

ISSUE OF 6 PAGES

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		SCOUT	SCOUT	WINDOW DISPENSER AN/APS-4	BOMBER 1-2000#BOMB AN/APS-4
GROSS WEIGHT	LBS.	15009	15009	15362	17152
EMPTY WEIGHT (SPECIFICATION)	LBS.	11164			
FUEL/OIL	GALS.	390/22	390/22	390/22	390/22
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.	37.5	37.5	38.4	42.9
POWER LOADING ①	LBS./BHP.	6.8	7.9	8.0	9.0
V-MAX. SEA LEVEL	KN.	315	281	254	252
V-MAX./CRITICAL ALT.	KN./FT.	335/13300	318/19400	287/19000	282/19000
V-STALL GROSS WEIGHT ②	KN.	75.8	75.8	76.5	80.8
V-STALL WITHOUT FUEL ②	KN.	69.4	69.4	70.4	75.1
TIME-TO-CLIMB -10000FT.-	MIN.	3.2	4.0	4.2	4.9
TIME-TO-CLIMB -20000FT.-	MIN.	7.8	9.3	9.9	11.9
SERVICE CEILING	FT.	33100	33100	31000	30200
TAKE-OFF DISTANCE -CALM-	FT.	541	541	596	775
TAKE-OFF DISTANCE -15 KN-	FT.	344	344	381	508
TAKE-OFF DISTANCE -25 KN-	FT.	235	235	262	360
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF TIME	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.	3780	2610	2480	2140
MAX. RANGE / V-AV. ③	N MI./KN.		1275/158	1115/139	1105/144
RANGE / V-AV. -60%NSP-③-	N MI./KN.				
SEARCH RADIUS / V-AV. -20%R-	N MI./KN.				
A.S.W. RADIUS / V-AV. -20%R-	N MI./KN.				
SCOUT RADIUS (S-1)	N MI.		350	305	
COMBAT RADIUS (B-1)	N MI.				230
ENGINE / PROP GEAR RATIO R-3350-26W / .4375					
ENGINE RATING BHP/RPM/ALT.	COMBAT	MILITARY		NORMAL	TAKE-OFF
	3200 /2900/SL-1000	2700/2900/SL-3700	2300/2600/SL-6200	2700/2900/SL	
	2920-2700/2900/3700	2100/2600/11500-14500	1900/2600/12000-17000		
	2600 /2600/4900-10600				
	2220-2100/2600/1450				
Military, T.O. and Normal Ratings are with "Normal" Mixture.					
TANKAGE IN GALLONS		OIL	FUEL	OFFENSIVE ARMAMENT	
AUX. FIXED	PROTECTED		390	Fuselage-External (Douglas Bomb Ejector)	
	UNPROTECTED	32		(Alternate with drop tanks)	
	TOTAL-FIXED INTERNAL	32	390	Bombs: 1-2000#, 1-1600#, 1-1000# or 1-500#	
	DROPPABLE 2 @ 150 on wings		300	Depth Bombs: 1-325#	
	DROPPABLE			Mines: 1-2000# or 1-1000#	
				Torpedo: 1-MK. 13-3	
	TOTAL	32	690	Wings: (2-MK51-11 bomb racks)	
NOTE	① BHP AT MAX. CRIT. ALT.			(Alternate with drop tanks, radar or window dispenser)	
	② STALL - WITHOUT POWER			Bombs: 2-2000#, 2-1600#, 2-1000#, 2-500#, 2-250#	
	③ AT 1500' ALTITUDE			Depth Bombs: 2-325# Mines: 2-1000#	
				Torpedo: 2-MK13-3 Rockets: 2-11.75"AR(Tiny Tim) or 12-5" HVAR	

DATE 1 MAY, 1947

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~~RESTRICTED~~

MODEL AD-2Q

DECLASSIFIED IN ACCORDANCE WITH E. O. 11652

136

DATE 1 MAY 1947

MODEL AD-2Q

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

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 MK-51 wing bomb racks with sway bracing and fuselage bomb ejector aboard. AN/APS-4 radar and rocket launchers not aboard.

Addition of 12 MK-9 rocket launchers to Condition (1) decreases Vmax. S.L. to 308 kn. and Vmax./ACA to 327 kn./13200 ft. Addition of 12-5" HVAR increases gross weight of Condition (1) to 16740# and decreases Vmax S.L. to 289 kn. and Vmax./ACA to 304 kn./12900 ft.

