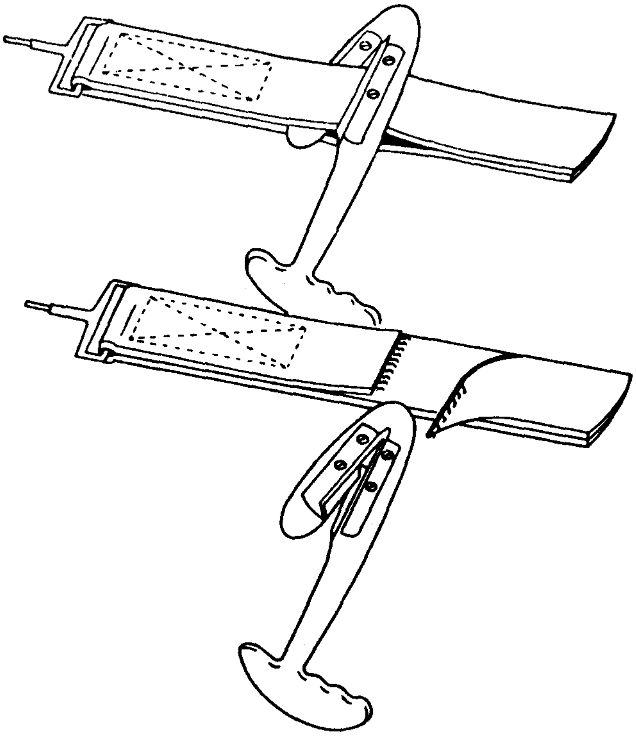


Figure 5–11. Method of cutting double harness.

(2) Location of personnel and aircraft entrance points.

(3) Fuel tank locations and capacities.

(4) Oil tanks, hydraulic reservoirs, and anti-icing reservoir locations and capacities.

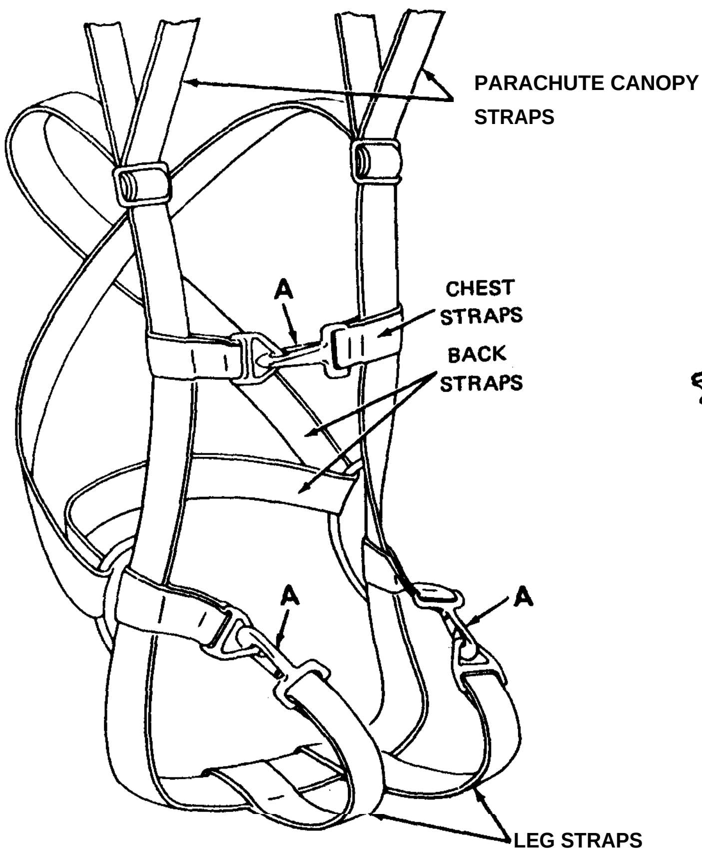
(6) Battery location.

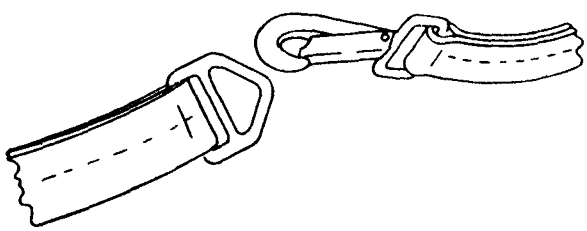
(6) Oxygen cylinder location.

(7) Basic features of ejection seat, its operation, and precautions necessary to prevent accidental ejection.

(8) Preservation of evidence that could possible aid in determining cause of accident.

b. To aid in this familiarization, figures 5–15 through 6-49 illustrate the general arrangement of standard Army aircraft and several Air Force aircraft, and the emergency procedures to be followed for each.





DETAIL A
CLIP-TYPE FASTENER

Figure 5-12. Parachute harness with clip-type fasteners.

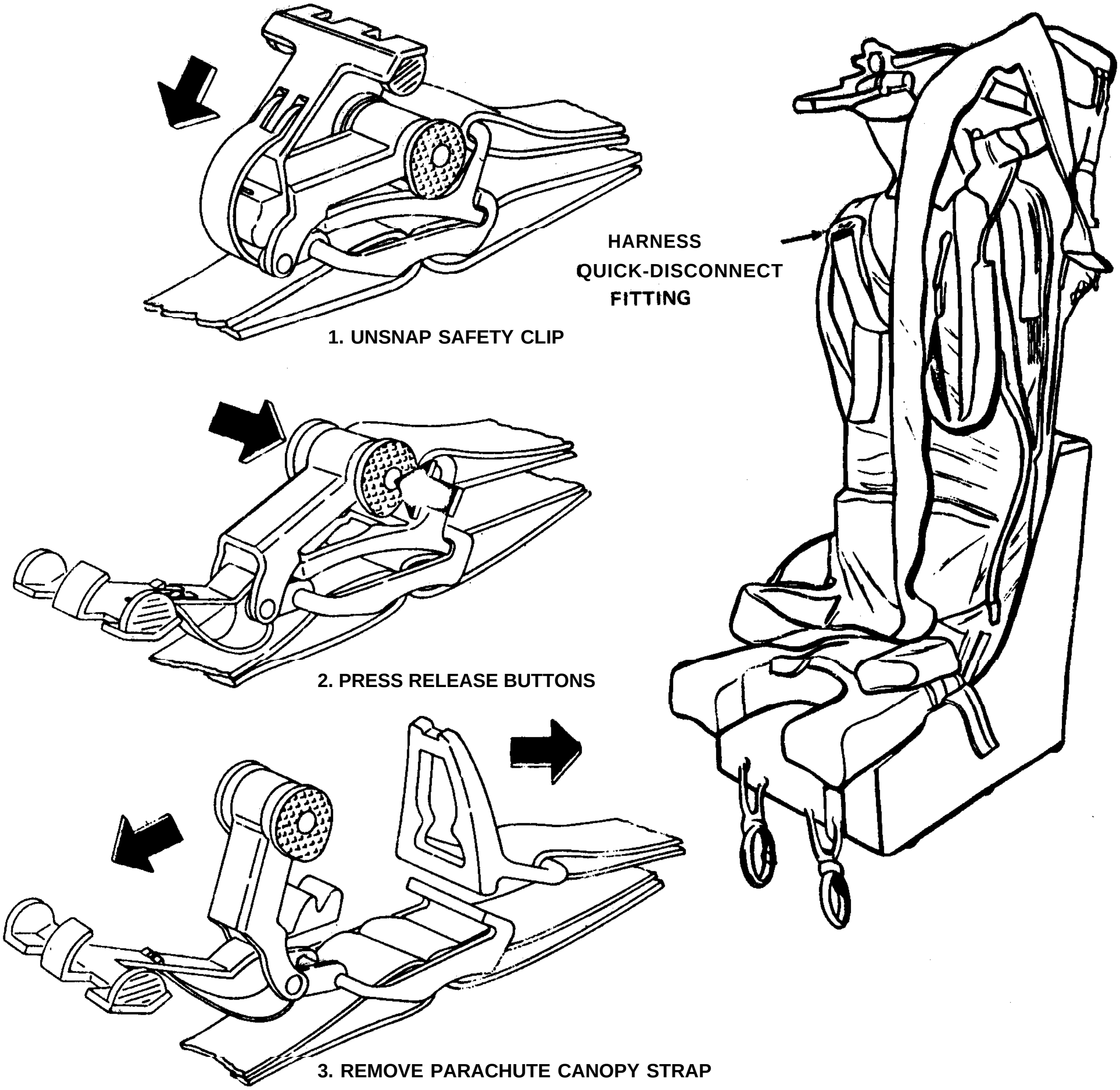


Figure 5-13. Parachute canopy release mechanism—typical.

