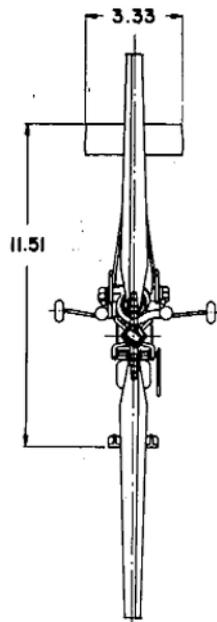


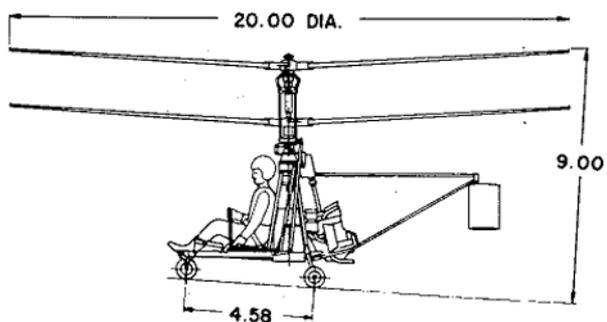
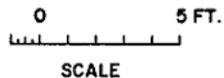
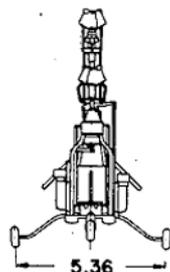
STANDARD AIRCRAFT CHARACTERISTICS XRON-1 "ROTORCYCLE" (20' ROTOR DIAMETER)

GYRODYNE



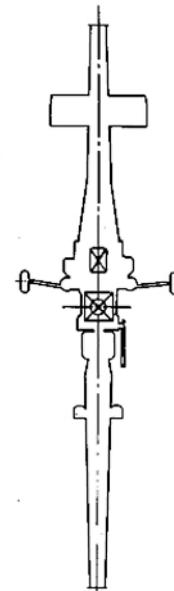
ROTOR DATA

DISC AREA - 314.2 SQ. FT.
 BLADE AREA - 22.6 SQ. FT.
 BLADE SECTION - NASA 0021 TO 0012
 ROTOR GEAR RATIO - 9.93 TO 1



DESCRIPTIVE ARRANGEMENT

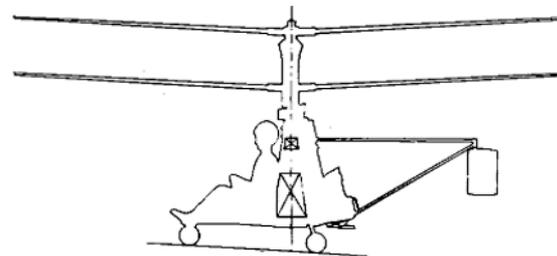
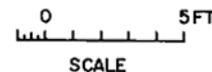
☒ NON SELF-SEALING TANKS



1 GAL.
(OIL)

10 GAL.

1 GAL.
(OIL)



ARMAMENT & TANKAGE

Standard Aircraft Characteristics NAVAR 1335B (Rev. 1-55)

POWER PLANT

ENGINE (1) YO-95-6
 MFR Gyrodyne-Porsche
 TYPE 4 cyl., 4 cycle

RATINGS

	<u>BHP</u>	<u>RPM</u>	<u>ALT</u>
T.O.	72	4500	SSL
NORM.	72	4500	SSL

Model Spec. No. 3 of 11 Feb 1959

ORDNANCE

NONE

MISSION AND DESCRIPTION

The Model XRON-1 rotorcycle is a one-man helicopter suitable for use in missions involving observation, liaison, and small unit tactical maneuvers. The machine may be folded into a compact package for easy transport.

The rotorcycle 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. This machine is completely controllable through the rotors. Control in pitch and roll is obtained through conventional cyclic pitch control. Control in yaw is achieved by means of the Gyrodyne-developed rotor blade tip air (drag) brakes, which provide positive directional control in all flight regimes. An inverted-V tail is utilized to provide longitudinal and directional stability in forward flight.

The present Model XRON-1 Rotorcycle is an optimized version of the 17 foot diameter rotor Model XRON-1, incorporating a larger rotor diameter and a higher horsepower engine. Engine cooling is provided by a fan. Removal of the engine is easily effected by disconnecting the tail truss and the engine mounts, and lifting the engine out.

