

**WELCOME TO TECHNICAL ORDER 00-105E-9, 1 FEBRUARY 2006, REVISION 11.**

**THIS IS SEGMENT 22 COVERING CHAPTER 19 FROM THE USCG TO NOAA.**

**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,  
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**TO SEE THE SEGMENT INFORMATION CHANGE NOTICE,  
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**TO CONTACT THE TECHNICAL CONTENT MANAGER ,  
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# TECHNICAL ORDER 00-105E-9 TECHNICAL CONTENT MANAGER



## WRITTEN CORRESPONDENCE:

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**<http://www.afcesa.af.mil/CEX/cexf/index.asp>**

**Safety Supplements: [http://www.afcesa.af.mil/CEX/cexf/\\_firemgt.asp](http://www.afcesa.af.mil/CEX/cexf/_firemgt.asp)**

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

## SEGMENT 22 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 Retaining out of date rescue information can negatively affect the user's operability and outcome of emergencies.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>
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None.

## NOTE

Chapter 19 contains emergency rescue and mishap response information for the following aircraft:

USCG	HC-130**
USCG	HH-60J**
USCG	HU-25
NOAA	212**
NOAA	CITATION II
NOAA	WP-3D**
NOAA	AC-690
NOAA	LA-27
NOAA	G-IV**
NOAA	AC-500S
NOAA	DH-6
NOAA	MD-500D
USFS	Aero Commander**
USFS	Air Tractor AT-802
USFS	Beechcraft 58P Baron
USFS	Boeing 727**
USFS	Boeing 737**
USFS	Boeing KC-97
USFS	C-130 Hercules**
USFS	CASA C-212 Aviocar**
USFS	Cessna 337/ Skymaster O-2**
USFS	CH-46 Sea Knight/Vertol 107**
USFS	CH-47 Chinook**
USFS	CL-415 Super Scooper
USFS	Convair 580
USFS	DC-3 Douglas Turbine
USFS	DC-4 Airliner
USFS	DC-6 Airliner**
USFS	DC-7 Airliner**
USFS	DCH-2 Beaver**
USFS	DCH-6 Twin Otter**
USFS	Fokker F-27**
USFS	Grumman S-2F Tracker**
USFS	H-43 Huskie
USFS	Lookheed P2V Neptune**
USFS	Lookheed SP2H**
USFS	Model 90 King Air**
USFS	P-3 Orion**
USFS	PB4Y-2 Privateer
USFS	Rockwell OV-10
USFS	S-64 Skycrane**
USFS	S-70/UH-60**
USFS	SH-3 Sea King**
USFS	Shorts SD 330/C-23**

\* Aircraft information pending

\*\* See like aircraft in manual

## NOTE

Chapter 19 contains emergency rescue and mishap response information for the following aircraft:

USFS	Aerospatiale AS 350
USFS	Bell 204B/UH-1A,B,C**
USFS	Bell 204/UH-1D,H**
USFS	Bell 206B/OH-58**
USFS	Bell 206L-3/OH-58**
USFS	Bell 212/412**
USFS	Bell 214
USFS	Bell 222
USFS	Boeing/Vertol 234
USFS	Eurocopter BK-117
USFS	Eurocopter BO-105**
USFS	Fairchild Hiller FH-1100
USFS	McDonnell Douglas 500-C,D
USFS	Sikorsky S-58T

\* Aircraft information pending

\*\* See like aircraft in manual



## CHAPTER 19

### U.S. GOVERNMENT

#### VARIOUS AGENCIES

### AEROSPACE EMERGENCY RESCUE AND MISHAP RESPONSE INFORMATION

#### 19-1. INTRODUCTION AND USE.

19-2. 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.

#### 19-3. GENERAL ARRANGEMENT.

19-4. 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.

#### 17-5. AGENCY PLATFORMS.

17-6. Most aircraft in these active inventories are included in this manual. Those aircraft not yet included will be added in the near future.

a. FAA Platforms are: **Boeing 727-25C**, **Convair CV-580**, **Beech King Air BE-200**, **Aero Commander AC-680E**, and **Sikorsky S-76A**.

b. Dept of Energy Platforms are intensively modified to perform their specialized missions and many are inherently unavailable for other applications. DOE uses a **Gulfstream 159** for airborne atmospheric research and, for climate research, a **Cessna-172N** and **various Unmanned Aerospace Vehicles (UAVs)** and a **DeHavilland DCH-6 Twin Otter** chase plane in support of DOE's Atmospheric Radiation Measurements program.

c. Federal Research aircraft available for oceanographic research, helps to promote interagency cooperation, coordination, and scheduling of assets. The National Oceanographic Partnership Program (NOPP) is a collaboration of fifteen Federal agencies to provide leadership and coordination of national oceanographic research and education programs.

#### **NOPP Agencies with Participating Aircraft**

DOE, National Science Foundation, FAA\*, Office of Naval Research, NASA, U.S.C.G. and NOAA.

\*Not a member of NOPP

#### **Other NOPP Agencies**

Army Corps of Engineers Minerals Management Service, Defense Advanced Research Projects, Office of Management and Budget, Department of Homeland Security, Office of Science and Technology Policy Department of State U.S. Geological Survey, EPA and Naval Research Laboratory.

d. The U.S. Immigrations and Customs Enforcement (ICE) aircraft are **PC-12**, **UH-60A**, **Eurocopter AS-350** and **Cessna Citation II**.

The aircraft information is located in Chapter 6  
containing USAF aircraft.

The aircraft information is located in Chapter 13  
containing USAF aircraft.





**AIRCRAFT DIMENSIONS**

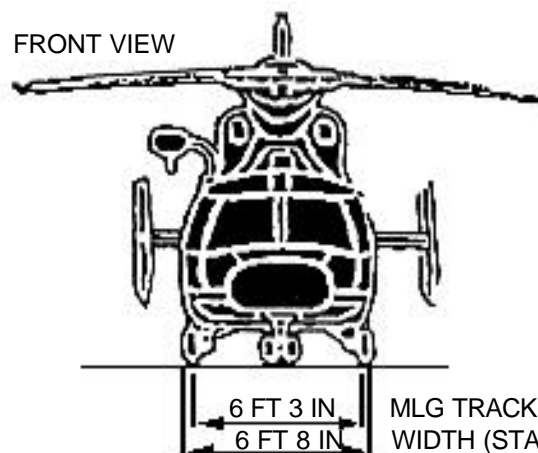
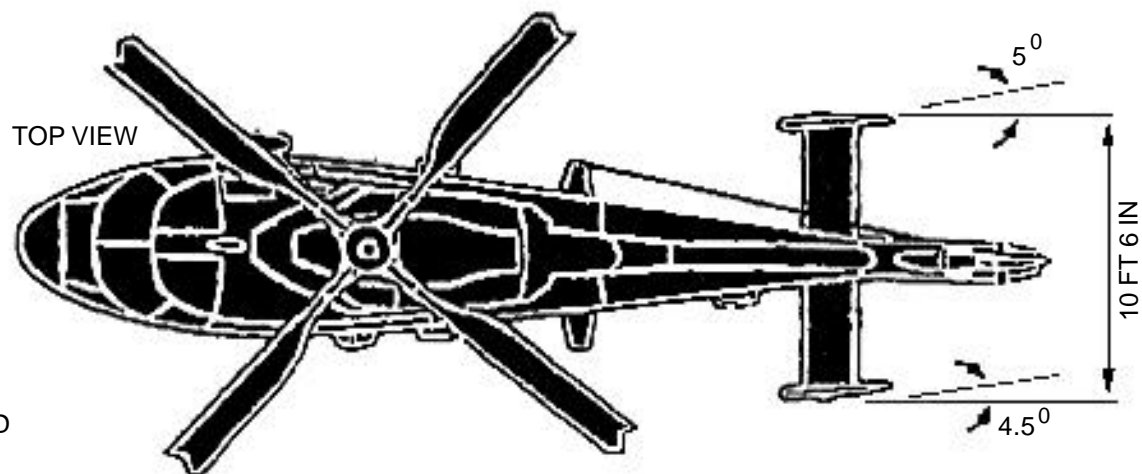
AIRCRAFT WITH BLADES FOLDED: LENGTH - 38 FT 2 IN

