

# Standard Aircraft Characteristics

## NAVY MODEL SH-3H AIRCRAFT

PUBLISHED BY DIRECTION OF THE  
COMMANDER OF THE NAVAL AIR SYSTEMS COMMAND

APRIL 1972

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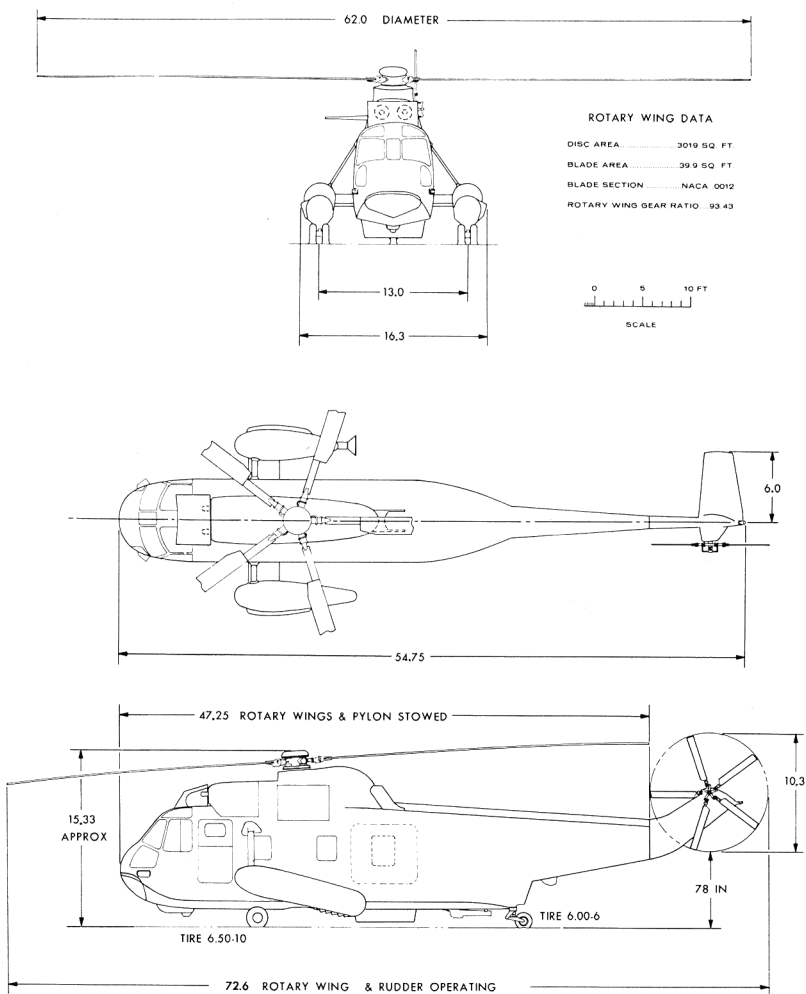
# STANDARD AIRCRAFT CHARACTERISTICS

## SH-3H

SIKORSKY

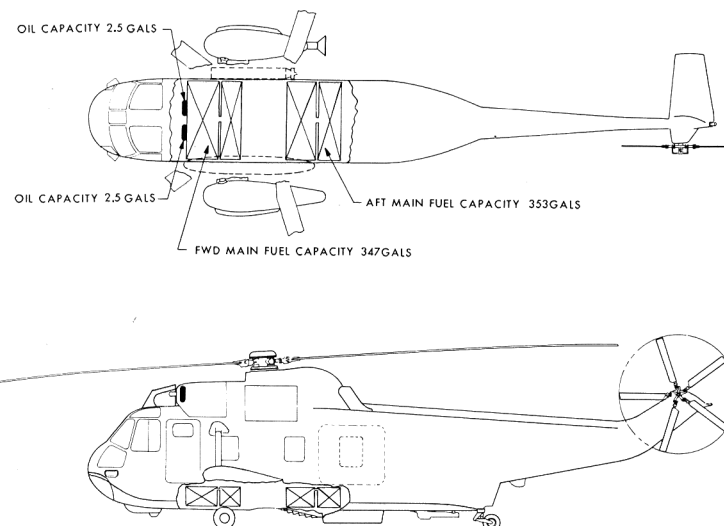
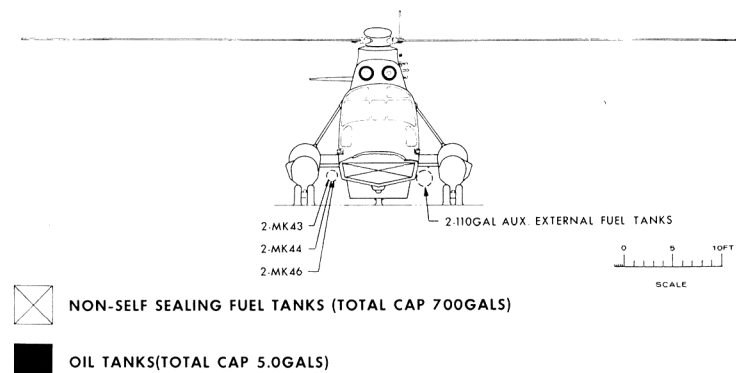
STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4A (Rev. 7-65)

