

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		Scout No Explosives	Scout No Explosives	Window Dispenser AN/APS-4	1-2000# Bomb 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 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)		
	① BHP AT MAX CRIT. ALT.		Bombs: 2-1000#, 2-500#, or 2-250#		
	② STALL - WITHOUT POWER		Depth Bombs: 2-325#		
	③ AT 1500' ALTITUDE		Mines: 2-1000#		
		Rockets: 2 11.75" A.R. (Tiny Tim)			
		Torpedo: 2-MK 13-3			

DATE 1 October 1946

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MODEL AD-1Q 3681

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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.

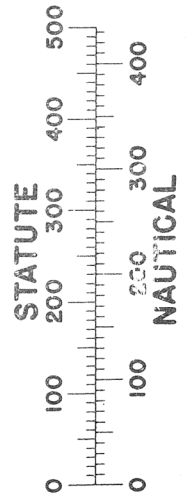
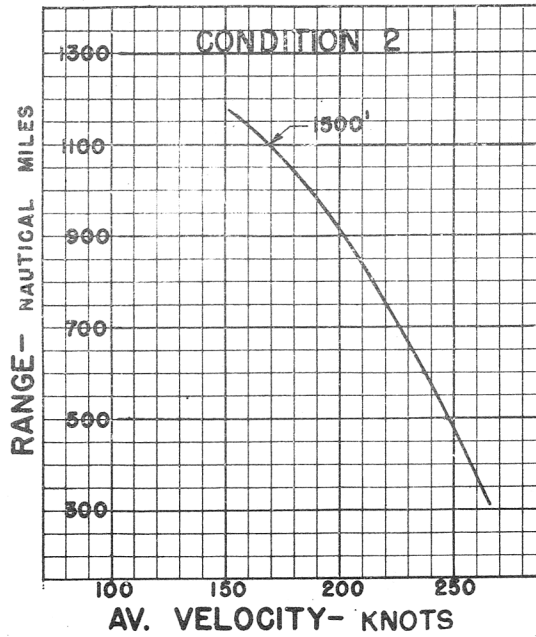
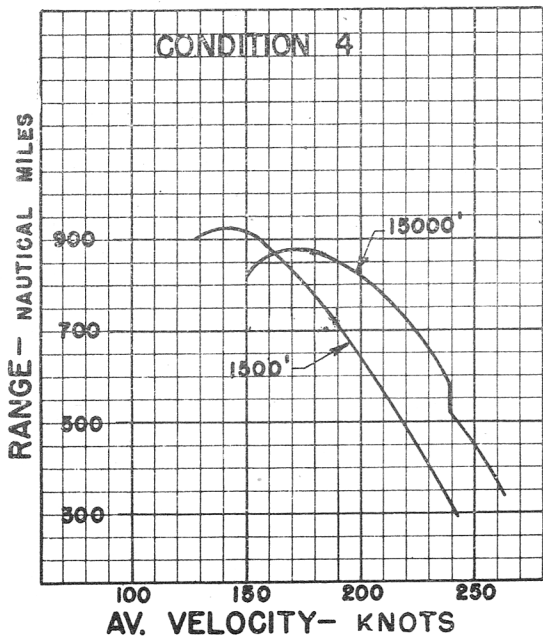
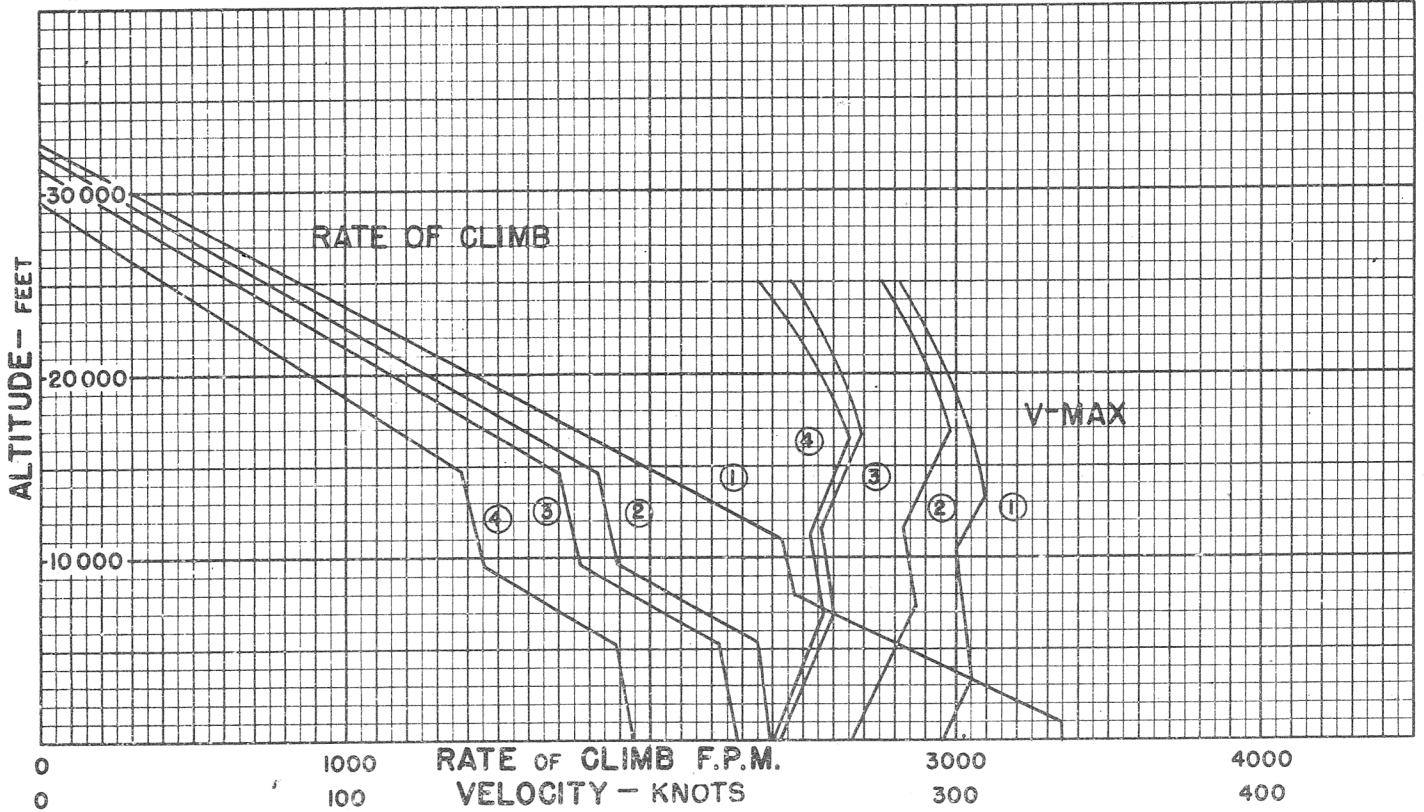
NOTES:

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		
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
<u>TAKE-OFF</u>	at	at	180 kts.TAS	DROP BOMBS	5 min. WEP.	170 kts.TAS	Vel.for
1 min.	60% N.S.P. Auto Lean.	NORMAL POWER Auto Rich.	Auto Lean.	PIRE ROCKETTS	10 min.Nor.Pr.	Auto Lean.	Max. Range 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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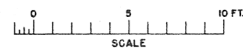
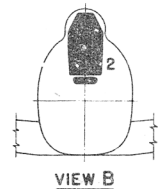
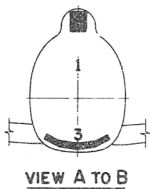
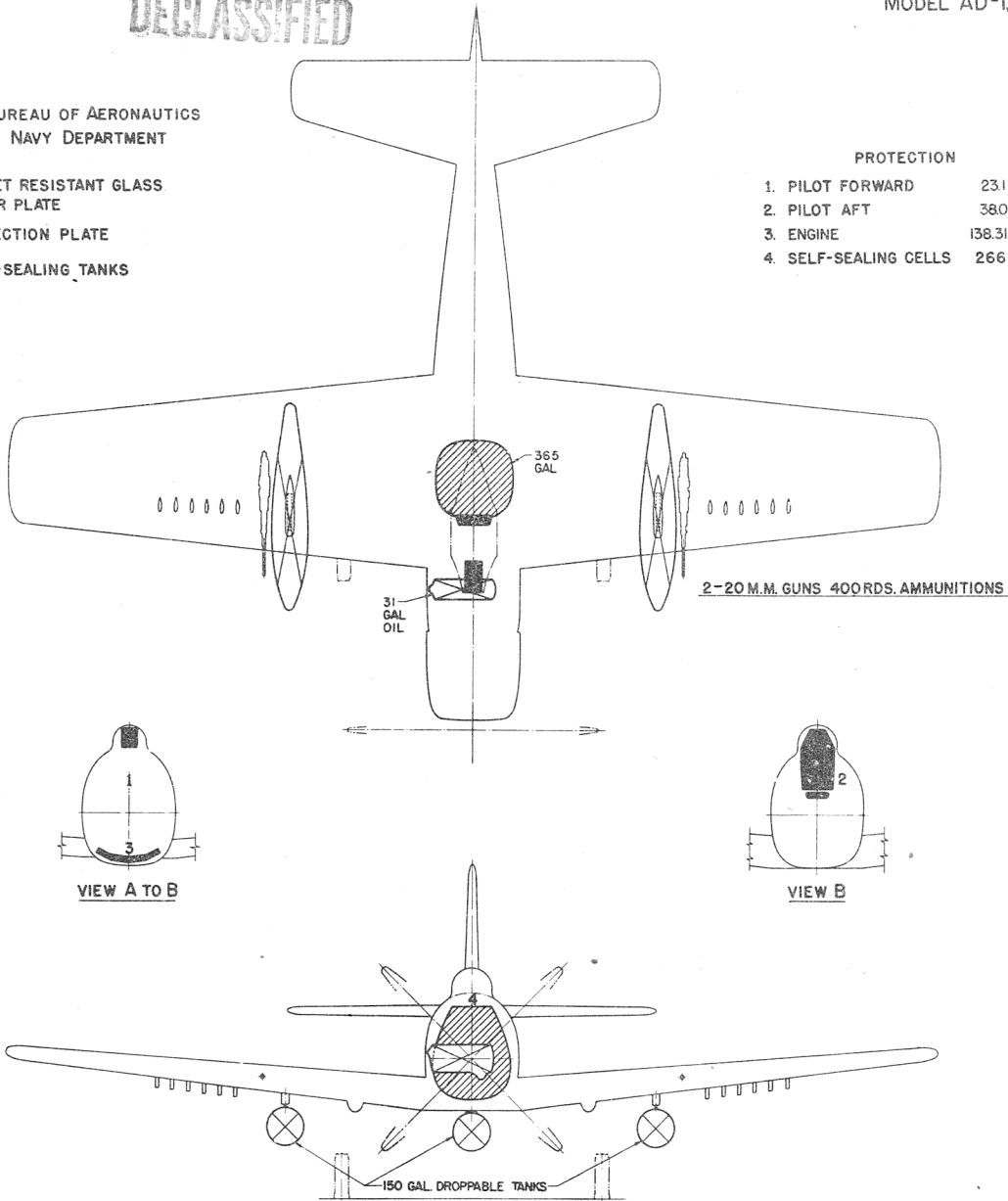
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NAVY DEPARTMENT

