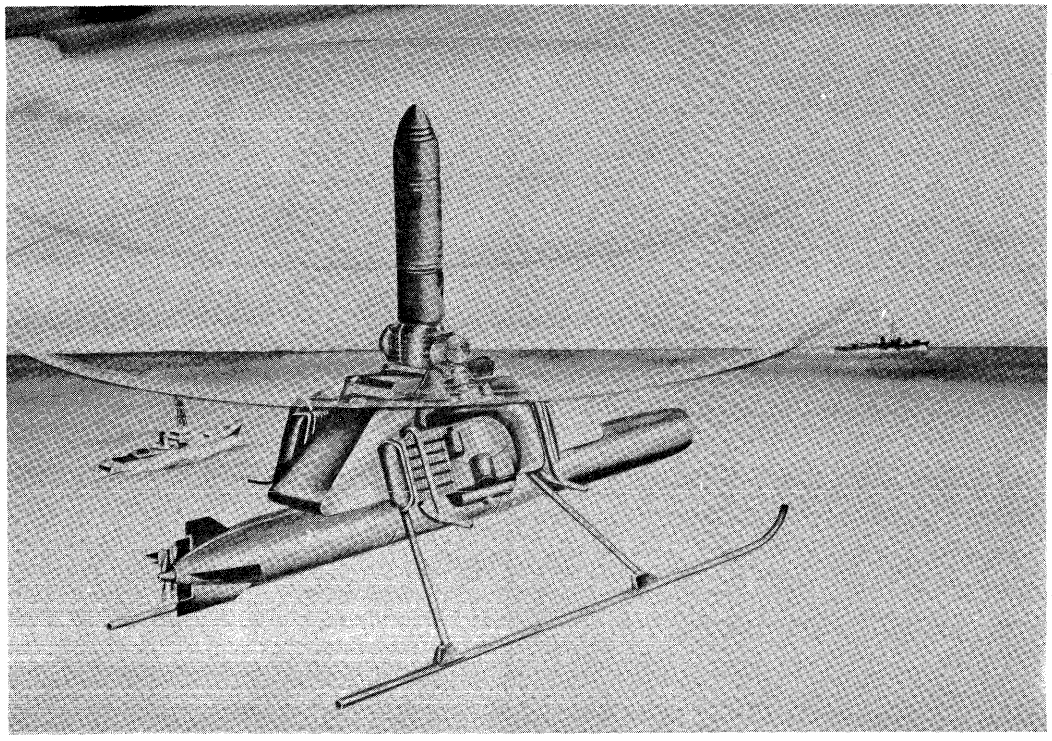
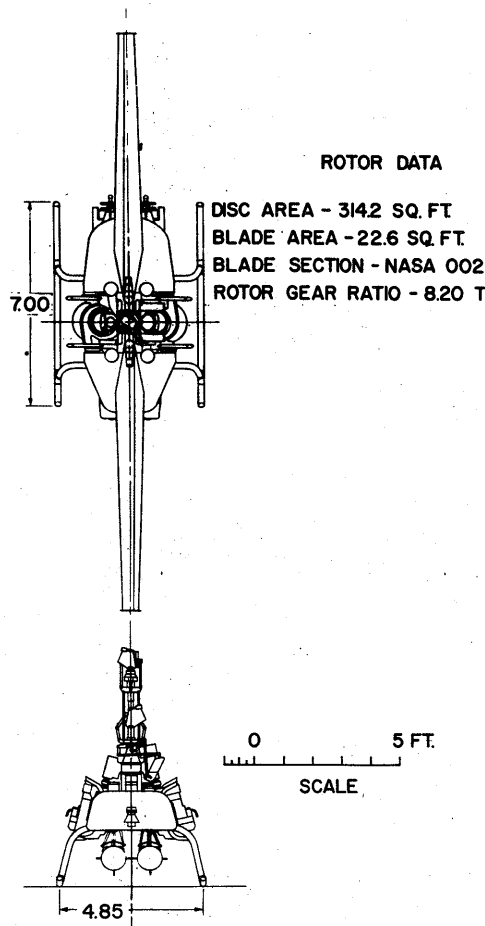


STANDARD AIRCRAFT CHARACTERISTICS

DSN-2

GYRODYNE

Standard Aircraft Characteristics NAVAER 1335A (REV. 1-55)

