

**AIRPLANE CHARACTERISTICS & PERFORMANCE**

BUREAU OF AERONAUTICS, NAVY DEPT.

| COLUMN NUMBER                     |                         | 1                                  | 2                                 | 3  | 4                        |
|-----------------------------------|-------------------------|------------------------------------|-----------------------------------|--|--------------------------|
| LOADING CONDITION                 |                         | Scout<br>No<br>Explosives          | Scout<br>No<br>Explosives         | Window<br>Dispenser<br>AN/APS-4            | 1-2000# Bomb<br>AN/APS-4 |
| GROSS WEIGHT                      | LBS.                    | 14718                              | 14718                             | 15071                                      | 16861                    |
| EMPTY WEIGHT                      | Calculated LBS.         | 10946                              |                                   |  |                          |
| FUEL/OIL                          | GALS.                   | 365/20                             | 365/20                            | 365/20                                     | 365/20                   |
| FIXED GUNS/AMMUNITION             |                         | 2-20 MM/400 Rds. Mk.I Sight System |                                   |  |                          |
| FLEXIBLE GUNS/AMMUNITION          |                         | NONE                               |                                   |  |                          |
| ENGINE POWER USED FOR PERFORMANCE |                         | COMBAT                             | NORMAL                            | NORMAL                                     | NORMAL                   |
| WING LOADING                      | LBS./SQ.FT.             | 36.8                               | 36.8                              | 37.7                                       | 42.2                     |
| POWER LOADING ①                   | LBS./BHP.               | 6.7                                | 8.2                               | 8.4  | 9.4                      |
| V-MAX. SEA LEVEL                  | KN                      | 296                                | 266                               | 243  | 241                      |
| V-MAX./CRITICAL ALT.              | KN/FT.                  | 309/13300                          | 298/17000                         | 269/16600                                  | 265/16600                |
| V-STALL GROSS WEIGHT ②            | KN                      | 75.0                               | 75.0                              | 75.8                                       | 80.2                     |
| V-STALL WITHOUT FUEL ②            | KN                      | 69.1                               | 69.1                              | 70.1                                       | 74.7                     |
| TIME-TO-CLIMB -10000FT-           | MIN.                    | 4.1                                | 4.5                               | 4.7  | 5.6                      |
| TIME-TO-CLIMB -20000FT-           | MIN.                    | 9.0                                | 10.5                              | 11.2                                       | 13.7                     |
| SERVICE CEILING                   | FT.                     | 31900                              | 31300                             | 30200                                      | 28400                    |
| TAKE-OFF DISTANCE -CALM-          | FT.                     | 564                                | 564                               | 615  | 821                      |
| TAKE-OFF DISTANCE -15 KN-         | FT.                     | 355                                | 355                               | 391  | 537                      |
| TAKE-OFF DISTANCE -25 KN-         | FT.                     | 243                                | 243                               | 269  | 377                      |
| TAKE-OFF DISTANCE -50 FT. OBST.   | FT.                     |                                    |                                   |  |                          |
| TAKE-OFF TIME                     | SECONDS                 |                                    |                                   |  |                          |
| RATE OF CLIMB -SL-                | FT./MIN.                | 3350                               | 2390                              | 2280                                       | 1940                     |
| MAX. RANGE / V-AV. ③              | NMI./KN                 |                                    | 1170/153                          | 1030/135                                   | 930/142                  |
| RANGE / V-AV. -60%NSP-③           | NMI./KN                 |                                    |                                   |  |                          |
| SEARCH RADIUS / V-AV. -20%R-      | NMI./KN.                |                                    |                                   |  |                          |
| A.S.W. RADIUS / V-AV. -20%R-      | NMI./KN.                |                                    |                                   |  |                          |
| SCOUT RADIUS                      | N MI.                   |                                    | (S-1) 320                         | (S-1) 280                                  |                          |
| COMBAT RADIUS -B-1                | N MI.                   |                                    |                                   |  | (B-1) 195                |
| ENGINE / PROP GEAR RATIO          |                         | W.A.C. R-3350 - 24W/.4375:1        |                                   |  |                          |
| ENGINE RATING<br>BHP/RPM/ALT.     | COMBAT                  | MILITARY                           | NORMAL                            | TAKE-OFF                                   |                          |
|                                   | 2800/2800/SL-1000       | 2500/2800/SL-3500                  | 2100/2400/SL-5300                 | 2500/2900                                  |                          |
|                                   | 2200/2600/8000-11000    | 1900/2600/11000-14800              | 1800/2400/9700-14800              |  |                          |
| TANKAGE IN GALLONS                |                         | OIL                                | FUEL                              | OFFENSIVE ARMAMENT                         |                          |
| AUX. FIXED                        | PROTECTED               |                                    | 365                               | FUSELAGE (EXPLOSIVE DISPLACING GEAR)       |                          |
|                                   | UNPROTECTED             | 31                                 |                                   | Bombs: 1-2000#, 1-1600#, 1-1000# or 1-500# |                          |
|                                   | TOTAL - FIXED INTERNAL  | 31                                 |                                   | Depth Bomb: 1-325#                         |                          |
|                                   | DROPPABLE WING          |                                    |                                   | Mines: 1-2000# or 1-1000#                  |                          |
|                                   | DROPPABLE 2@150 GAL.    |                                    | 300                               | Torpedo: 1-MK13-3                          |                          |
| TOTAL                             | 31                      | 665                                |                                   | Incendiary Cluster: 1-500#                 |                          |
| NOTE                              |                         |                                    | WINGS: (FAIRED MK51-9 BOMB RACKS) |  |                          |
|                                   |                         |                                    | Bombs: 2-1000#, 2-500#, or 2-250# |  |                          |
|                                   | ① BHP AT MAX CRIT. ALT. |                                    | Depth Bombs: 2-325#               |  |                          |
|                                   | ② STALL - WITHOUT POWER |                                    | Mines: 2-1000#                    |  |                          |
|                                   | ③ AT 1500' ALTITUDE     |                                    | Rockets: 2 11.75" A.R. (Tiny Tim) |  |                          |
|                                   |                         | Torpedo: 2-MK 13-3                 |                                   |  |                          |

