

STANDARD AIRCRAFT CHARACTERISTICS

AO-1B MOHAWK

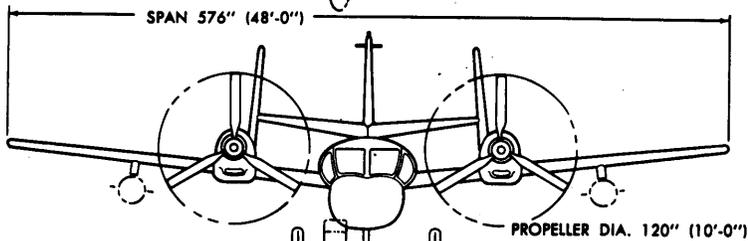
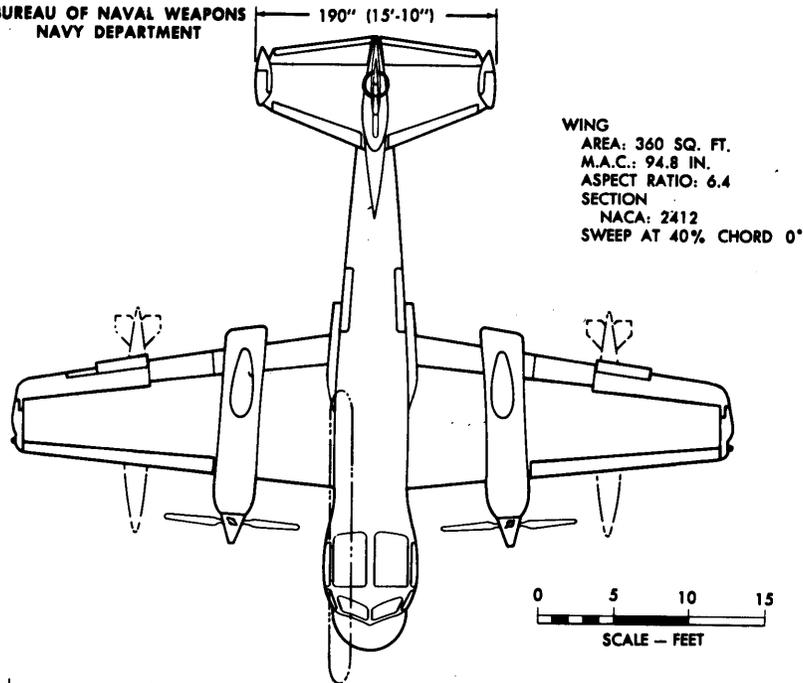
GRUMMAN

15 MARCH 1963

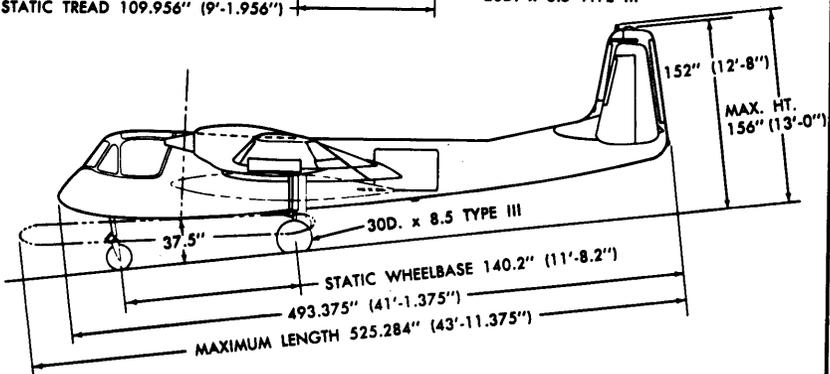
OV-1B (**AO-1B**)