WIDTH (AT STABILIZER) - 10 FT 6 IN

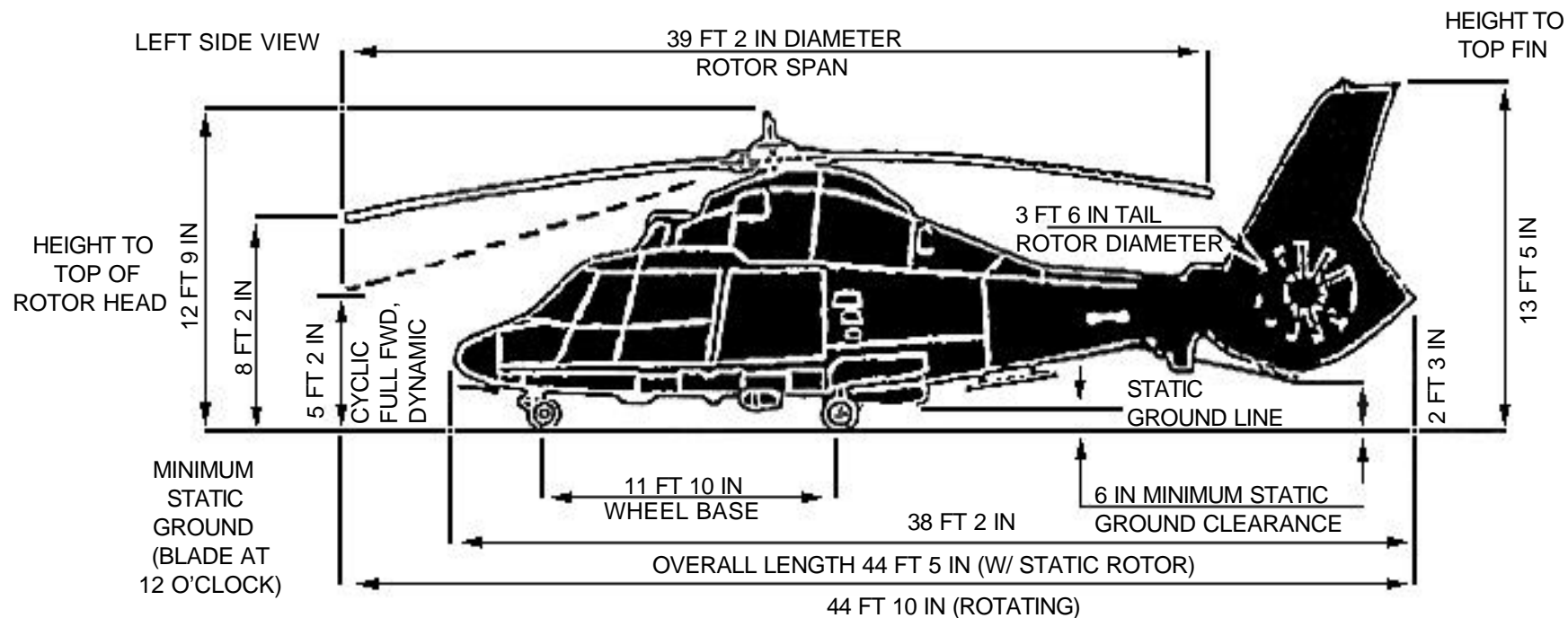
AIRCRAFT DISASSEMBLED FOR SHIPMENT: LENGTH - 21 FT 5 IN

WIDTH (STABILIZER REMOVED) - 6 FT 8 IN

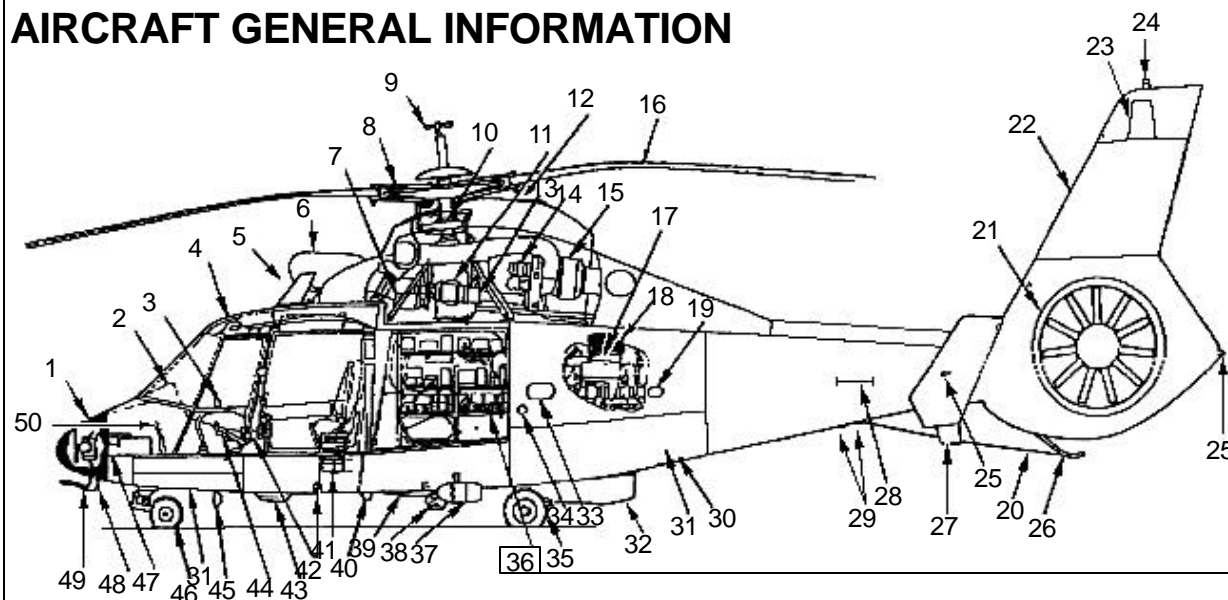
HEIGHT (ROTOR HEAD AND LANDING GEAR REMOVED) - 8 FT 4 IN

**HH-65A**MLG TRACK  
WIDTH (STAB REMOVED  
FOR SHIPMENT)

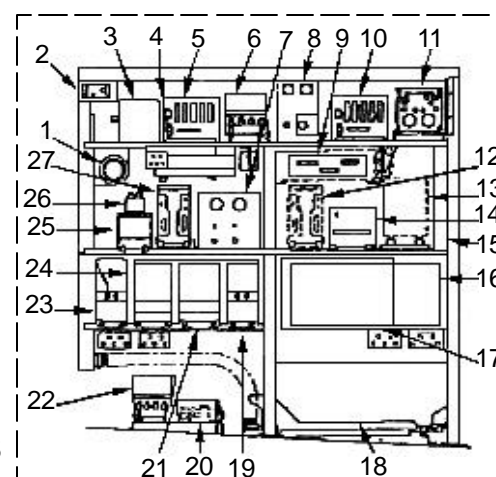
MINIMUM GROUND CLEARANCE WITH CYCLIC DISPLACED TO LIMIT LIGHT ILLUMINATION (100% NR) - 7 FT 7.2 IN



# AIRCRAFT GENERAL INFORMATION



- |                                  |  |
|----------------------------------|--|
| 1 RADOME                         | 26 TAIL SKID                               |
| 2 INSTRUMENT PANEL               | 27 UHF/VHF COMM 2 RADIO ANTENNA            |
| 3 CYCLIC (2)                     | 28 VOR/ILS ANTENNA                         |
| 4 FREE AIR TEMPERATURE PROBE     | 29 RADAR ALTIMETER ANTENNAS                |
| 5 VHF/FM RADIO ANTENNA           | 30 UHF/DF ANTENNA                          |
| 6 RESCUE HOIST                   | 31 FLOTATION EQUIPMENT BAY (2 SHOWN)       |
| 7 ALTERNATOR (2)                 | 32 FUEL DUMP FAIRING (OUT OF VIEW)         |
| 8 ROTOR HEAD                     | 33 GRAVITY REFUELING RECEPTACLES (2)       |
| 9 OMNIDIRECTIONAL AIR DATA PROBE | 34 EXTERNAL AIR CONDITIONING RECEPTACLES   |
| 10 ROTATING SMASHPLATE           | 35 MAIN LANDING GEAR                       |
| 11 MAIN GEARBOX                  | 36 AVIONICS EQUIPMENT RACK (SEE RT VIEW)   |
| 12 GSP ANTENNA                   | 37 SEARCH LIGHT                            |
| 13 DRIVE COUPLING SHAFT          | 38 CARGO HOOK                              |
| 14 STARTER/GENERATOR (2)         | 39 MARKER BEACON ANTENNA                   |
| 15 ENGINE (2)                    | 40 TACAN ANTENNA                           |
| 16 ROTOR BLADE                   | 41 LOUD HAILER (NOT PERMANENTLY INSTALLED) |
| 17 AIRCONDITIONER HEAT EXCHANGER | 42 CREW SEATS (3)                          |
| 18 ECS AIR INTAKE                | 43 ADF LOOP ANTENNA (LT) TCAS ANTENNA (RT) |
| 19 ECS AIR EXHAUST               | 44 COLLECTIVE (2)                          |
| 20 HF RADIO ANTENNA              | 45 HOVER LIGHT (LT) LANDING LIGHT (RT)     |
| 21 TAIL ROTOR                    | 46 NOSE LANDING GEAR                       |
| 22 VERTICAL STABILIZER           | 47 BATTERY                                 |
| 23 UHF/VHF COMM 1 & TCAS ANTENNA | 48 SEARCH/WEATHER RADAR                    |
| 24 ANTICOLLISION LIGHT           | 49 PILOT PROBES (2)                        |
| 25 POSITION LIGHT                | 50 DIRECTIONAL CONTROL PANELS              |



DETAILED VIEW OF AVIONICS RACK  
LOOKING OUTBOARD

- 1 AVIONICS RACK FAN
- 2 AUXILIARY AUDIO CONTROL PANEL
- 3 ALTITUDE CONTROLLER
- 4 LOUDHAILER AMPLIFIER
- 5 NO.1 SYSTEM COUPLER COMPUTER (SCC)
- 6 COMM 1 UHF/VHF
- 7 TACAN
- 8 OMNIDIRECTIONAL AIR DATA SYSTEM (OADS)
- 9 AUDIO MIXER
- 10 NO.2 SYSTEM COUPLER COMPUTER (SCC)
- 11 IFF
- 12 VOICE FLIGHT DATA RECORDER (VFDR)
- 13 IFF KIT 1C (PROVISIONAL) OR TCAS TRC79
- 14 VHF/FM
- 15 AVIONICS RACK CIRCUIT BREAKER PANEL
- 16 GPS RECEIVER
- 17 SIGNAL INTERFACE UNIT (SIU)
- 18 MISSION COMPUTER UNIT (MCU)
- 19 COPILOT'S DISPLAY DRIVER UNIT (DDU)
- 20 RATE GYROS AND ACCELEROMETERS
- 21 FLIGHT DIRECTOR COMPUTER (FDC)
- 22 COMM 2 VHF/UHF
- 23 PILOT'S DISPLAY DRIVER UNIT (DDU)
- 24 AFCS COMPUTER
- 25 ADF
- 26 AIRSPEED SENSOR
- 27 NO 1 VOR/ILS NAV RECEIVER