NAVAL AIR SYSTEMS COMMAND  
NAVY DEPARTMENT



DESCRIPTIVE ARRANGEMENT

NAVAL AIR SYSTEMS COMMAND  
NAVY DEPARTMENT



ARMAMENT AND TANKAGE

STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4B (Rev. 7-65)

STANDARD AIRCRAFT CHARACTERISTICS, NAVWEPS FORM 13100/4C (Rev. 7-65)

POWER PLANT					MISSION AND DESCRIPTION		WEIGHTS		
No. and Model: (2) T58-GE-10 Manufacturer: General Electric Engine Spec. No.: E1081 23 Oct. 1963 Type: Axial  Main Rotor Gear Ratio: 93.43 to 1 Tail Rotor Gear Ratio: 15.757 to 1					The missions of this helicopter shall be:  (1) To detect, identify, track, and destroy enemy submarines. (2) To detect, identify, and track anti-ship missiles and to warn surface vessels in the operational area. (3) To provide logistic support capability. (4) To provide search and rescue capability as required.  The twin turbine engine helicopter uses a single main rotor and a single anti-torque tail rotor. The blades are all metal construction. Main rotor blades are equipped with Sikorsky BHM to eliminate mandatory blade retirement. Conventional helicopter controls are provided for both pilot and copilot. The mechanical controls are augmented by two parallel and independent hydraulic servo systems. An automatic flight control system (AFCS) is also provided. The amphibious design of the alighting gear is formed by hull bottom, sponsons, and retractable main wheels. Tail pylon and main rotor blades fold to permit stowage on a CVE-55 carrier elevator.  The SH-3H configuration is a modified SH-3G featuring basic aircraft and electronic improvements to provide increased multi-purpose mission capabilities. The SH-3G evolved from the basic SH-3A helicopter and featured convertibility between ASW and utility missions.		LOADING POUNDS L.F.  Empty (E) 13,892 Basic 13,918 Operating Weight **14,809 Design 21,000 2.25 Combat **18,154 Maximum Takeoff *21,000 2.25 Maximum Landing *21,000 2.25  (E) Estimated * Structural Substantiation ** For Basic Mission		
RATINGS							FUEL AND OIL		
	*ESHP	RPM	ALT	TIME			LOCATION	TYPE	GAL.
Military:	1400	19500	S.S.L.	30 Min.			Fuselage		
Normal:	1250	19500	S.S.L.	Contin.			Forward	Bladder	347.0
* See Page 4, Performance Basis, Items (5)&(9)							Aft	Bladder	353.0
							Fwd.Launch Points	2-Aux.(droppable)	220.0
ELECTRONICS					DEVELOPMENT		OIL		
AN/ARC-51A Radio Set (UHF) AN/ARN-52(V) TACAN Navigation Set AN/APX-72 Radar Identification Set AN/ARC-94 Radio Set AN/ARN-59 ADF AN/ARA-25A Direction Finder Group AN/APN-171 Radio Altimeter AN/APN-182(V) Radar Navigation Set AN/AYK-2 Navigation Computer Set AN/AQS-13B Sonar Detection System AN/APQ-107 Radar Altitude Warning System AN/ARR-52A(V) Receiver Set Radio AN/ASN-50 Attitude Heading Reference System AN/ASQ-81(V)(-2) Magnetic Detecting Set AN/ASA-26B Recorder Group AN/ALR-54 Electronic Surveillance Measures Radar AN/AIC-14 Intercommunications Set AN/ALE-37 Chaff Dispenser Unit AN/AKT-22(V)-2 Sonobuoy Data Link LN 66 HP Search Radar					Design Contract July 1971  First Flight April 1972		Engine Comp't. 2 Metal 5.0  Specification MIL-L-7808D		
					DIMENSIONS		ORDNANCE		
Main Rotor Diameter 62'-0"							Four Fixed Launching Points:		
Length							ASW Mission		
Maximum 72'-7.5"							2 MK-46 (Mod 0/1) Torpedoes		
Folded blades and tail 47'-3"							ASMD Mission		
Height							2 Chaff Dispenser Units (aft)		
Top of main rotor 15'-4"							Alternate Armament		
Folded blades and tail 16'-10"							1 MK-101 (Mod 0) Depth Bomb, or,		
Width (folded blades) 16'-4"							2 MK-54 (Mod 1) Depth Bombs, or,		
Tail Rotor Ground Clearance 6'-6"							2 MK-14 (Mod 0) Depth Charge, or,		
Main Gear Tread 13'-0"							2 MK-43 (Mod 1) Torpedoes, or,		
Main Rotor Disc Area 3019 sq.ft.							2 MK-44 (Mod 1) Torpedoes		
Main Rotor Blade Area (total) 199.5 sq.ft.							ACCOMMODATIONS		
							Crew (ASW/ASMD)-----4		
							Provision for troop seats-----15		
							Cabin Size Clearance: Length-----27' - 9"		
							Width-----6' - 6"		
							Height-Approx.6' - 0"		