DEVELOPMENT

First Flight..... November 1959
 Service Use November 1960

DIMENSIONS

DISC AREA 314.2 sq.ft.
 BLADE AREA 22.6 sq.ft.
 ROTOR DIAMETER ... 20' - 0"
 LENGTH 20' - 0"
 HEIGHT (Max.) 9' - 0"
 TREAD 5' - 4.25"
 INVERTED-V TAIL
 AREA 4.69 sq.ft.

WEIGHTS

<u>LOADINGS</u>	<u>LBS</u>
EMPTY	537
NORMAL	818
OVERLOAD I	854
OVERLOAD II	903

All weights are estimated

FUEL AND OIL

<u>NO. TANKS</u>	<u>GALS</u>	<u>LOCATION</u>
1	5	Behind pilot
1 (Aux.)	5	Behind pilot
GRADE		91/96
SPEC		MIL-F-5572B

OIL

CAPACITY	2.0 gals.
GRADE	SAE 20/30
SPEC	MIL-L-9000D

ELECTRONICS

NONE

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION		(1) NORMAL	(2) OVERLOAD I	(3) OVERLOAD II		
TAKE-OFF WEIGHT	lb.	818	854	903		
Fuel	lb.	30	60	30		
Fayload	lb.	60	60	140		
Disc loading	lb./sq.ft.	2.60	2.71	2.87		
Vertical rate of climb at S.L.	(A) fpm.	980	780	520		
Absolute hovering ceiling	(A) ft.	5950	4700	3000		
Max. rate of climb at S.L.	(A) fpm.	1180	1070	935		
Service ceiling (100 fpm)	(A) ft.	12,900	11,700	10,000		
Speed at S.L.	(A) kn.	68.0	67.3	66.5		
Max. speed/altitude	(A) kn./ft.	68.0/S.L.	67.3/S.L.	66.5/S.L.		
Combat range	n.mi.	48.6	97.8	46.2		
Average cruising speed	kn.	52.0	53.0	54.0		
Cruising altitude	ft.	S.L.	S.L.	S.L.		
Combat radius	n.mi.	24.3	48.9	23.1		
Average cruising speed	kn.	52.0	53.0	54.0		
Mission Time	hr.	.93	1.85	.86		
Maximum endurance	hr.	1.12	2.22	1.03		

NOTES

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

PERFORMANCE is based on calculations modified by contractor flight test data of the Model XRON-1 Rotorcycle, 17 ft.dia.

RANGE and RADIUS are based on engine specification fuel consumption data increased 5%.

All performance is out of ground effect.

COMBAT RADIUS MISSION

WARM-UP AND TAKE-OFF: 1 Minute at Normal Rated Power.

CRUISE-OUT AND -BACK: At sea level at average cruising speed (speed for maximum range).