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Performance is based on flight tests of XBT2D-1 airplane. Range and radius are based on engine specification fuel consumption data increased by 15% to conform with past experience.

Scout Condition: Two wing bomb racks (MK51-12) with sway bracing and bomb ejector (fuselage) aboard. Sway bracing for bomb ejector aboard only in bomber condition. AN/APS-4 radar and rocket launcher not aboard. Addition of 12 MK-9 rocket launchers reduces Vmax S.L. to 289 Kn. and Vmax/ACA to 302 Kn/13300 Ft. at combat power. Addition of 12-5" HVAR increases gross weight of condition (1) to 16438# and decreases Vmax S.L. to 271 Kn. and Vmax/ACA to 281 KN/13000 Ft.

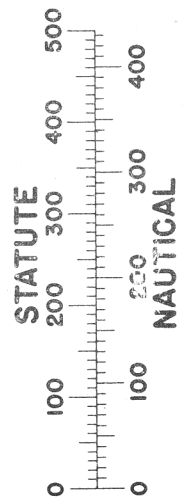
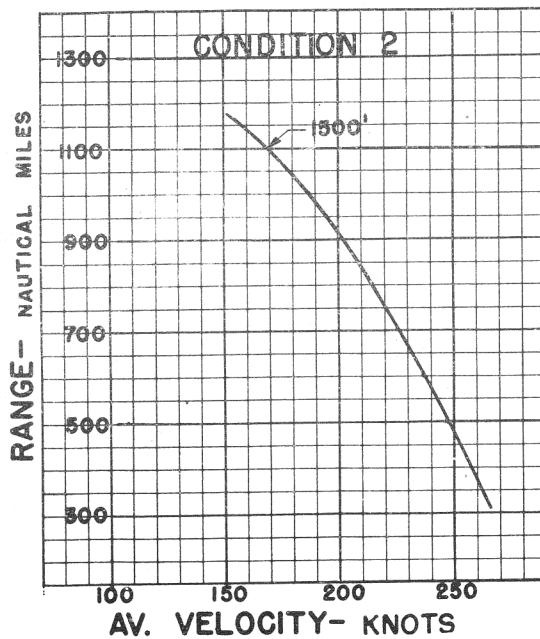
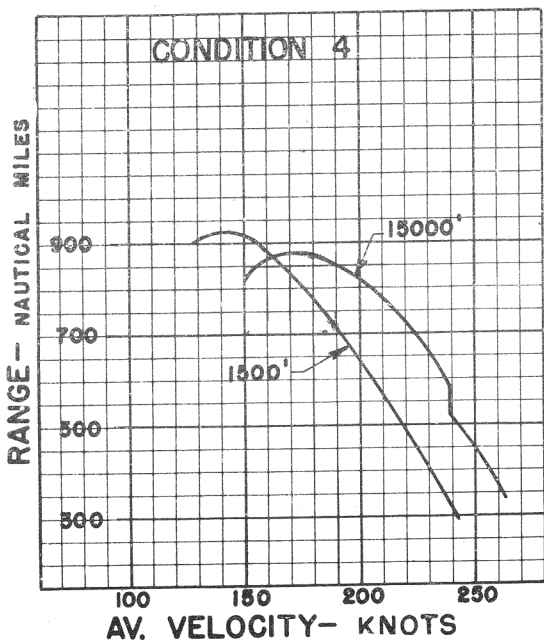
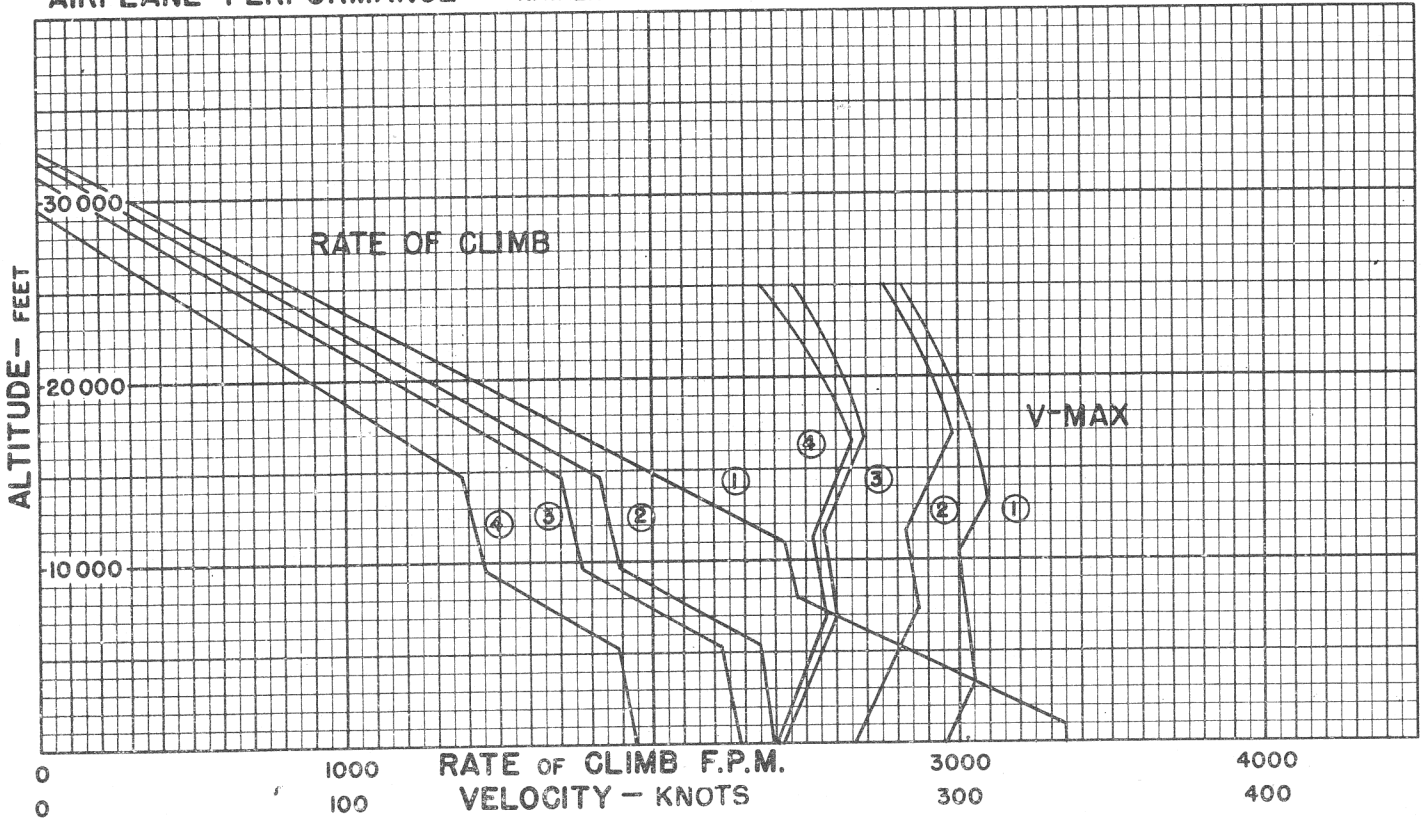
NOTES:

1. AN/APS-4 radar is carried on port side wing bomb-rack.
2. 12-100# bombs or 12-250# bombs can be carried at MK-9 rocket launcher positions by replacing launchers with MK-55 bomb-racks.
3. Minimum engine power and speed of 568 BHP and 1200 RPM, respectively, limits max. range and scouting radius of conditions (2) and (3) and also the bomber radius of condition (4) by requiring more fuel for reserve.
4. 20 gallons of ADI fluid are available for 12 minutes at combat power.
5. 200 ft. length is required to spot 20 planes on the 96' wide deck immediately aft of the forward ramp on the CV-9 class carriers.

| BOMBER COMBAT RADIUS FORMULA NO. B-1-CONDITIONS NOS. - 4 |                         |              |                   | RADIUS = CLIMB + CRUISE-OUT + CRUISE BACK |                        |                    |                |
|--|-------------------------|--------------|-------------------|---|------------------------|--------------------|----------------|
| <u>WARM-UP</u>   | <u>RENDEZVOUS</u>       | <u>CLIMB</u> | <u>CRUISE OUT</u> | <u>DROP TANKS</u>                         | <u>COMBAT</u>          | <u>CRUISE BACK</u> | <u>RESERVE</u> |
| 20 min.  | 20 min. at sea level    | to 15000 ft. | at 15000 ft.      | <u>DESCEND</u><br>to 1500 ft.             | 15 min.<br>at 1500 ft. | at 1500 ft.        | 60 min.<br>at  |
| <u>TAKE-OFF</u>  | at                      | at           | 180 kts.TAS       | <u>DROP BOMBS</u>                         | 5 min. WEP.            | 170 kts.TAS        | Vel.for        |
| 1 min.   | 60% N.S.P. NORMAL POWER |              |                   | <u>FIRE</u>                               | 10 min. Nor.Pr.        |                    | Max. Range     |
|  | Auto Lean.              | Auto Rich.   | Auto Lean.        | <u>ROCKETS</u>                            |                        | Auto Lean.         | Auto Lean.     |

SCOUTING RADIUS FORMULA NO. S-1 - CONDITIONS (2) & (3).

