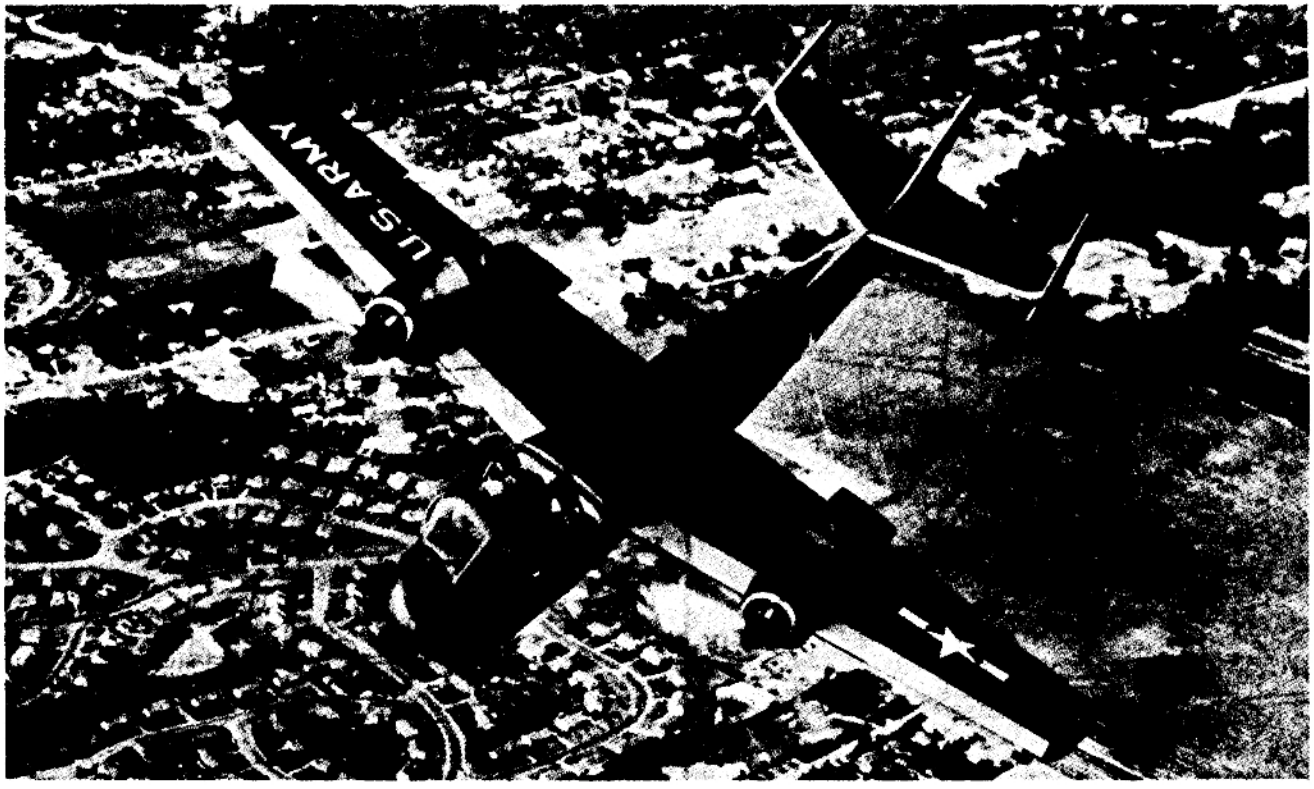
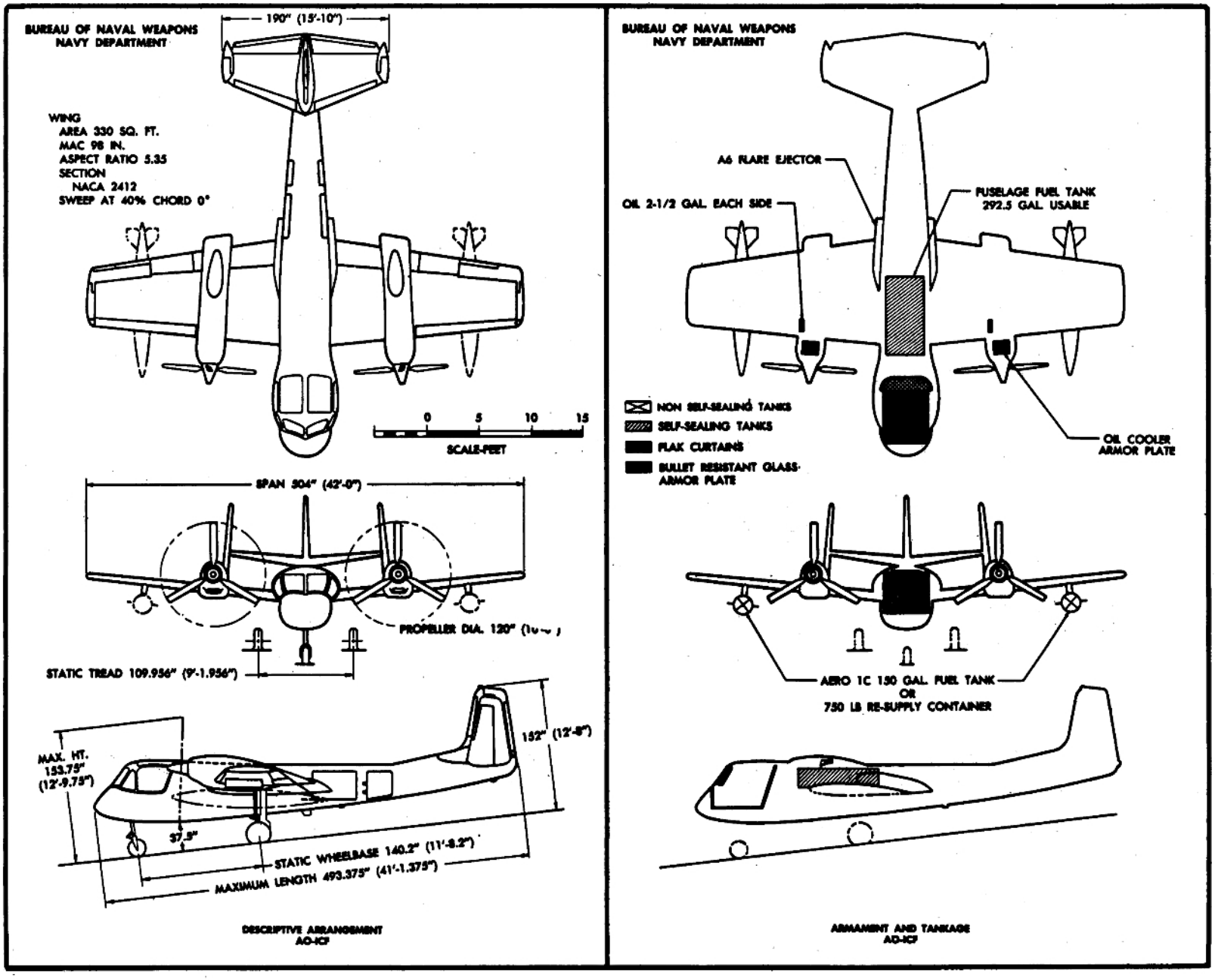


