

**AIRPLANE CHARACTERISTICS & PERFORMANCE**

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER			1	2	3	4
LOADING CONDITION			TORPEDO 1 MK 13-2	TORPEDO 1 MK 13-2	TORPEDO 1 MK 13-2 2 EXT. TANKS	BOMBER 1-1000#
GROSS WEIGHT	LBS.		16940	16940	18440	15900
EMPTY WEIGHT	- CALCULATED - LBS.		10960			
FUEL/OIL	GALS.		335/19	335/19	535/29	335/19
FIXED GUNS/AMMUNITION			2-50/600			
FLEXIBLE GUNS/AMMUNITION			1-50/400; 1-30/500			
ENGINE POWER USED FOR PERFORMANCE			MILITARY	NORMAL	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.		34.4	34.4	37.5	32.3
POWER LOADING ①	LBS./BHP.		11.7	12.6	13.7	11.8
V-MAX. SEA LEVEL	MPH.		254	246	231	247
V-MAX. AIRPLANE CRIT. ALT.	MPH.		272/16500	270/17500	249/17300	273/17500
V-STALL GROSS WEIGHT ②	MPH.		78.7	78.7	82.1	76.2
V-STALL WITHOUT FUEL ②	MPH.		73.9	73.9	74.6	71.2
TIME-TO-CLIMB -10000FT-	MIN.		8.2	9.0	11.1	7.9
TIME-TO-CLIMB -20000FT-	MIN.		20.0	21.8	28.0	18.7
SERVICE CEILING	FT.		28900	28800	26500	30100
TAKE-OFF DISTANCE -CALM-	FT.		1008	1008	1418	844
TAKE-OFF DISTANCE -15 KN-	FT.		625	625	910	514
TAKE-OFF DISTANCE -25 KN-	FT.		418	418	631	336
TAKE-OFF TIME	SECONDS					
RATE OF CLIMB -SL-	FT./MIN.		1480	1320	1090	1490
MAX. RANGE /V-AV. ③	STMI/MPH.			1065/163	1510/148	1095/166
BOMBING RADIUS/V-AV -20%R-	NMI/KN.					
BOMBING RADIUS/V-AV -33%R-	NMI/KN.					
PATROL RADIUS/V-AV -20%R-	NMI/KN.					
PATROL RADIUS/V-AV -33%R-	NMI/KN.					
SCOUT RADIUS	N MI.					
COMBAT RADIUS	N MI.			240	425	245
ENGINE / PROP GEAR RATIO			WAC R-2600-20 (16:9)			
ENGINE RATING BHP/RPM/ALT.	MILITARY		NORMAL		TAKE-OFF	
	1750/2600/SL-3200		1600/2400/SL-5000		1800/2600	
	1450/2600/8400-15000		1350/2400/9700-14800			
TANKAGE IN GALLONS			OIL	FUEL	OFFENSIVE ARMAMENT	
AUX. FIXED	PROTECTED			335	FUSELAGE BOMB BAY - (See Note)	
	UNPROTECTED		32		BOMBS - 1-2000#, 1-1600#	
	TOTAL - FIXED INTERNAL		32	335	2-1000#, 4-500# or	
	DROPPABLE 2x100 (Wing)			200	12-100#	
	DROPPABLE - BOMB BAY					
	UNPROTECTED			275	TORPEDOES: 1-MK 13-2 or 3	
TOTAL			810			
NOTE	STATUTE MILES USED-EXCEPT-RADIUS IS GIVEN IN NAUTICAL MILES & KNOTS.			DEPTH BOMBS: 1-650# or 4-325#		
	① BHP AT MAX. CRIT. ALT.			NOTE: Bombs or torpedoes cannot be carried internally with bomb-bay tank installed.		
	② STALL-WITHOUT POWER					
	③ AT 1500' ALTITUDE					

SUPERSEDES 1 Jan. 1944

DATE 1 Aug. 1944

NAVAER-15188 (Rev. 4-66)