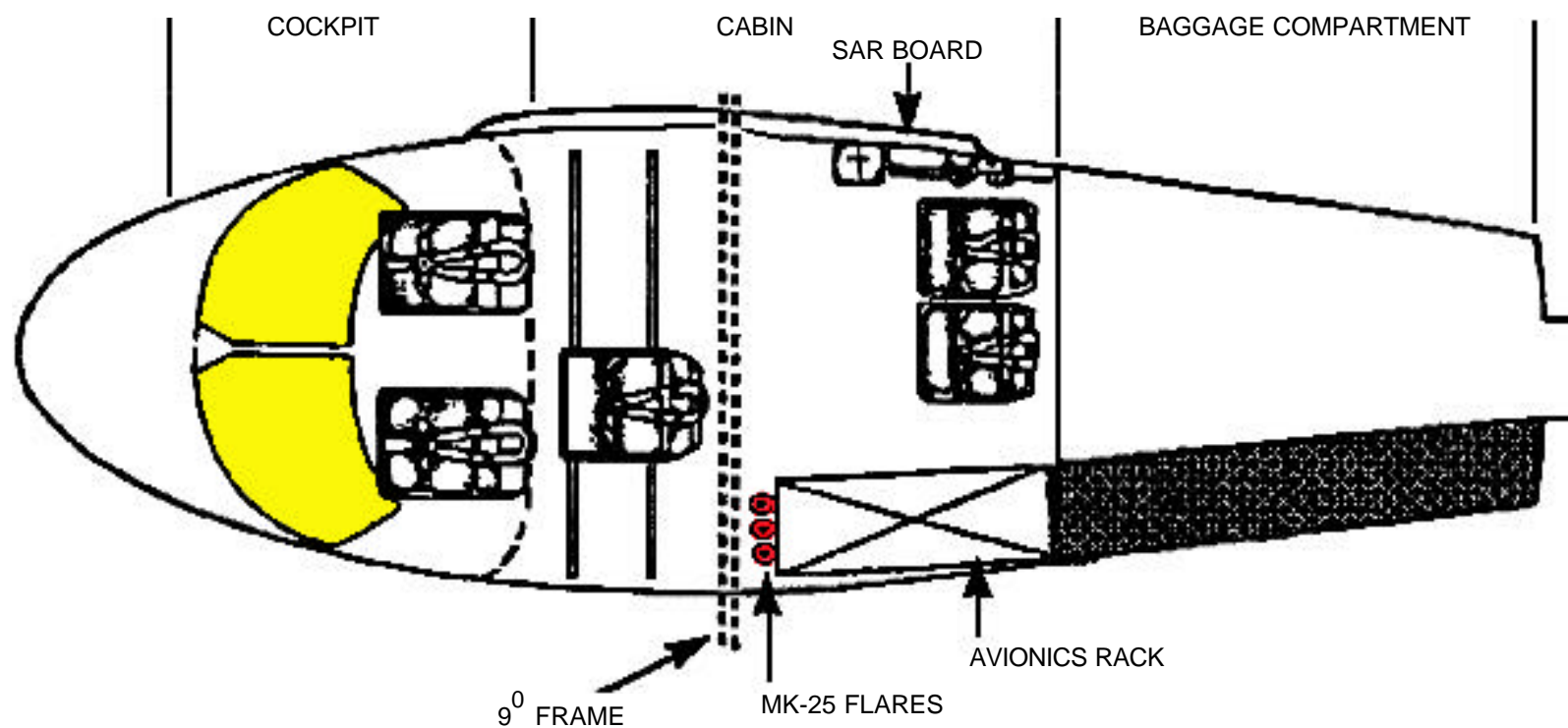
HH-65A

# AIRFRAME MATERIALS

HH-65A

## 1. AIRFRAME MATERIALS

The cockpit, cabin and baggage compartment is constructed primarily of longitudinal, aluminum alloy beams and non-metallic honeycomb laminated with fiberglass with a metal covering that supports the vertical fin and a fixed horizontal stabilizer. Graphic illustrates the 9<sup>0</sup> Frame and basic interior of the HH-65A.





# HH-65A.5 AIRCRAFT FUEL SYSTEM AND CAPACITIES

HH-65A

T.O. 00-105E-9

## 1. AIRCRAFT FUEL SYSTEM

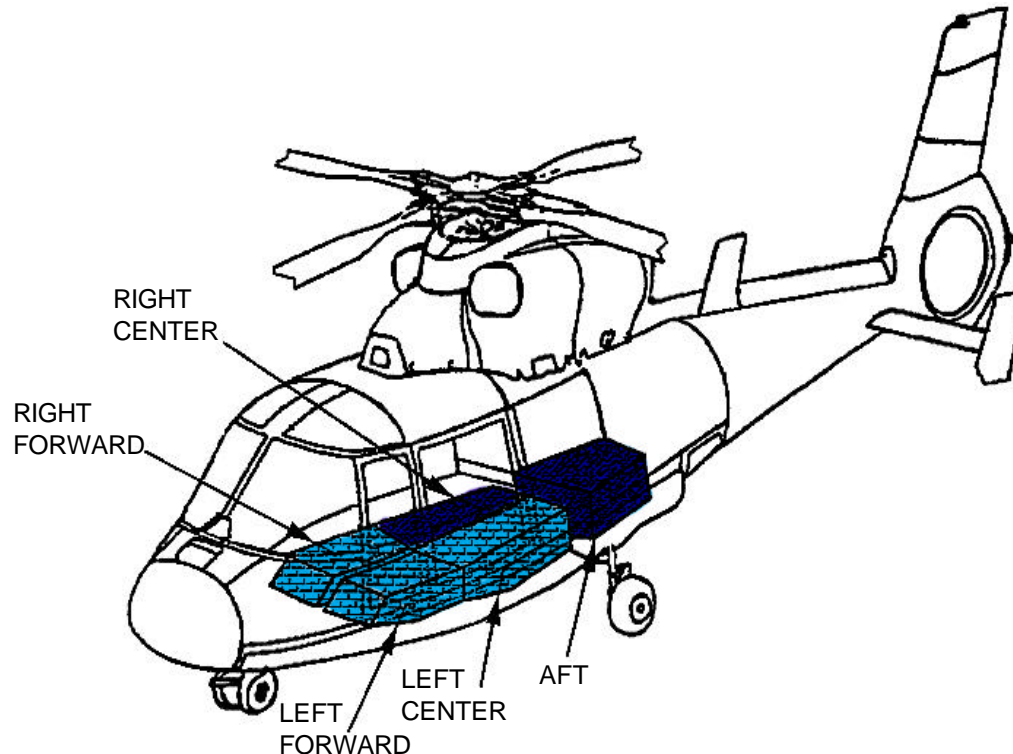
- a. The fuel system has 5 cells, located beneath the floor panel in seal compartments. The 5 cells are divided into 2 systems. The #1 system has 3 cells and #2 has 2 cells. This arrangement minimizes lateral and longitudinal center of gravity changes as fuel is consumed. Each system has a feeder tank located in its center tank for it's respective engine. Each system is vented to an expansion tank mounted in the baggage compartment.



#1 FUEL SYSTEM



#2 FUEL SYSTEM



## 2. FUEL CAPACITY CHART

FUEL CAPACITY																
TANKS	LEFT SYSTEM (#1)								RIGHT SYSTEM (#2)							
	PRESSURE FUELING				GRAVITY FUELING				PRESSURE FUELING				GRAVITY FUELING			
	GALS				GALS				GALS				GALS			
		JP-4	JP-5	JP-8		JP-4	JP-5	JP-8		JP-4	JP-5	JP-8		JP-4	JP-5	JP-8
RIGHT FWD	39.6	257	269	265	43.8	285	298	293								
LEFT FWD	37.0	241	252	248	42.5	276	289	285								
LEFT CTR	59.6	387	405	399	55.4	360	377	371								
RIGHT CTR									71.6	463	487	480	59.1	384	402	396
AFT									74.3	486	509	501	82.7	577	603	594
TOTAL	136.2	885	926	912	141.7	921	964	949	146.4	952	996	981	147.8	961	1005	990

# FUEL AND STATIC SYSTEMS

## 1. DRAINING/BLEEDING POINTS

### NOTE:

Servicing also includes the use of aircraft draining and bleeding points. These are provided for the pitot-static system and fuel sump draining as well as the hydraulic system. The points may be a source of flammable hazards.