STANDARD AIRCRAFT CHARACTERISTICS

OV-1C MOHAWK



POWER PLANT

Turboprop
- Model — (2) T-53-L-3
- Mfgr. — Lycoming
- Type — Axial-Centrif.
- Eng. Length — 58.85"
- Eng. Diam. — 23"
- Eng. Spec. No. — 104.11b
- Reduc. Gear Ratio — 12.46
- Prop. Mfgr. — Ham Std.
- No. Bl./Diam. — 3/10'
- Prop Bl. Des. No. — 7125-6

RATINGS

COND.	SHP @	PRPM @	ALT
Take-off	960	1678	S.SL
Military	900	1678	S.SL
Normal	825	1678	S.SL

ELECTRONICS

- UHF Radio Set — AN/ARC-55
- FM Radio Set — AN/ARC-44
- VHF Radio Set — AN/ARC-73
- Interphone-Transistorised — AN/AIC-12
- LF-ADF Dir. Finder — AN/ARN-59
- Identification Set — AN/APX-44
- VOR Navigation Set — AN/ARN-30
- Marker Beacon Rec. — R-737
- Radar Altimeter — APN-22
- VHF Transmitter — T-366A/ARC
- Auto Pilot — AN/ASW-12
- Infra Red Surviel. Syst. — UAS-4
- Space Provided for:
  - Doppler Radar — AN/APN-118
  - HF Radio Set — AN/ARC-( )

MISSION AND DESCRIPTION

The Grumman AO-1CF 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 semimonocoque 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.