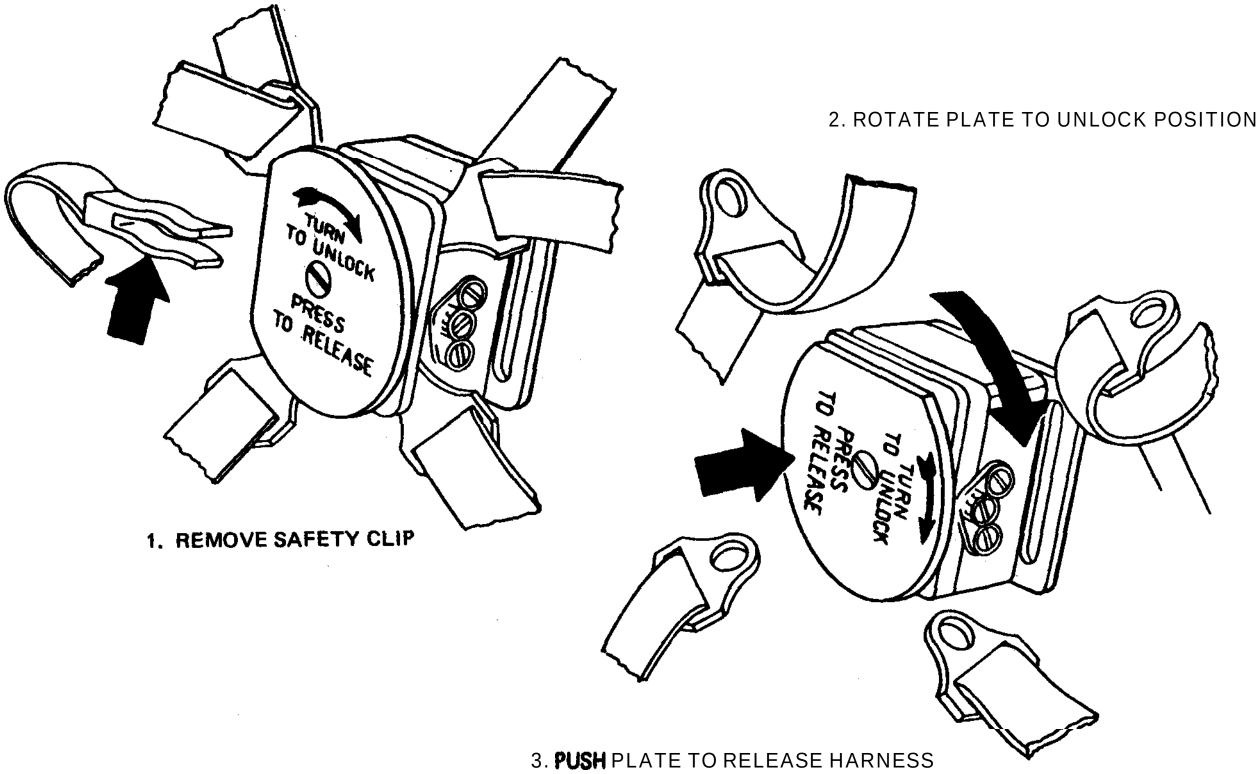
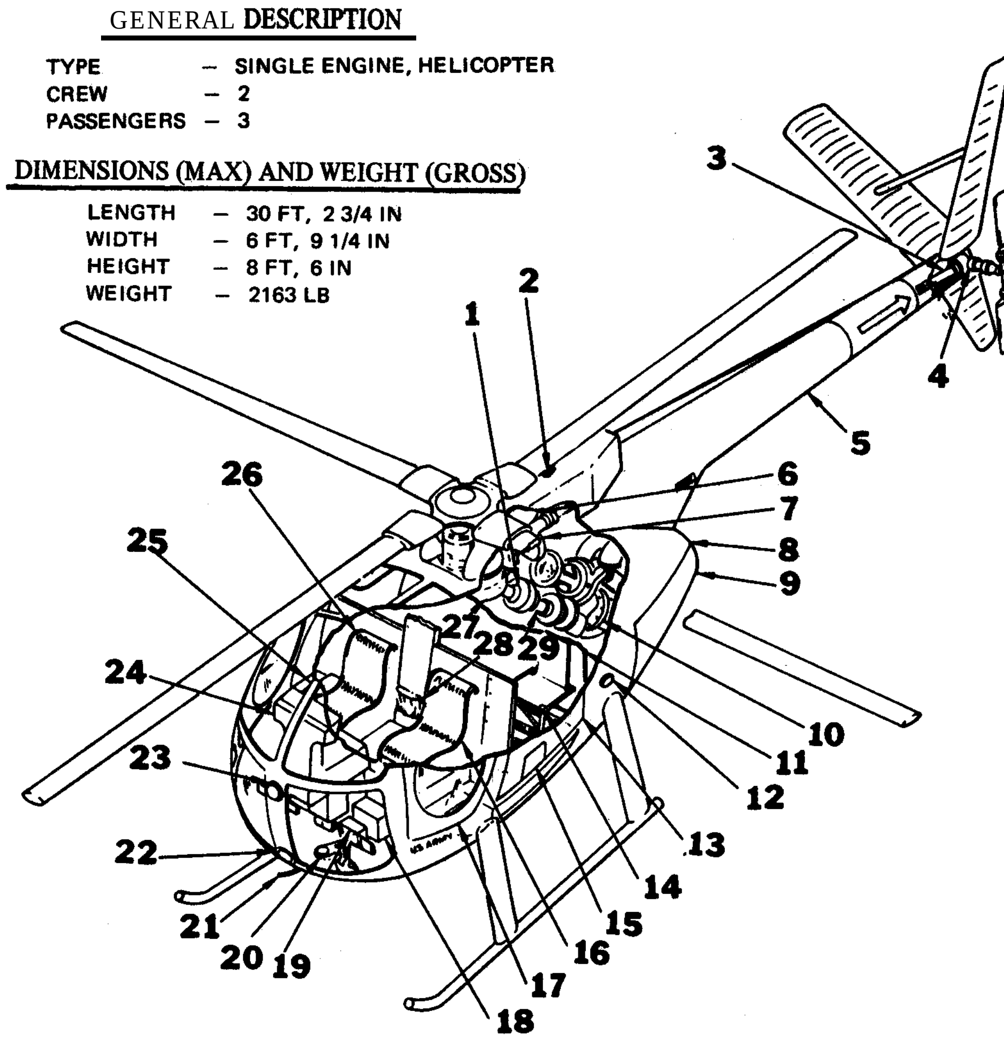


Figure 5-14. Parachute harness quick-release box.



1. OIL COOLER 6LOWER
2. UPPER ANTICOLLISION LIGHT
3. TAIL ROTOR DRIVE SHAFT
4. TAIL ROTOR TRANSMISSION
5. TAIL BOOM
6. ENGINE OIL TANK
7. OIL COOLER
6. ENGINE EXHAUST PIPE
9. ENGINE ACCESS DOOR
10. ENGINE
11. FIREWALL
12. LH NAVIGATION LIGHT
13. LH CARGO COMPARTMENT DOOR
14. TROOP SEAT
15. ARMAMENT ACCESS DOOR
16. COPI LOTS SEAT
17. LH PILOTS COMPARTMENT DOOR
16. RADIO AND NAVIGATION EQUIPMENT
19. BATTERY
20. LOWER ANTICOLLISION LIGHT
21. PITOT TUBE
22. LANDING/HOVER LIGHT
23. EXTERNAL AIR INLET
24. INSTRUMENT PANEL AND CONSOLE
25. EXTERNAL POWER RECEPTACLE
26. PI LO& SEAT
27. MAIN ROTOR TRANSMISSION
2B. MAP CASE (CHECKLIST)
29. MAIN DRIVE SHAFT

Figure 5-15. Model *OH-6A* aircraft.

EMERGENCY PROCEDURES

EMERGENCY ENTRANCE IS GAINED THROUGH CABIN DOORS AND PASSENGER DOORS. IF DOOR FAILS TO OPEN, BREAK WINDOWS OR CANOPY TO GAIN ACCESS TO DOOR JETTISON HANDLE,

