



STANDARD AIRCRAFT CHARACTERISTICS

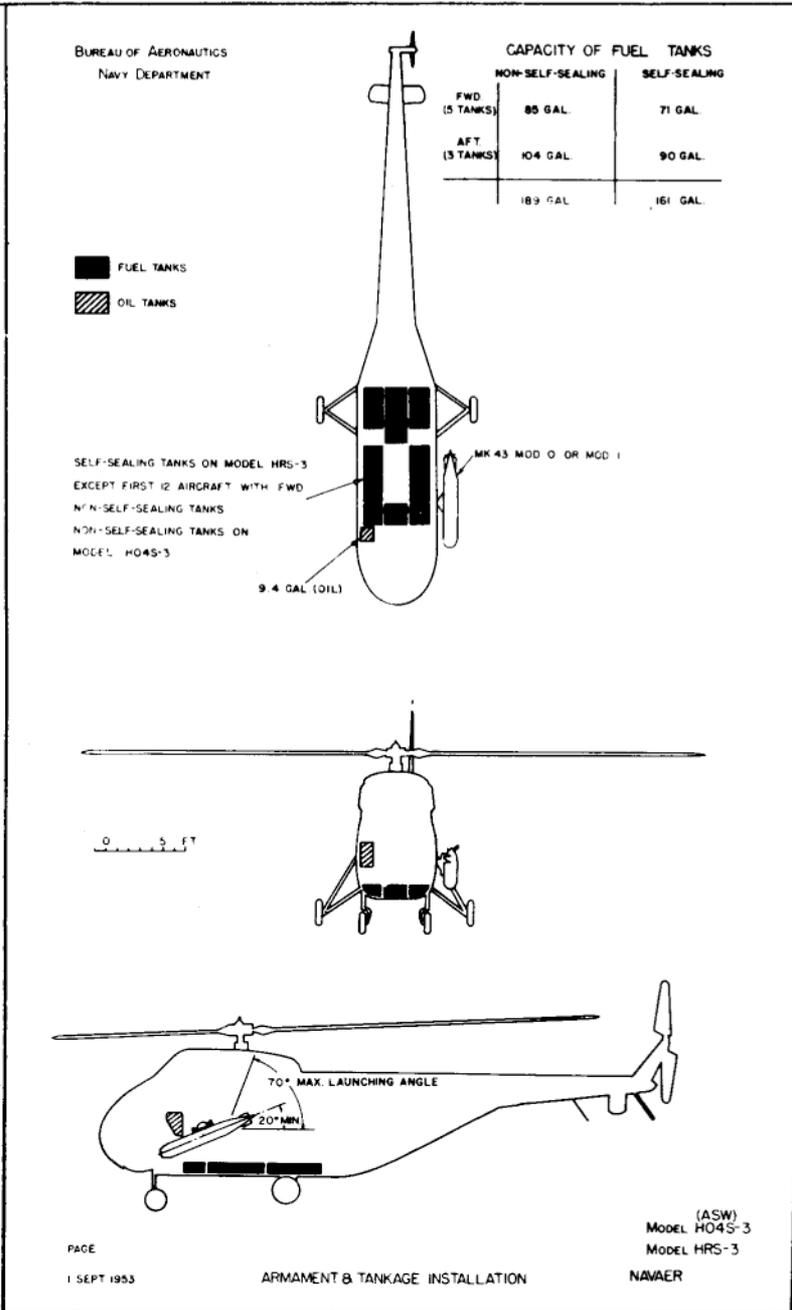