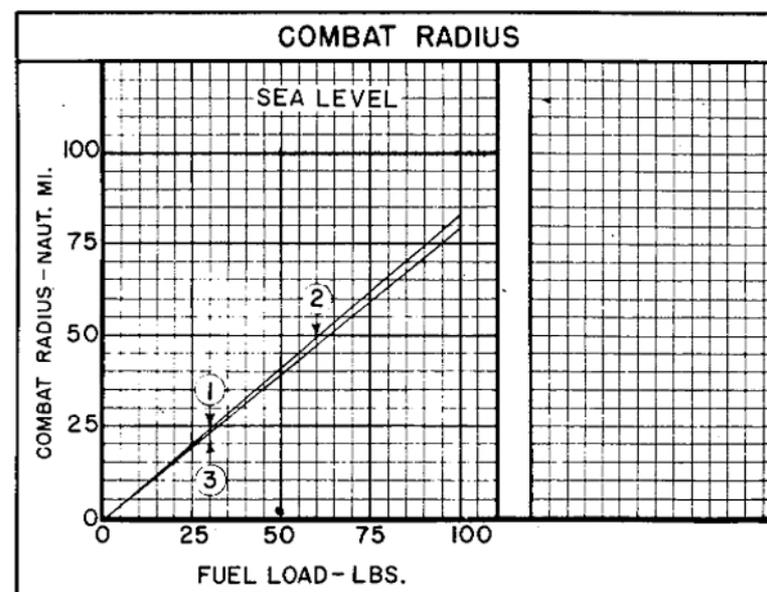
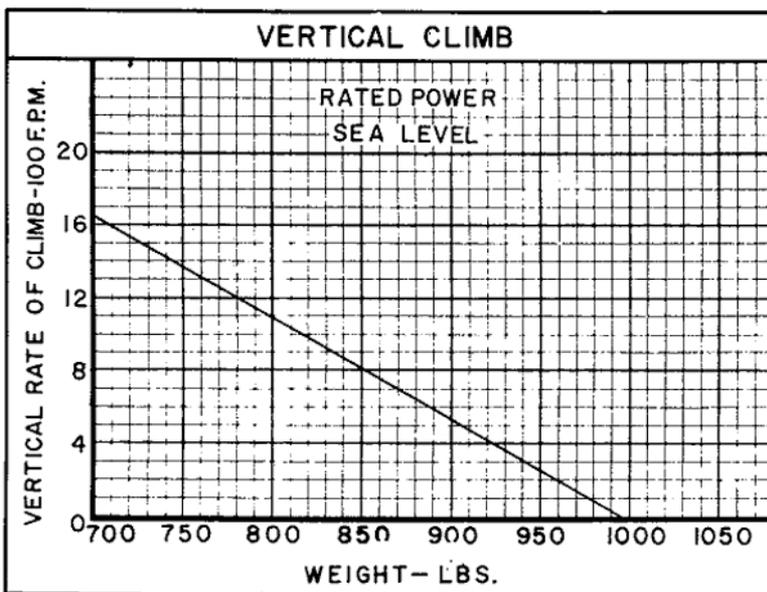
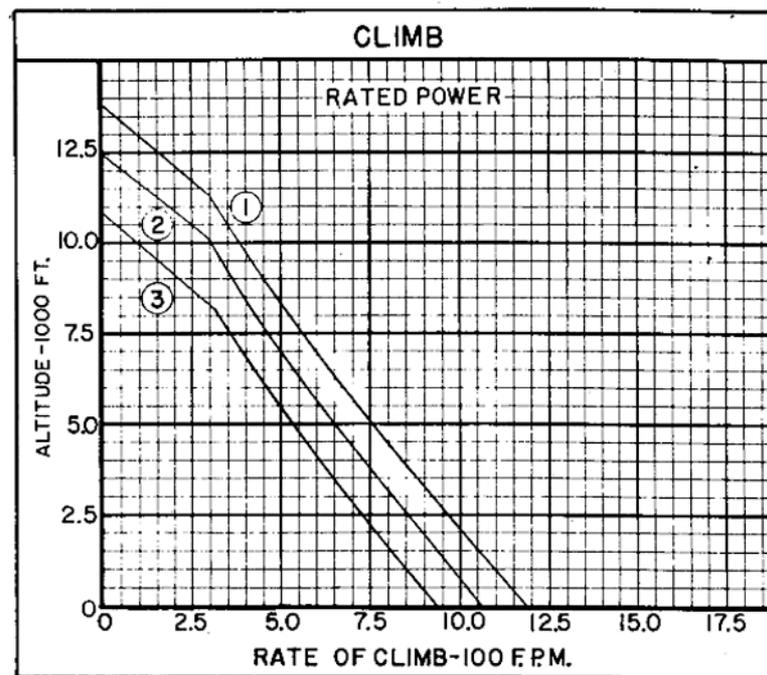
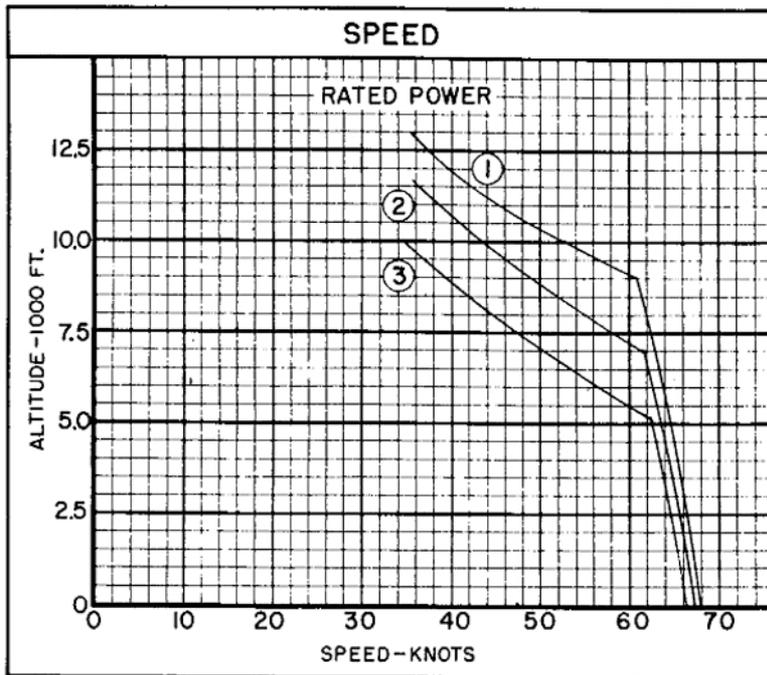
RESERVE: 10 percent of initial fuel load.