SERVICE

BUREAU OF NAVAL WEAPONS
NAVY DEPARTMENT

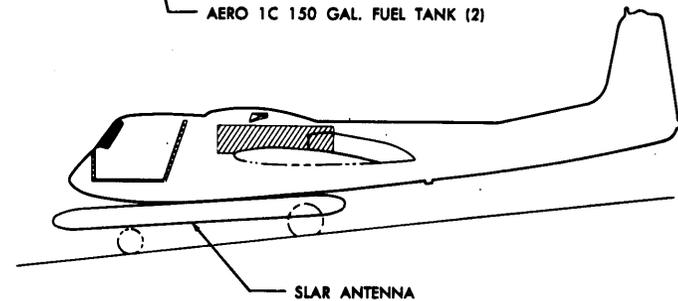
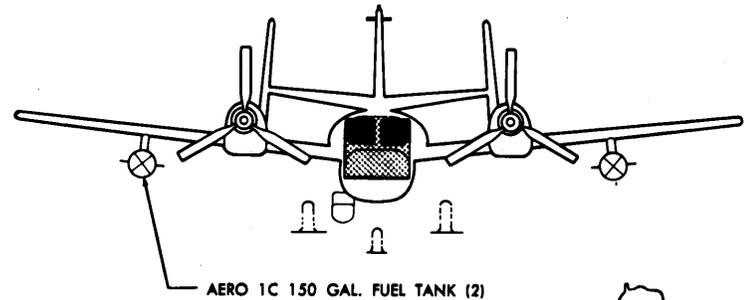
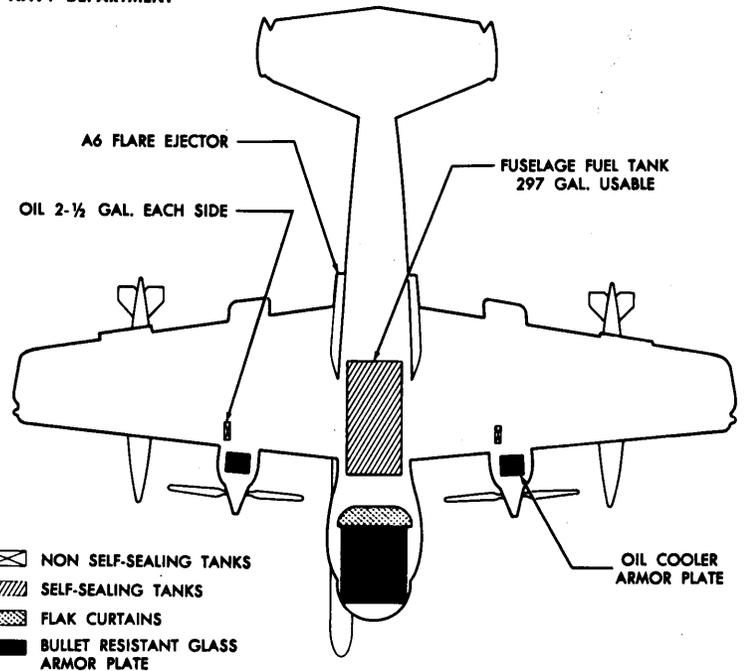


STATIC TREAD 109.956" (9'-1.956") 20D. x 6.5 TYPE III



DESCRIPTIVE ARRANGEMENT
AO-1BF

BUREAU OF NAVAL WEAPONS
NAVY DEPARTMENT



ARMAMENT AND TANKAGE
AO-1BF

OV-1B (AO-1BF)

15 MARCH 1963

POWER PLANT

Turboprop
 Model _____ (2) T53-L-7
 Mfr. _____ Lycoming
 Type _____ Axial-Centrif.
 Eng. Length _____ 58.85 in.
 Eng. Diameter _____ 23 in.
 Eng. Spec. No. _____ 104.21B
 Reduc. Gear Ratio _____ 12.4
 Prop. Mfr. _____ Ham Std.
 No. Bl./Diam. _____ 3/10 ft.
 Prop. Bl. Des. No. _____ 7125-6

RATINGS

| COND. | SHP | @ PRPM | @ ALT |
|----------|------|--------|-------|
| Take-off | 1090 | 1678 | S. SL |
| Military | 995 | 1678 | S. SL |
| Normal | 895 | 1678 | S. SL |