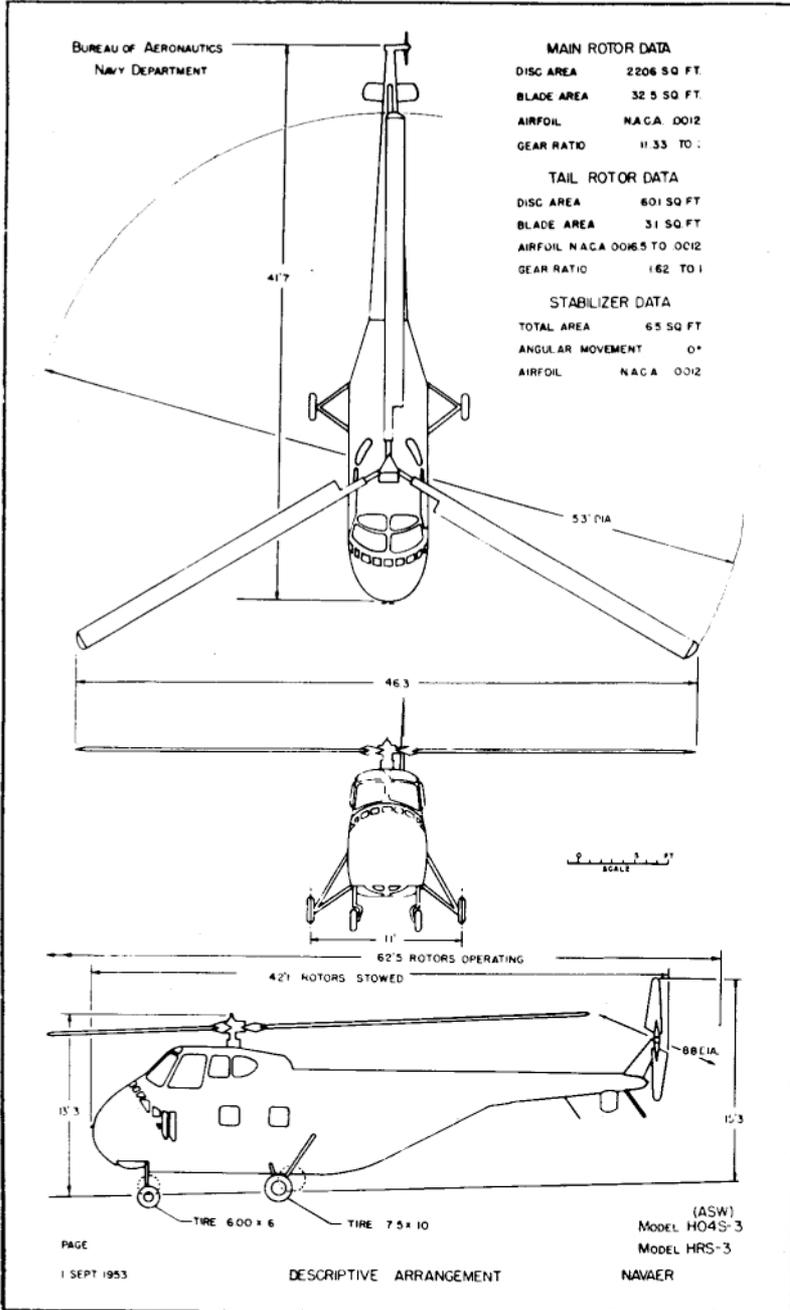
HRS - 3