## 2. GRAVITY REFUELING PANEL

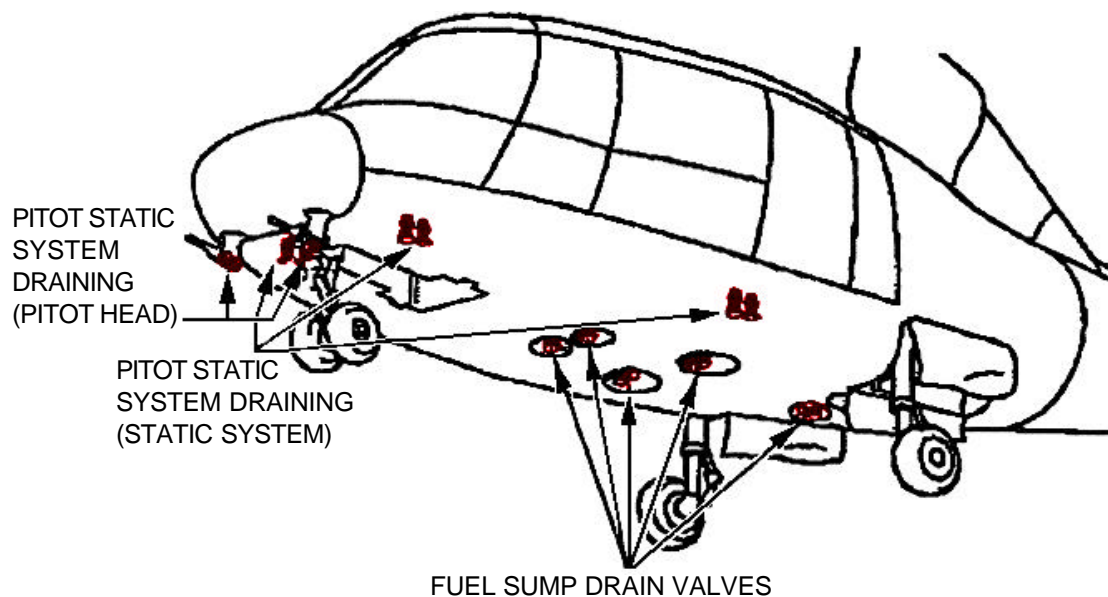
### NOTE:

The gravity refueling panel is located above the left main landing gear. The location of the panel and components are illustrated to the right.

## 3. SINGLE POINT REFUELING (SPR) PANEL

### NOTE:

The pressure refueling receptacle is on a panel located above the right main landing gear.



PRESSURE SHUTOFF VALVE CONTROL (NORMAL POSITION)

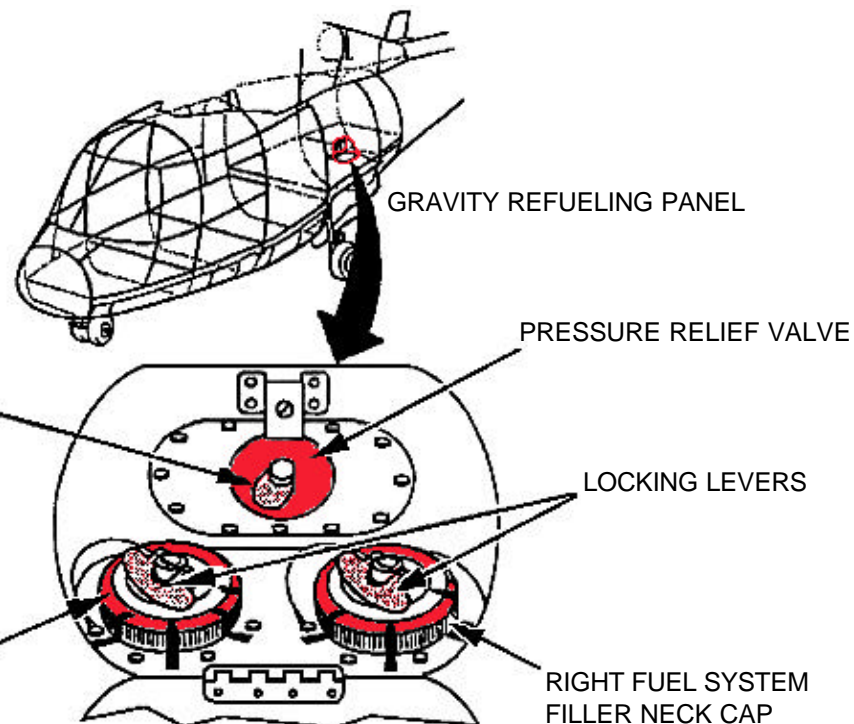
PRESSURE SHUTOFF VALVE CONTROL (SHUTOFF POSITION)

SPR PANEL

FUEL CAP

THREE WAY CONTROL VALVE

LEFT FUEL SYSTEM FILLER NECK CAP



# EMERGENCY EXITS AND LOCATIONS

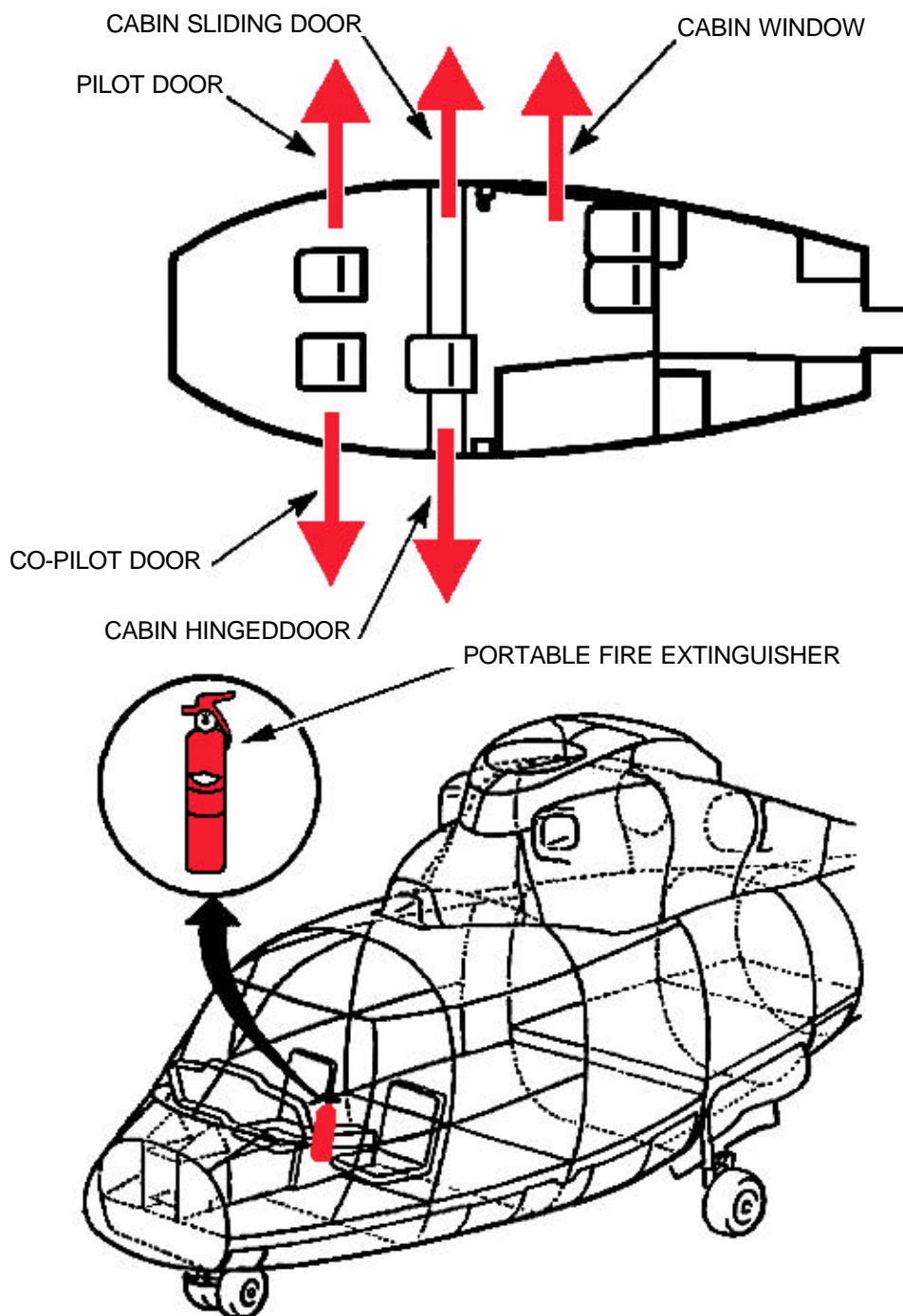
## 1. EMERGENCY EXITS AND LOCATIONS

### NOTE:

An important item concerning helicopter ditching over water is the aircraft, almost always, turns upside down. This will complicate egress by the crew and passengers from the helicopter as well as rescue crews attempting to enter and extract personnel. Knowing where and how to operate these emergency exits become a matter of life and death.

## 2. PORTABLE FIRE EXTINGUISHER

- a. A portable fire extinguisher is located between the pilot and co-pilot seats in the cockpit.