## AIRPLANE CHARACTERISTICS &amp; PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER	5	6	7	8
LOADING CONDITION	BOMBER 1-1000#  2 EXT. TANKS	SCOUT	SCOUT BOMB-BAY  TANK	BOMBER 1-1000# 8-5" A. R. *
GROSS WEIGHT	LBS. 17390	14780	16760	16585
EMPTY WEIGHT	CALCULATED LBS.	10960		11005
FUEL/OIL	GALS. 535/29	335/19	610/32	335/19
FIXED GUNS/AMMUNITION	2-50/600			
FLEXIBLE GUNS/AMMUNITION	1-50/400;		1-30/500	
ENGINE POWER USED FOR PERFORMANCE	NORMAL	NORMAL	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT. 35.4	29.8	34.1	33.6
POWER LOADING ①	LBS./BHP 12.9	11.0	12.4	12.3
V-MAX. SEA LEVEL	MPH. 232	249	247	238
V-MAX. AIRPLANE CRIT. ALT.	MPH. 253/17400	276/17600	271/17500	260/17400
V-STALL. GROSS WEIGHT ②	MPH. 79.6	73.4	78.2	79.8
V-STALL. WITHOUT FUEL ②	MPH. 71.9	68.3	69.2	74.7
TIME-TO-CLIMB -10000FT-	MIN. 9.8	7.3	8.8	8.8
TIME-TO-CLIMB -20000FT-	MIN. 24.0	16.5	21.2	21.1
SERVICE CEILING	FT. 27700	31500	29000	29100
TAKE-OFF DISTANCE -CALM-	FT. 1170	676	978	1038
TAKE-OFF DISTANCE -15 KN-	FT. 736	400	604	648
TAKE-OFF DISTANCE -25KN-	FT. 499	254	404	438
TAKE-OFF TIME	SECONDS.			
RATE OF CLIMB -SL-	FT/MIN. 1220	1630	1340	1340
MAX. RANGE / V-AV. ③	ST. MI./MPH. 1570/156	1165/143	2000/166	1010/158
BOMBING RADIUS / V-AV -20%R-	NMI./KN.			
BOMBING RADIUS / V-AV -33%R-	NMI./KN.			
PATROL RADIUS / V-AV -20%R-	NMI./KN.			
PATROL RADIUS / V-AV -33%R-	NMI./KN.			
SCOUT RADIUS	NMI.	290	530	
COMBAT RADIUS	NMI. 435			235

PERFORMANCE IS BASED ON- PROTOTYPE FLIGHT TEST (XTBF-3)

RANGE &amp; RADIUS ARE BASED ON ENGINE REQUIREMENTS

FUEL CONSUMPTION DATA INCREASED

BY 15 PERCENT TO CONFORM WITH PAST EXPERIENCE.

The following changes are incorporated: Pending-Armor Modification.

Max. Range in the ferry condition (G.W. = 16965,810 gals. fuel) is 2550 st.mi. at 148 mph at 1500 ft.

ASB radar in all loadings except ferry.

\* CONDITION 8: - Rockets suspended from MK5-1 (zero-length) launchers.

See page 3 for operating radius problems.

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### OPERATING RADIUS PROBLEMS:

#### Conditions 2, 4, and 8:

Practical Combat Radius is based on 20 min. warm-up and idling; one min. take-off; 20 min. rendezvous at 60% normal sea-level power (nsp) and auto-lean; climb to 15000 ft. at 60% nsp and auto-lean; cruise out at 15000 ft. at 180 knots true air speed and auto-lean; drop unprotected droppable tanks; dive; drop bombs or torpedoes; 5 min. combat at 1500 ft. at full military power plus 10 min. at full normal power; cruise back at 1500 ft. at 170 knots true air speed and auto-lean; 60 min. at V for max. range and auto-lean as allowance for rendezvous, landing and reserve. Radius includes distance covered in climb but not in descent.

NOTE: For condition 8, rockets are fired during combat.