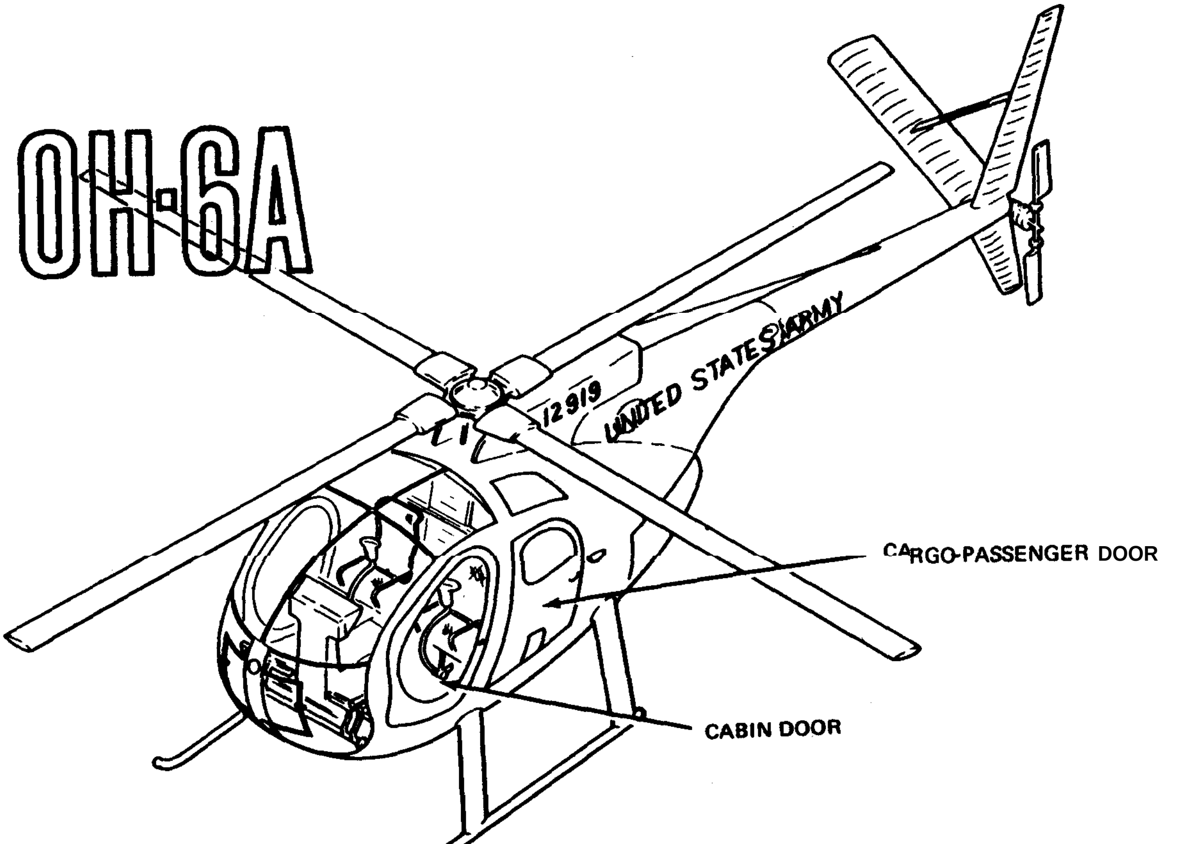


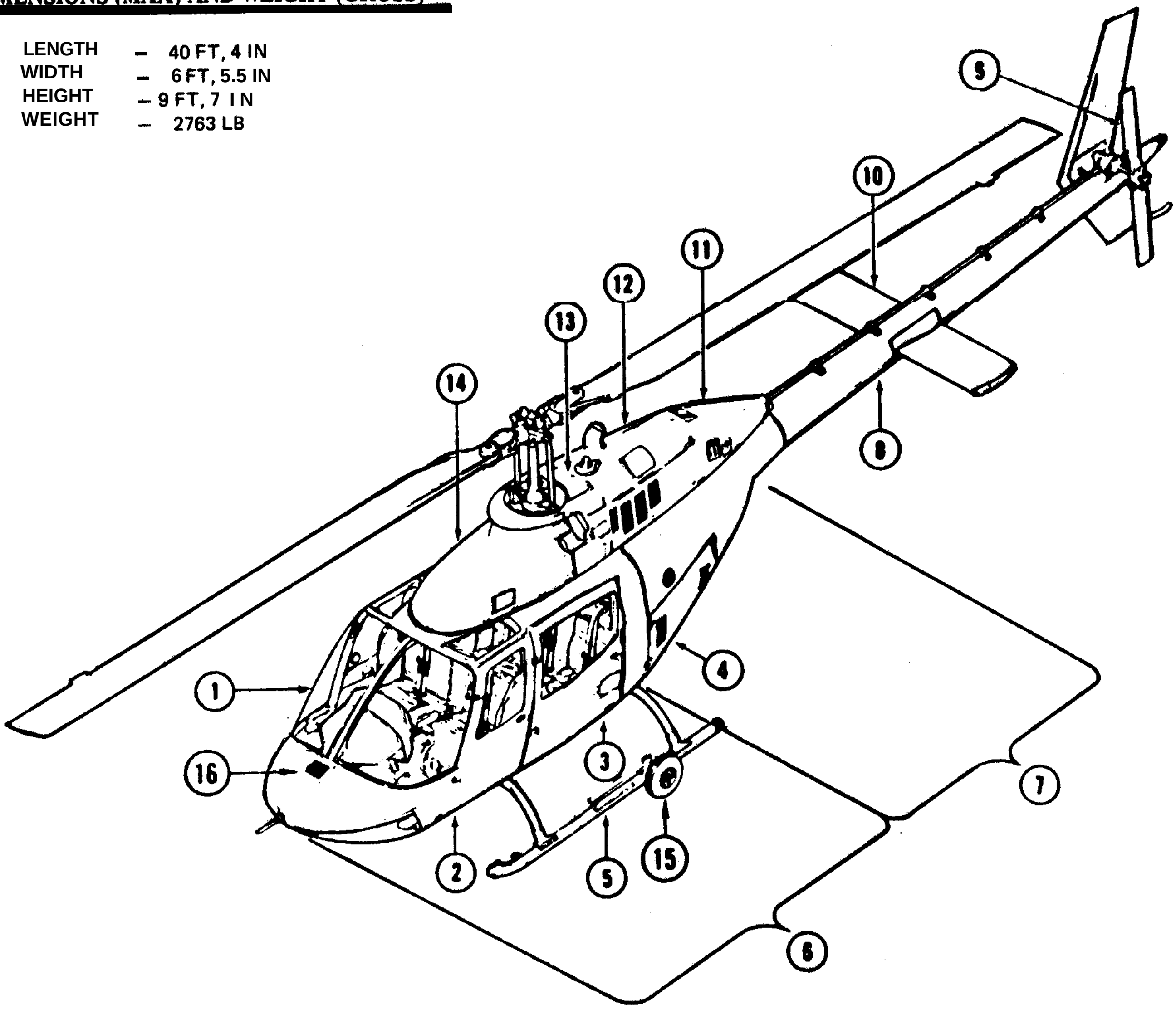
Figure 5-15. Model OH-6A aircraft—Continued.

GENERAL DESCRIPTION

TYPE – SINGLE ENGINE, HELICOPTER
CR&W – 2
PASSENGERS – 2

DIMENSIONS (MAX) AND WEIGHT (GROSS)

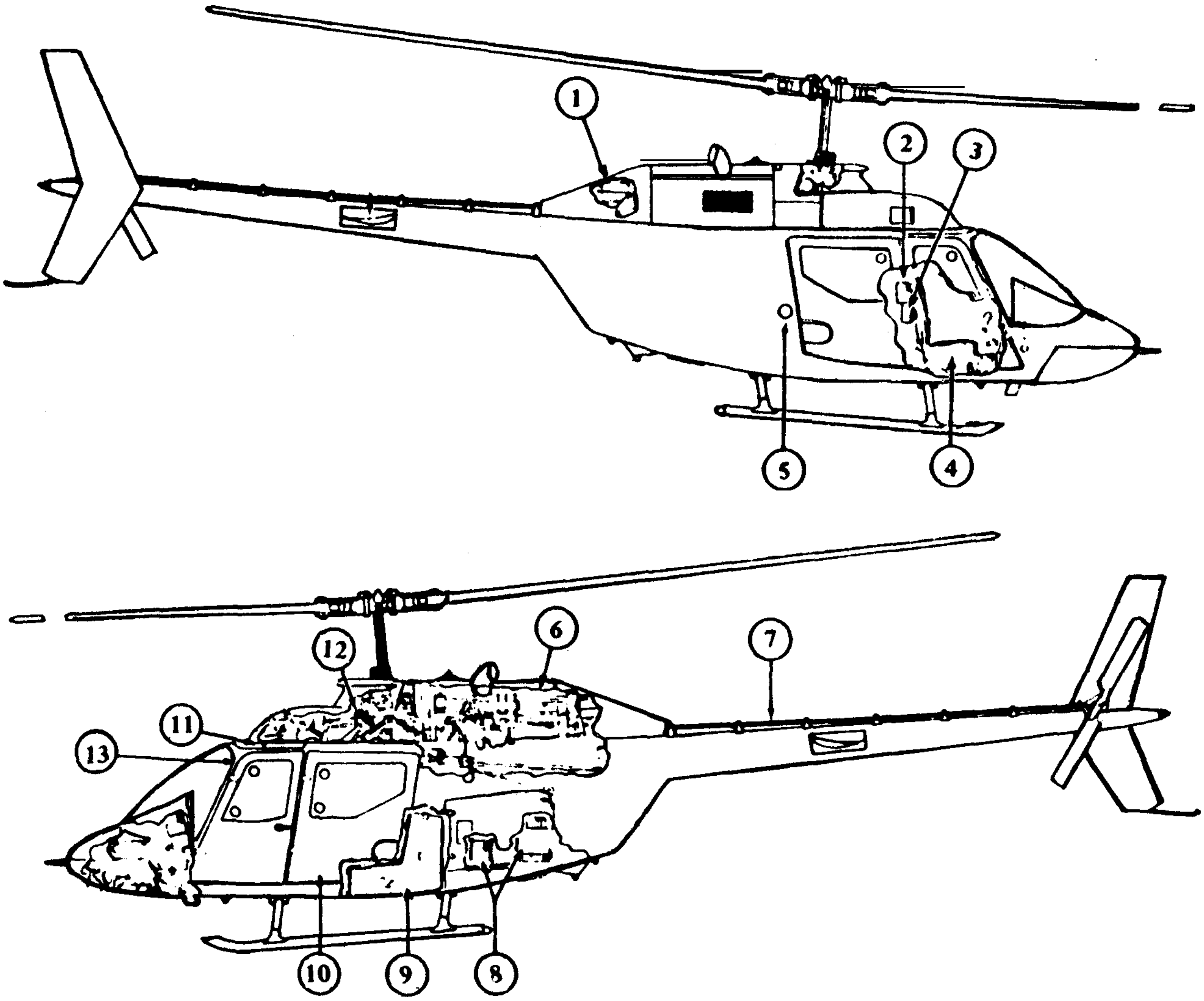
LENGTH – 40 FT, 4 IN
WIDTH – 6 FT, 5.5 IN
HEIGHT – 9 FT, 7 IN
WEIGHT – 2763 LB



1. WINDSHIELD
2. CREW DOORS
3. AFT CABIN DOORS
4. AFT AVIONICS COMPARTMENT
5. LANDING GEAR
6. FORWARD SECTION
7. INTERMEDIATE SECTION
8. TAIL 800M
9. TAIL ROTOR
10. HORIZONTAL STABILIZER
11. AFT FAIRING
12. ENGINE COWL
13. INDUCTION FAIRING
14. FORWARD FAIRING
15. GROUND HANDLING WHEELS
16. RAM AIR

Figure 5-16. Model OH-58A aircraft.

EMERGENCY PROCEDURES



EMERGENCY ENTRANCE

EMERGENCY ENTRANCE IS GAINED THROUGH CABIN DOORS AND PASSENGER DOOR. IF DOOR FAILS TO OPEN, BREAK WINDOWS OR CANOPY TO GAIN ACCESS TO DOOR JETTISON HANDLE.

1. OIL TANK FILLER (11/2GAL)
2. FIRST AID KIT
3. FIRE EXTINGUISHER
4. PILOT'S STATION
5. FUEL TANK FILLER
6. ENGINE
7. TAIL ROTOR DRIVE SHAFT (OPEN)
B. BATTERY
9. FUEL CELL (73GAL)
10. PASSENGER STATION
11. FUEL VALVE SHUT-OFF
12. HYDRAULIC PUMP AND RESERVOIR (2PINTS)
13. MASTER SWITCH (CONSOLE)

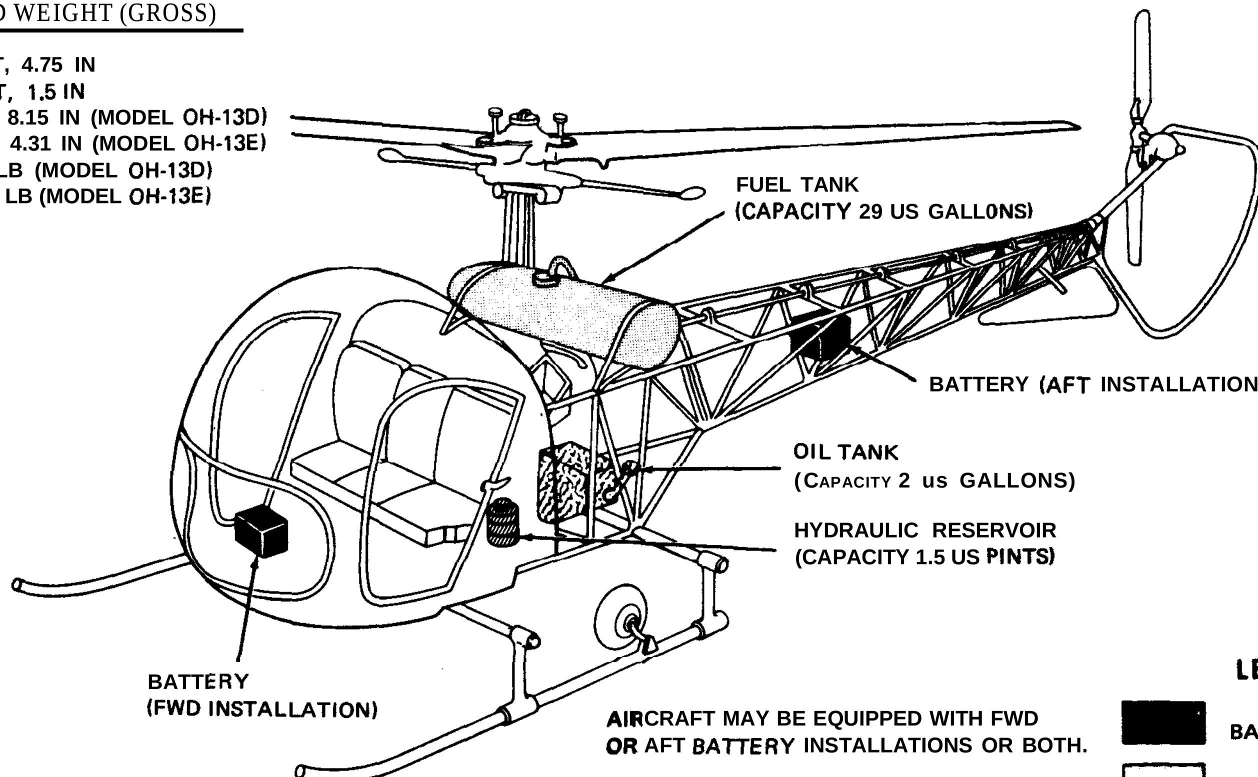
***Figure* 5-16.** *Model **OH-58A aircraf** t-continued.*

GENERAL DESCRIPTION

TYPE – SINGLE ENGINE, HELICOPTER
CREW – 2
LITTERS – 2

DIMENSIONS (MAX) AND WEIGHT (GROSS)

LENGTH – 41 FT, 4.75 IN
WIDTH – 35 FT, 1.5 IN
HEIGHT – 8 FT, 8.15 IN (MODEL OH-13D)
– Q FT, 4.31 IN (MODEL OH-13E)
WEIGHT –1968 LB (MODEL OH-13D)
– 2350 LB (MODEL OH-13E)



AIRCRAFT MAY BE EQUIPPED WITH FWD OR AFT BATTERY INSTALLATIONS OR BOTH.