STANDARD AIRCRAFT CHARACTERISTICS, NAVJEPs FORM 13100/4C (Rev. 7-65)

PERFORMANCE SUMMARY						
TAKE-OFF LOADING CONDITION		CLEAN- HIGH ALTITUDE	ASW- BASIC MISSION (2-MK 46 Torpedoes)	ASMD (Chaff-306 lb.)	ASW- HOVER/CRUISE (2-MK 46 Torpedoes)	FERRY RANGE
TAKE-OFF WEIGHT	LB.	17751	21000	18610	21000	19392
FUEL	LB.	4763	4615	3255	4615	6259
PAYLOAD	LB.	0	1576	306	1576	0
DISC LOADING	LB./SQ.FT.	5.88	6.95	6.16	6.95	6.42
VERTICAL RATE OF CLIMB AT S.L. (B)	FPM.	800	0	550	0	330
ABSOLUTE HOVERING CEILING (B)	FT.	5900	0	4400	0	3000
MAX. RATE OF CLIMB AT S.L. (A)/(B)	FPM.	1720/2400	1130/1700	1540/2200	1130/1700	1410/2020
SERVICE CEILING (100 FPM.) (A)/(B)	FT.	15,750/15,850	10,800/11,150	14,400/14,600	10,800/11,150	13,200/13,450
SPEED AT S.L. (A)	KN.	137	126	134	126	132
MAX. SPEED/ALTITUDE (A)	KN./FT.	111/10,000	124/1500	133/1500	126/S.L.	98/10,000
COMBAT RANGE	N.MI.	---	---	---	---	647
AVERAGE CRUISING SPEED	KN.	---	---	---	---	99
CRUISING ALTITUDE	FT.	---	---	---	---	10,000
COMBAT RADIUS	N.MI.	258	162	10	---	---
AVERAGE CRUISING SPEED	KN.	106	116	90	100	---
Cruising Altitude	FT.	10,000	1500	1500	S.L.	---
Total Mission Time	HRS.	5.0	3.8	3.2	3.2	6.6

## NOTES:

- (A) Normal power  
(B) Military power

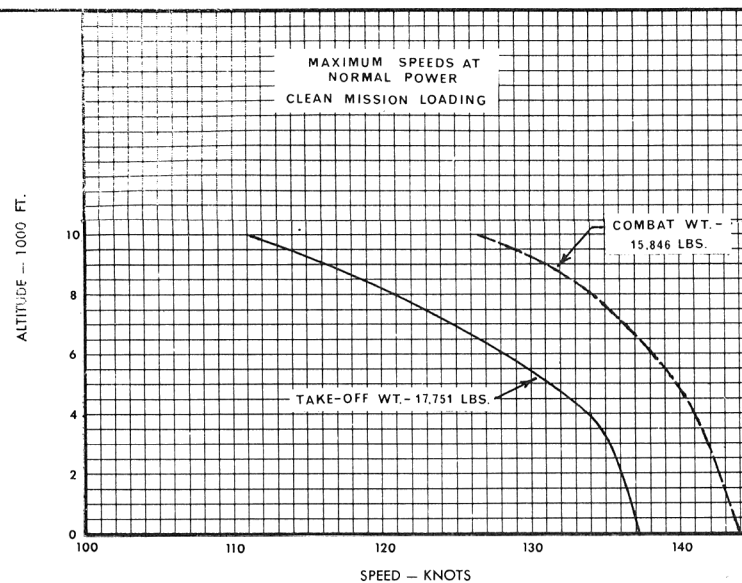
## Performance Basis:

- (1) ICAO standard conditions, no wind, no ground effect.
- (2) Calculated data based on Navy flight tests on SH-3A helicopter.
- (3) Range and radius based on General Electric specification fuel consumption data using fuel grade JP-5.
- (4) Fuel consumption data are increased 5% above engine specification values.
- (5) Transmission ratings for two engine operation are 2100 HP, maximum continuous and 2500 HP, takeoff.
- (6) Aircraft red line airspeed is 144 knots IAS.
- (7) Weight data is estimated pending actual weight and balance, first aircraft.
- (8) Performance reference: Sikorsky Report, SER-611570, "Substantiating Data for Standard Aircraft Characteristics and Performance Charts for SH-3H Helicopter".
- (9) With Sikorsky engine ice deflector shield installed, power ratings used in performance calculations are:

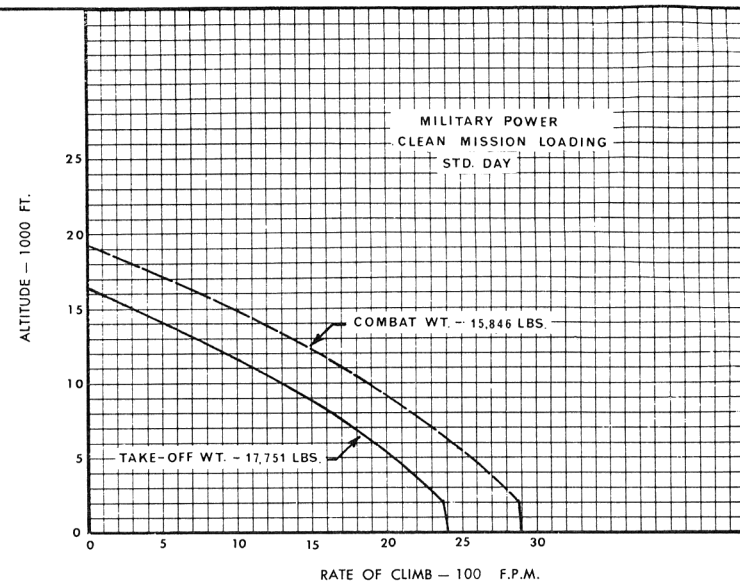
	SHP	RPM	ALT
Military	1322	18966	S.S.L.
Normal	1185	18966	S.S.L.

STANDARD AIRCRAFT CHARACTERISTICS, NAVJEPs FORM 13100/4E (2-63)