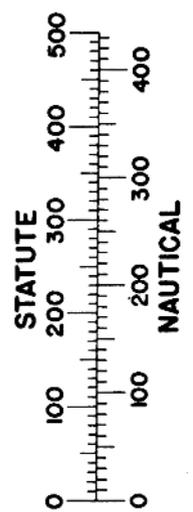
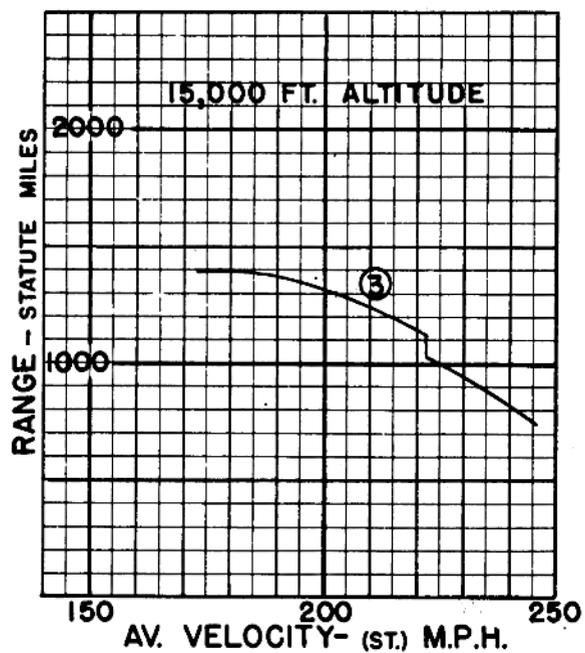
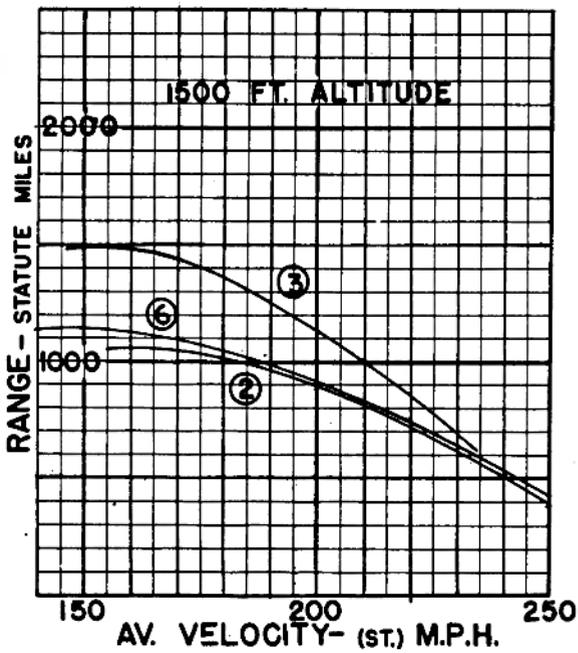
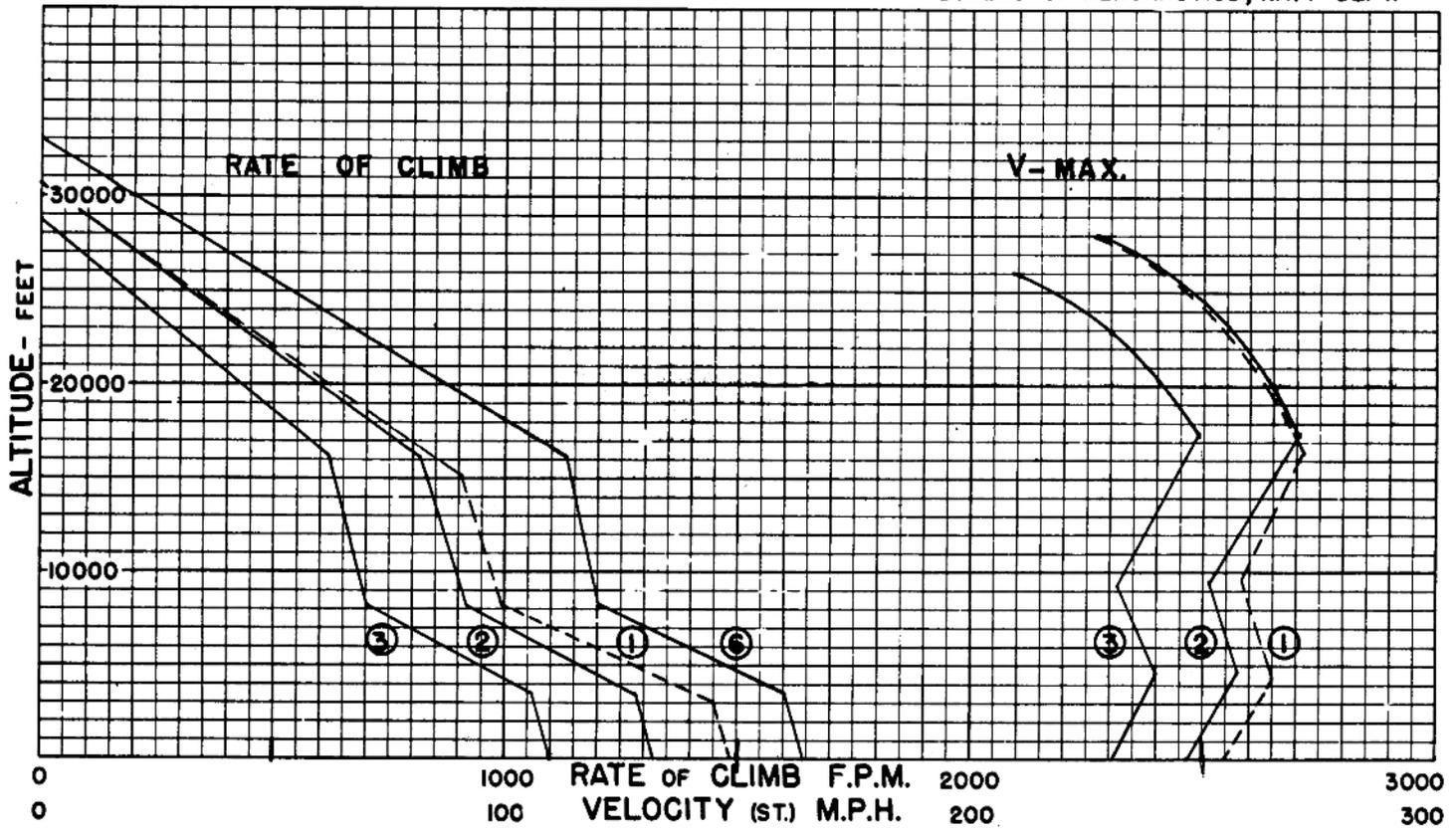
#### Conditions 3 and 5:

Practical combat radius is the same as for 2, 4, and 8 except that climb is at full normal power in lieu of 60% nsp.

#### Conditions 6 and 8:

Practical Scout Radius is 1/3 of range at V for max. range at 1500 ft. with fuel taken from initial fuel load for 20 min. warm-up and idling and one min. take-off and with allowance at end of flight for 60 min. at V for max. range for rendezvous, landing and reserve. Bombs, torpedoes, droppable tanks and radar are carried all the way.

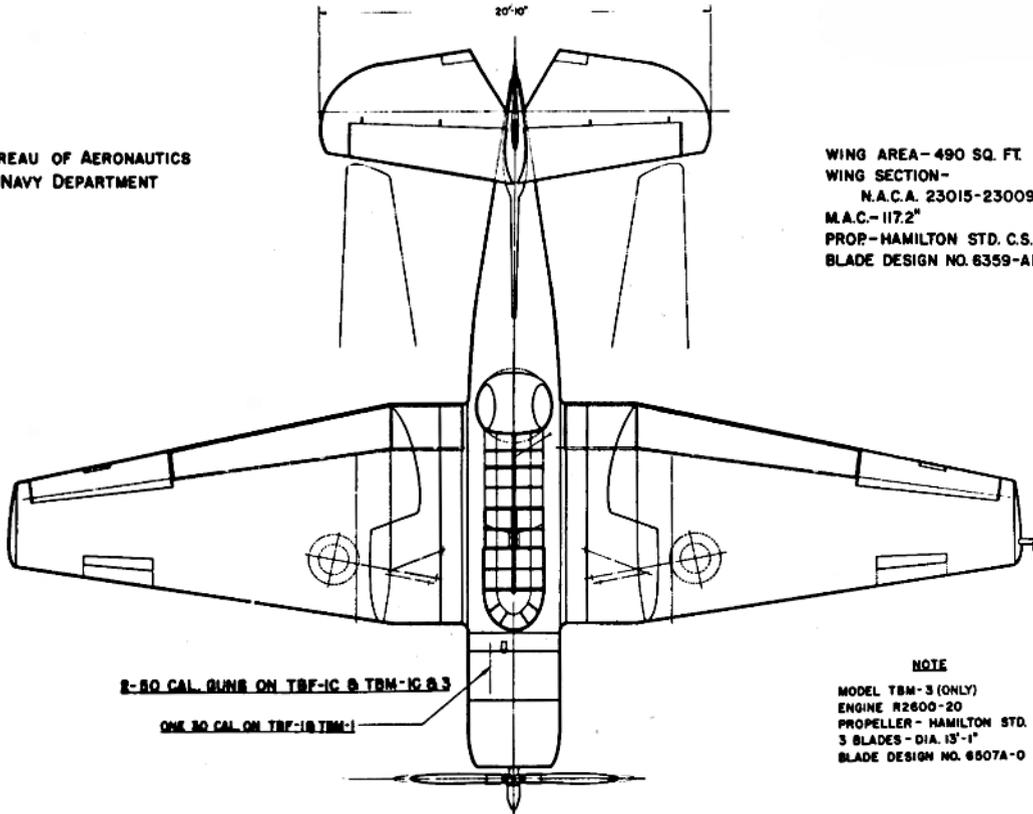
Practical Scout radius is reduced 5 nautical miles for each minute of combat at 1500 ft. at full military power.