ELECTRONICS

UHF Radio Set _____ AN/ARC-55
 FM Radio Set _____ AN/ARC-44
 Interphone-Transistorized _____
 _____ 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-1041
 Radar Altimeter _____ APN-22
 VHF Transmitter _____ T-366A/ARC
 Auto Pilot _____ AN/ASW-12
 Doppler Radar _____ AN/APN-129
 Radar Surveillance System _____ APS-94

Space Provided for:

VHF Radio Set _____ AN/ARC-73
 Additions to IFF _____ MK-12
 HF Radio Set _____ AN/ARC-()

MISSION AND DESCRIPTION

The Grumman AO-1BF 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-surveillance, artillery gun fire spotting, air control emergency resupply and radiological monitoring.

The Mohawk has a midwing, triple tail, tricycle landing gear, with a fuselage of semimonocoque construction. Design features include wide span flaps, hydraulically operated inboard ailerons functioning both as flaps and ailerons, and manually controlled elevators, rudders and outboard ailerons.

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-1BF version of the Mohawk carries an APS-94 Side Looking Airborne Radar Antenna as standard equipment.

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

DEVELOPMENT

First Flight (Proto) _____ November 1961
 Estimated First Service Use _____ January 1963

DIMENSIONS

Wing
 Area _____ 360 sq. ft.
 Span _____ 48 ft. 0 in.
 MAC _____ 94.8 in.
 Length _____ 43 ft. -11.4 in.
 Height _____ 13 ft. -0 in.
 Tread _____ 9 ft. -2 in.

WEIGHTS

| Loading | Lbs. | L. F. |
|---------------|--------|-------|
| Empty E | 10,983 | |
| Basic | 11,217 | |
| Design | 13,100 | 4.0 |
| Combat | | |
| Basic Mission | 12,882 | |
| Normal T. O. | 13,654 | |
| Maximum T. O. | 16,643 | |
| Max. Landing | 16,643 | |

