



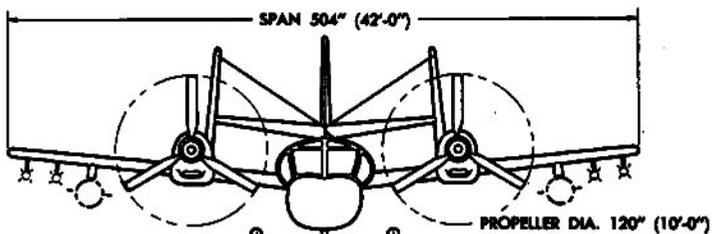
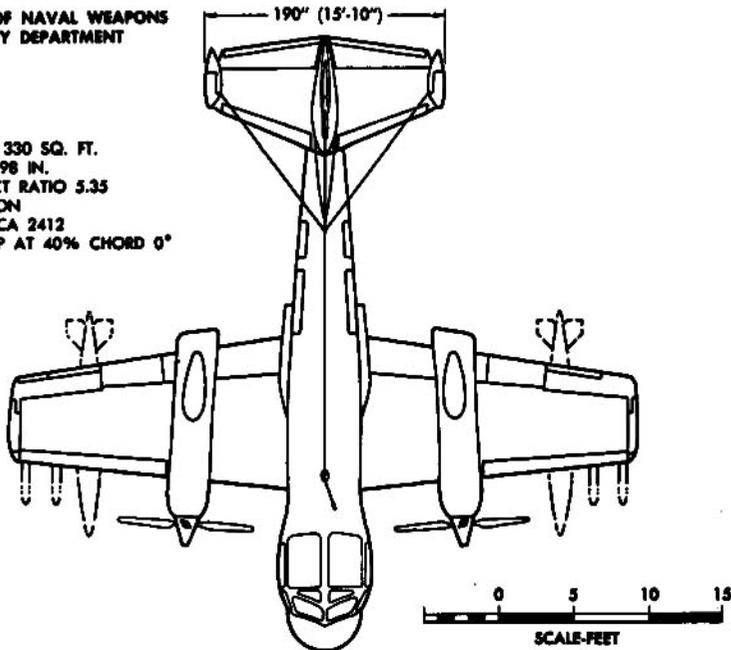
STANDARD AIRCRAFT CHARACTERISTICS