LEGEND

- BATTERY
- FUEL TANK
- HYDRAULIC RESERVOIR
- OIL TANK

EMERGENCY ENTRANCE

EMERGENCY ENTRANCE MAY 8E GAINED THROUGH CABIN DOORS. IF DOORS FAIL TO OPEN, BREAK CABIN DOOR OR THE BUBBLE TO GAIN ACCESS TO JETISON DOORS.

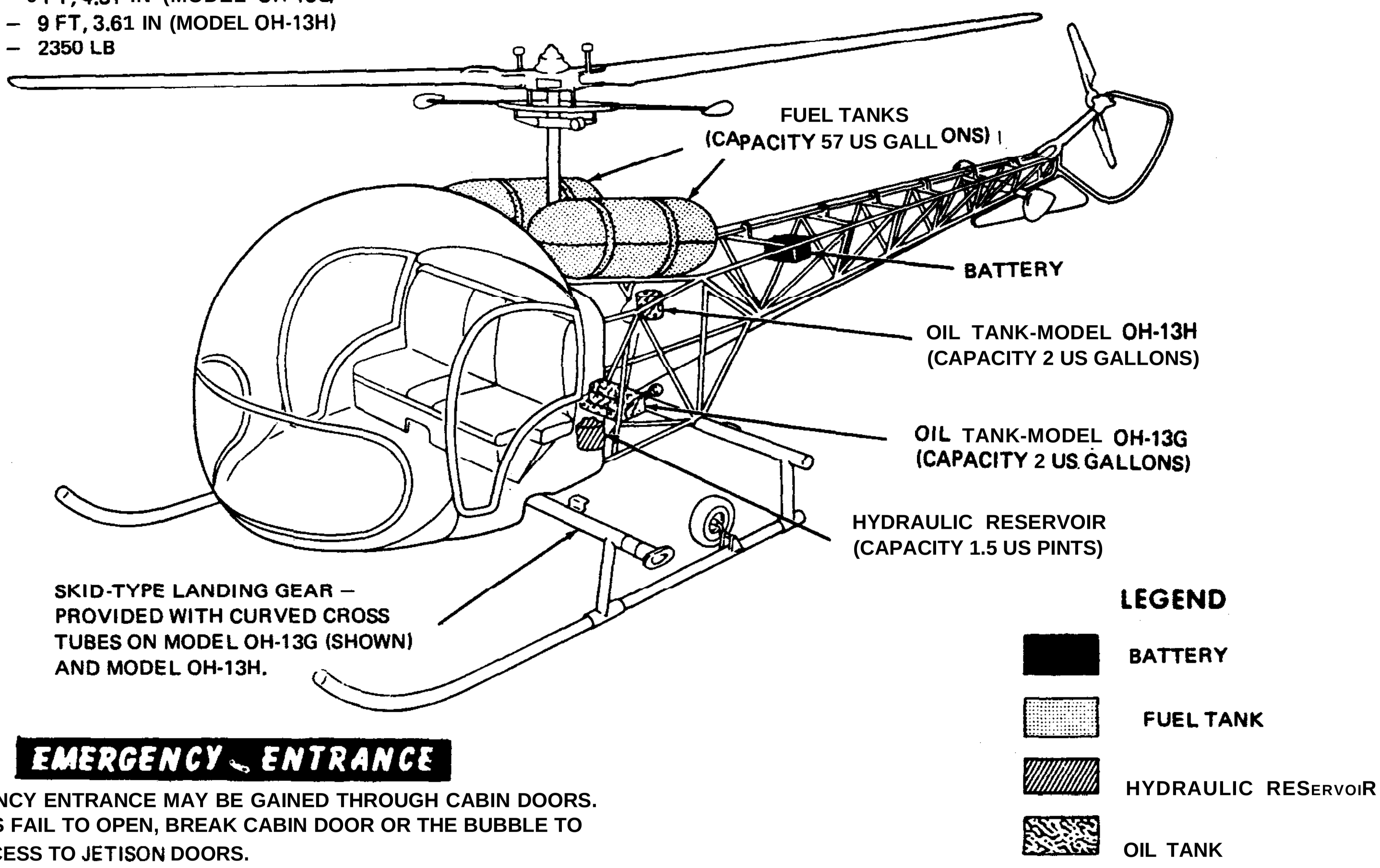
Figure 5-17. Model OH-13E aircraft.

GENERAL DESCRIPTION

TYPE – SINGLE ENGINE, HELICOPTER
CREW – 2
LITTERS – 2

DIMENSIONS (MAX) AND WEIGHT (GROSS)

LENGTH – 41 FT, 4.75 IN
WIDTH – 35 FT, 1.5 IN
HEIGHT – 9 FT, 4.31 IN (MODEL OH-13G)
– 9 FT, 3.61 IN (MODEL OH-13H)
WEIGHT – 2350 LB



EMERGENCY ENTRANCE

EMERGENCY ENTRANCE MAY BE GAINED THROUGH CABIN DOORS. IF DOORS FAIL TO OPEN, BREAK CABIN DOOR OR THE BUBBLE TO GAIN ACCESS TO JETISON DOORS.

Figure 5-18. Models OH-13G, OH-13H, and OH-13K aircraft.

GENERAL DESCRIPTION

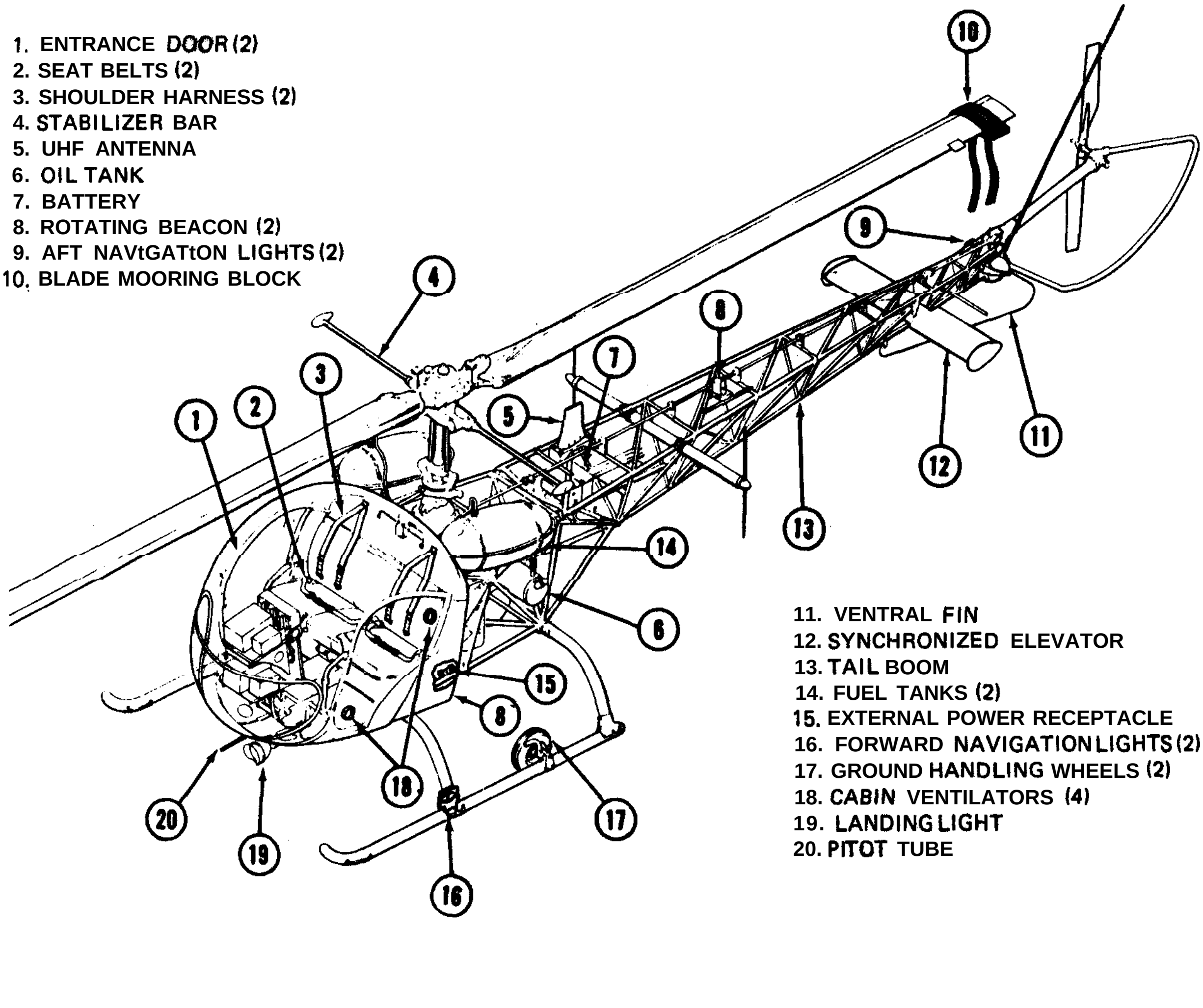
TYPE – SINGLE ENGINE, HELICOPTER
CREW – 2
PASSENGERS – NONE

DIMENSIONS (MAX) AND WEIGHT (GROSS)

LENGTH – 43 FT, 2.56 IN
WIDTH – 9 FT, 7 IN (OH-13S)
– 9 FT, 4 IN (TH-13T)
HEIGHT – 9 FT, 3.66 IN
WEIGHT – 1680 LB

NOTE: OH-13S and TH-13T ARE THE SAME HELICOPTERS, EXCEPT THAT THE TH-13T IS THE TRAINING MODEL WITH DUPLICATE CONTROLS.