The AO-1CF version of the Mohawk carries AN/UAS-4 Infrared Detection equipment. The infrared surveillance system makes it possible to detect military terrestrial targets by inherent characteristics that are distinguishable in the visual and infrared portion of the electromagnetic spectrum.

External provisions are incorporated to carry two 150 gallon fuel tanks, or two resupply containers.

DEVELOPMENT

- First Flight (Proto) — March 1961
- First Service Use — July 1961

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	10011	
Basic	10379	
Design	11924	4.9
Combat		
Basic Mission	12296	
Normal T.O.	12682	
Maximum T.O.	15302	
Max. Landing	15302	

FUEL AND OIL

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

Gal.	No. Tanks	Location
297	1	Fuselage
150	2	External

OIL

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

ORDNANCE

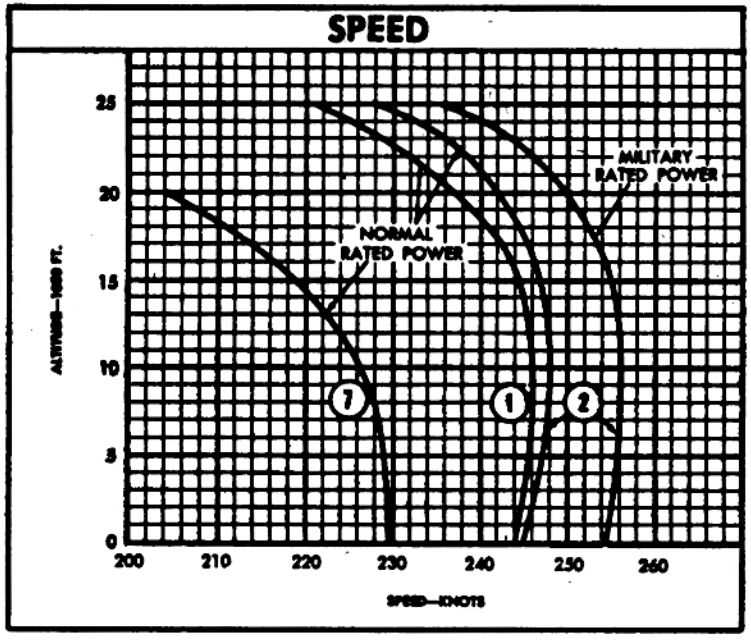
2 Flare Ejectors
2 Resupply Containers

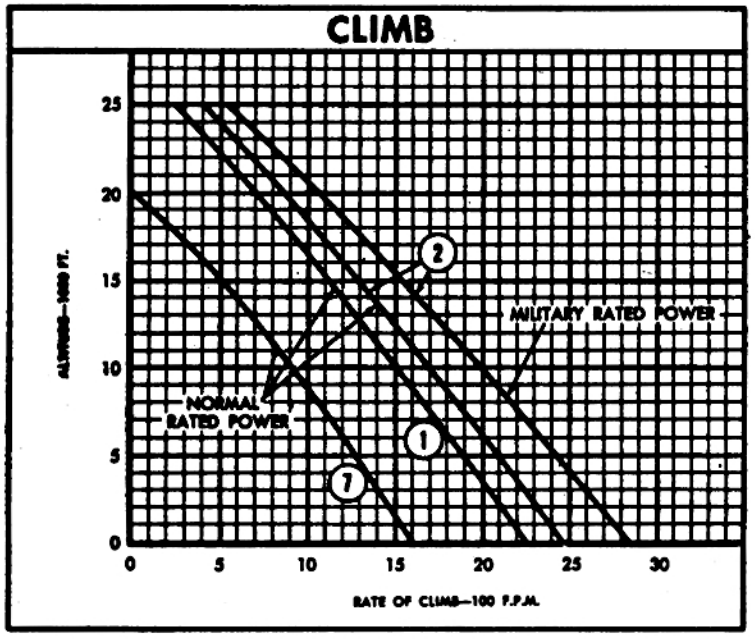
PERFORMANCE SUMMARY

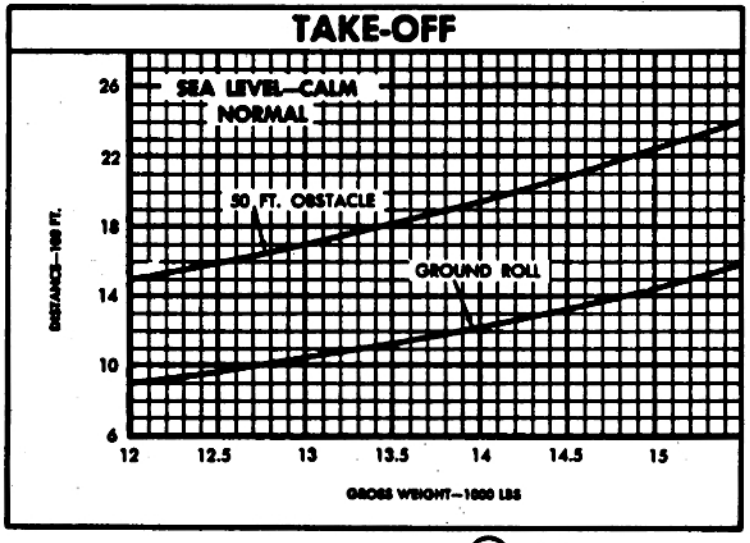
TAKE-OFF LOADING CONDITION			(1) OBSERVATION NO STORES	(3) NIGHT PHOTO 2—A6 EJECTORS	(5) EMERG. RESUPPLY 2—RESUPPLY CONTAINERS	(7) FERRY 2—150 GAL. EXT. TANKS	
TAKE-OFF WEIGHT		lb.	12682	12943	14197	14961	
Fuel		lb.	1930	1930	1930	3880	
Payload		lb.	-	264	1500	-	
Wing loading		lb./sq. ft.	38.4	39.2	43.0	45.3	
Stall speed—power-off	(D)	kn.	74	74	78	80	
Take-off run at S.L.—calm	(F)	ft.	990	1040	1270	1440	