YA0-1 MOHAWK

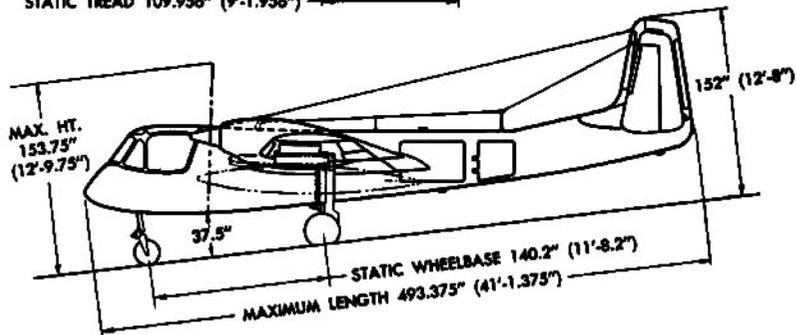
GRUMMAN

BUREAU OF NAVAL WEAPONS
NAVY DEPARTMENT

WING
AREA 330 SQ. FT.
MAC 98 IN.
ASPECT RATIO 5.35
SECTION
NACA 2412
SWEEP AT 40% CHORD 0°

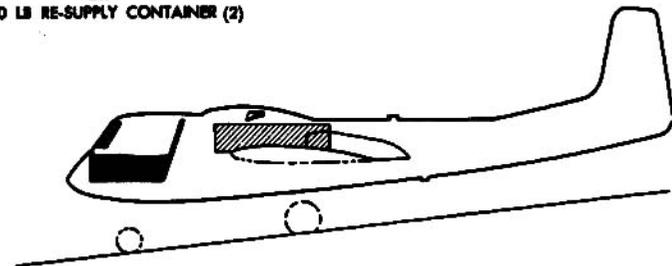
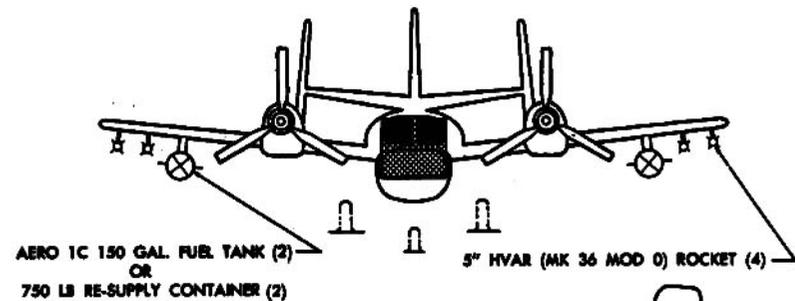
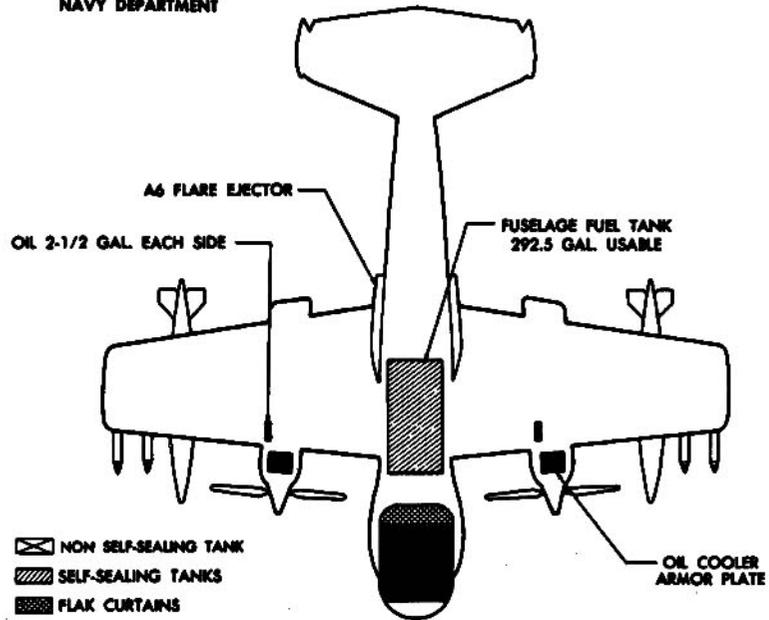


STATIC TREAD 109.956" (9'-1.956")



DESCRIPTIVE ARRANGEMENT
YAO-1

BUREAU OF NAVAL WEAPONS
NAVY DEPARTMENT



ARMAMENT & TANKAGE
YAO-1

POWER PLANT**Turboprop**

Model _____ (2) T-53-L-3
 Mfr. _____ Lycoming
 Type _____ Axial-Centrif.
 Eng. Length _____ 58.85"
 Eng. Diam. _____ 23"
 Eng. Spec. No. _____ 104.11
 Reduc. Gear Ratio _____ 12.46
 Prop. Mfr. _____ Ham Std.
 No. Bl. /Diam. _____ 3/10'
 Prop Bl. Des. No. _____ 7103-6

RATINGS

COND.	SHP @	PRPM @	ALT
Take-off	960	1674	S. SL
Military	900	1674	S. SL
Normal	825	1674	S. SL

ELECTRONICS

UHF Command Set _____ AN/ARC-52
 FM Radio Set _____ AN/ARC-44
 LF-ADF Dir. Finder _____ AN/ARN-59
 TACAN _____ AN/ARN-21
 Identification Set _____ AN/APX-68
 Coder Group _____ AN/APA-89
 Interphone - Transistorized -
 _____ AN/AIC-12
 Marker Beacon Rec. _____ AN/ARN-32
 Complete Provisions For:
 MHF Liaison Set _____ AN/ARC-39
 Space Provided For:
 Doppler Radar _____ AN/APN-78
 Television or Recording Equip. _____
 Nose Radar _____

MISSION AND DESCRIPTION

The Grumman YAO-1 is a two place, twin turboprop aircraft, capable of operating from small fields and unimproved runways. The aircraft is capable of performing missions of observation, artillery gun fire spotting, air control emergency resupply liaison, and radiological monitoring.

Design features include a dual controlled, midwing, three tail configuration of semi-monocoque construction equipped with wide span flaps, and leading edge slats.

The crew of two are seated side-by-side within a bubbled enclosure at the extreme forward end of the fuselage.

A remotely operated day and night KA-30 camera installation provides horizon-to-horizon photo coverage along the airplane flight path.

External provisions are incorporated to carry 150 gallon fuel tanks, resupply containers, and target marking rockets.