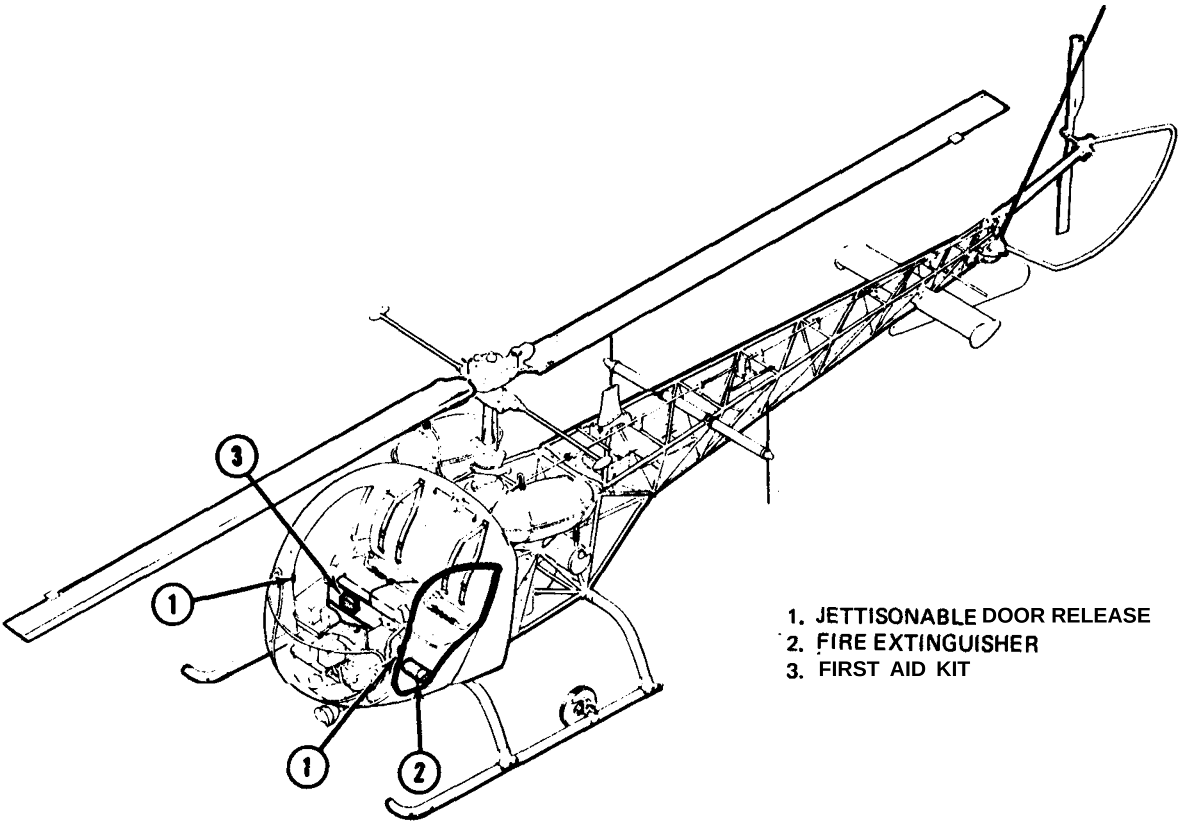
1. ENTRANCE DOOR (2)
2. SEAT BELTS (2)
3. SHOULDER HARNESS (2)
4. STABILIZER BAR
5. UHF ANTENNA
6. OIL TANK
7. BATTERY
8. ROTATING BEACON (2)
9. AFT NAVIGATION LIGHTS (2)
10. BLADE MOORING BLOCK



11. VENTRAL FIN
12. SYNCHRONIZED ELEVATOR
13. TAIL BOOM
14. FUEL TANKS (2)
15. EXTERNAL POWER RECEPTACLE
16. FORWARD NAVIGATION LIGHTS (2)
17. GROUND HANDLING WHEELS (2)
18. CABIN VENTILATORS (4)
19. LANDING LIGHT
20. PITOT TUBE

Figure 5-19. Models OH-13S and TH-13T aircraft.

EMERGENCY PROCEDURES



1. JETTISONABLE DOOR RELEASE
2. FIRE EXTINGUISHER
3. FIRST AID KIT

EMERGENCY ENTRANCE

EMERGENCY ENTRANCE MAY BE GAINED THROUGH CABIN DDORS. IF DOORS FAIL TO OPEN, BREAK CABIN DOOR OR THE BUBBLE TO GAIN ACCESS TO JETTISON DOORS.

Figure 5-19. Models OH-13S and TH-13T aircraft—Continued.

GENERAL DESCRIPTION

TYPE	– SINGLE ENGINE, HELICOPTER
CREW	– 1 TO 3
PASSENGERS	– 10 (LITTERS – 6)

DIMENSIONS (MAX) AND WEIGHT (GROSS)

LENGTH	– 62 FT, 5.5 IN
WIDTH	– 63 FT
HEIGHT	– 14 FT, 6.6 IN
WEIGHT	– 7500 LB

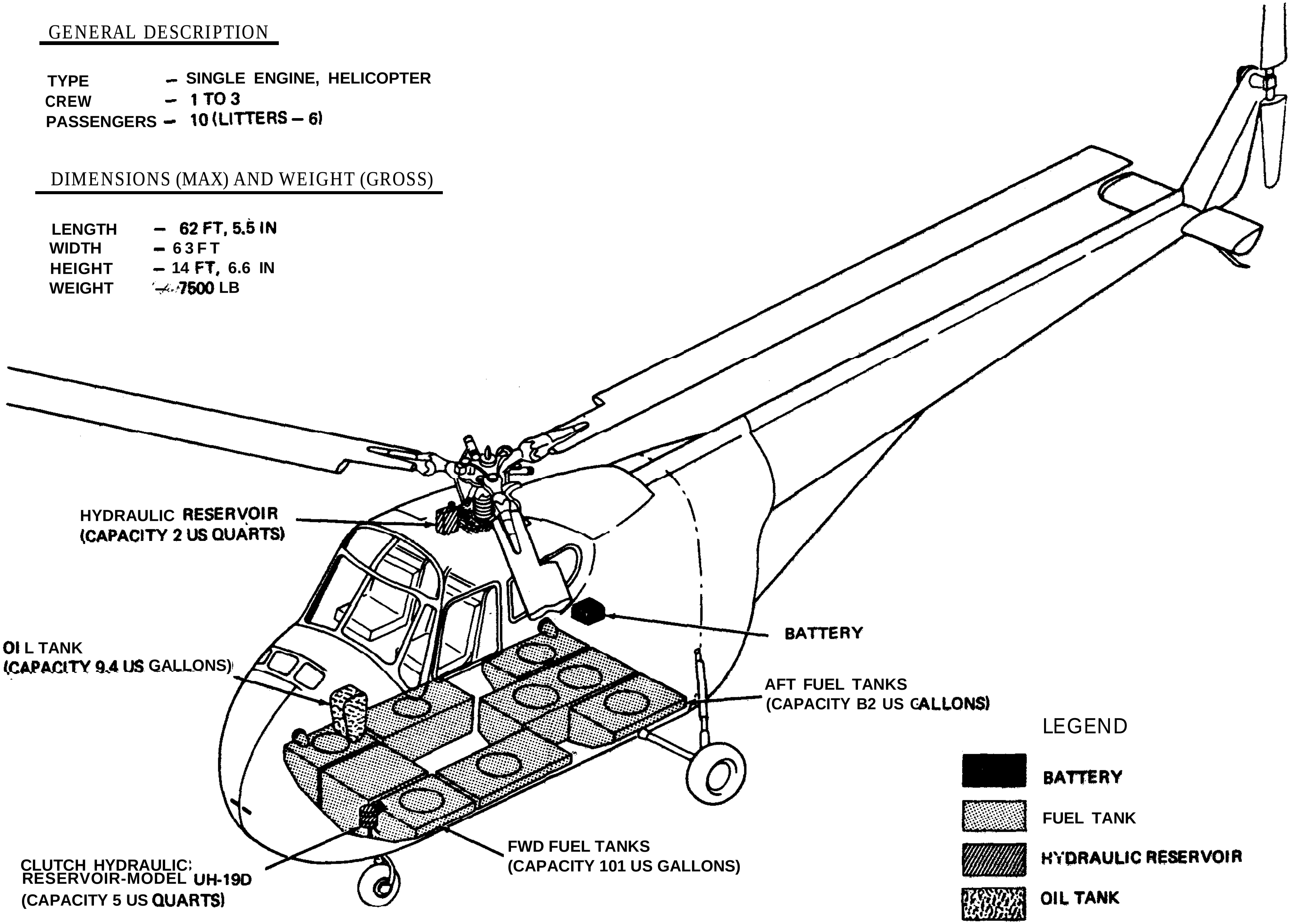
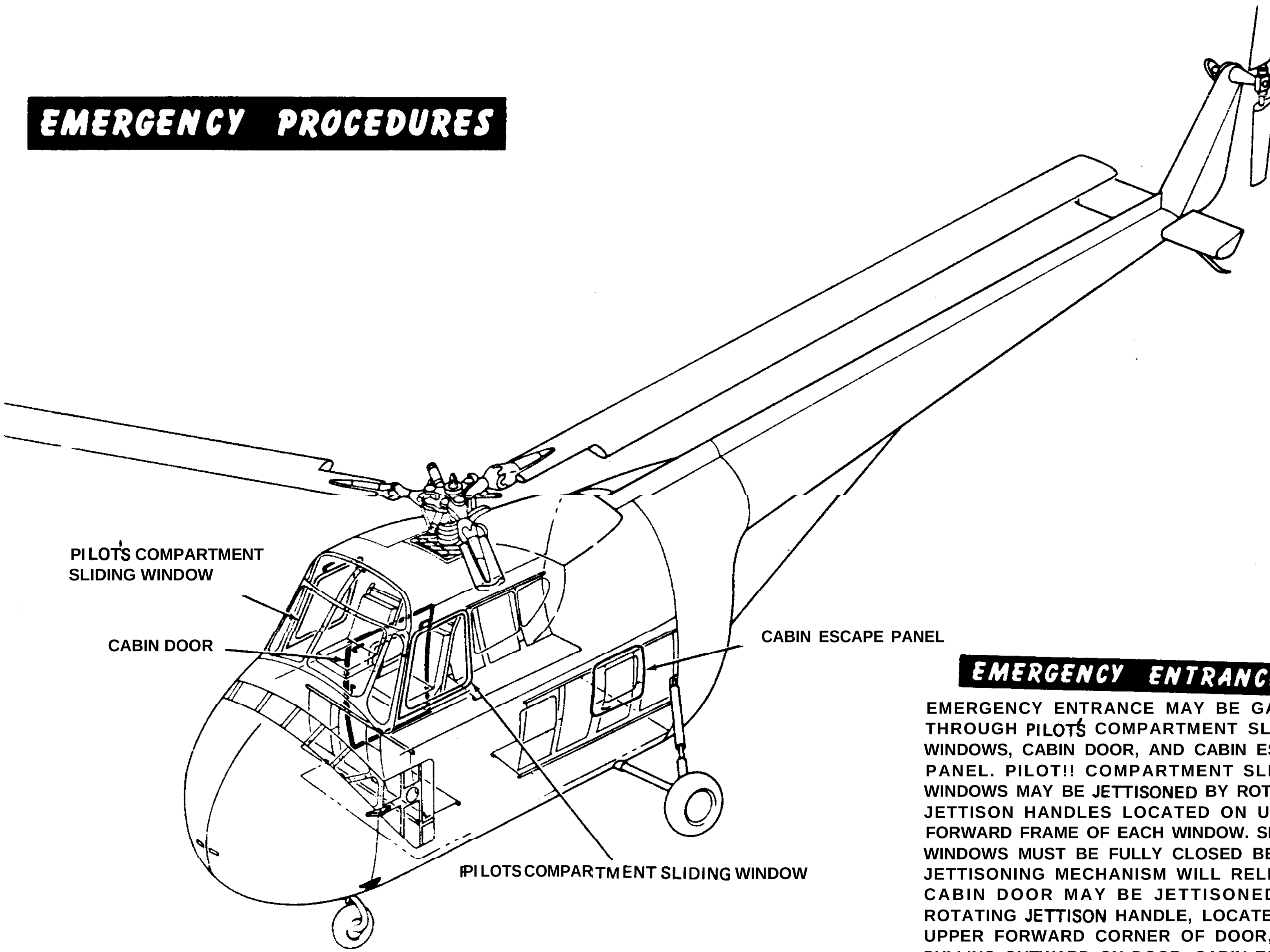


Figure 5–20. Models *UH–19C* and *UH–19D* aircraft.

