

ISSUE OF 6 PAGES  
**AIRPLANE CHARACTERISTICS & PERFORMANCE**

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		Scout	Scout	Bomber 1-2000#Bomb 2-Wing Tanks	Bomber 1-2000#Bomb AN/APS-4Radar
GROSS WEIGHT	LBS.	13924	13924	18030	16067
EMPTY WEIGHT	Calculated LBS.	10508			
FUEL/OIL	GALS.	365/20	365/20	665/28	365/20
FIXED GUNS/AMMUNITION		2-20 mm./400rds. MkI Sight System			
FLEXIBLE GUNS/AMMUNITION		None			
ENGINE POWER USED FOR PERFORMANCE		Combat	Normal	Normal	Normal
WING LOADING	LBS./SQ.FT.	34.8	34.8	45.1	40.2
POWER LOADING ①	LBS./BHP.	6.3	7.7	10.0	8.9
V-MAX. SEA LEVEL	KN	302	274	241	245
V-MAX./CRITICAL ALT.	KN/FT.	318/13500	306/17200	264/16600	271/16700
V-STALL GROSS WEIGHT ②	KN	72.8	72.8	82.8	78.2
V-STALL WITHOUT FUEL ②	KN	67.0	67.0	73.3	72.8
TIME-TO-CLIMB -10000FT-	MIN.	3.3	4.1	6.2	5.2
TIME-TO-CLIMB -20000FT-	MIN.	8.0	9.5	15.4	12.3
SERVICE CEILING	FT.	33000	32500	27200	29300
TAKE-OFF DISTANCE -CALM-	FT.	489	489	953	709
TAKE-OFF DISTANCE -15 KN-	FT.	306	306	632	457
TAKE-OFF DISTANCE -25 KN-	FT.	205	205	452	319
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF TIME	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.	3590	2590	1760	2090
MAX. RANGE / V-AV. ③	NMI./KN		1225/161	1680/143	980/145
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.		335(S-1)		
COMBAT RADIUS	N MI.			615(B-1)	215(B-1)
ENGINE / PROP GEAR RATIO		WAC R3350 - 24W/.4375:1			
ENGINE RATING BHP/RPM/ALT.	COMBAT	MILITARY		NORMAL	
	2800/2800/SL-1000	2500/2800/SL-3500		2100/2400/SL-5300	
	2200/2600/8000-11000	1900/2600/11000-14800		1800/2400/9700-14800	
		TAKE-OFF 2500/2900/SL			
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			Depth Bombs: 1-650#, or 1-325	
	DROPPABLE			Mines: 1-2000# or 1-1000#	
	DROPPABLE 2@150 on wings		300	Torpedo: 1-MK-13-3	
TOTAL	31	665	Incendiary Cluster - 1-500#		
NOTE			WINGS: (Paired MK 51-9 bomb racks)		
			Bombs: 2-2000#, 2-1600#, 2-1000#, 2-500# or 2-250#		
			Depth Bombs: 2-650# or 2-325#		
			Mines: 2-1000#		
			Rockets: 2-11.75" A.B. (Tiny Tim), 12-5" HVAR		
		Torpedo: 2-MK 13-3			

Supersedes 1 Aug 1946  
 1 Oct. 1946

DATE

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CONFIDENTIAL

MODEL -AD-1  
 3681

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 (Mk 51-12) with sway bracing and bomb ejector (fuselage) aboard. Sway bracing for bomb ejector aboard only in bomber conditions. AN/APS-4 radar and rocket launchers not aboard. Addition of 12 Mk-9 rocket launchers reduces Vmax S.L. to 295 kn. and Vmax/ACA to 311 kn/13400 ft at combat power. Addition of 12-5" HVAR increases gross weight of Condition (1) to 15649# and decreases Vmax SL to 277 kn. and Vmax/ACA to 288 kn./13100 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 HP and 1200 RPM, respectively, limits max. range and scouting radius of Condition (2) and also the bomber radius of Conditions (3) and (4) by requiring more fuel for reserve.
4. 20 gallons of AD1 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.