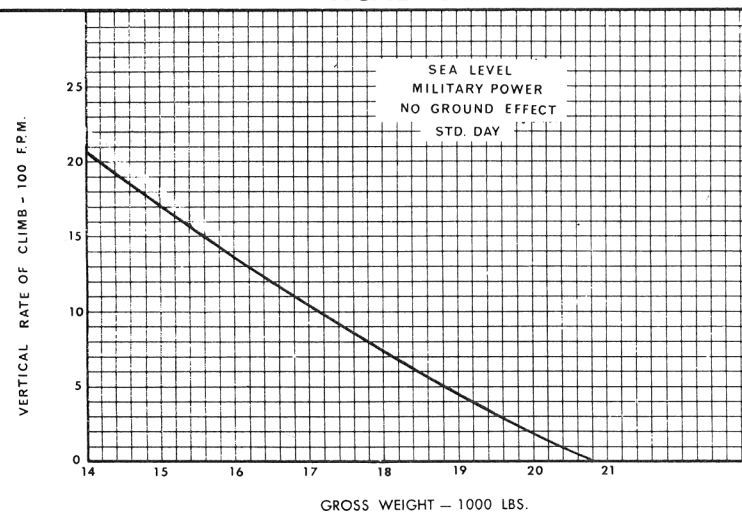
## SPEED



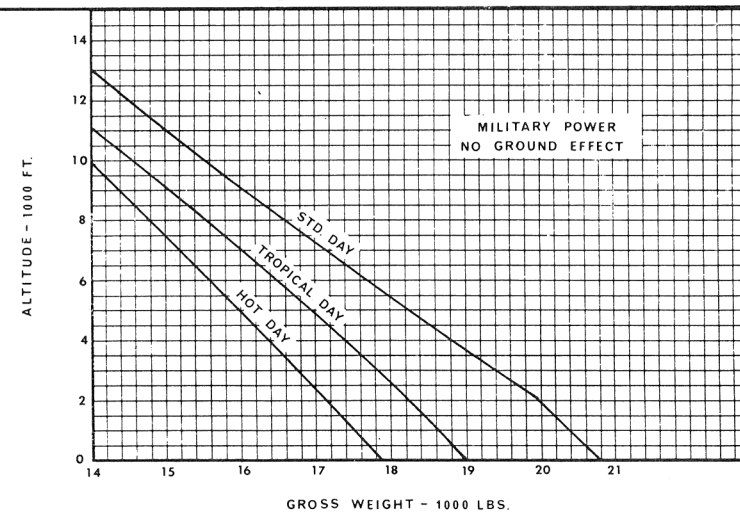
## CLIMB



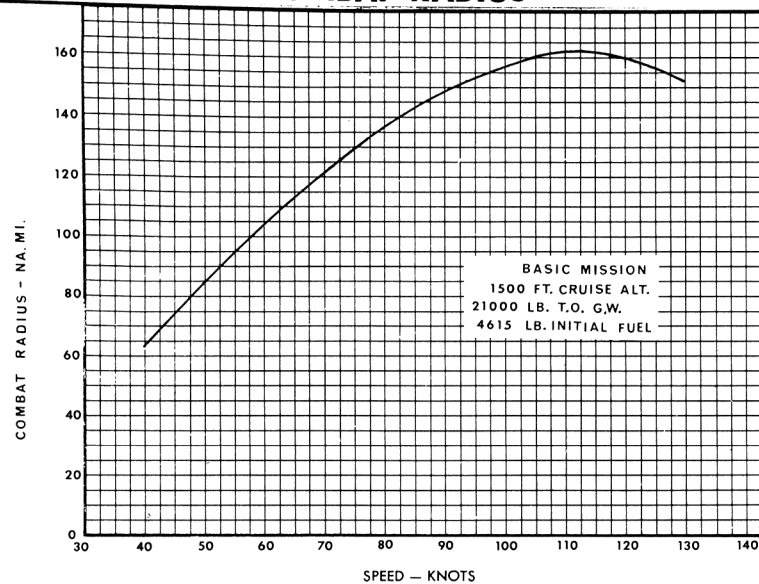
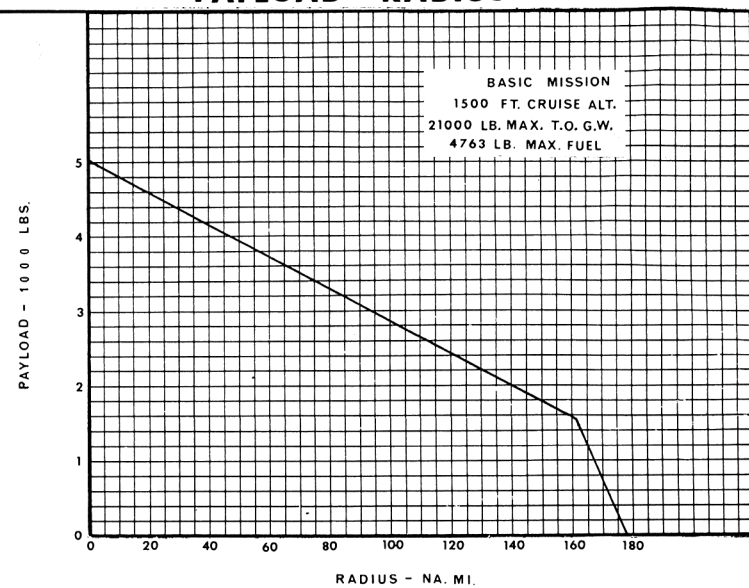
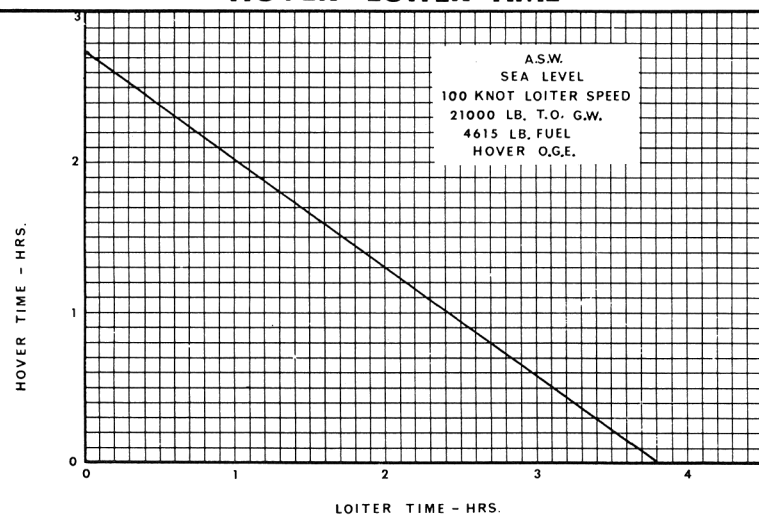
## VERTICAL CLIMB