EMERGENCY PROCEDURES



EMERGENCY ENTRANCE

EMERGENCY ENTRANCE MAY BE GAINED THROUGH PILOTS COMPARTMENT SLIDING WINDOWS, CABIN DOOR, AND CABIN ESCAPE PANEL. PILOT!! COMPARTMENT SLIDING WINDOWS MAY BE JETTISONED BY ROTATING JETTISON HANDLES LOCATED ON UPPER FORWARD FRAME OF EACH WINDOW. SLIDING WINDOWS MUST BE FULLY CLOSED BEFORE JETTISONING MECHANISM WILL RELEASE. CABIN DOOR MAY BE JETTISONED BY ROTATING JETTISON HANDLE, LOCATED ON UPPER FORWARD CORNER OF DOOR, AND PULLING OUTWARD ON DOOR. CABIN ESCAPE PANEL MAY BE JETTISONED BY ROTATING JETTISON HANDLE AND PULLING OUTWARD.

Figure 5-20. Models UH-19C and UH-19D aircraft—Continued.

GENERAL DESCRIPTION

TYPE – SINGLE ENGINE, HELICOPTER
CREW – I T 0 5
PASSENGERS – 20 (LITTERS–12)

DIMENSIONS (MAX) AND WEIGHT (GROSS)

LENGTH – 86 FT, 4 IN
WIDTH – 4 4 F T
HEIGHT – 15 FT, 4 IN
WEIGHT – 13,500 LB

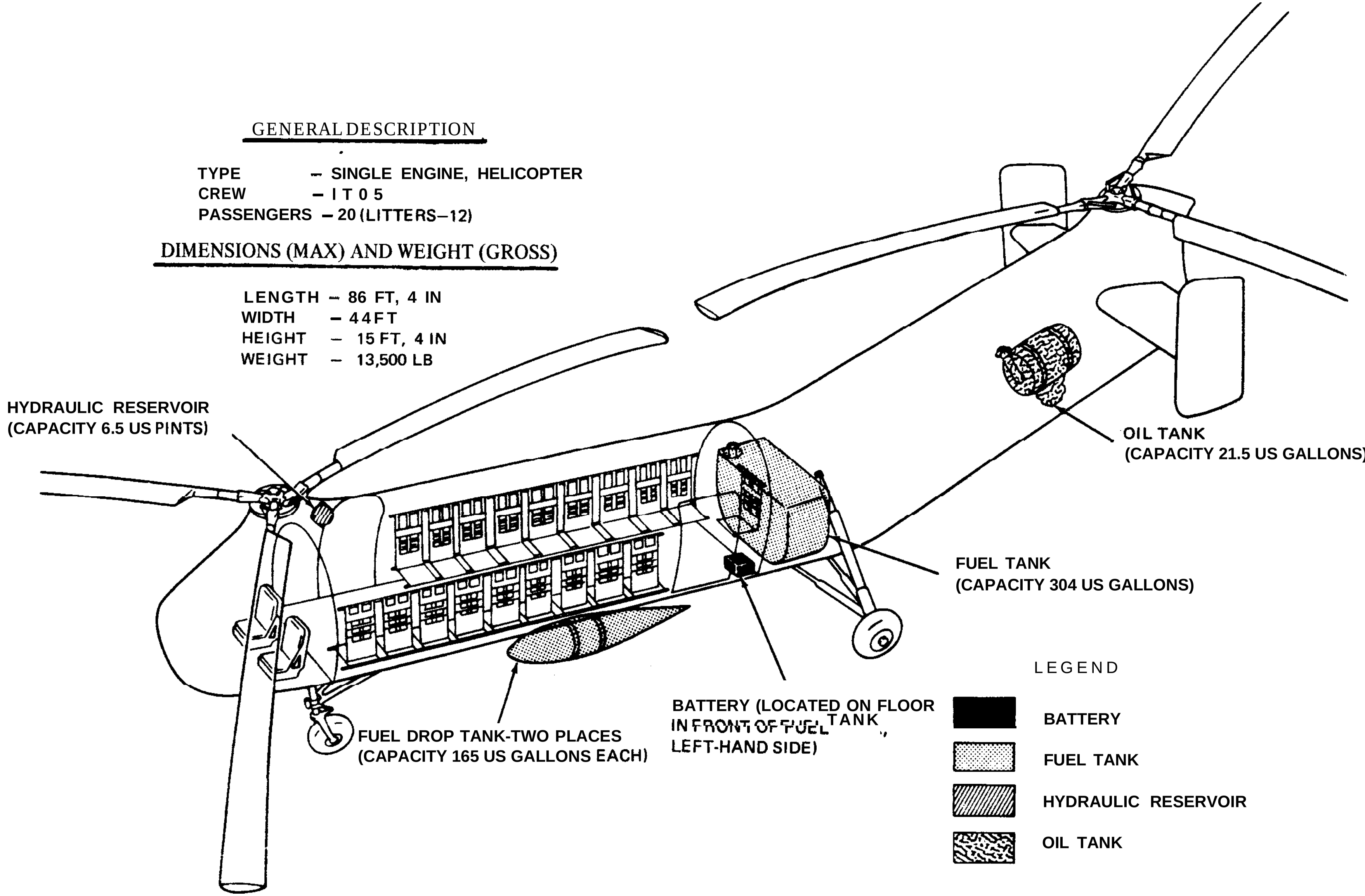
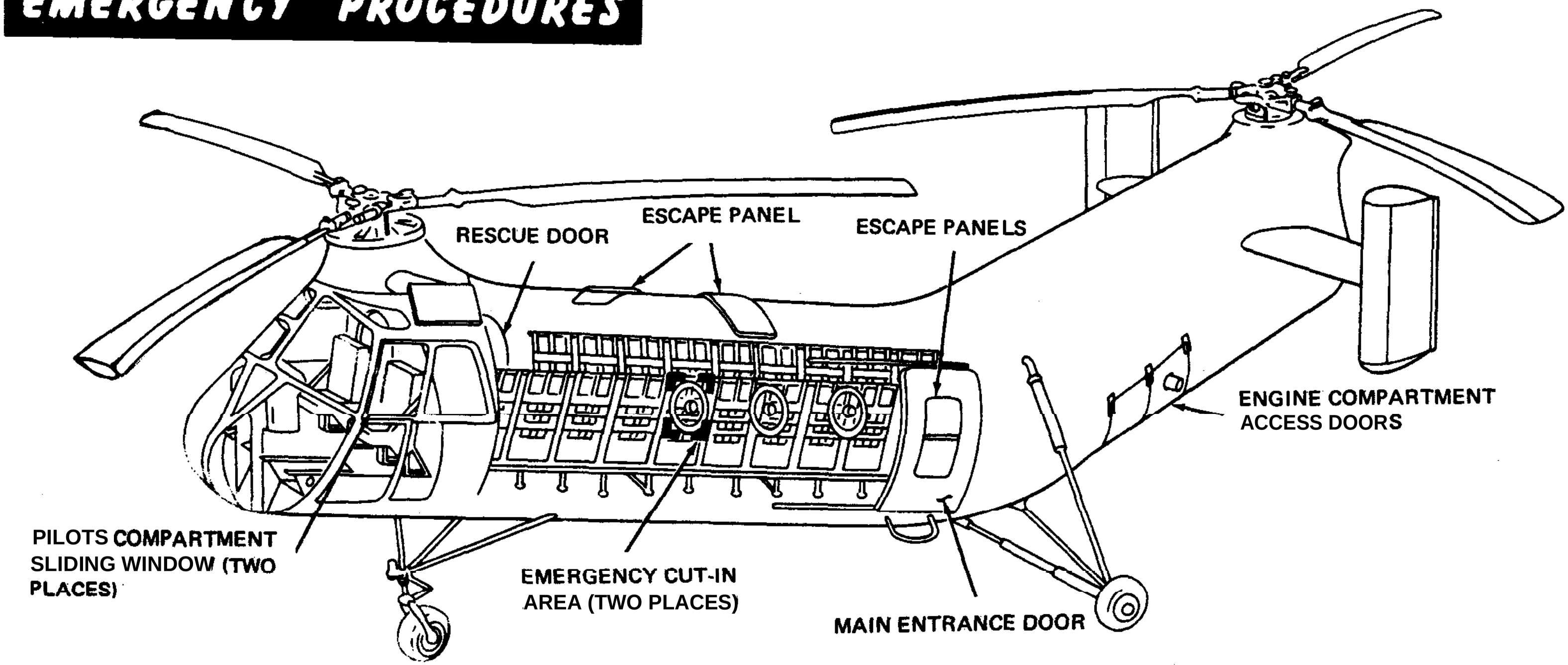


Figure 5-21. Models CH-21 B and CH-21C aircraft.



EMERGENCY ENTRANCE

EMERGENCY ENTRANCE MAY BE MADE THROUGH OVERHEAD ESCAPE PANELS, MAIN ENTRANCE DOOR ESCAPE PANEL, RESCUE DOOR ESCAPE PANEL, AND PILOT'S SLIDING WINDOWS. TO OPEN OVERHEAD ESCAPE PANELS, RESCUE, AND MAIN ENTRANCE DOOR ESCAPE PANELS, PULL RED PROTRUDING TAB FROM PANEL. JETTISON PILOT'S SLIDING WINDOWS BY PULLING OUT ON EXTERNAL JETTISON HANDLE. PILOT'S SLIDING WINDOWS, RESCUE DOOR (LOCATED ON RIGHT-HAND SIDE OF FUSELAGE), AND MAIN ENTRANCE DOOR ARE PROVIDED WITH INTERNAL JETTISON HANDLES,

Figure 5–21. *Models CH–21B and CH–21C aircraft*—Continued.