Take-off run at S.L. 25 kn. wind	(F)	ft.	613	640	802	930	
Take-off to clear 50 ft.—calm	(F)	ft.	1640	1680	2000	2230	
Max. speed/altitude	(A)	kn./ft.	246/10000	243/10000	229/5000	230/Sea Lev.	
Rate of climb at S.L.	(A)	fpm.	2270	2175	1800	1630	
Time: S.L. to 20,000 ft.	(A)/(B)	min.	14/12	15/13	22/17	27/22	
Time: S.L. to 25,000 ft.	(A)/(B)	min.	24/20	27/22	47/35	64/47	
Service ceiling (100 fpm)	(A)/(B)	ft.	26200/27450	25700/26500	21600/23200	20200/21300	
Combat range	(C)	n.mi.	408	397	362	1081	
Average cruising speed		kn.	200	200	200	215	
Cruising altitude(s)		ft.	5000	5000	5000	20000	
Cruise time		hr.	2.01	1.96	1.78	4.72	
Mission time		hr.	2.05	2.00	1.83	5.17	
COMBAT LOADING CONDITION			(2) NO STORES	(4) 2—A6 EJECTORS	(6) 2—RESUPPLY CONTAINERS		
COMBAT WEIGHT 60% Int. Fuel		lb.	11910	12171	13425		
Engine power			MILITARY	MILITARY	MILITARY		
Fuel		lb.	1158	1158	1158		
Combat speed/combat altitude	(B)	kn./ft.	256/5000	252/5000	240/5000		
Rate of climb/combat altitude	(B)	fpm/ft.	2100/5000	2000/5000	1620/5000		
Combat ceiling (500 fpm)	(B)	ft.	25200	24300	20400		
Rate of Climb at S.L.	(B)	fpm.	2880	2780	2320		
Max. Speed at S.L.	(B)	kn.	255	252	239		
Max. speed/altitude	(B)	kn./ft.	256/10000	253/10000	240/5000		
LANDING WEIGHT 10% Int. Fuel		lb.	10945	11206	12460		
Fuel		lb.	193	193	193		
Stall speed—power-off (D) /approach power (E)		kn.	68/54	69/55	72/58		
Landing distance to clear 50 ft. obst.		ft.	850 (G)	870 (G)	1335 (H)		