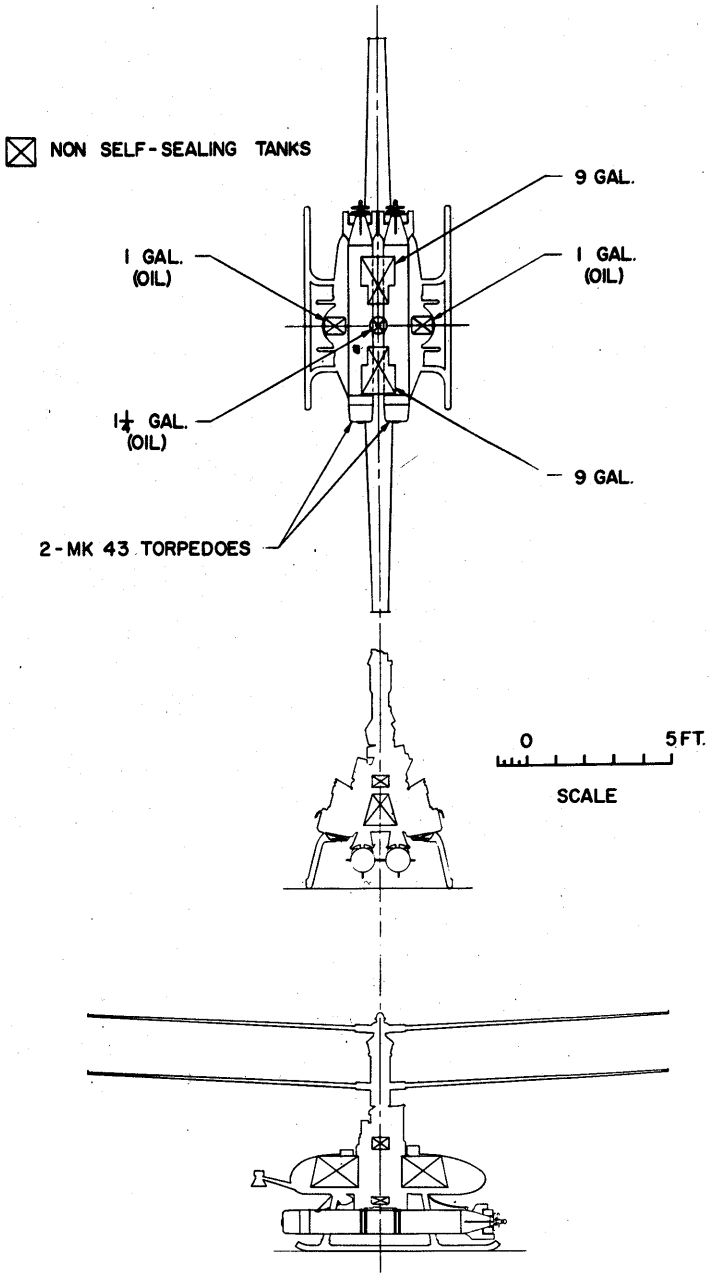


ROTOR DATA

DISC AREA - 314.2 SQ. FT.
BLADE AREA - 22.6 SQ. FT.
BLADE SECTION - NASA 0021 TO 0012
ROTOR GEAR RATIO - 8.20 TO 1

0 5 FT.
SCALE

DESCRIPTIVE ARRANGEMENT



ARMAMENT & TANKAGE

POWER PLANT

ENGINE ..... (2) YO-95-4

MFR ..... Gyrodyne-Porsche

TYPE ..... 4 cyl., 4 cycle

RATINGS

	BHP	RPM	ALT
T.O.	72	4500	SSL
NORM.	72	4500	SSL

Model Spec. No. 2 of 28 Jan 1959, revised 5 Aug 1959

ORDNANCE

Torpedoes:

500 lb. 1

or

MK 43 2

Max. Load Capacity - 530 lbs.

MISSION AND DESCRIPTION

The Model DSN-2 Drone is a remotely controlled ASW Helicopter, designed to carry a 500 lb. weapon (torpedo-type) and be capable of launching this weapon as directed by remote control. An alternate design loading (over-load condition) is to carry two MK43 Torpedoes, each weighing 266 lbs.

The drone incorporates two two-bladed coaxial rotors of the semi-rigid (see-saw) type. The blades are of laminated wood construction incorporating taper in planform and thickness and 12° negative twist. Attitude is completely controllable through the rotors by conventional cyclicpitch control; yaw control is achieved by means of rotor blade tip air (drag) brakes.

Two Gyrodyne-Porsche YO-95-4 four cylinder, four cycle reciprocating engines, rated at 72 hp (after cooling) at 4500 rpm at sea level, are incorporated in the DSN-2. Engine cooling is provided by a fan.

Service use of this drone weapons system is not presently contemplated, although it will be used for purposes of testing and checking out the avionics equipment and remote control system to be incorporated in the DSN-3.