DEVELOPMENT

First Flight (Proto) _____ April 1959
 Estimated First Service Use _____ Sept. 1960

DIMENSIONS

Wing
 Area _____ 330 sq. ft.
 Span _____ 42' - 0"
 M. A. C. _____ 98"
 Length _____ 42' - 9.5"
 Height _____ 12' - 8"
 Tread _____ 9' - 2"

WEIGHTS

Loading	Lbs.	L. F.
Empty A	9388	
Basic	9852	
Design	11715	5
Combat		
(Basic Mission)	11548	
Normal T. O.	12308	
Max. T. O.	15765	
Max. Land.	15765	

FUEL AND OIL

JP-4 (6.5#/Gal.) MIL-F-5624A

Gal.	No. Tanks	Location
292.5	1	Fuselage
150	2	External

OIL

Capacity _____ 5 Gallons
 Spec. _____ MIL-L-7808B

ORDNANCE

4 Target Marking Rockets
 2 Flare Ejectors
 2 Resupply Containers

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	①	OBSERVATION NO STORES	③	OBSERVATION 2-5 ROCKETS	⑤	NIGHT PHOTO 2-A6 EJECTORS	⑦	FERRY 2-150 GAL. EXT. TANKS	⑧	FERRY 2-TANKS 4-ROCKETS
TAKE-OFF WEIGHT lb.		11984		12308		12248		14343		14991
Fuel INTERNAL/EXTERNAL LB/lb.		1901		1901		1901		1901/1950		1901/1950
Payload lb.		-		270		264		-		540
Wing loading lb./sq.ft.		36.3		37.3		37.1		43.5		45.4
Stall speed-power-off (D) kn.		68		69		69		76		78
Take-off run at S.L. -calm ft.		669(F)		741(F)		727(F)		1030(G)		1240(G)
Take-off run at S.L. - 25 kn. wind ft.		270(F)		345(F)		285(F)		410(G)		560(G)
Take-off to clear 50 ft. -calm ft.		1016(F)		1114(F)		1093(F)		1455(G)		1655(G)
Max. speed/altitude (A) kn./ft.		260/11000		255/10000		257/11000		244/7500		232/5000
Rate of climb at S.L. (A) fpm		2680		2520		2580		1935		1720
Time: S.L. to 20000 ft. (A) min.		11.0		12.0		11.5		18.5		21.5
Time: S.L. to 25000 ft. (A) min.		16.5		18.5		18.0		34.7		-
Service ceiling (100 fpm) (A) ft.		30380		30000		30000		24000		21800
Combat range n.mi.		434		412		424		1195		1093
Average cruising speed kn.		200		200		200		205		204
Cruising altitude(s) ft.		5000		5000		5000		20000		20000
COMBAT RADIUS/MISSION TIME NM/lr.		175/2.15		165/2.06		170/2.09		-/ 5.63		-/ 5.10
AVERAGE CRUISING SPEED KT.		200		200		200		200		200
COMBAT LOADING CONDITION	②	NO STORES	④	2-ROCKETS	⑥	2-A6 EJECTORS	⑧		⑩	2-PYLONS * 4-ROCKETS
COMBAT WEIGHT 60% Int. Fuel Aboard lb.		11224		11548		11488				12767
Engine power		Military		Military		Military				Military
Fuel lb.		1141		1141		1141				1901
Combat speed/ combat altitude kn./ft.		256/5000		250/5000		250/5000				250/5000
Rate of climb/ combat altitude fpm/ft.		2875/5000		2715/5000		2757/5000				2290/5000
Combat ceiling (500 fpm) ft.		27500		27200		27200				24400
Rate of climb at S.L. fpm		3320		3148		3195				2680
Max. speed at S.L. kn.		251		246		245				246
Max. speed/altitude kn./ft.		256/10000		253/10000		251/10000				250/8000
LANDING WEIGHT 10% Int. Fuel Aboard lb.		10273		10597		10537				11056
Fuel lb.		190		190		190				190
Stall speed-power-off (D)/approach power (E) FT/kn.		60/53		61/54		61/54				66/57
Landing distance GND./50' Obs. -Calm FT/ft.		855		880		876				916