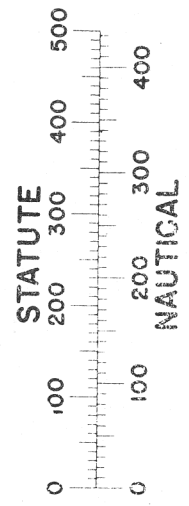
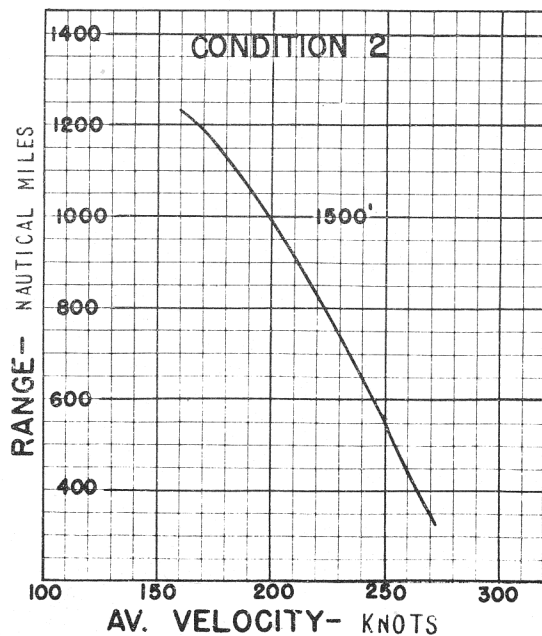
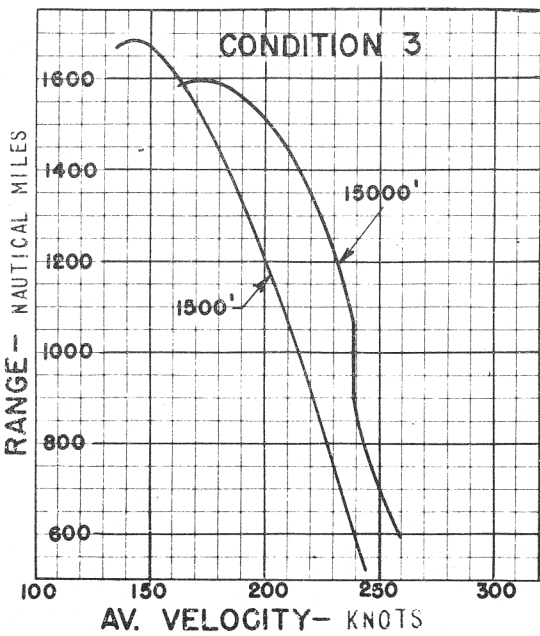
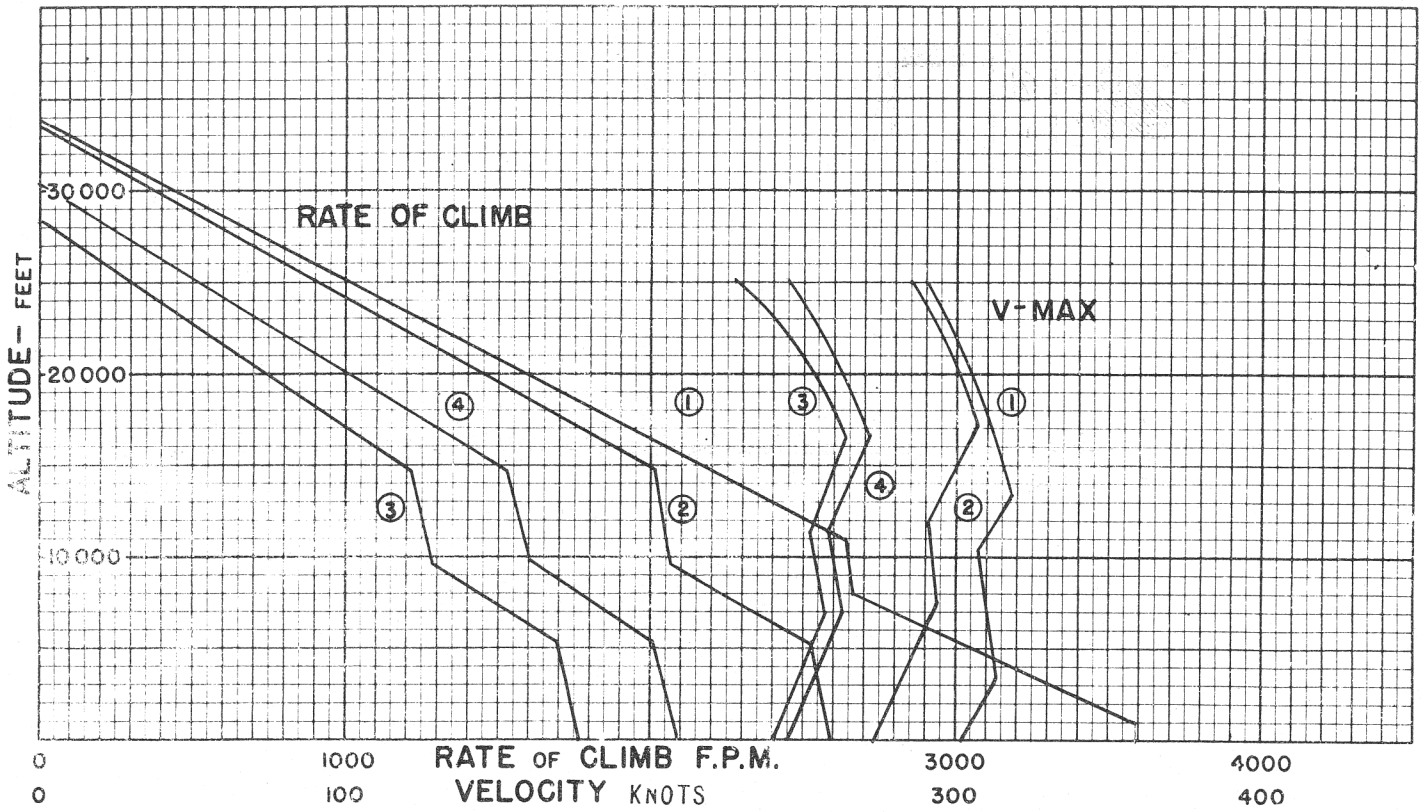
BOMBER COMBAT RADIUS FORMULA NO. B-1-CONDITIONS NOS. - 3 & 4