DEVELOPMENT

First Flight ..... July 1960

DIMENSIONS

DISC AREA ..... 314.2 sq. ft.

BLADE AREA ..... 22.6 sq. ft.

ROTOR DIAMETER ..... 20' - 0"

LENGTH ..... 20' - 0"

HEIGHT ..... 8' - 3"

TREAD ..... 4' -10"

WEIGHTS

LOADINGS	LBS.
EMPTY	813
NORMAL	1450
OVERLOAD	1500

All weights are estimated

FUEL AND OIL

NO. TANKS	GALS.	LOCATION
2	18	Fuselage

GRADE 96/96

SPEC MIL-F-5572B

OIL

CAPACITY ..... 3.25 gals

GRADE ..... Symbol 9110/9250

SPEC MIL-L-9000D

ELECTRONICS

Gyrodyne-Lear automatic stabilization and remote control equipment

(Nomenclature not yet available)

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION			(1) NORMAL 1-500# Torpedo	(2) OVERLOAD 2-MK 43			
TAKE-OFF WEIGHT		lb.	1450	1500			
Fuel		lb.	95	95			
Payload		lb.	500	530			
Disc loading		lb./sq.ft.	4.62	4.78			
Vertical rate of climb at S.L.	(A)	fpm.	640	420			
Absolute hovering ceiling	(A)	ft.	2950	1850			
Max. rate of climb at S.L.	(A)	fpm.	1160	1040			
Service ceiling (100 fpm)	(A)	ft.	8600	7600			
Speed at S.L.	(A)	kn.	76.8	76.0			
Max. speed/altitude	(A)	kn./ft.	76.8/S.L.	76.0/S.L.			
Max. range		n.mi.	85.3	--			
Average cruising speed		kn.	65	--			
Cruising altitude		ft.	S.L.	--			
Combat radius		n.mi.	32.0	31.2			
Average cruising speed		kn.	77.5	76.8			
Cruising altitude		ft.	S.L.	S.L.			
Max. endurance		hrs.	--	1.60			
Average cruising speed		kn.	--	42			
Cruising altitude		ft.	--	S.L.			

NOTES

(A) Normal Rated Power (Take-off Power)

PERFORMANCE is based on calculations modified by contractor flight data of the Model XRON-1 Rotorcycle (17' rotor dia.)

COMBAT RADIUS, RANGE, and ENDURANCE are based on engine specific fuel consumption increased 5%.

All performance is out of ground effect.

COMBAT RADIUS MISSION

Warm-up and Take-off: 1 min at NRP at Sea Level
Cruise out: at Vmax at Sea Level
Hover: 12 min at Sea Level
Drop Weapon: No fuel consumed, no distance gained
Cruise back: at Vmax at Sea Level
Reserve: 10% of initial fuel load