FUEL AND OIL

JP-4 (6.5 lbs./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

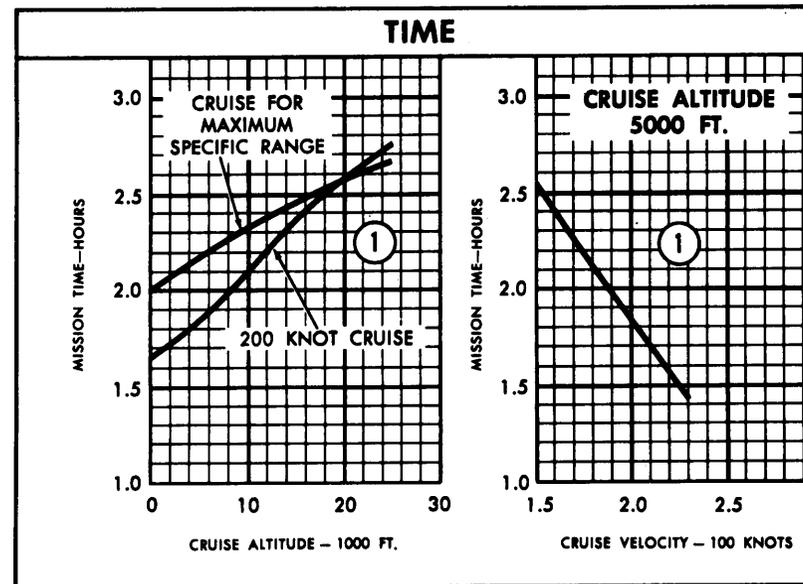
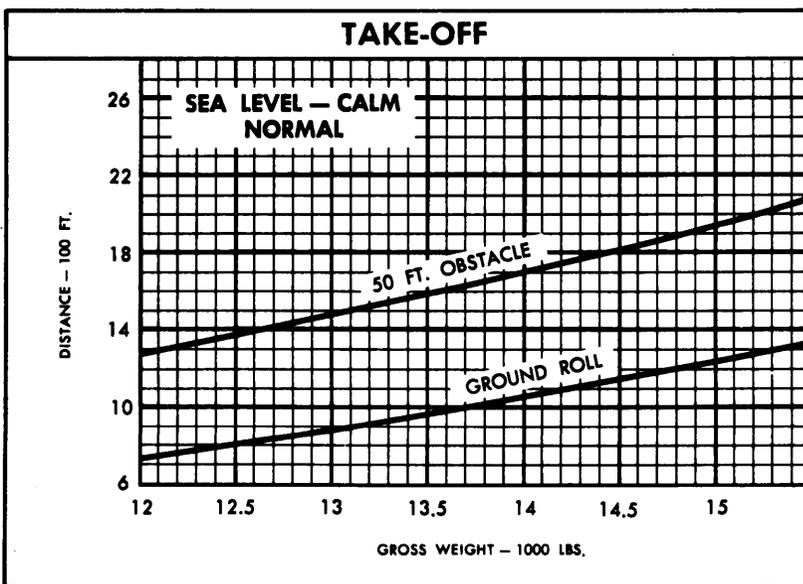
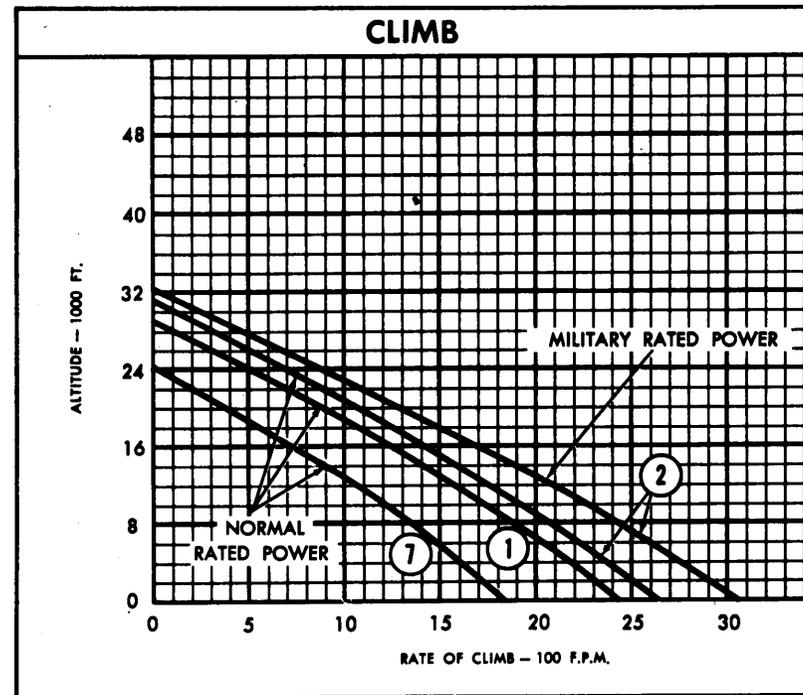
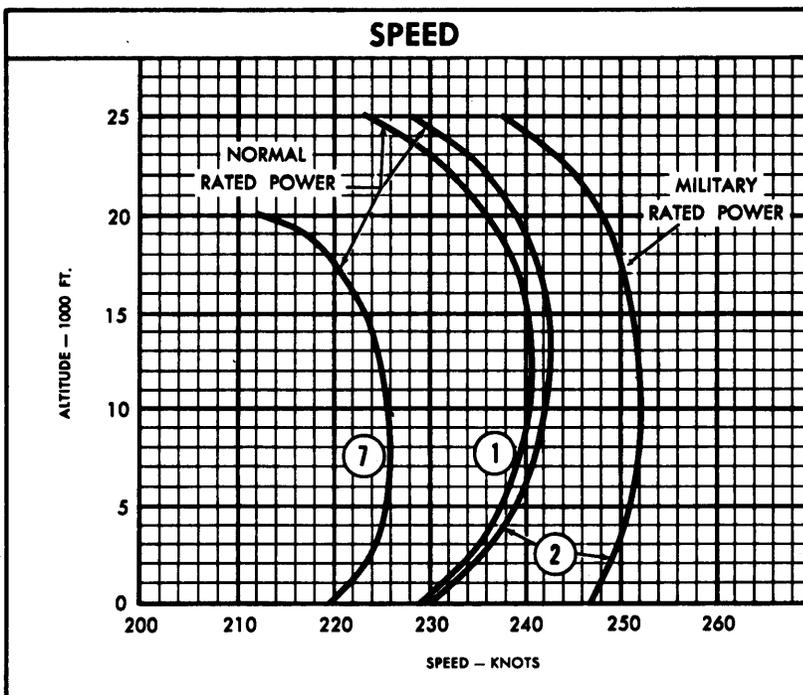
SERVICE TEST
PERFORMANCE SUMMARY