- (A) Normal Rated Power
(B) Military Rated Power

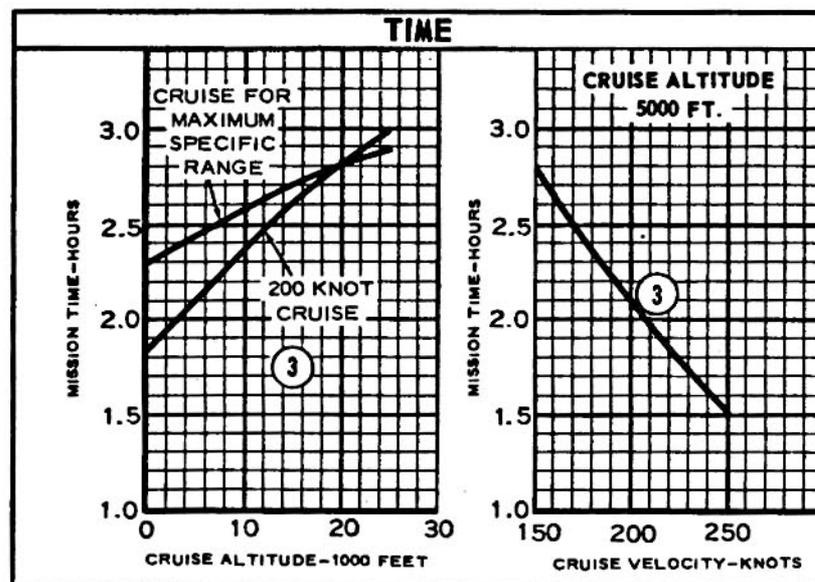
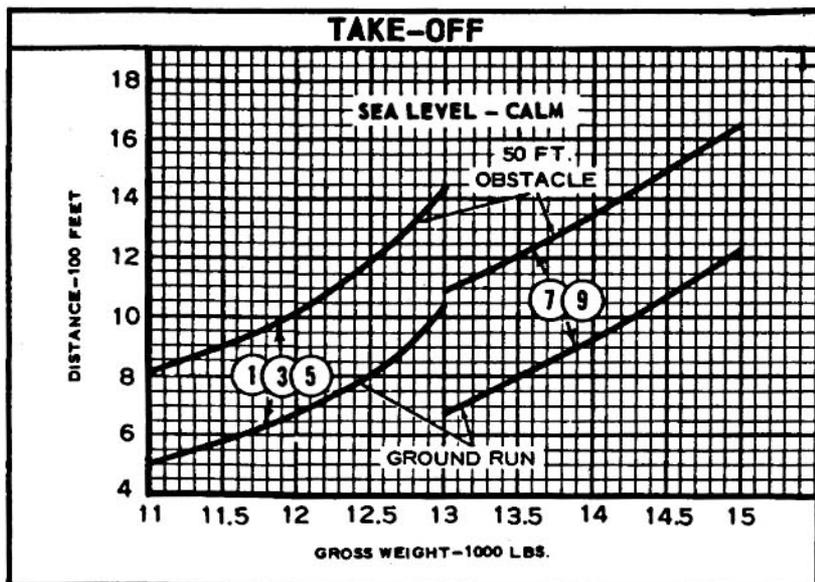
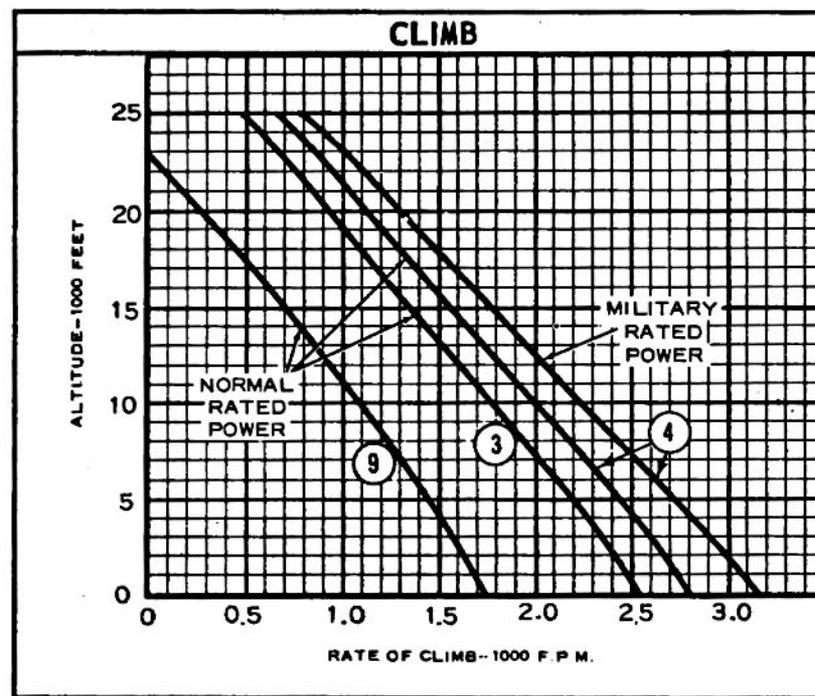
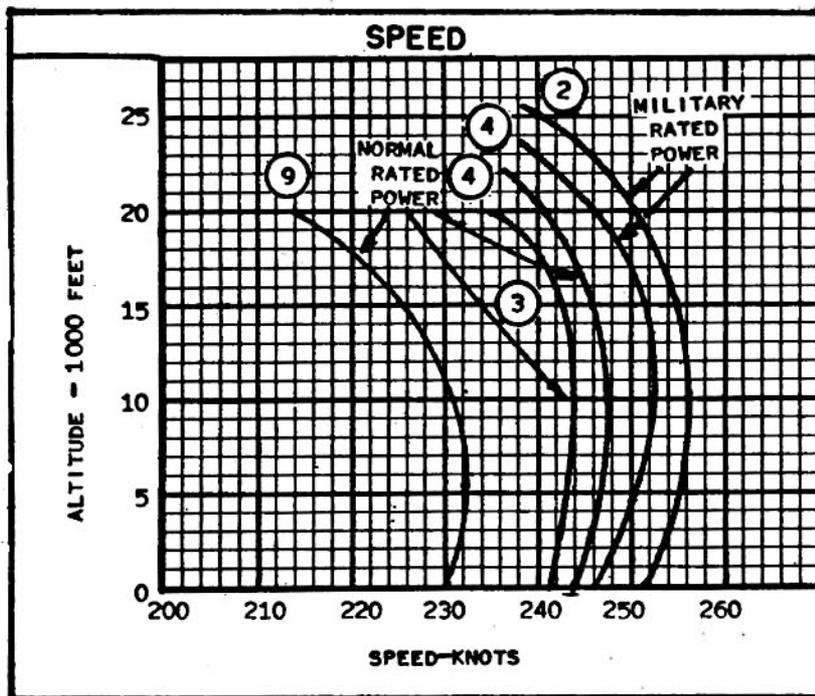
- (D) Flt. Idle Power, Propeller Control at MAX RPM
(E) Power for Level Flight at 120 per cent of Stall Speed - Power Off, Propeller Control at MAX RPM