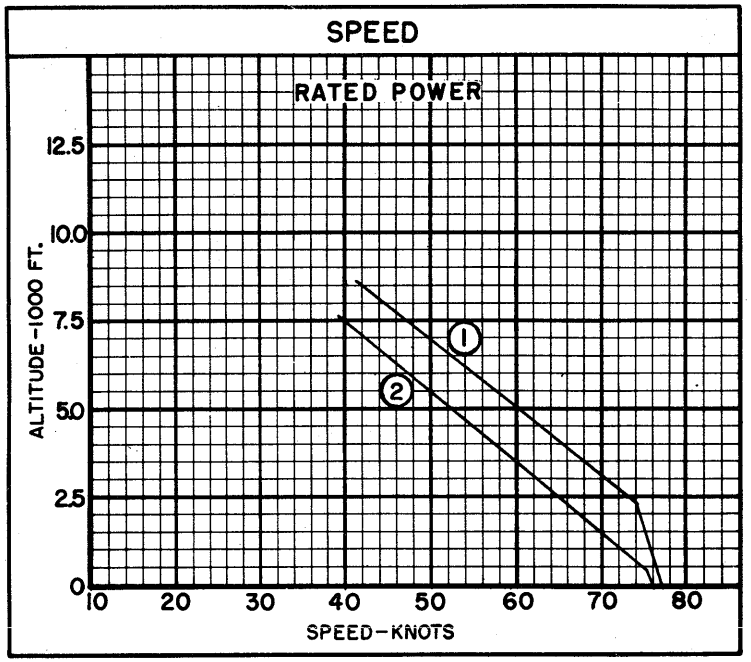
MAX. RANGE MISSION

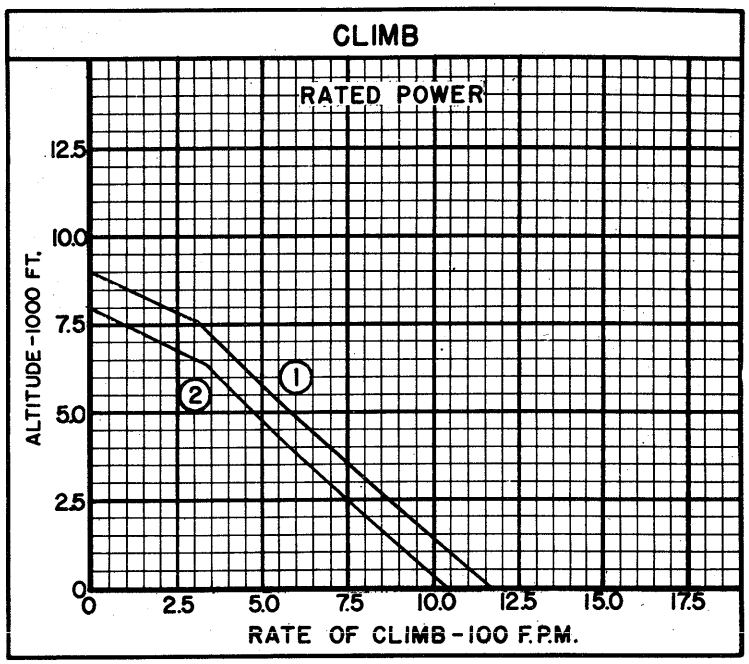
Warm-up and Take-off: 1 min at NRP at Sea Level
Cruise: at speed for best range at Sea Level
Reserve: 10% of initial fuel load

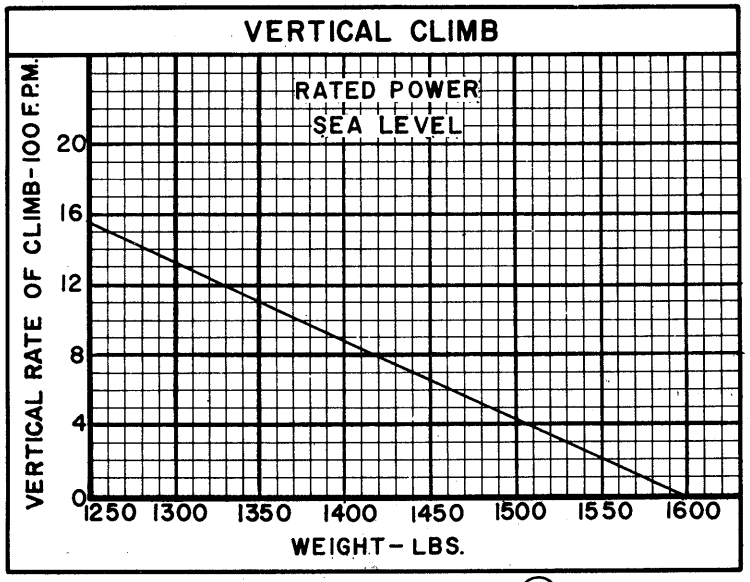
MAX. ENDURANCE MISSION

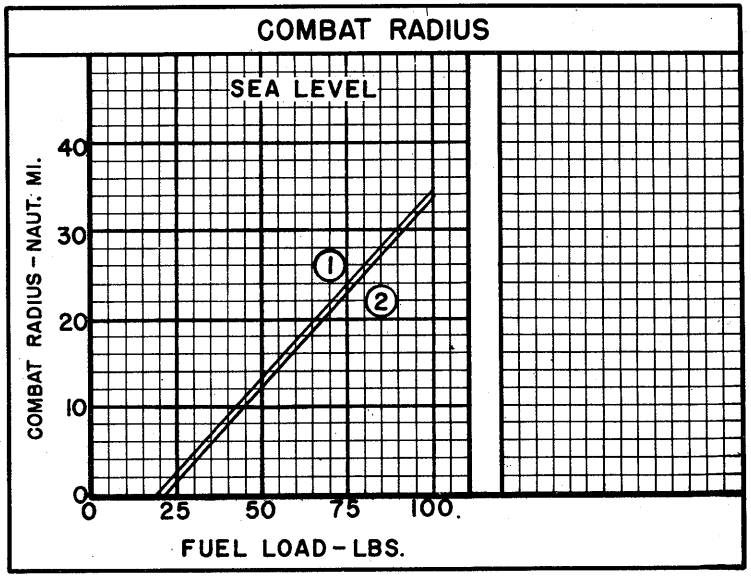
Warm-up and Take-off: 1 min at NRP at Sea Level
Cruise: at speed for best endurance at Sea Level
Reserve: 10% of initial fuel load