SIKORSKY

Standard Aircraft Characteristics NAVAER 1335A (REV. 1-49)

1 JUNE 1954

HRS - 3



Standard Aircraft Characteristics NAVAER 1335B (REV. 1-4-49)

POWER PLANT

NO. & MODEL.....(1)R-1300-3
 MFR.....Wright
 SUPERCH.....1 Speed
 ROTOR GEAR RATIO.....0.0882
 TAIL ROTOR RATIO.....0.617

RATINGS

	<u>BHP @</u>	<u>RPM @</u>	<u>ALT</u>
T.O.	800	2600	S.L.
NORMAL	700	2400	5,700

See not on performance
 summary page

SPEC. NO. W.A.D. AN-9500d

ACCOMMODATIONS

Pilot.....1
 Dual-Pilot.....1
 Combat Troops.....10
 Litters.....3
 Door size.....48" X 48"

MISSION AND DESCRIPTION

The HRS-3 is a transport helicopter. The primary mission of this helicopter is to transport assault troops and equipment from ships or land bases to the objective area and the evacuation of wounded. It may also be used for ship-to-ship liaison and general utility.

The most significant change incorporated in this model was the installation of a more powerful engine. The engine is mounted facing rearward in the nose of the aircraft with the shaft inclined 35° from the horizontal. Access is provided through clam-shell type nose doors and through a removable panel in the firewall.

Design features include an external cargo sling, provisions for a hydraulic hoist for airborne loading or rescue, equipment for night contact flying, hydraulically operated servo controls, a hydraulic clutch to accelerate the transmission to engine speed, and cockpit and cabin ventilation.

Accommodations for ten passengers are provided in the cabin of the HRS-3. Alternate arrangements for three litters and an attendant can be carried.

DEVELOPMENT

Development of the HRS-2
 Service Use.....February 1953

DIMENSIONS

DISC AREA2206 sq.ft.
 BLADE AREA.....97.5 sq.ft.
 STABILIZER AREA.....6.5 sq.ft.
 BLADE DIA.....53' -0"
 LENGTH.....42' -1"
 OVERALL LENGTH**.....62' -6"
 HEIGHT.....13' -4"
 TREAD.....11' -0"

- * Blades Folded
- ** Rotors operating

WEIGHTS

<u>LOADINGS</u>	<u>LBS</u>	<u>L.F.</u>
EMPTY.....	5,193.....	
BASIC.....	5,261.....	
DESIGN.....	7,100.....	2.67...
MAX.T.O.*.....	7,761.....	2.44...
MAX.LAND*.....	7,761.....	2.44...

* Maximum anticipated
 Loading

FUEL AND OIL

<u>NO.TANKS</u>	<u>TOT.GALS</u>	<u>LOCATION</u>
2	161	Fuselage
FUEL GRADE.....		91/96
FUEL SPEC.....		MIL-F-5572

OIL

CAPACITY(Gals).....9.4
 GRADE.....1100
 SPEC.....MIL-O-6082

ELECTRONICS

R-19 A.R.C. Type Receiver
 R-26/ARC-5 MHF Receiver
 T-19/ARC-5 MHF Transmitter
 T-23/ARC-5 VHF Transmitter
 R-11A A.R.C. Type Receiver

SERVICE

PERFORMANCE SUMMARY					
TAKE-OFF LOADING CONDITION		(1) Troop Transp. Crew (1) Passengers (8)	(2) Rescue Crew (1) Litter Patients (4)	(3) Cargo Transp. Crew (1)	
TAKE-OFF WEIGHT	lb.	7,761	7,065	7,725	
Fuel	lb.	456	966	210	
Payload	lb.	1,800	510	2,000	
Disc loading	lb./sq.ft.	3.5	3.2	3.5	
Vertical rate of climb at S.L. (A/B)	fpm.	145/-	745/-	180/-	
Absolute hovering ceiling (A/B)	ft.	2,000/-	7,100/-	2,550/-	
Max. rate of climb at S.L. (A)	fpm.	1,095	1,345	1,110	
Service ceiling (100 fpm) (A)	ft.	12,800	14,700	12,900	
Speed at S.L. (A)	kn.	103	105	103	
Max. speed/altitude (A)	kn./ft.	105/5,000	108/5,700	105/5,000	
Combat range	n.mi.	110	280	40	
Average cruising speed	kn.	77	79	76	
Cruising altitude	ft.	1,500	1,500	1,500	
Combat radius	n.mi.	45	108	10	
Average cruising speed	kn.	77	78	77	
Cruising altitude		1,500	1,500	1,500	
Max. endurance		1.7	4.4	0.6	
Average speed		54	49	54	
Altitude		1,500	1,500	1,500	
%MRP req'd to hover at S.L., no wind.		97	86	96	