COMBAT RANGE MISSION

WARM-UP AND TAKE-OFF: 1 minute at Normal Rated Power.

CRUISE: At sea level at average cruising speed (speed for maximum range).

RESERVE: 10 percent of initial fuel load.



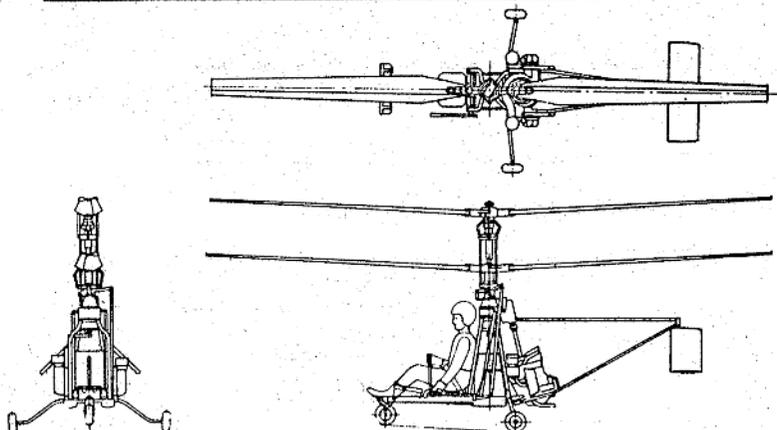
○ LOADING CONDITION COLUMN NUMBER

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

CHARACTERISTICS SUMMARY

OBSERVATION

XRON-1



DISC AREA 314.2 sq. ft.

LENGTH 20 ft.

ROTOR DIA. 20.0 ft.

HEIGHT 9 ft.

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

STATUS

First FlightNovember 1959
 Service UseNovember 1960

ENGINES

Gyrodyne-Porsche
 (1) YO-95-6

RATINGS

	HP/RPM/ALT
T.O.	72/4500/SSL
NORM.	72/4500/SSL

FEATURES

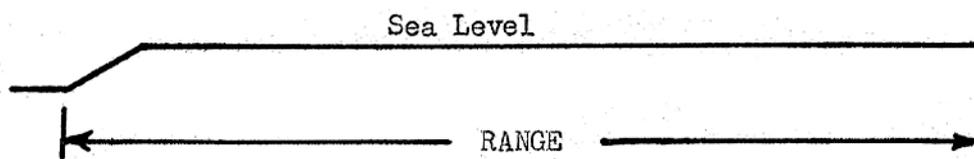
- (1) Crew: Pilot (one)
- (2) 60 lb. mil pack
- (3) Can be folded for Shipment

ARMAMENT

NONE

NAVAER-1519E (Rev. 6-56)

CHARACTERISTICS SUMMARY

BASIC MISSION
XRON-1


PERFORMANCE

ENDURANCE			RANGE			SPEED		
1.12	hours		48.6	naut. mi.		68.0	knots at S.L.	
35.0	knots avg.		52.0	knots avg.		64.8	knots at 5000 ft.	
Sea Level			Sea Level			Normal Gross Weight N.R. Power		
FORWARD FLIGHT CLIMB			SERVICE CEILING			HOVERING CEILING		
1180	ft./min.		12,900	ft.		5950	ft.	
Sea Level, N. G. Wt., N.R. Power			100 ft./min., N. G. Wt., N.R. Power			N. G. Wt., N.R. Power out of ground effect		
						7300 ft. N. G. Wt., N.R. Power in ground effect		
LOAD			WEIGHTS			VERTICAL CLIMB		
Fuel (N.G.Wt.)	30	lbs.	Empty	537	lbs.	980	ft./min.	
Internal	30	lbs.	Normal Gross	818	lbs.	Sea Level, N. G. Wt., N.R. Power		
External	-	lbs.	Overload I	854	lbs.			
Payload	60	lbs.	Overload II	903	lbs.			

NOTES

- Performance is based on calculations, modified by contractor flight test data of the Model XRON-1 Rotorcycle.
- Range and radius are based on manufacturer's estimated fuel consumption, increased by 5%.