-  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.

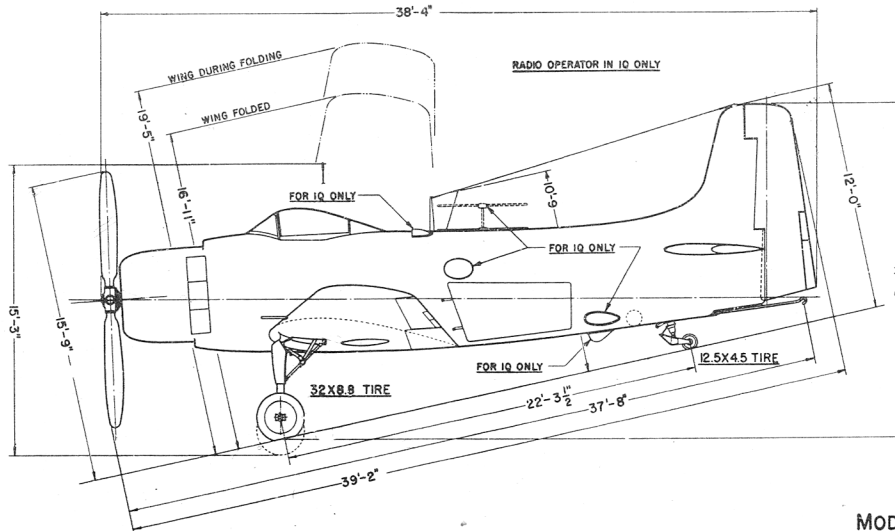
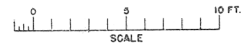
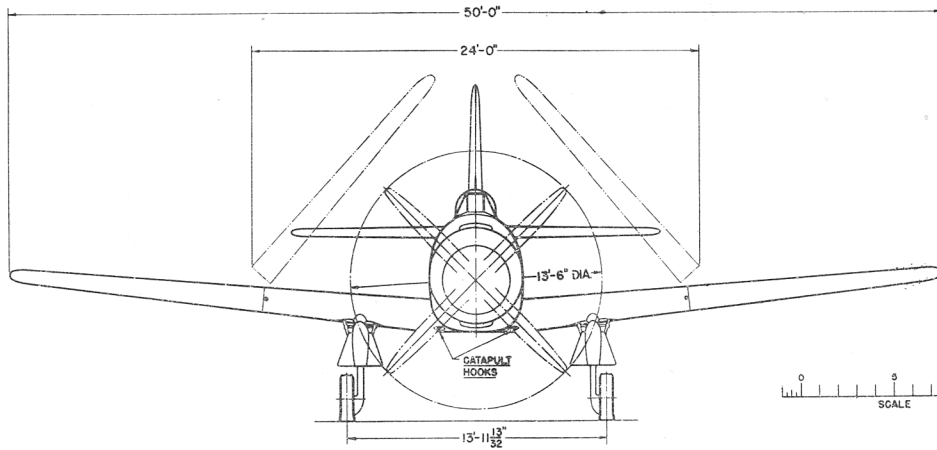
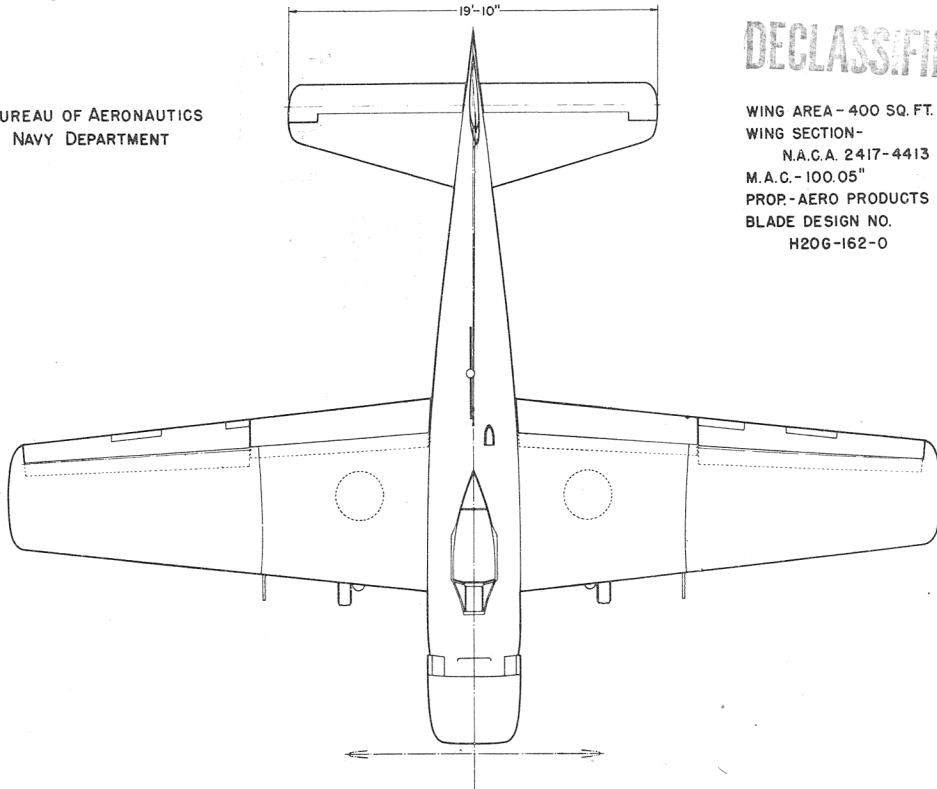




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WING AREA - 400 SQ. FT.
WING SECTION -
N.A.C.A. 2417-4413
M. A. C. - 100.05"
PROP. - AERO PRODUCTS
BLADE DESIGN NO.
H20G-162-0



MODEL AD-1, IQ