HH-65A



**SPECIAL TOOLS/EQUIPMENT**  
**Power Rescue Saw**  
**Fire Drill II**

**AIRCRAFT ENTRY**

**1. NORMAL ENTRY**

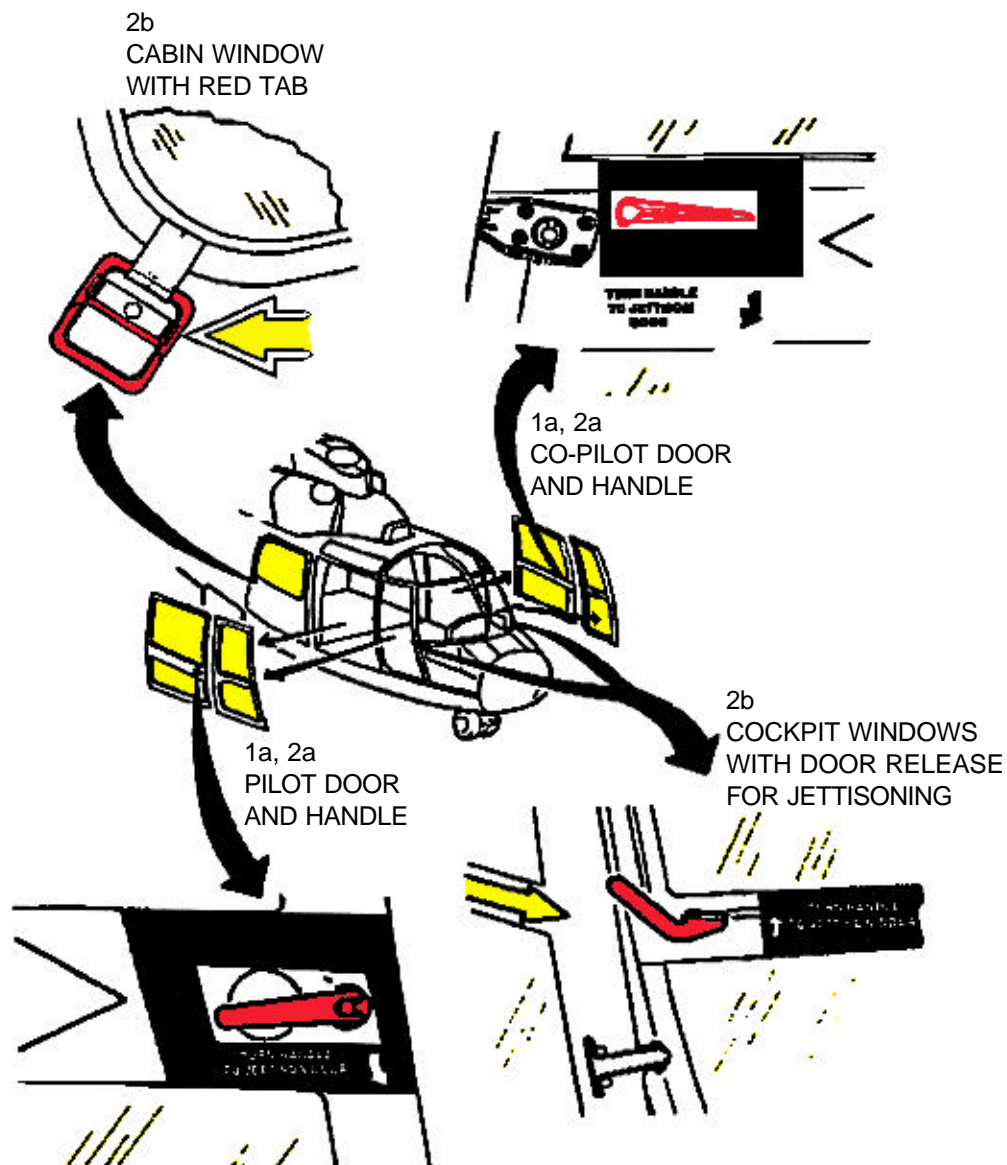
- a. Opening the pilot or co-pilot door or any door is accomplished by rotating the door handle downward.
- b. The left side door is a hinged door.
- c. The right side door is a sliding door.

**2. EMERGENCY ENTRY**

- a. Emergency entry through any door is accomplished through the door release to jettison the door.
- b. Opening the cabin window by pulling outward on the red-tabbed lanyard and pushing inward on the window.
- c. Accessing the cabin can be made through the baggage compartment door.

**3. CUT-IN**

- a. Cut-in to aircraft as needed.



# HH-65A.9 ENGINE SHUTDOWN AND FIRE WARNING

## 1. ENGINE SHUTDOWN

### NOTE:

There are two Fuel Flow Control Levers, one for each engine, are located on the overhead control quadrant. There are three detent positions on the 100 degree range: SHUTOFF, IDLE AND FLIGHT. The detents can be passed by pulling the lever to the right and moving it beyond the detent. A mechanical interlock prevents the levers from being moved forward of the IDLE position when the rotor brake is applied.

- a. Pull the Fuel Flow Control Levers to the SHUTOFF position.

## 2. EMERGENCY SHUTDOWN

### NOTE:

There are two emergency Fuel Shutoff Control Levers, one for each engine, are located on the overhead control quadrant. Each lever is used for emergency shutdown of the respective engine in the event of a fire within the engine compartment or in case of malfunction in the engine gas generator speed control system. The levers are breakaway wired in the OPEN (forward) position.

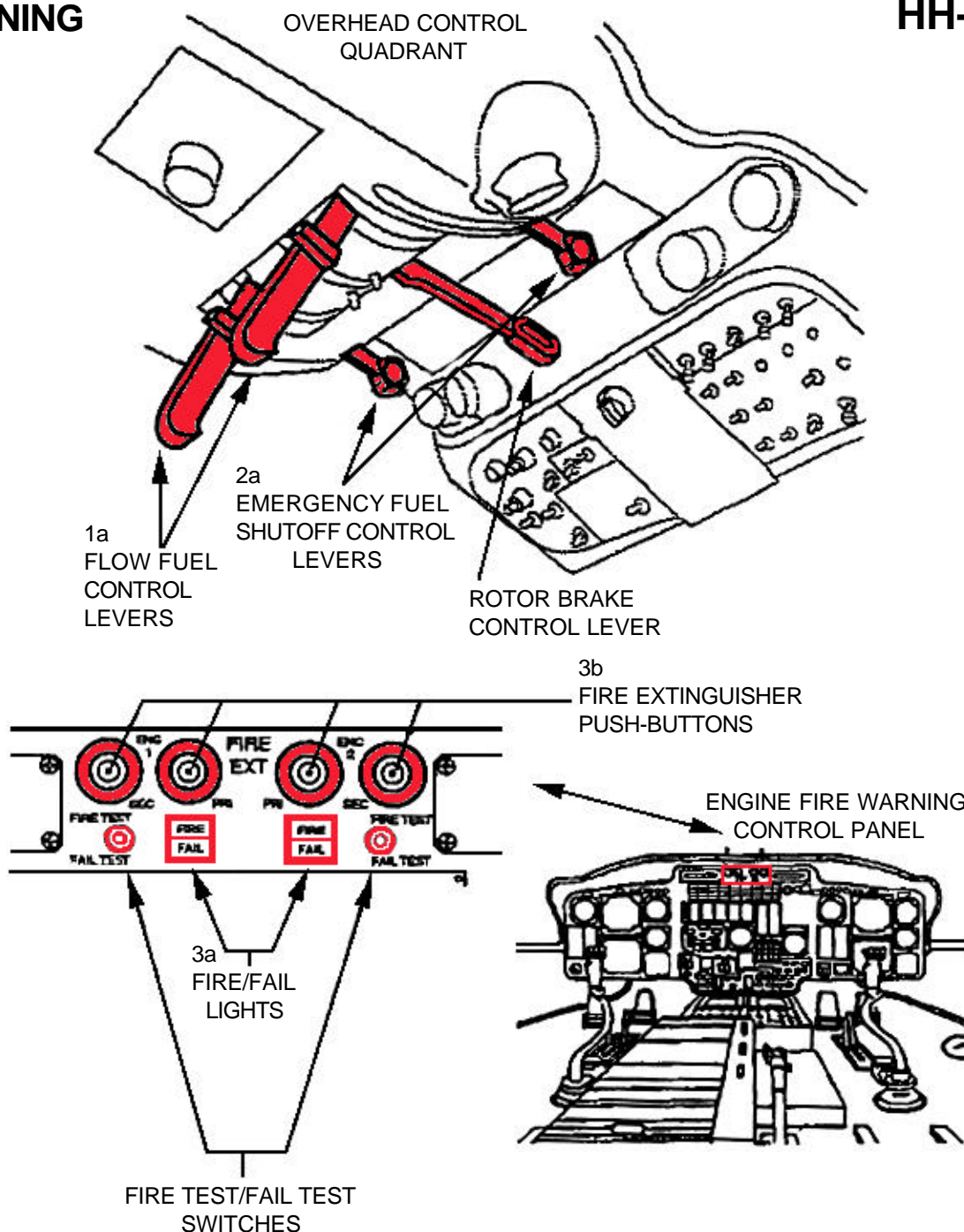
- a. Pull the Fuel Shutoff Control Levers to the AFT position to shut off all fuel flow.

## 3. ENGINE FIRE WARNING CONTROL PANEL

### NOTE:

The Engine Fire Warning Control Panel is located at the center of the instrument panel.

- a. In case of fire, the Fire/Fail Lights will illuminate.
- b.. Push the appropriate Fire Extinguisher push button, located just above the Fire/Fail lights.