NOTES

- (F) Take-Off Distances are Based upon Take-Off and Obstacle Speeds Satisfying minimum speeds for Single Engine control and Positive rate of climb as per Detail Spec. 532-1.

- (G) Take-Off Distances are Based upon Take-Off and Obstacle speeds satisfying single engine control.

* 2 Ext. Tank Pylons

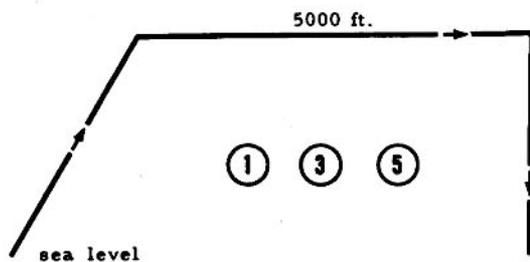


○ LOADING CONDITION COLUMN NUMBER

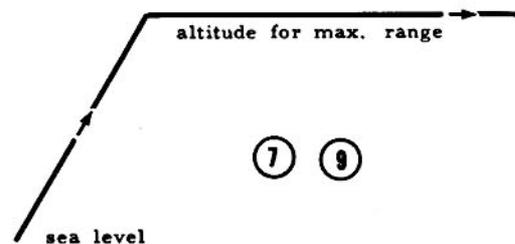
NOTES

TACTICAL AIR OBSERVATION MISSION
& NIGHT PHOTOGRAPHY

5 min. for warm-up, taxi, and take-off @ normal rated power
 climb to 5000 ft. @ normal rated power
 cruise @ 200 knots @ 5000 ft.
 reserve-10% of initial internal fuel
 rockets carried all the way

FERRY MISSION

5 min. for warm-up, taxi, and take-off @ normal rated power
 climb to altitude for max. range @ normal rated power
 cruise at altitude and velocity for max. range
 reserve-10% of initial internal fuel
 external fuel tanks dropped when empty



LOADING CONDITION COLUMN NUMBER