| 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. | 13,654 | 13,915 | 15,168 | 15,918 |
| Fuel internal/external | lb. | 1930 | 1930 | 1930 | 1930/1950 |
| Payload | lb. | - | 264 | 1500 | - |
| Wing loading | lb./sq. ft. | 38 | 38.7 | 42.1 | 44.6 |
| Stall speed—power-off (D) | kn. | 73 | 73.8 | 77 | 79 |
| Take-off run at S.L.—calm | ft. | 995 | 1040 | 1270 | 1410 |
| Take-off to clear 50 ft.—calm | ft. | 1625 | 1690 | 2000 | 2185 |
| Max. speed/altitude (A) | kn./ft. | 240.5/12,500 | 238/12,000 | 226.8/10,000 | 226/8000 |
| Rate of climb at S.L. (B) | fpm. | 2800 | 2700 | 2320 | 2160 |
| Time: S.L. to 20,000 ft. (B) | min. | 9.5 | 10 | 13 | 15 |
| Time: S.L. to 25,000 ft. (B) | min. | 15.5 | 16 | 23 | 26.5 |
| Service ceiling (100 fpm) (B) | ft. | 29,500 | 28,750 | 26,500 | 24,900 |
| Combat range (C) | n.mi. | 365 | 358 | 334 | 1053 |
| Average cruising speed | kn. | 200 | 200 | 200 | 203 |
| Cruising altitude(s) | ft. | 5000 | 5000 | 5000 | 20,000 |
| Cruise time | hr. | 1.80 | 1.77 | 1.64 | 4.98 |
| Mission time | hr. | 1.84 | 1.80 | 1.69 | 5.30 |
| | | | | | |
| | | | | | |
| COMBAT LOADING CONDITION | | ② NO STORES | ④ 2-A6 EJECTORS | ⑥ 2-RESUPPLY CONTAINERS | |
| COMBAT WEIGHT 60% Int. Fuel | lb. | 12,882 | 13,143 | 14,396 | |
| Engine power | | Military | Military | Military | |
| Fuel | lb. | 1158 | 1158 | 1158 | |
| Combat speed/combat altitude (B) | kn./ft. | 250/5000 | 248/5000 | 238/5000 | |
| Rate of climb/combat altitude (B) | fpm/ft. | 2660/5000 | 2560/5000 | 2175/5000 | |
| Combat ceiling (500 fpm) (B) | ft. | 27,700 | 26,900 | 23,800 | |
| Rate of Climb at S.L. (B) | fpm. | 3050 | 2940 | 2530 | |
| Max. Speed at S.L. (B) | kn. | 247.2 | 244.9 | 235.9 | |
| Max. speed/altitude (B) | kn./ft. | 252/11,500 | 249.5/11,500 | 239.5/10,000 | |
| | | | | | |
| | | | | | |
| LANDING WEIGHT 10% Int. Fuel | lb. | 11,917 | 12,178 | 13,431 | |
| Fuel | lb. | 193 | 193 | 193 | |
| Stall speed—power-off (D) / approach power (E) | kn. | 67.5/54.6 | 68.2/55.2 | 71.5/58 | |
| Landing distance to clear 50 ft. obst. | ft. | 870 | 890 | 1330 | |