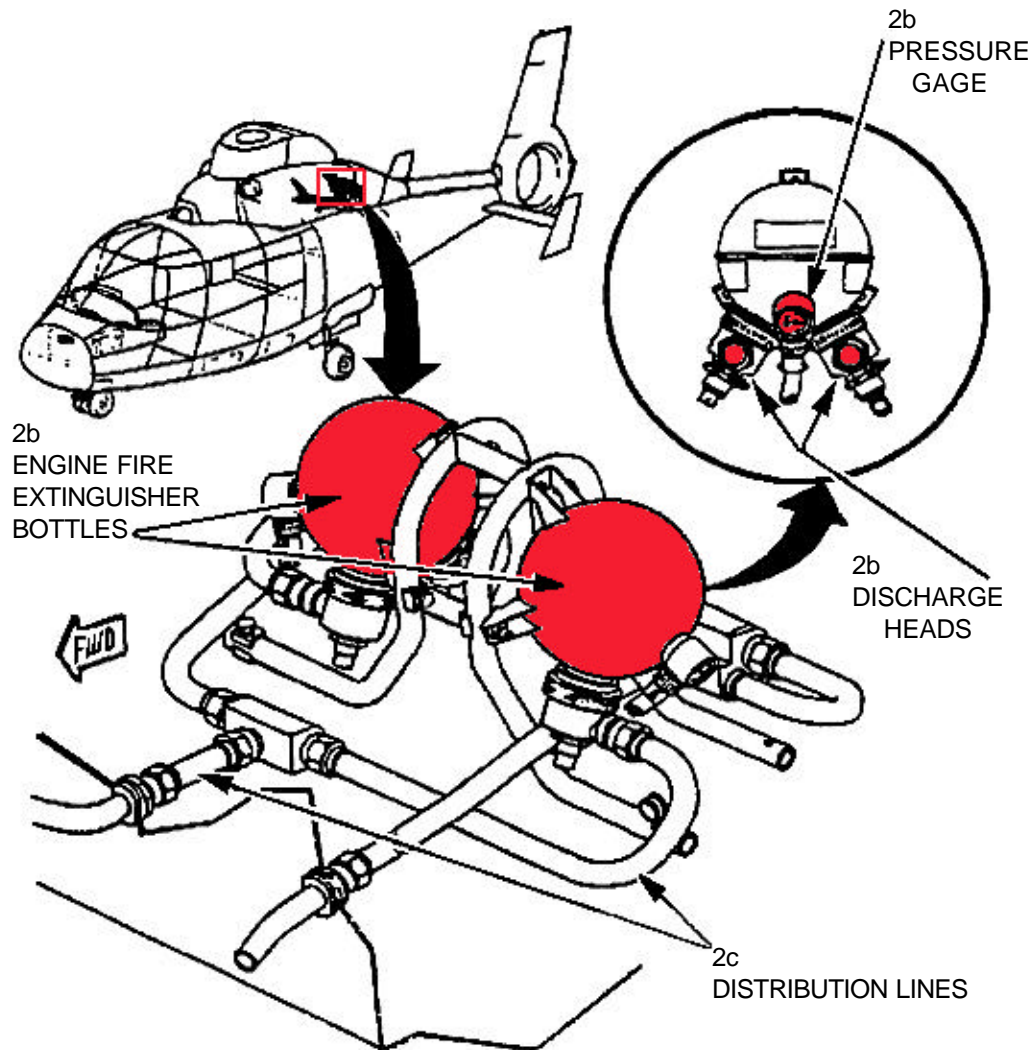
HH-65A

T.O. 00-105E-9

# HH-65A:10 ENGINE FIRE EXTINGUISHER BOTTLES

## 1. ENGINE FIRE EXTINGUISHER BOTTLES

- a. The engine fire extinguisher system is designed to extinguish fires in the engine compartment and is comprised of :
- Two spherical bottles
  - Distribution system
  - Engine fire warning/control panel
  - Low pressure warning system
- b. The characteristics of the fire extinguisher bottles are:
- Each bottle is mounted aft of it's respective engine bay in a fire protected area
  - Equipped with dual discharge heads
  - Extinguishing agent is released by explosive squibs
  - Contains the agent Bromotrifluoromethane
  - Pressurized to 600 - 626 PSI at 21.1<sup>0</sup> Celsius.
  - Each equipped with a pressure gage
- c. The engine fire extinguisher distribution system mainly consists of distribution lines connected to the explosive squibs that route the extinguishing agent to the selected engine.



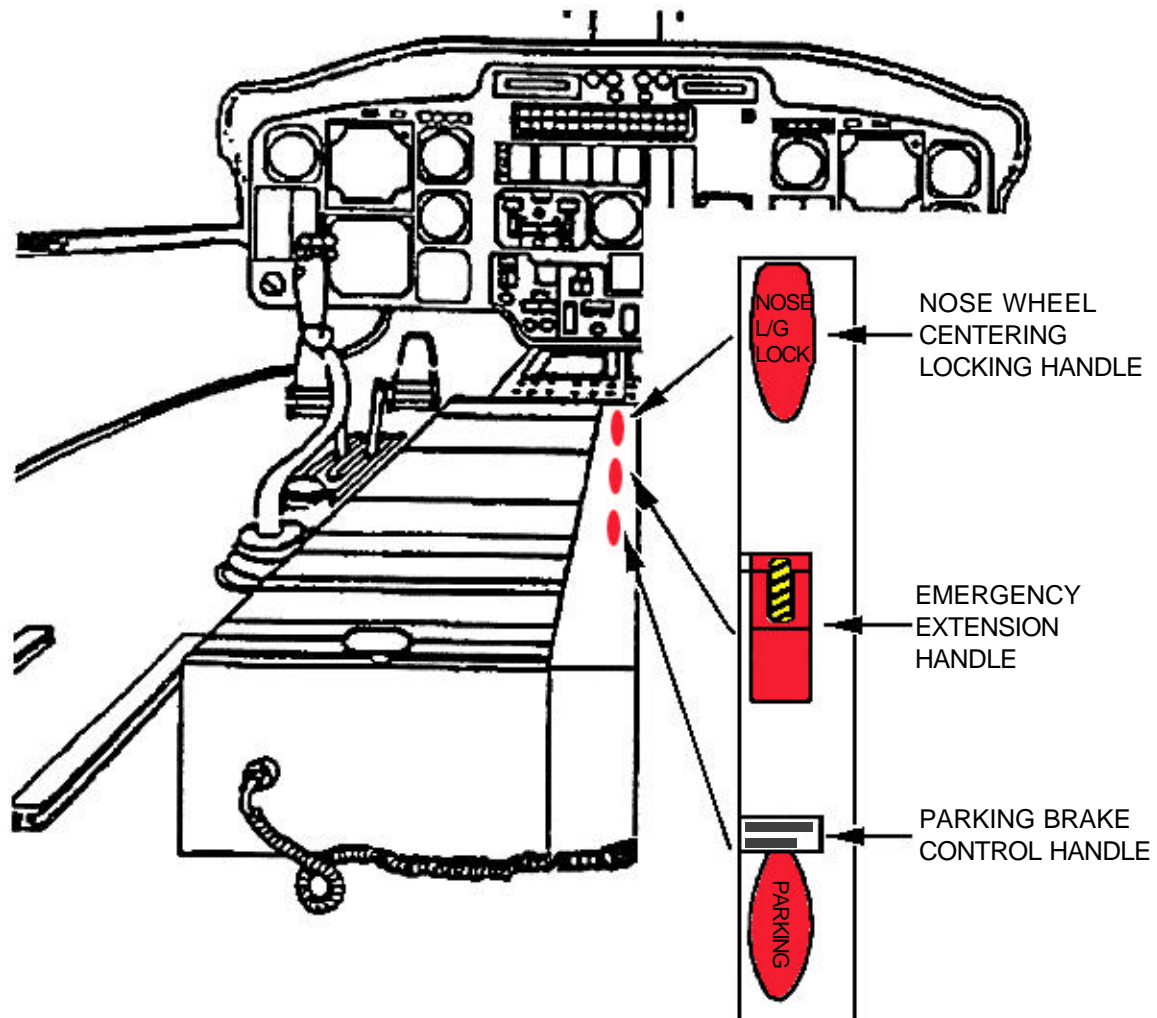
# LANDING GEAR SYSTEM

## 1. LANDING GEAR SYSTEM

### NOTE:

The operation of the landing gear system can be beneficial to a rescue team in stabilizing aircraft movement.

- a. The illustration at the right shows the control handles located on the pilot's side of the center console.