NAVAER-1335G (Rev. 1-55)









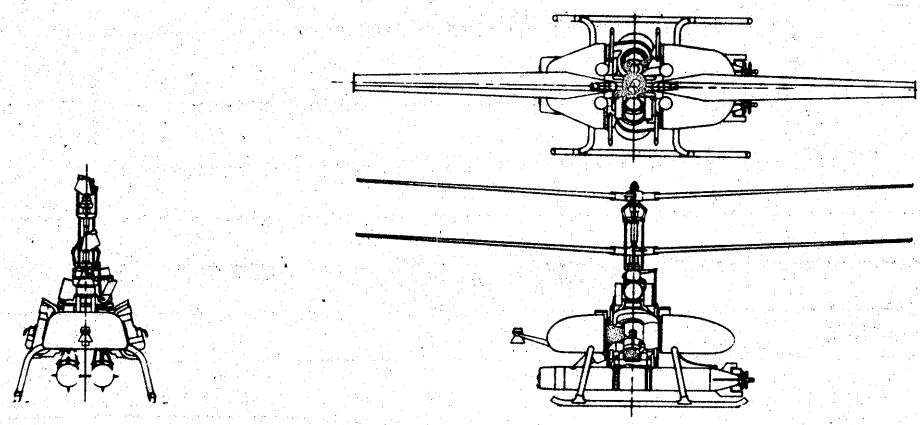
◯ LOADING CONDITION COLUMN NUMBER

Standard Aircraft Characteristics NAVAER 1335E (Rev. 1-55)

SERVICE

CHARACTERISTICS SUMMARY

ASW DSN-2



DISC AREA 314.2 sq. ft.

ROTOR DIA. 20' 0"

LENGTH 20' 0"

HEIGHT 7' 4"

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

STATUS

First Flight ..... July 1960

ENGINES

Gyrodyne - Porsche
(2) YO-95-4

RATINGS

BHP/RPM/ALT

T.O. 72/4500/SSL
NORM. 72/4500/SSL

FEATURES

Completely ground controllable, including weapon drop

Flight path radar monitored

Designed to operate from destroyer-type vessels

ARMAMENT

Torpedoes:

500 lb. 1

or

MK 43 2

NAVAER-1519E (Rev. 6-56)

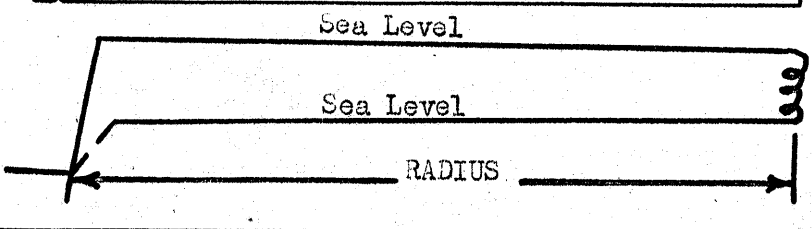
[redacted] UNCLASSIFIED

SERVICE

CHARACTERISTICS SUMMARY

BASIC MISSION

DSN-2



PERFORMANCE

ENDURANCE	RADIUS	SPEED
1.65 hours	32.0 naut. mi.	76.8 knots at Sea Level
42.5 knots avg.	77.5 knots avg.	60.5 knots at 5000 ft.
Sea Level	Sea Level 1.04 hrs. mission time	Normal Gross Weight Normal Power
FORWARD FLIGHT CLIMB	**SERVICE CEILING**	**HOVERING CEILING**
1160 ft./min. Sea Level, N. G. Wt., Normal Power	8600 ft. 100 ft./min., N. G. Wt., Normal Power	2950 ft. N. G. Wt., Normal Power out of ground effect
		ft. N. G. Wt., Power in ground effect
LOAD	**WEIGHTS**	**VERTICAL CLIMB**
Fuel 95 lbs. Internal 95 lbs. External --- lbs. Payload 500 lbs.	Empty 813 lbs. Normal Gross 1450 lbs. Overload 1500 lbs.	640 ft./min. Sea Level, N. G. Wt., Normal Power

NOTES

1. Performance is based on calculations, modified by contractor flight test data of the Model XRON-1 Rotorcycle (17 ft. dia.)
2. Endurance and radius are based on manufacturer's fuel consumption data increased 5%.
3. Radius is computed at maximum speed outgoing and returning

NAVAER-1519D (Rev. 6-56)