NOTES

- (A) Normal power
(B) Take-off power

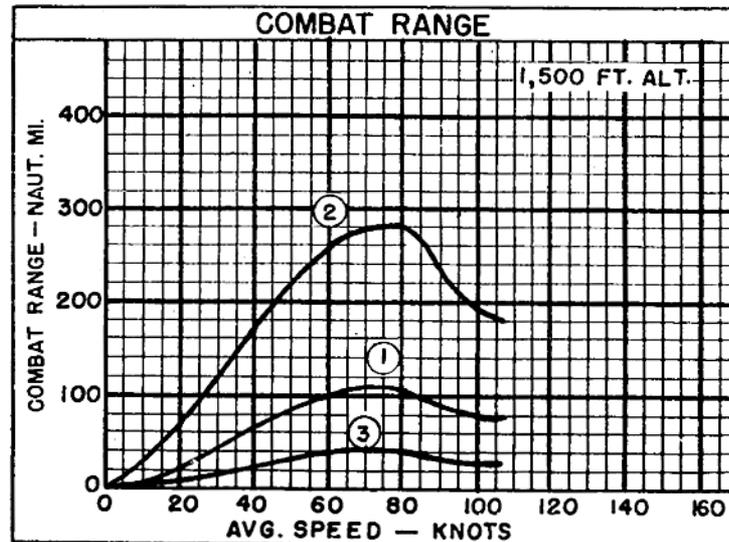
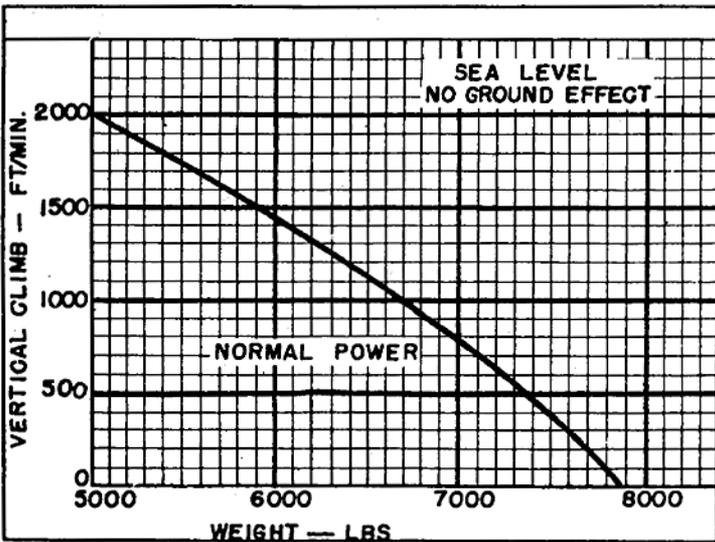
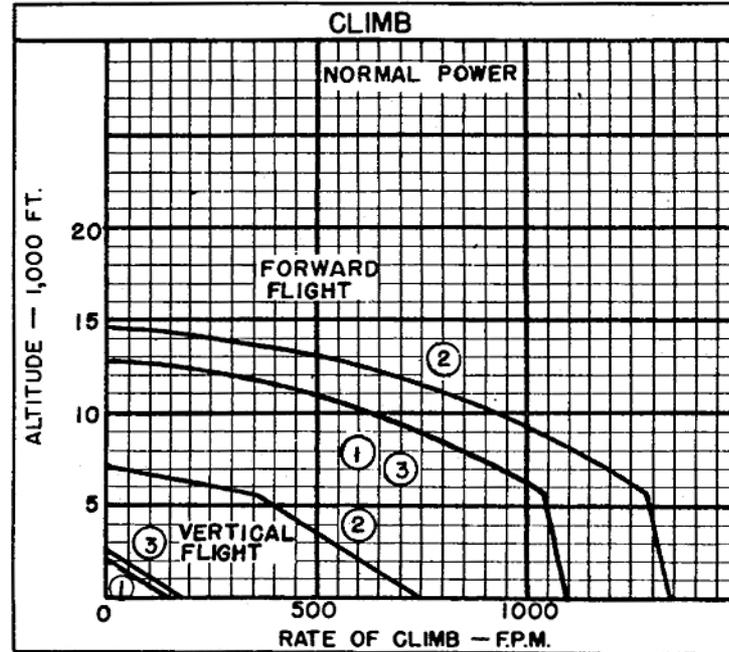
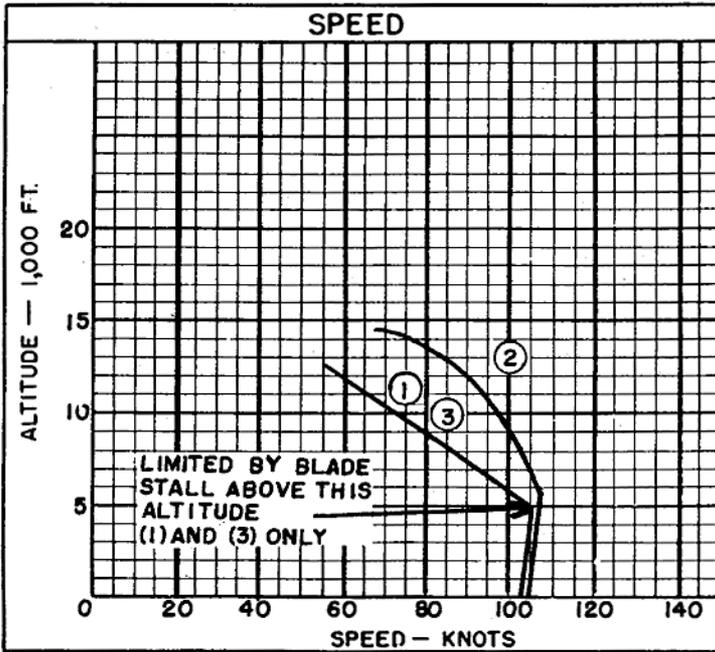
Performance basis: NATESTCEN flight test of the HRS-3 helicopter and Air Force flight test of the H-19B helicopter.