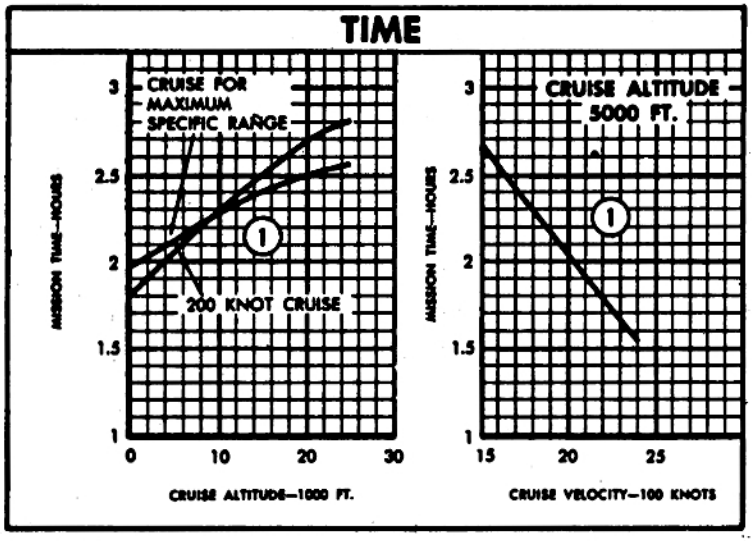
NOTES

(A) Normal Rated Power
(B) Military Rated Power
(C) See notes on Mission Specifications.
(D) Flight idle power, propeller control at max rpm.
(E) Power for level flight at 120 percent of stall speed, power off, propeller control at max rpm.
(F) Take-off distances are based on take-off and obstacle speed equal to 120 percent of power off stall speed in take-off configuration.
(G) Landing distance is based on approach speed equal to 110 percent of landing stall speed with rate of sink equal to 14 fps.
(H) Landing distance is based on approach speed equal to 110 percent of landing stall speed, power off with rate of sink equal to 8 fps.