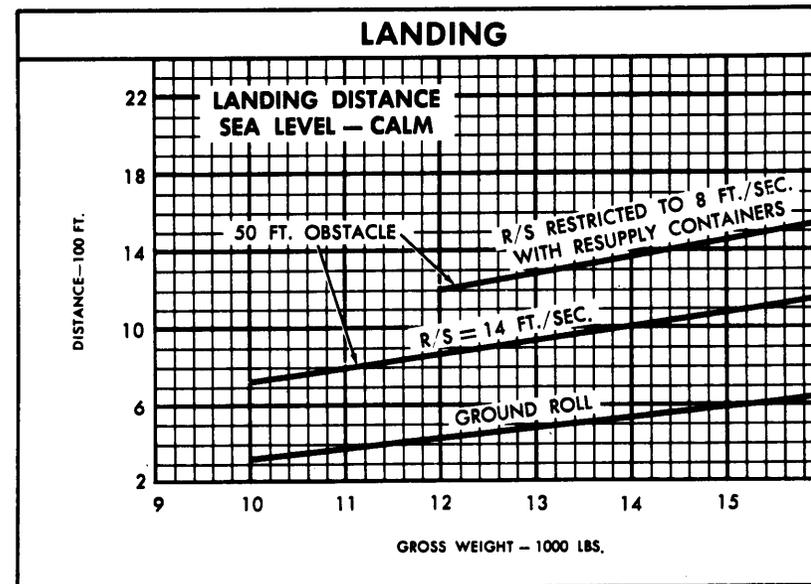
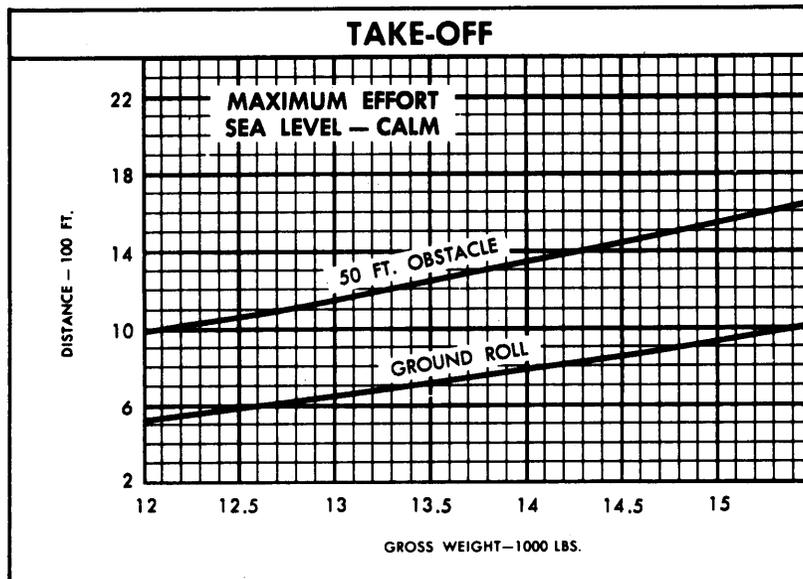
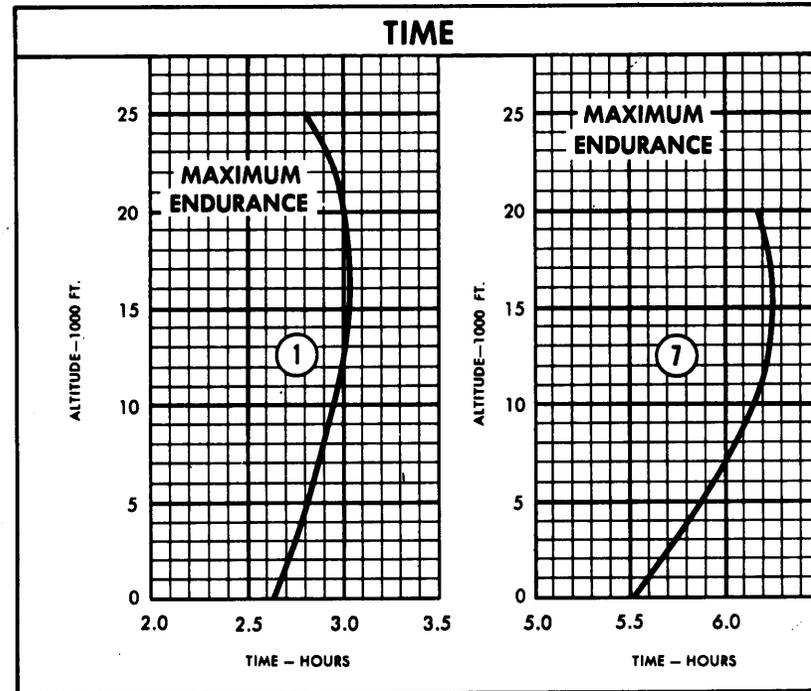
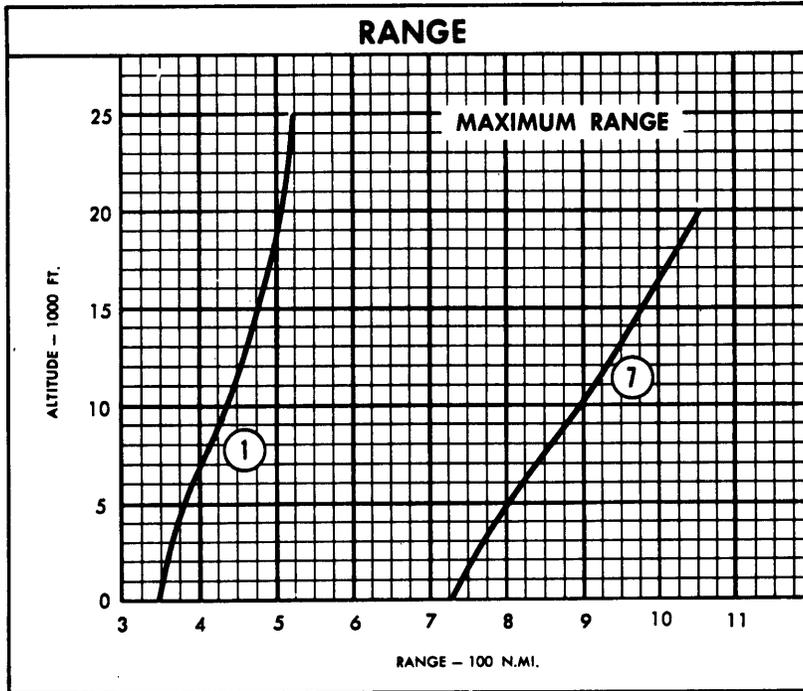
NOTES

- (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.



○ LOADING CONDITION COLUMN NUMBER



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NOTES

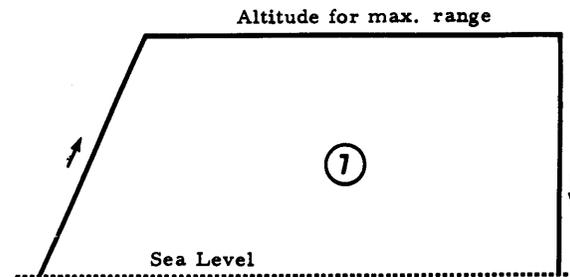
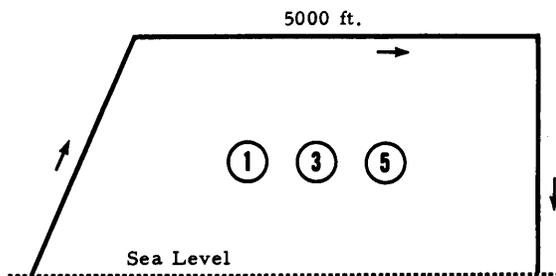
TACTICAL AIR OBSERVATION MISSION
& NIGHT PHOTOGRAPHY

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

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○ LOADING CONDITION COLUMN NUMBER