RADIUS = CLIMB + CRUISE-OUT + CRUISE BACK

WARM-UP	RENDEZVOUS	CLIMB	CRUISE OUT	DROP TANKS	COMBAT	CRUISE BACK	RESERVE
20 min.	20 min. at sea level	to 15000 ft.	at 15000 ft.	DESCEND to 1500 ft.	15 min. at 1500 ft.	at 1500 ft.	60 min. at
TAKE-OFF	at 60% N.S.P.	at NORMAL POWER	180 kts.TAS	DROP BOMBS	5 min. WEP.	170 kts.TAS	Vel. for
1 min.	Auto Lean.	Auto Rich.	Auto Lean.	FIRE ROCKETS	10 min. Nor.Pr.	Auto Lean.	Max. Range Auto Lean.

SCOUTING RADIUS FORMULA NO. S-1 CONDITION NO. 2.

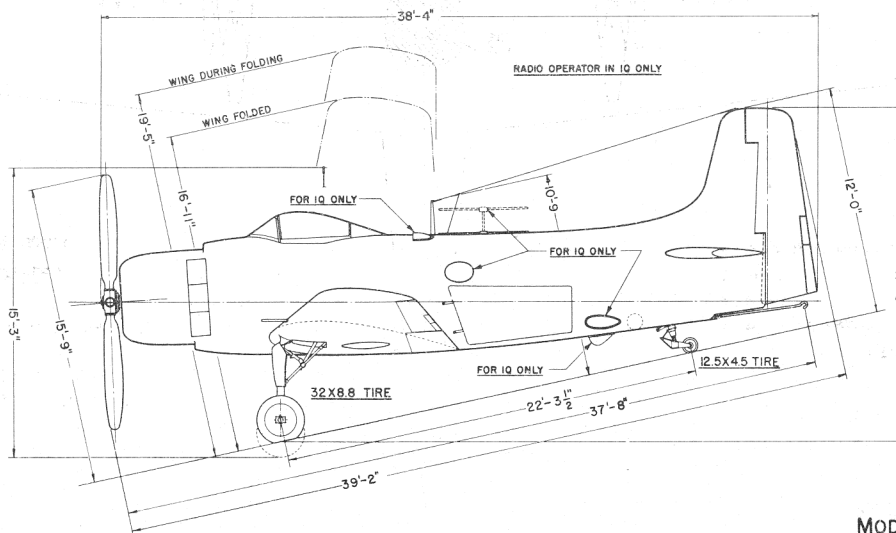
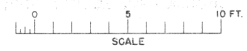