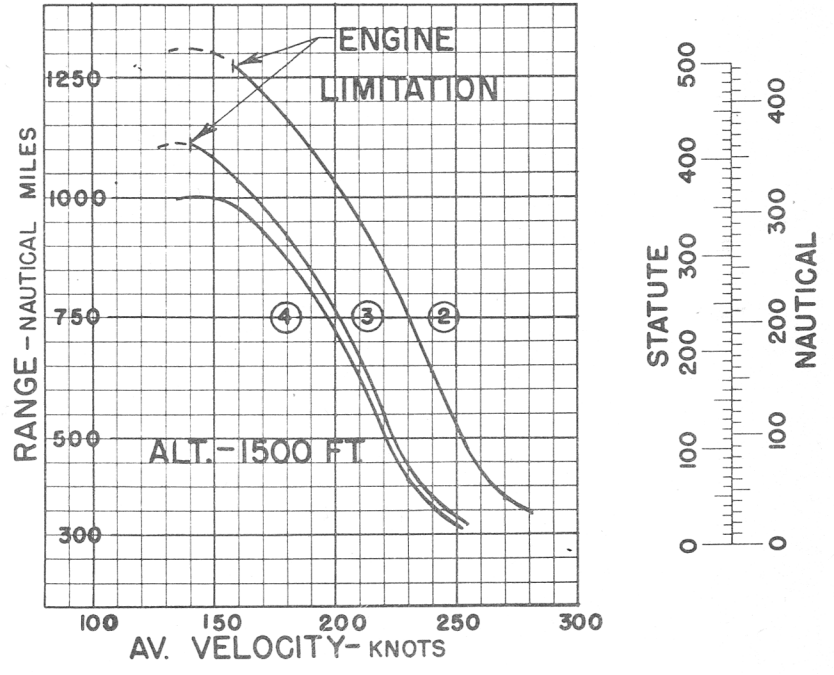
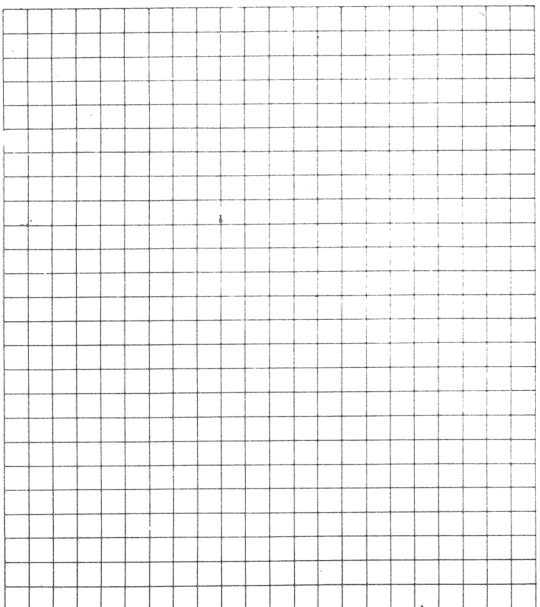
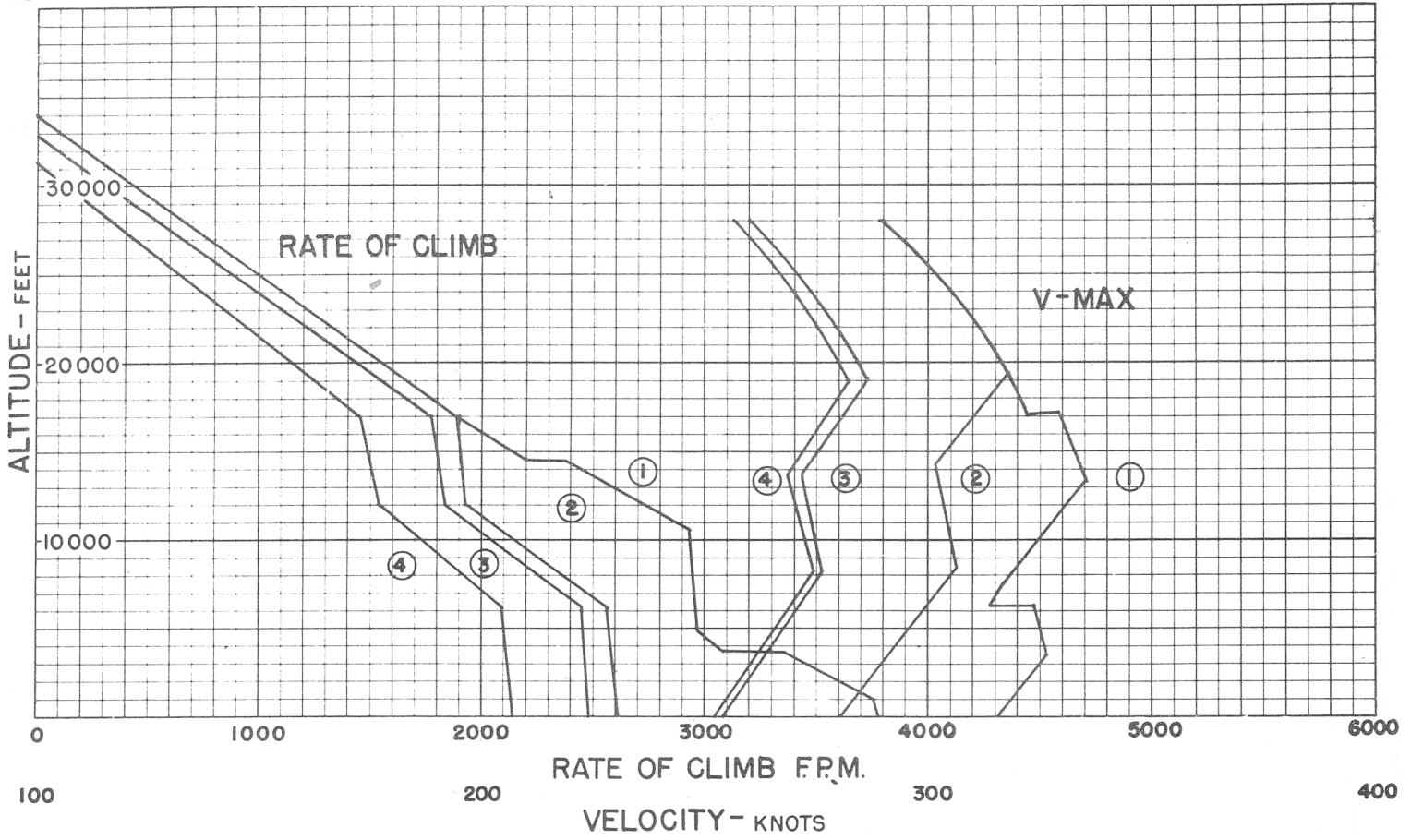
Notes:

1. AN/APS-4 radar is carried on port wing bomb rack.
2. Window dispenser is carried on starboard wing bomb rack. Removal of window dispenser from Condition (3) increases Vmax. S.L. to 289 kn. and Vmax/ACA to 304 kn./12900 ft.
3. 12-100# bombs or 12-250# bombs can be carried at MK-9 rocket launchers positions by replacing launchers with MK-55 bomb racks.
4. Minimum engine power and speed of 580 HP and 1100 rpm, respectively, limits maximum range of Condition (2) and scouting radius of Conditions (2) and (3). Bomber radius of Condition (4) is also limited by the requirement of more fuel for reserve.
5. 20 gallons of AD1 fluid are available for 12 minutes at combat power at 1500 ft. altitude.
6. 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 60% N.S.P.	at Norm.Power	180 kts.TAS	DROP BOMBS	5 min. WEP.	170 kts.TAS	Vel.for
1 min.	Norm. Mix.	Norm. Mix.	Norm. Mix.	FIRE ROCKETTS	10 min.Nor.Pr.	Norm. Mix.	Max.Range Norm.Mix.

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

RADIUS IS 1/3 RANGE AT VEL. 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 V. for max. range for rendezvous, landing and reserve carried entire distance. Practical scout radius is decreased approximately 9 nautical miles for each minute of combat power operation at 1500 ft. altitude.