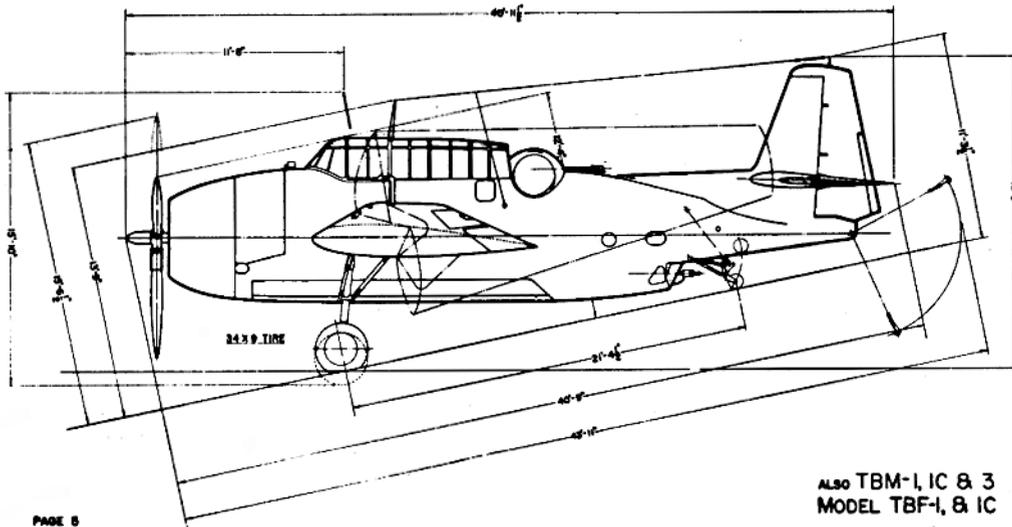
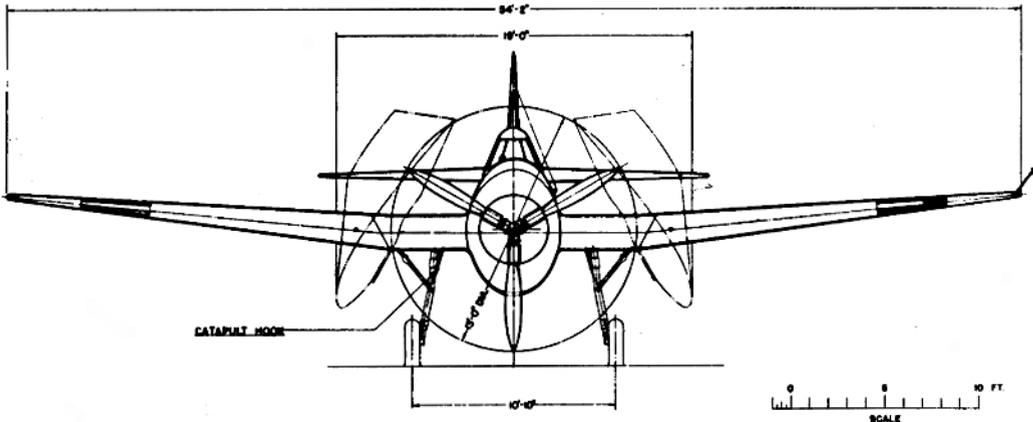
○ LOADING CONDITION COLUMN NUMBER

BUREAU OF AERONAUTICS  
NAVY DEPARTMENT

WING AREA-490 SQ. FT.  
WING SECTION-  
N.A.C.A. 23015-23009  
M.A.C.-117.2°  
PROP-HAMILTON STD. C.S.  
BLADE DESIGN NO. 6359-A12



**NOTE**  
MODEL TBM-3 (ONLY)  
ENGINE R2600-20  
PROPELLER - HAMILTON STD.  
3 BLADES - DIA. 13'-1"  
BLADE DESIGN NO. 6507A-0



ALSO TBM-1, IC & 3  
MODEL TBF-1, & IC

BUREAU OF AERONAUTICS  
NAVY DEPARTMENT

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

- PROTECTION
1. FORWARD FIRE WALL 68 LBS.
  2. PILOT FORWARD 30 LBS.
  3. PILOT AFT & SEAT 154 LBS.
  4. TURRET 94 LBS.
  5. TUNNEL (ARMOR & B.R. GLASS) 149 LBS.
  6. SELF-SEALING CELLS 237 LBS