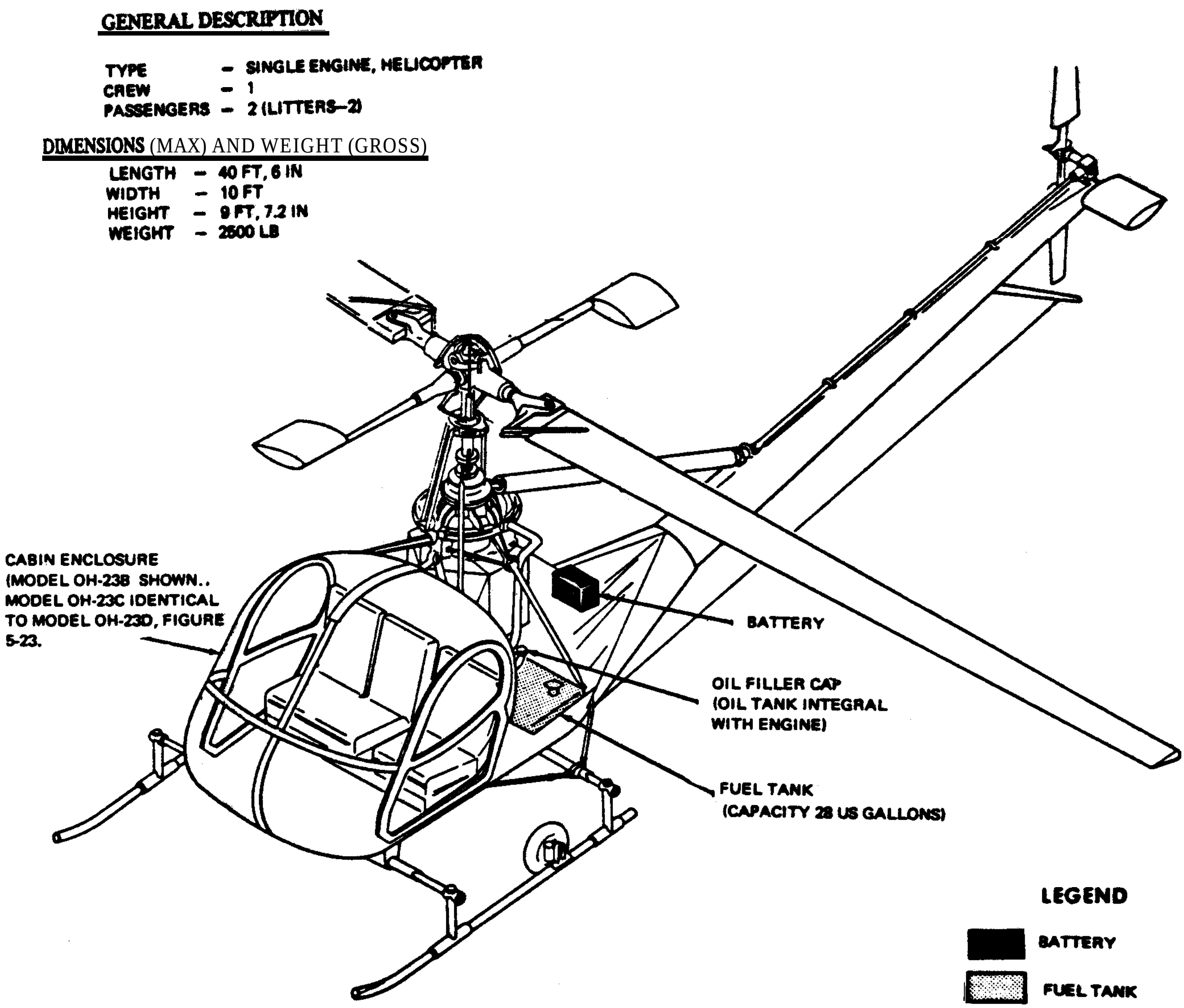
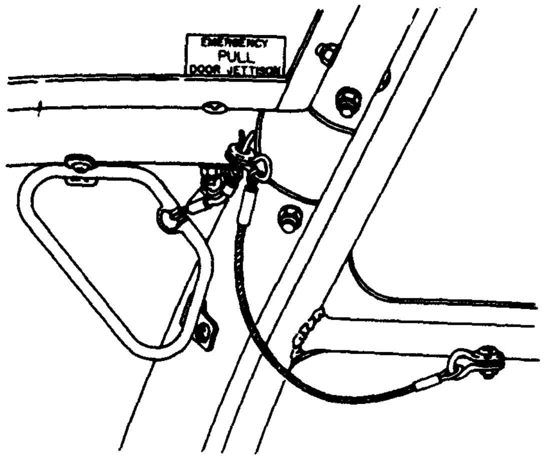
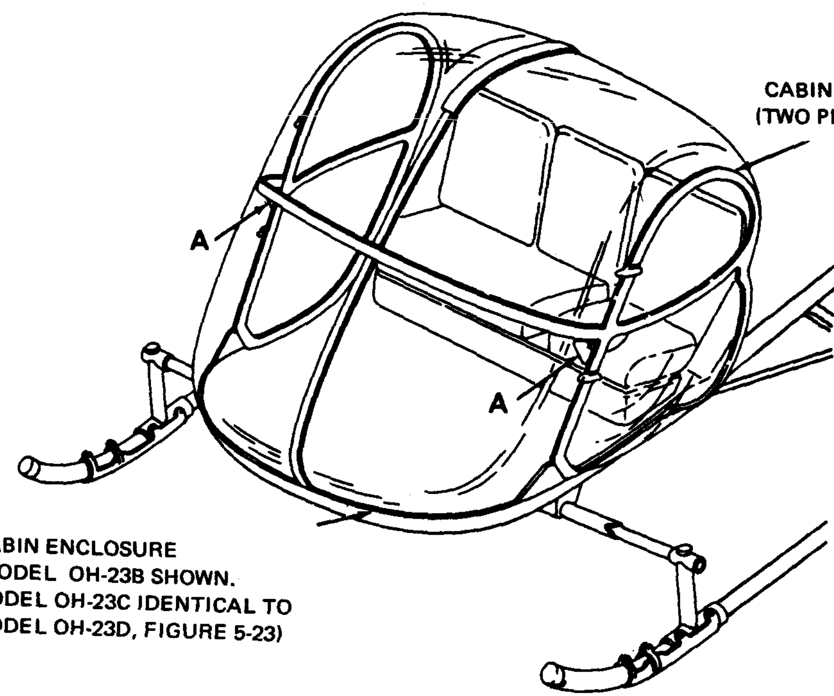


Figure 5-22. Models OH-23B and OH-23C aircraft.



DETAIL A
DOOR JETTISON HANDLE



CABIN ENCLOSURE
(MODEL OH-23B SHOWN.
MODEL OH-23C IDENTICAL TO
MODEL OH-23D, FIGURE 5-23)

EMERGENCY ENTRANCE

EMERGENCY ENTRANCE IS GAINED THROUGH CABIN DOORS. IF DOORS FAIL TO OPEN, BREAK WINDOWS TO GAIN ACCESS TO DOOR JETTISON HANDLE. DOOR IS JETTISONED BY PULLING HANDLE. (SEE DETAIL A.)

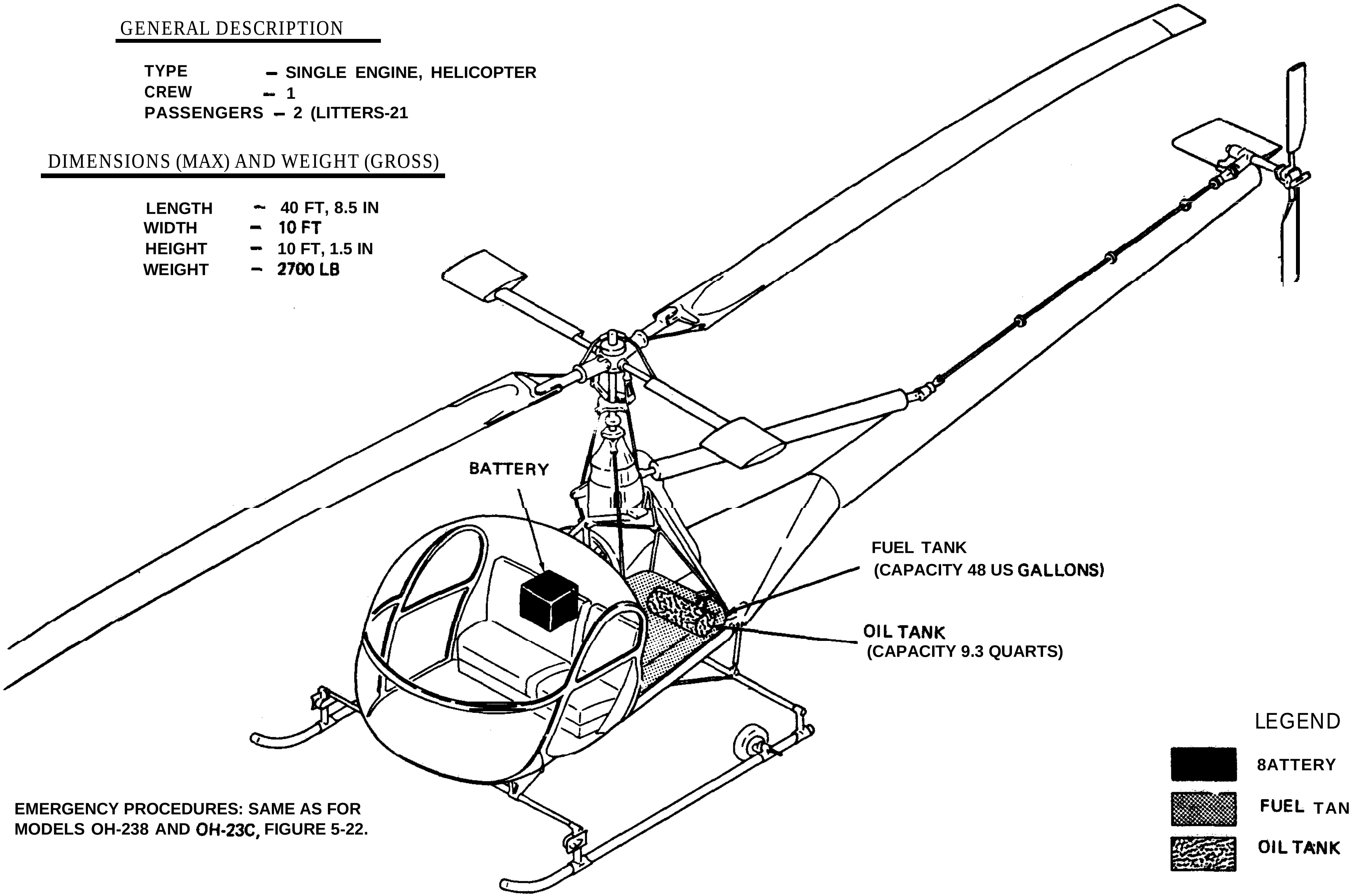
Figure 5–22. Models OH–23B and OH–23C aircraft—Continued.