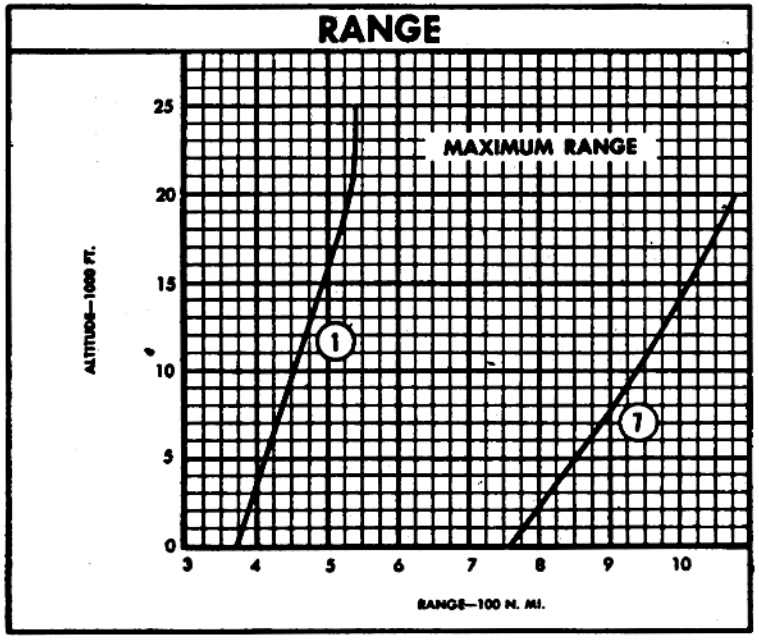




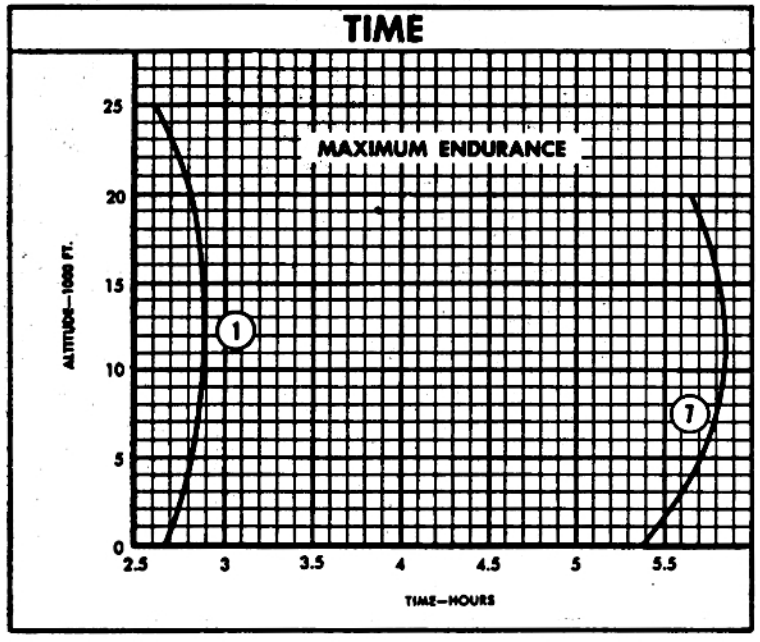


◯ LOADING CONDITION COLUMN NUMBER

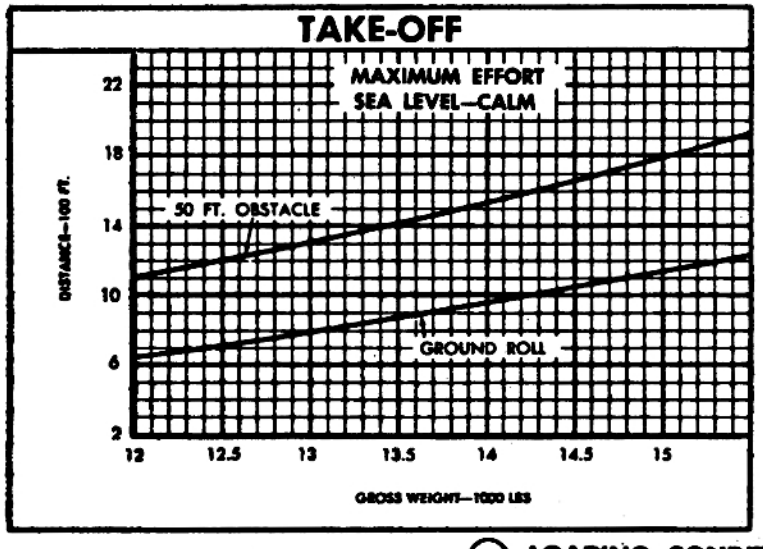
RANGE



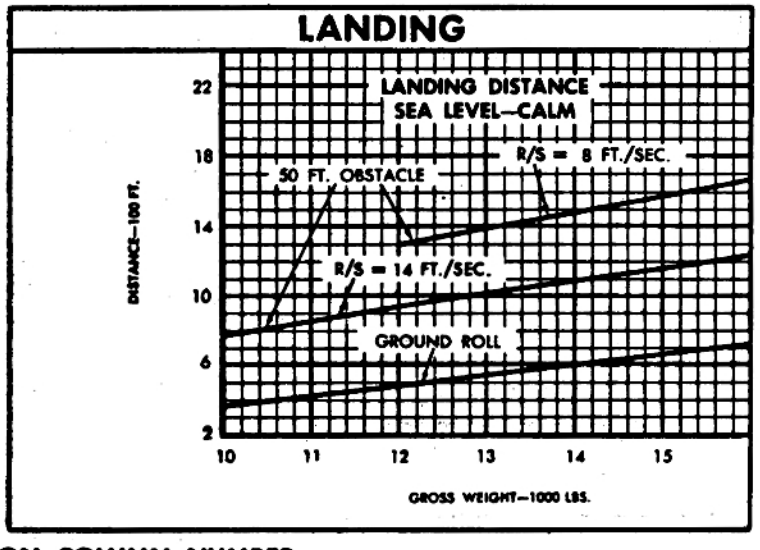
TIME



TAKE-OFF



LANDING



○ LOADING CONDITION COLUMN NUMBER

NOTES

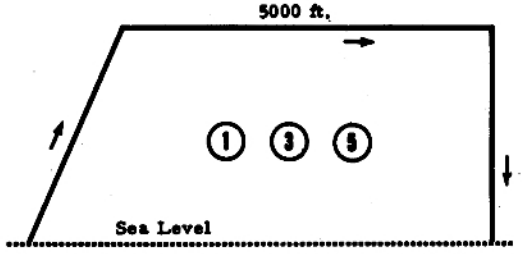
TACTICAL AIR OBSERVATION MISSION & NIGHT PHOTOGRAPHY

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



FERRY MISSION

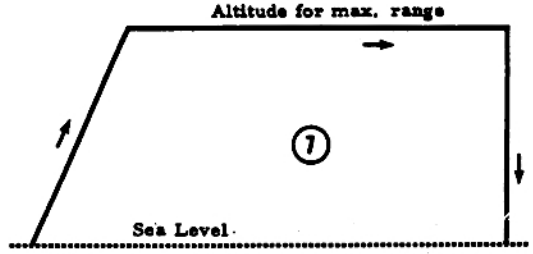
5 min. for warm-up, taxi, and take-off @ normal rated power

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