All performance is out of ground effect and in standard atmosphere (59°F).

Range, radius, and endurance are based on NATESTCEN fuel consumption test data increased by 5% and allowing fuel for warm-up and take-off (5 minutes at MRP) and a 10% fuel reserve. 2,400 rpm is used at all speeds.

Power is limited to a maximum value of 700 BHP by helicopter transmission capacity. Engine is limited to 2400 rpm.

NAVAER-1335G (Rev. 10-51) 213916



○ LOADING CONDITION COLUMN NUMBER

Standard Aircraft Characteristics NAVAER 1335E (REV. 2-50)

NOTES

ENDURANCE PROBLEM

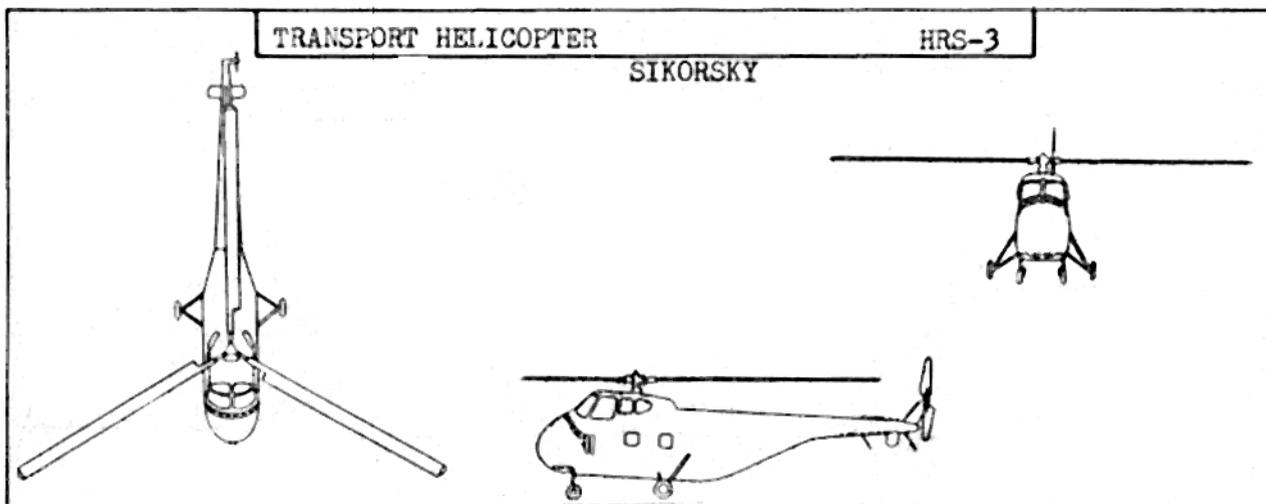
WARM-UP AND TAKE-OFF: 5 minutes at normal rated power
CLIMB: To 1500 ft. altitude
CRUISE: At speed for minimum fuel flow
RESERVE: 10% of initial fuel load