HH-65A



# MAIN LANDING GEAR WHEEL BRAKE SYSTEM

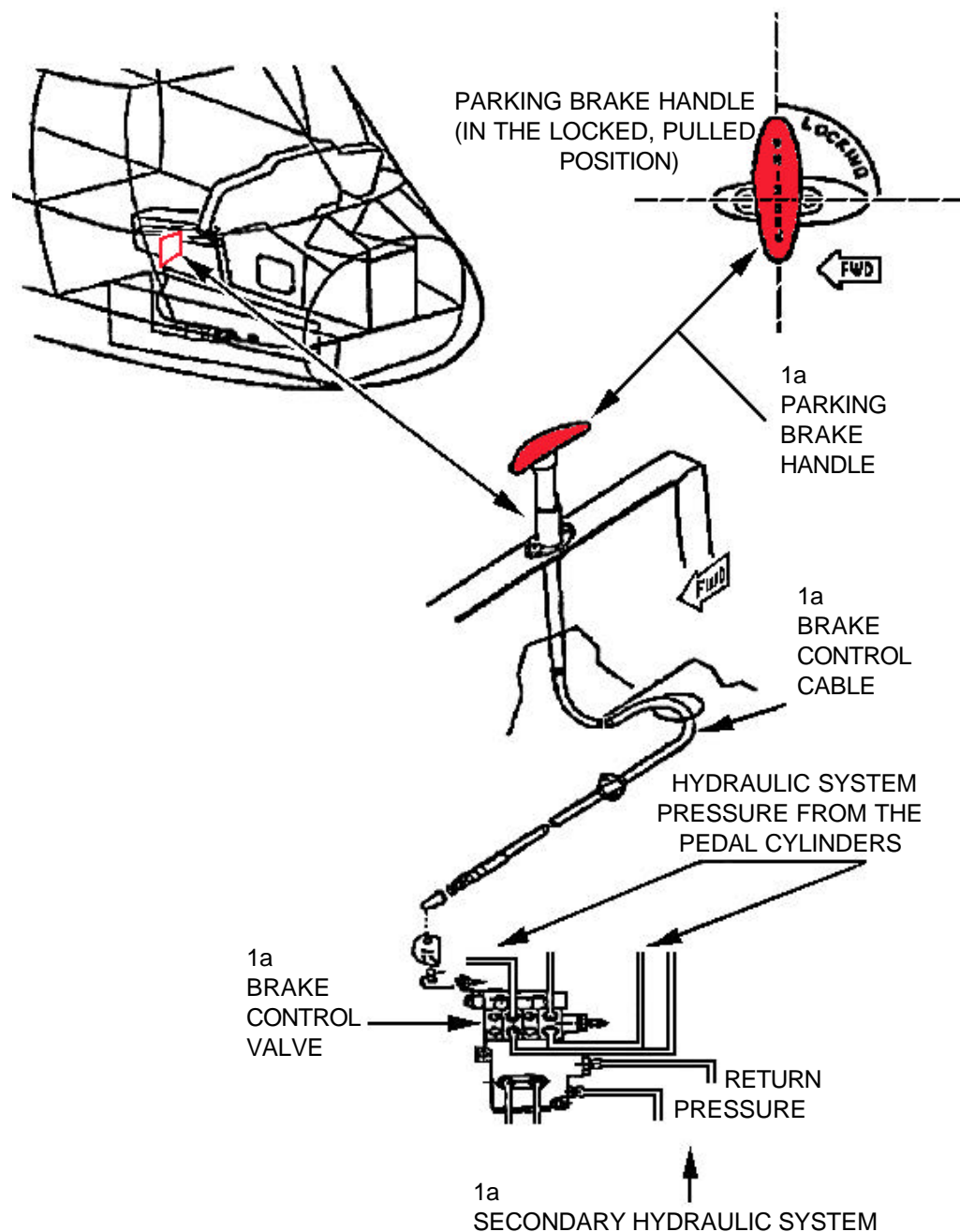
HH-65A

## 1. MAIN LANDING GEAR WHEEL BRAKE SYSTEM

### NOTE:

The brake can be useful during rescue operations to prevent the aircraft from movement.

- a. The illustration to the right shows the location and operation of the parking brake handle and brake control cable to the brake control valve of the secondary hydraulic system.



# TOWING PROCEDURES

## 1. TOWING PROCEDURES

- a. Connect tow bar to the ends of the nose landing gear tow bar adapter.

### NOTE:

While connecting the tow bar, ensure that the nose landing gear centering lock is in the unlocked position.

- b. Connect tow bar to tow tractor.
- c. Station required towing team members.
- d. Release parking brake and remove main landing gear chocks.

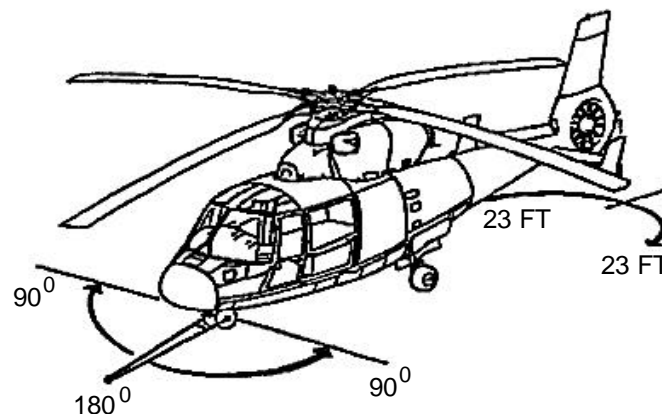
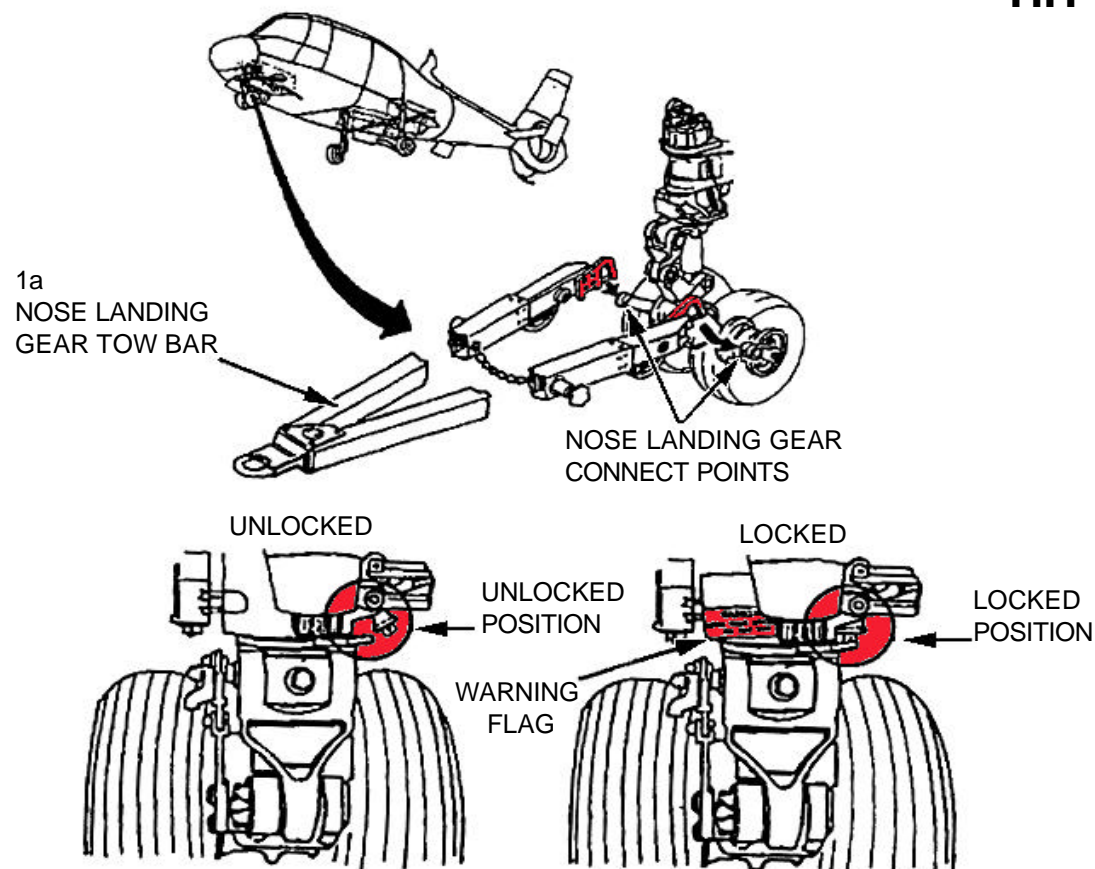
### CAUTION

Avoid sudden acceleration or deceleration. Do not turn nose landing gear before rolling to prevent tire distortion and slipping on rims.

- e. Tow the aircraft.

### NOTE:

Turn radius: Limited to a 90 degree turn of the nose landing gear. Allow 23 feet minimum turning radius for clearance of the tailboom.



## GENERAL INFORMATION

NATIONAL OCEANIC AND ATMOSPHERE ADMINISTRATION  
(NOAA) ACTIVE AIRCRAFT INVENTORY

**NOTE:**

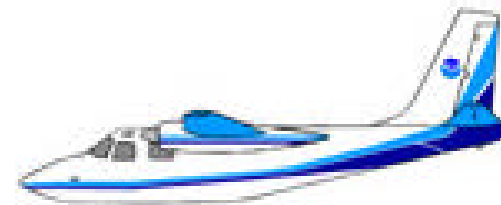
These aircraft will be cross referenced with other similar aircraft where appropriate.



BELL 212



GULFSTREAM TURBO COMMANDER  
AC-690



ROCKWELL AERO COMMANDER  
AC-500S



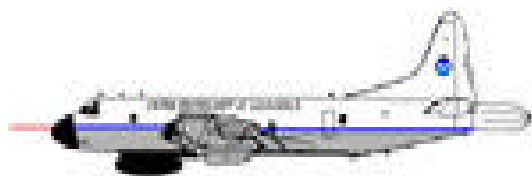
CESSNA CITATION II  
CE-550



LAKE SEAWOLF  
LA-27



DeHAVILLAND TWIN OTTER  
DH-6



LOCKHEED WP-3D ORION



GULFSTREAM IV (SP) G-IV



MD 500D



## GENERAL INFORMATION

### NOTE:

This aircraft is similar to the UH-1N "Twin Huey"  
See Chapter 9 for details.



## BELL 212

## GENERAL INFORMATION

### NOTE:

This aircraft is a business jet and does not have a similar military designation. Emergency rescue information pending.