○ LOADING CONDITION COLUMN NUMBER

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DATE 1 MAY 1947

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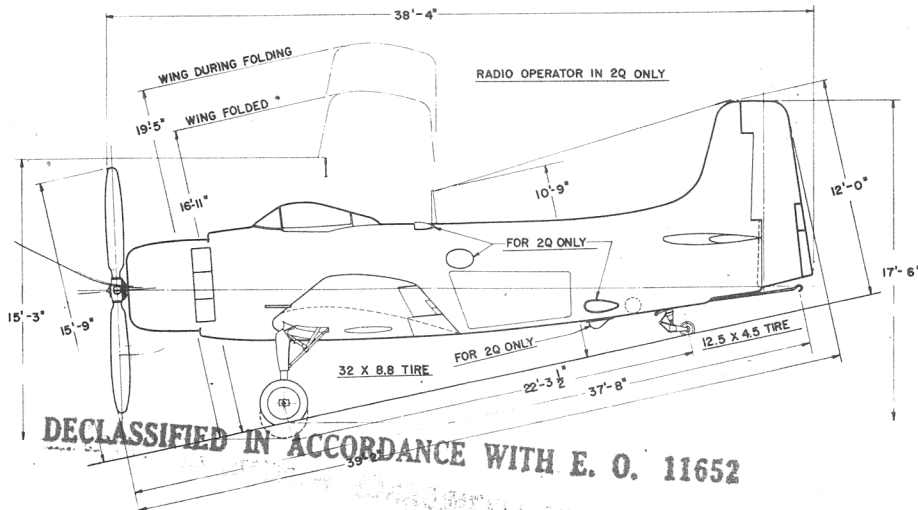
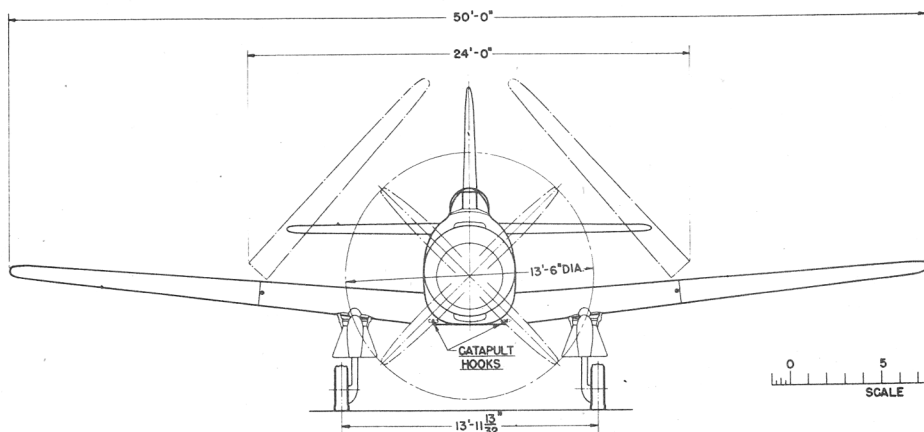
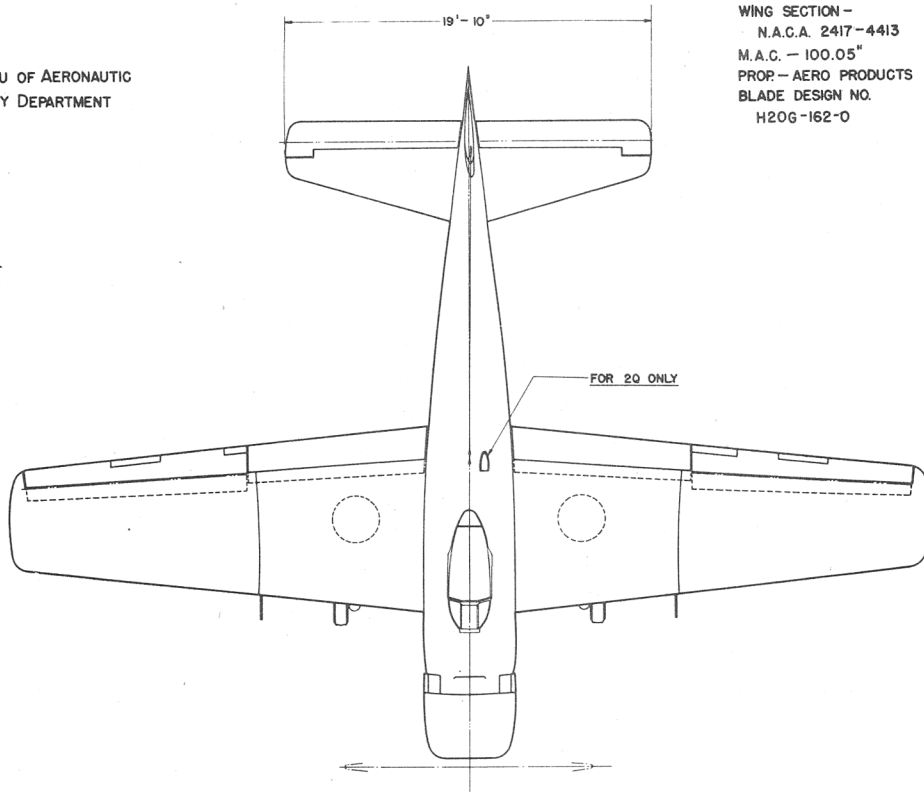
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MODEL-AD-2Q 13616

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BUREAU OF AERONAUTIC
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



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BUREAU OF AERONAUTICS
NAVY DEPARTMENT

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

PROTECTION

- 1. PILOT FORWARD 9.15 LBS.
- 2. PILOT AFT 38.0 LBS.
- 3. ENGINE 148.33 LBS.
- 4. SELF-SEALING CELLS 266 LBS.