GENERAL DESCRIPTION

TYPE – SINGLE ENGINE, HELICOPTER
CREW – 1
PASSENGERS – 2 (LITTERS-21

DIMENSIONS (MAX) AND WEIGHT (GROSS)

LENGTH – 40 FT, 8.5 IN
WIDTH – 10 FT
HEIGHT – 10 FT, 1.5 IN
WEIGHT – 2700 LB



EMERGENCY PROCEDURES: SAME AS FOR MODELS OH-238 AND OH-23C, FIGURE 5-22.

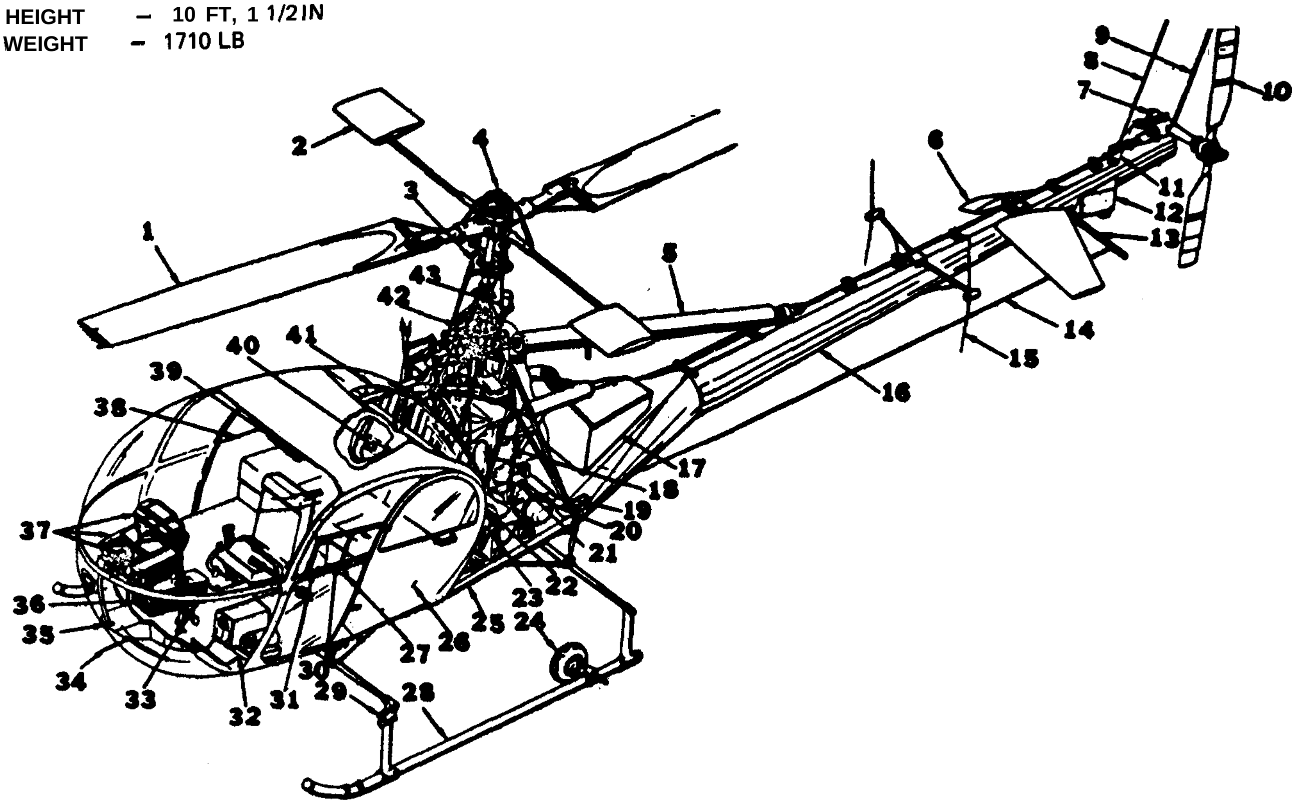
Figure 5–23. Models OH–23D and OH-28G aircraft.

GENERAL DESCRIPTION

TYPE – SINGLE ENGINE, HELICOPTER
CREW – 1
PASSENGERS – 2

DIMENSIONS (MAX) AND WEIGHT (GROSS)

LENGTH – 40 FT, 8 1/2 IN
WIDTH – 7 FT, 9 1/2 IN
HEIGHT – 10 FT, 1 1/2 IN
WEIGHT – 1710 LB



1. MAIN ROTOR
2. CONTROL ROTOR
3. WOBBLE PLATE
4. COLLECTIVE BALLAST
5. TAIL ROTOR DRIVE
6. STABILIZER
7. TAIL ROTOR SPEED DECREASER GEAR ASSY
8. ANTENNA
9. ANTENNA
IO. TAIL ROTOR
11. TAIL ROTOR CDNTROL CABLES
12. BATTERY
13. TAIL SKID STRUT
14. ANTENNA
15. ANTENNA
16. TAIL 800M
17. CARGO COMPARTMENT
18. ENGINE
19. FUEL TANK FILLER
20. OIL TANK FILLER CAP (TRANSMISSION)
21. OIL TANK FILLER CAP (ENGINE)
22. OIL COOLER (TRANSMISSION)
23. OIL COOLER (ENGINE)
24. GROUND HANDLING WHEELS
25. 8ASIC BODY SECTION
26. LH CABIN DOOR
27. UTILITY POWER RECEPTACLE
28. SKID LANDING GEAR
29. NAVIGATION LIGHT
30. WINDOW PANEL
31. VENTILATOR WING
32. RADIO EQUIPMENT
33. PEDESTAL TUNNEL
34. PITOT TUBE
35. LANDING LIGHT
36. INSTRUMENT PEDESTAL
37. RADIO EQUIPMENT
38. RH CABIN DOOR
39. CABIN HEAT DIFFUSER
40. EXTERNAL POWER RECEPTACLE
41. FIREWALL
42. TRANSMISSION
43. ANTICOLLISION LIGHT

EMERGENCY - ENTRANCE

EMERGENCY PROCEDURES SAME AS FOR MODEL OH-23D, FIGURE 5-23, EXCEPT THAT BATTERY IS IN TAIL.

Figure 5–24. Model OH–23F aircraft.

GENERAL DESCRIPTION

TYPE – SINGLE ENGINE, HELICOPTER
CREW - 2
PASSENGERS – 12 TO 18 (LITTERS-8)

DIMENSIONS (MAX) AND WEIGHT (GROSS)

LENGTH – 65 FT, 10 IN
WIDTH – 56 FT
HEIGHT – 15 FT, 11 IN
WEIGHT – 13,600 LB

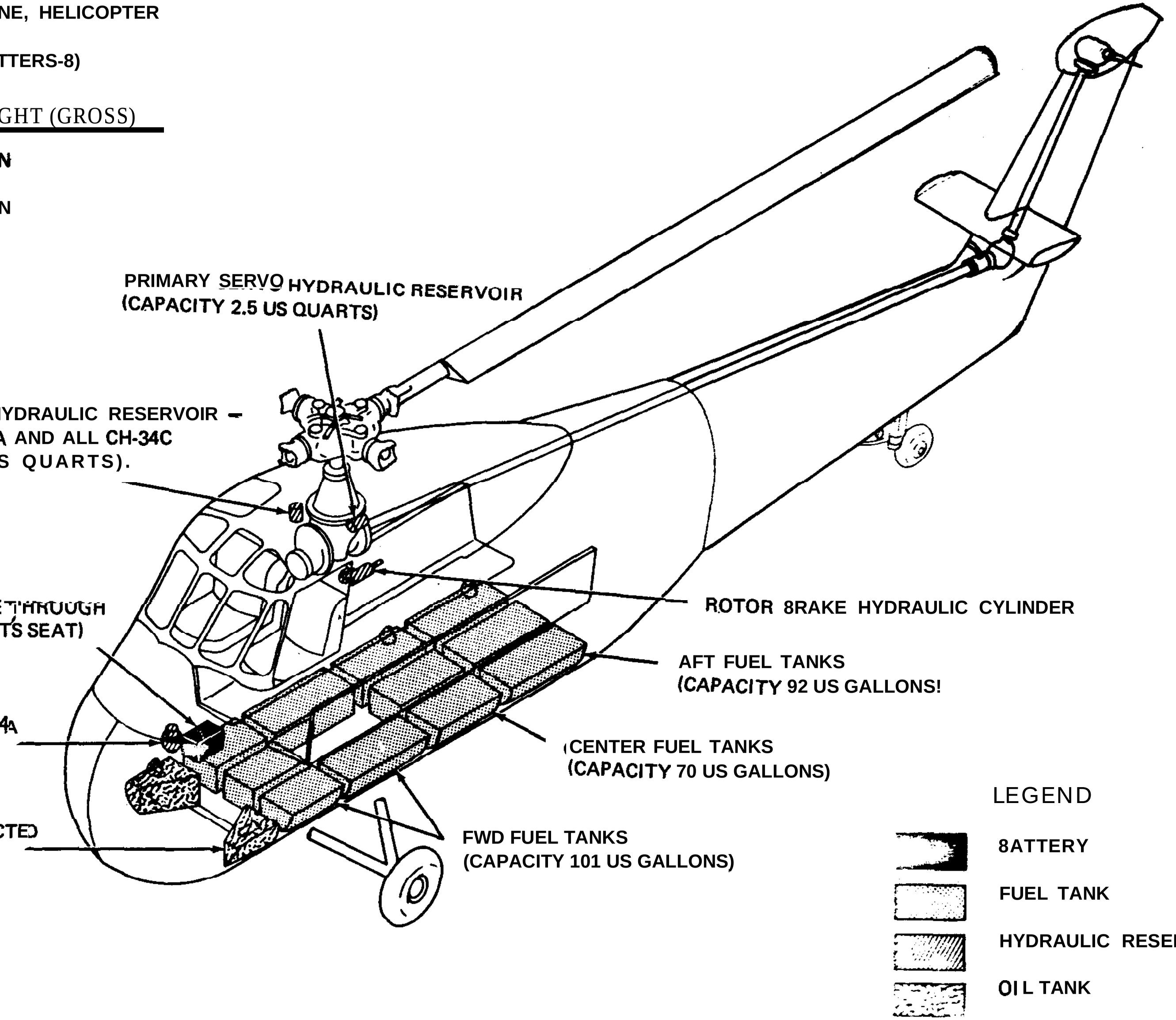


Figure 5-25. Models CH-34A and CH-34C aircraft.