The is Cessna Citation (CE-550) a versatile twin-engine jet aircraft modified for acquiring coastal remote sensing imagery. The aircraft can support a wide variety of remote sensing configurations, including largeformat aerial photography as well as data collection for digital cameras, hyperspectral, multispectral, and LIDAR systems. Cessna Citation (CE-550)

### STANDARD AIRCRAFT SPECIFICATIONS

Type:	Cessna Citation II/ Model 550
Crew:	2 Pilots and 2-4 Scientists
Ceiling:	43,000 feet (without supplemental cabin oxygen)
Rate of Climb:	2500 ft/min at sea level (20 minutes to climb to 30,000 ft)
Cruise Airspeed:	350 knots (true)
Scientific Power:	8 amps @ 115 volts (5 standard outlets) 50 amps @ 28 volts DC
Max. Gross Weight:	14,600 lbs
Empty Weight:	7,800 lbs
Useful Load:	6,800 lbs (fuel, personnel, cargo)
Fuel Load:	5,008 lbs
Standard Fuel Burn:	Normal Cruise (98%): Range-1325 nm Duration-4 hrs 15 min, Max. Cruise (104%): Range-1200 nm Duration-3 hrs 40min, Max. Endurance: Range-1610 nm Duration-5 hrs
Dimensions:	Wing Span: 51 ft 8.4 in, Total Length: 47 ft 3 in, Fuselage Height: 4.8 ft, Tail Height: 14 ft 9.6 in
Cabin Doors:	39 in x 21.25 in
Baggage Doors (rear):	22 in x 27 in
Cabin Length:	20.9 ft
Cabin Width:	4.9 ft
Useable Volume:	491 cu ft
Nose Baggage:	28 cu ft
Cabin Baggage:	947 cu ft
Cockpit:	Color weather radar, radar altimeter, integrated flight director system, HF radio, GPS flight management system
Cabin:	Dual cameras: Wild RC-30 on the right side/Wild RC- 10 on the left side. Applanix POS/AV IMU system and laptop computer Cabin



## CESSNA CITATION II

## GENERAL INFORMATION

### NOTE:

This aircraft is similar to the P-3. See Chapter 21 for details.



**LOCKHEED  
WP-3D ORION**

## GENERAL INFORMATION

### NOTE:

This aircraft does not have a similar military designation. Emergency rescue information pending.

The Gulfstream Turbo Commander (AC-690) is a stable high-winged twin, pressurized turboprop aircraft that is suitable for a variety of missions. The standard configuration allows for mission equipment, two pilots, and one photographer. However, with all seats installed, five scientists/technicians may be accommodated in the cabin. NOAA's AC-690 Turbo Commander is utilized by the NGS Remote Sensing Division and the NOHRSC (National Operational Hydrologic Remote Sensing Center).



## GULFSTREAM TURBO COMMANDER AC-690

### STANDARD AIRCRAFT SPECIFICATIONS

Type:	Rockwell AC690A TurboCommander
Engines:	Garrett TPE 331-5-251K
Crew:	2 Pilots + 5 Scientists
Ceiling:	31,000 feet
Rate of Climb:	3000 feet/minute
Operational Airspeeds:	120 - 250 kts
Electrical:	Two 28 VDC generators, 110 VAC
Scientific Power:	28 VDC, 110 VAC
Max. Gross Weight:	10,250 lbs.
Empty Weight:	6830 lbs.
Useful Load:	3,420 lbs.
Fuel Load:	384 US gallons
Fuel Type:	Jet A,B JP4,5,8
Standard Fuel Burn:	Normal Cruise Speed - 60 to 90 gallons per hour, depending on altitude and mission
Dimensions (external):	Wing Span: 46 ft. 7 in., Total Length, Length: 44 ft. 5 in., Tail Height: 14 ft. 12 in.
Dimensions (internal):	Cabin Door: 47 in. X 26.5 in. Baggage Door: 31.25 in. X 19.75 in. Baggage volume: 45 cubic ft.

## GENERAL INFORMATION

### NOTE:

This aircraft does not have a similar military designation. Emergency rescue information pending.

The Lake Renegade Seawolf (LA-27) is a rugged, adaptable, single engine amphibious aircraft designed for nearshore low-level surveys. The aircraft is equipped with external fuel tanks, bubble windows, and NATO hardpoints. NOAA operates two of these single turbo-charged piston engine amphibious aircraft. A standard crew consists of one pilot and up to three scientists. The Lake aircraft have been used for biological surveys including red drum, sea turtle and marine mammal surveys, as well as on site terrain observations.

### STANDARD AIRCRAFT SPECIFICATIONS

Type Engines: AVCO Lycoming TI0540-AA1AD

Crew: 1 Pilot + 3 Scientists

Ceiling: 12,500 feet (without supplemental cabin oxygen), 20,000 feet (with supplemental cabin oxygen)

Rate of Climb: 800 feet/minute

Operational Airspeeds: 120 knots

Electrical: Two 70 ampere alternators

Max. Gross Weight: 3700 lbs. (weight above 3450 lbs should consist of under wing fuel/ stores)

Empty Weight: 2450 lbs

Useful Load: 1000 lbs (fuel, personnel, cargo)

Fuel Load: 40 U.S. Gals main, 14 U.S. Gals, Auxiliary tanks (7 Gals ea, usable), 34 U.S. Gals wing tanks (17 Gals ea), 34 U.S. Gals ea drop tank

Type Fuel: Aviation Gasoline 100 or 100LL

Maximum Range/Duration: 12 hours/ 1500 NM

Dimensions (external): Length 28'9", Wing Span 39', Height 11'

Displacement: At rest 18" (17-19), Step taxi 6" (3-6)

Max wave height: 18"

Additional Standard Equipment (Cockpit) : GPS/ Loran-C navigation system with scientific data drop, radar altimeter, Dual VHF radios, real-time L1/L2 band differential GPS antenna, Trimble Pro X/R GPS receiver is plugged into this antenna and allows the crew to view moving map displays of the survey area as well as record detailed ancillary data collected during flight.

Additional Standard Equipment (Cabin): Bubble windows on each side of cabin (removeable), hardpoints (with jettison capability) for camera pod attachment, wing camera pod, modified ventilation system with individual air ducts for rear seat passengers.



## LAKE SEAWOLF LA-27

## GENERAL INFORMATION

### NOTE:

This aircraft is similar to the C-20/H.  
See Chapter 6 for details.



## GULFSTREAM IV (SP) G-IV



## GENERAL INFORMATION

### NOTE:

This aircraft does not have a similar military designation. Emergency rescue information pending.

The Rockwell Aero Commander (AC-500S) is a versatile and stable high-winged twin piston-engine aircraft that is suitable for a variety of missions. Standard configuration allows for mission equipment and two pilots. However, with the scientific packages removed, seating for five additional passengers may be installed. NOAA's two aero commanders are utilized primarily as aerial survey platforms for visual verification of aeronautical charts, high-resolution aerial photography, and snow water equivalent and soil moisture content measurements. Additionally, the aircraft has been used in biological investigations, such as algal bloom measurements and sea turtle population assessments, and post-hurricane and severe flood damage assessment photography.



## ROCKWELL AERO COMMANDER AC-500S

### STANDARD AIRCRAFT SPECIFICATIONS

Type: Rockwell AC-500S Aero Commander

Engines:	Lycoming IO-540-E1B5 (piston)
Crew:	2 Pilots + 3 Scientists
Ceiling:	12,500 feet (without supplemental cabin oxygen) 18,000 feet (with supplemental cabin oxygen)
Rate of Climb:	1750 feet/minute
Operational Airspeeds:	90-150 knots
Electrical:	Two 28 VDC 100 ampere alternators
Max. Gross Weight:	6,750 lbs.
Empty Weight:	5,341 lbs., (5,621 lbs. including RC-8 Aerial Camera), (5,756 lbs. including Snow System)
Useful Load:	1,409 lbs. (fuel, personnel, cargo), (1,129 lbs. with camera installed), (994 lbs. with Snow System installed)
Fuel Load:	958 lbs. (159 gal)
Type Fuel:	100 LL
Standard Fuel Burn:	Normal Cruise Speed - 164 lbs./hr (27.3 gal/hr) Fuel Burn for specific mission configuration will be calculated during mission planning and will vary with environmental conditions.
Maximum Range and Duration:	@Normal Cruise - 670 nm @Max. Endurance - 860 nm @Normal Cruise - 4 hr 30 min @Max. Endurance - 6 hr 10 min
Dimensions (external):	Wing Span - 49 ft 0.6 in, Total Length - 36 ft 9.7 in, Fuselage Height - 14 ft 3.5 in, Tail Height - 14 ft 8.2 in
Forward Cabin Doors	- 3 ft 10 in x 1 ft 11 in
Aft Cabin Doors	- 3 ft 9 in x 2 ft 4 in
Baggage Doors	- 1 ft 11 in x 1 ft 7 in
Dimensions (internal):	Cabin Length - 10 ft 7.5 in, Cabin Height - 4 ft 5 in, Cabin Width - 4 ft 4 in
Useable Volumes:	Cabin - 177 cu ft Baggage compartment - 32 cu ft
	Additional Standard Equipment, Cockpit: Weather radar, radar altimeter, GPS navigation system
	Cabin: Camera ports on bottom of fuselage (approx. 1' x 1'), RC-8 aerial camera GPS data port



## GENERAL INFORMATION

### NOTE:

This aircraft is similar to the UV-18B. See Chapter 12 for details.



## DeHAVILLAND TWIN OTTER DH-6

## GENERAL INFORMATION

### NOTE:

This aircraft is similar to the O/MH-6 "Cayuse".  
See Chapter 13 for details.



## MD 500D