COMBAT RADIUS PROBLEM

WARM-UP AND TAKE-OFF: 5 minutes at normal rated power
CLIMB: To 1500 ft. altitude
CRUISE: At speed for maximum range
LAND AT REMOTE SEA LEVEL BASE
RESTART, WARM-UP AND TAKE-OFF: 5 minutes at normal rated power
CLIMB: To 1500 ft. altitude
CRUISE-BACK: At speed for maximum range
RESERVE: 10% of initial fuel load

NOTE: Weight of cargo carried both ways.

CHARACTERISTICS SUMMARY



DISC AREA 2206 sq. ft.
 ROTOR DIA. 53 ft.

LENGTH 42' - 11"*
 HEIGHT 13' - 4"
 *Blades Folded

AVAILABILITY			PROCUREMENT			
NUMBER AVAILABLE			NUMBER DELIVERED			
			IN FISCAL YEARS			
ACTIVE	RESERVE	TOTAL				

STATUS
Development of the HRS-2 Service Use - - - - - February 1953

ENGINES
1 Wright R-1300-3 BHP/ RPM/ ALT. T.O.* 800/2600/S.L. NORM. 700/2400/S.L.- 5000' *Power limited to 700 HP by helicopter trans- mission. Max. Allow- able RPM - 2400

FEATURES
48" X 48" cabin door Folding rotor blades External cargo sling Provisions for hydraulic hoist * Max. fuel cap..161 gals. *One hoist furnished with every third helicopter.

ARMAMENT	
- - - - - NONE	
ACCOMMODATIONS	
Pilot	1
Co-Pilot	1
Combat Troops	10
Litters	3
2000 lbs. cargo	

NAVAIR 1519 A (REV. 1-49)

CHARACTERISTICS SUMMARY

BASIC MISSION

HRS-3

WARM-UP AND TAKE-OFF: 5 minutes at normal rated power
 CLIMB to 1500 ft. and cruise at speed for max. range
 LAND, RESTART, WARM-UP AND TAKE-OFF AT REMOTE SEA LEVEL BASE: 5 minutes
 at normal rated power
 CLIMB to 1500 ft. and cruise at speed for max. range
 RESERVE: 10% of initial fuel load. (Weight of cargo carried both ways)

PERFORMANCE

COMBAT RADIUS	COMBAT RANGE	SPEED
45 naut. mi.	110 naut. mi.	103 knots at S.L.
77 knots avg.	77 knots avg.	105 knots at 5000 ft.
1500 ft. alt.	1.4 hours	knots at ft.
	1500 ft. alt.	Take-off Weight Normal Power
CLIMB	CEILING	TAKE OFF
1095 ft./min. Sea Level, T. O. wt. Normal Power	12,800 ft. (forward flight) 100 ft./min., T. O. wt. Normal Power	Vertical
177 ft./min. (Vertical) Sea Level, T.O. wt. Normal Power	2,550 ft. Absolute Hover ceiling T.O. wt. Normal Power	97% NRP req'd to hover at S.L., no wind
LOAD	WEIGHTS	
Fuel 76 gal.	Empty 5193 lbs.	
fixed 76 drop	Combat - - lbs.	
Payload 1800 lbs.	Take-off 7761 lbs.	

NOTES

Performance basis: Flight test of the HRS-3 and H-19B helicopters.
 All performance is out of ground effect.
 Range and radius are based on NATESTCEN fuel consumption data increased
 by 5% and allowing fuel for warm-up and take-off (5 min. at NRP) and
 a 10% fuel reserve. 2400 rpm is used at all speeds.