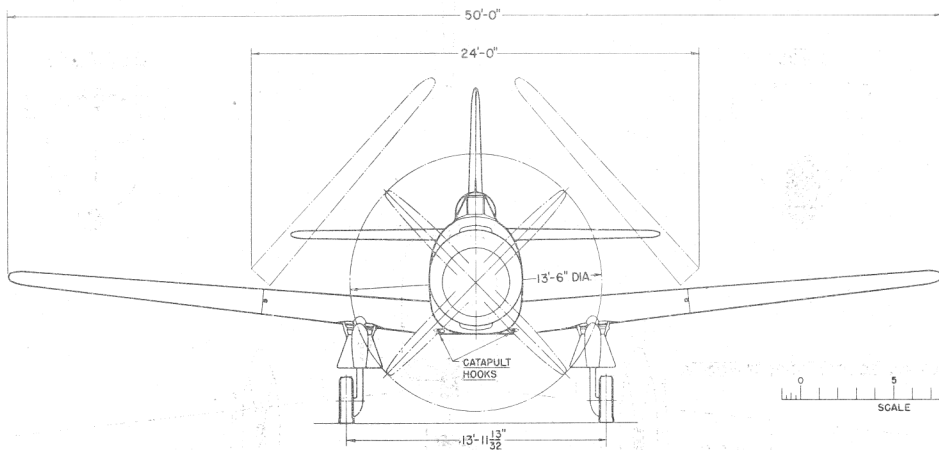
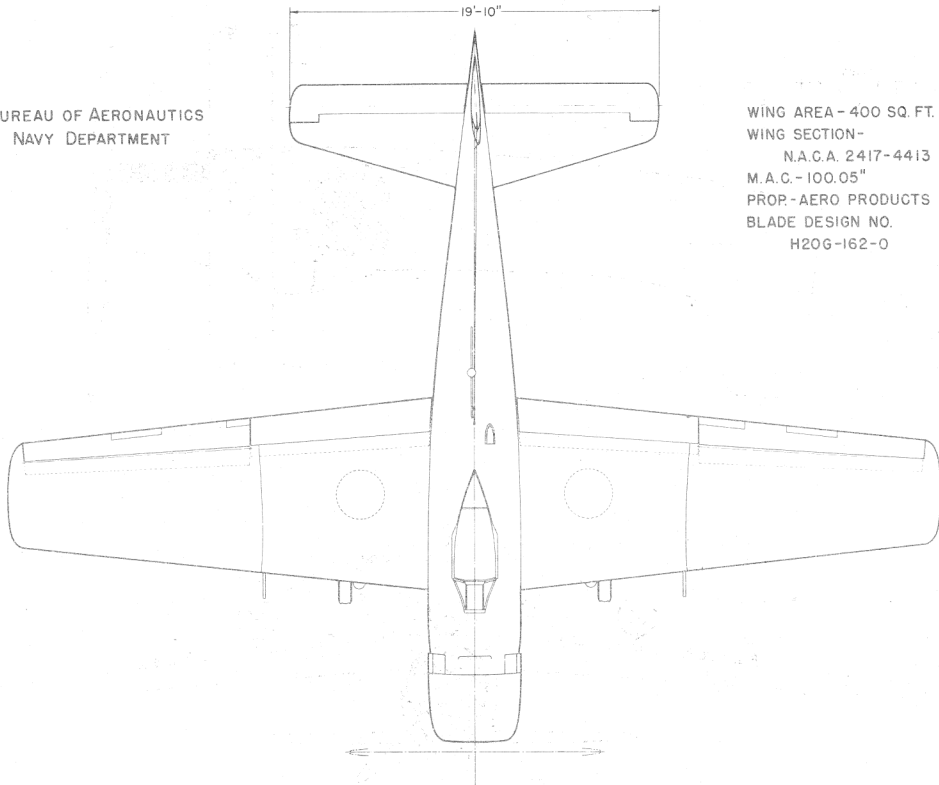
RADIUS is 1/3 range at velocity for max. range at 1500 ft. Fuel for 20 min. warm-up, 1 min. T.O., used at start of flight. Allowance for 60 min. at velocity for max. range for rendezvous, landing and reserve carried entire distance. Practical scout radius is reduced 11.5 nautical miles for each minute of combat power operation at 1500 ft.



○ LOADING CONDITION COLUMN NUMBER





BUREAU OF AERONAUTICS  
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.  
H206-162-0