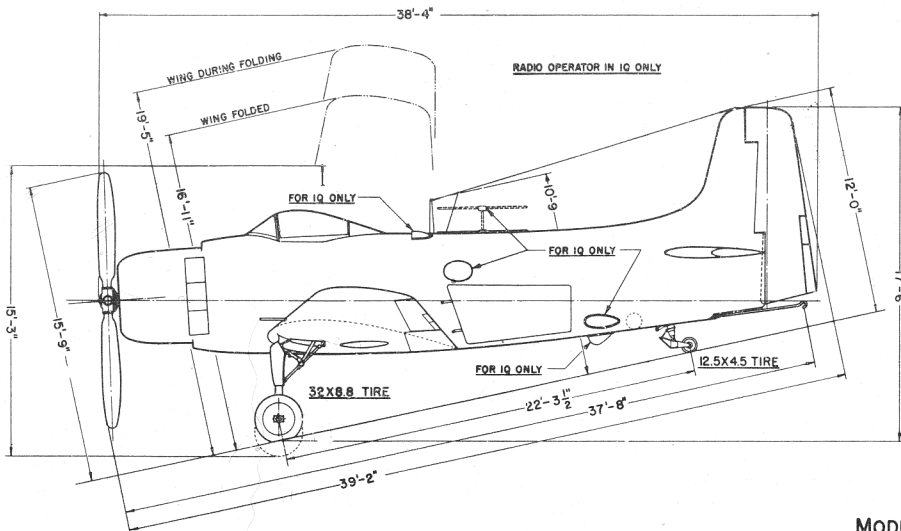
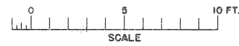
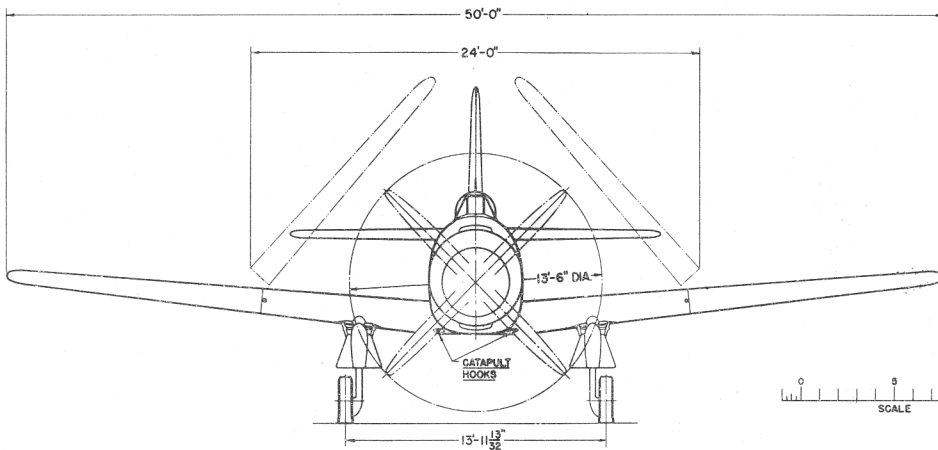
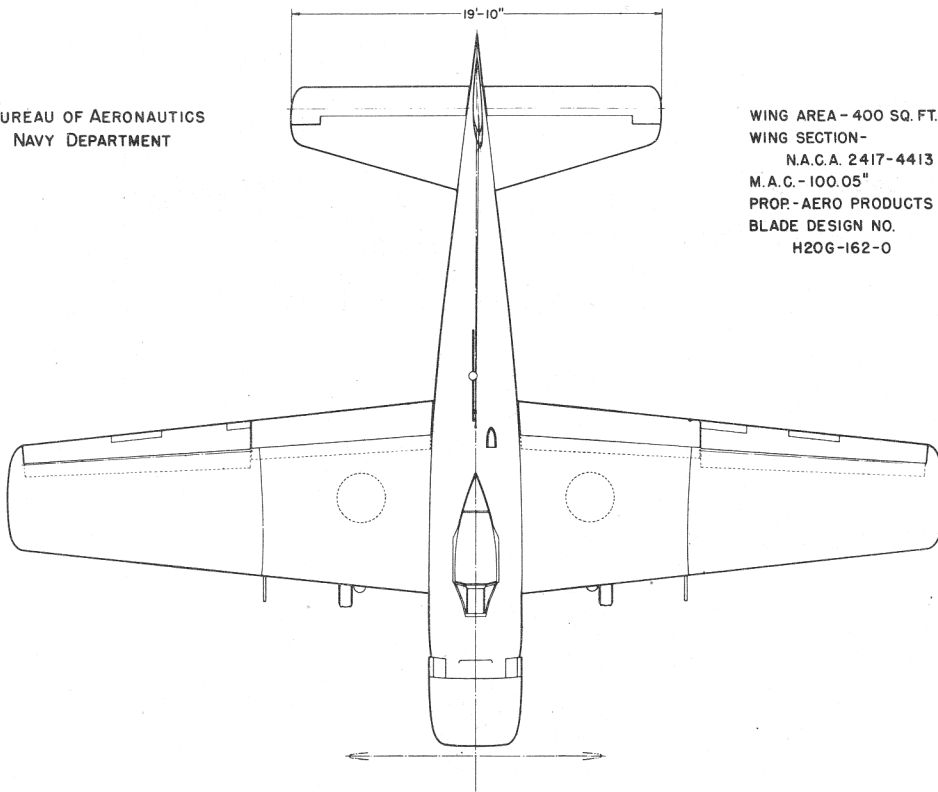
Radius is 1/3 range at velocity for max. range at 1500 Ft. Fuel for 20 min. warm-up, 1 min. T.O., used at start of flight. Allowance for 60 min. at velocity for max. range for rendezvous, landing and reserve carried entire distance. Practical scout radius is reduced 9 nautical miles for each minute of combat power operation at 1500 ft.