## HOVER CEILING



STANDARD AIRCRAFT CHARACTERISTICS, NAVJEPs FORM 13100/4F (Rev. 7-65)

**COMBAT RADIUS****PAYLOAD - RADIUS****HOVER - LOITER TIME**



## NOTES

CLEAN - HIGH ALTITUDE

Warmup & Takeoff: 2 min. at S.L., NRP.

Climb: On course to 10,000 ft. with Mil power.

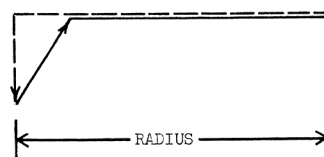
Cruise Out: At maximum range speeds to remote base.

Hover: 5 min. OGE at remote base.

Cruise Back: At maximum range speeds, 10,000 ft.

Descend: To S.L. (no fuel used, no distance gained).

Reserve: 10% of initial fuel load.

ANTI-SUBMARINE WARFARE (ASW) - BASIC MISSION

Warmup & Takeoff: 2 min. at S.L., NRP.

Climb: On course to 1500 ft. with Mil power.

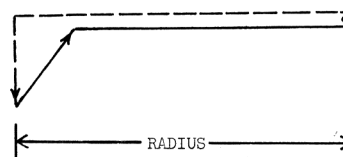
Cruise Out: To target at maximum range speeds.

Loiter: One hour at 1500 ft. at maximum endurance speeds. Drop stores.

Cruise Back: To home base at maximum range speeds, 1500 ft.

Descend: To S.L. (no fuel used, no distance gained).

Reserve: 10% of initial fuel load.

ANTI-SHIP MISSILE DEFENSE (ASMD)

Warmup & Takeoff: 2 min. at S.L., NRP.

Climb: On course to 1500 ft. with Mil power.

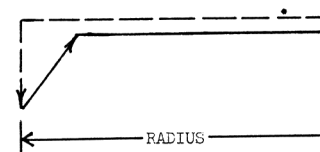
Cruise Out: 10 nautical miles at maximum endurance speed, 1500 ft.

Loiter: 3 hours at maximum endurance speed, 1500 ft.

Cruise Back: 10 nautical miles at maximum range speeds, 1500 ft.

Descend: To S.L. (no fuel used, no distance gained).

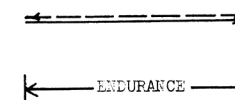
Reserve: 10% of initial fuel load.

ASW-HOVER/CRUISE

Warmup & Takeoff: 3 min. at S.L., NRP.

Alternately hover OGE at S.L. and cruise at 100 knots at S.L. allowing 50% of time for hover and 50% of time for cruise.

Reserve: 10% of initial fuel load.

FERRY RANGE

Warmup & Takeoff: 5 min. at S.L., NRP.

Climb: On course to 10,000 ft. with Mil power.

Cruise Out: At maximum range speeds to remote base at 10,000 ft.

Descend: To S.L. (no fuel used, no distance gained).

Reserve: 10% of initial fuel load.