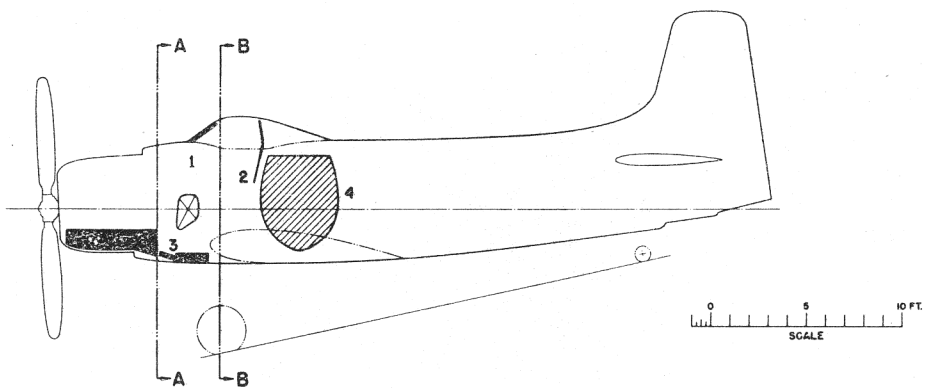
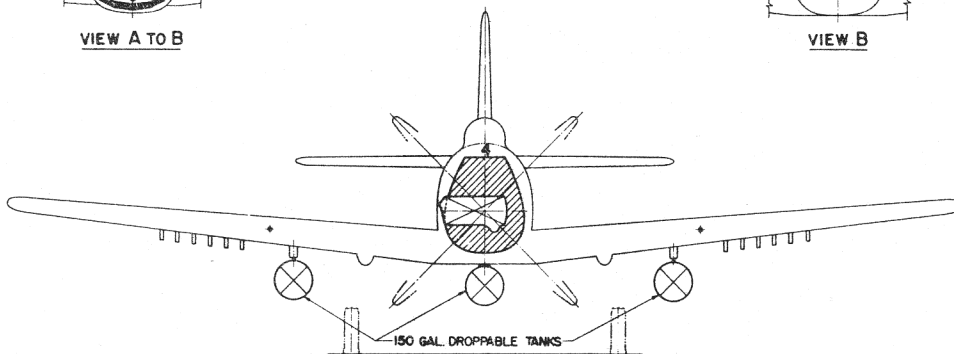
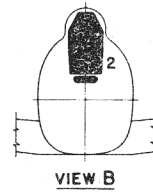
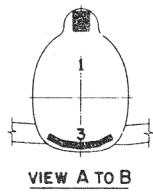
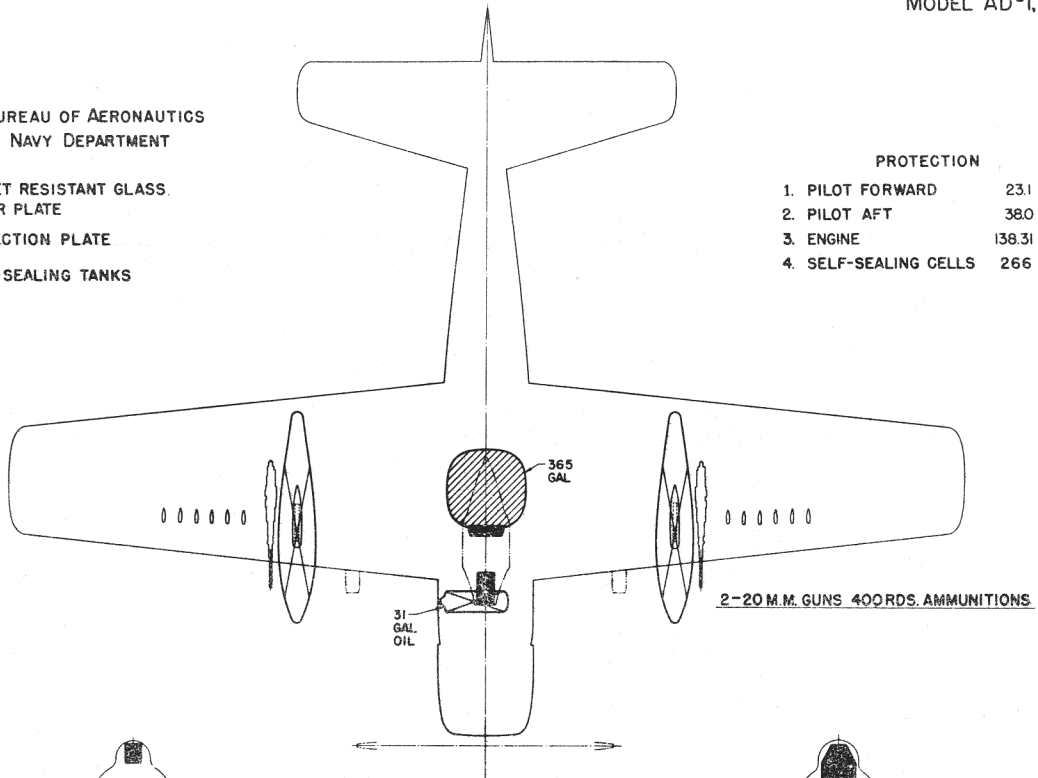
MODEL AD-1, IC

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.    |



3681