○ LOADING CONDITION COLUMN NUMBER





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NAVY DEPARTMENT

WING AREA - 400 SQ. FT.  
WING SECTION -  
N.A.C.A. 2417-4413  
M.A.C. - 100.05"  
PROP - AERO PRODUCTS  
BLADE DESIGN NO.  
H20G-162-0

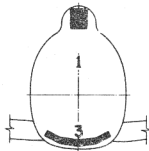
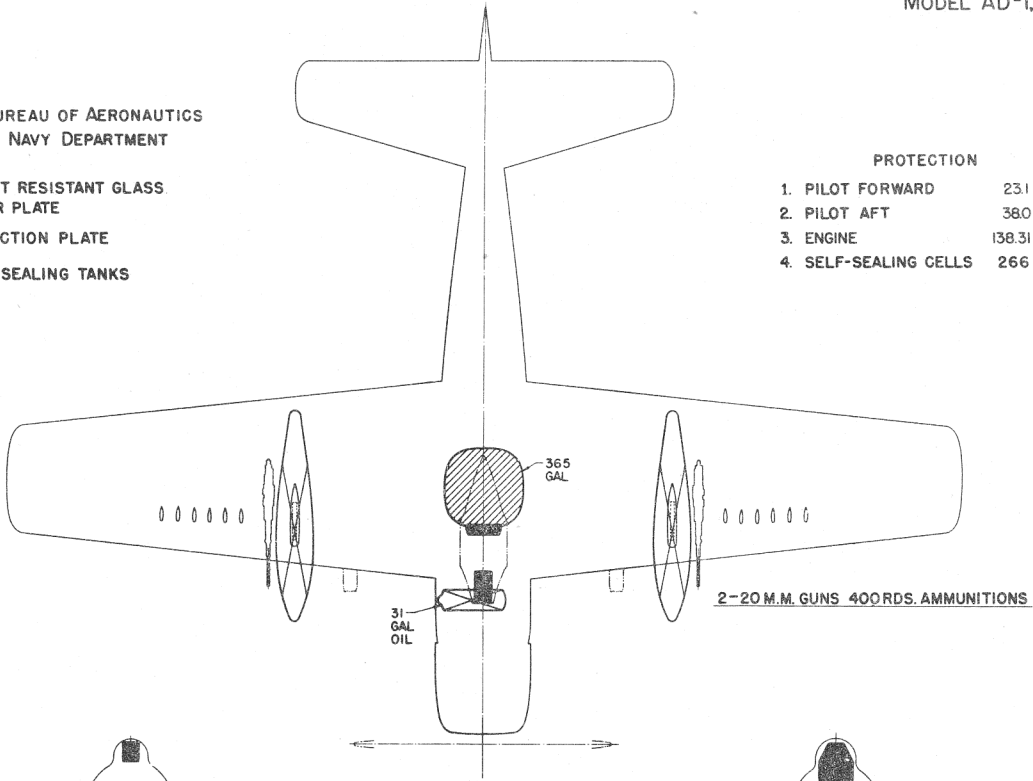


MODEL AD-1, IQ

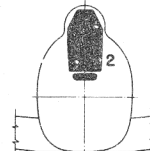
BUREAU OF AERONAUTICS  
NAVY DEPARTMENT

-  BULLET RESISTANT GLASS ARMOR PLATE
-  DEFLECTION PLATE
-  SELF-SEALING TANKS
- 

- PROTECTION
- 1. PILOT FORWARD 231 LBS.
  - 2. PILOT AFT 380 LBS.
  - 3. ENGINE 138.31 LBS.
  - 4. SELF-SEALING CELLS 266 LBS.



VIEW A TO B



VIEW B

