

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER			1	2	3	4
LOADING CONDITION			TORPEDO 1MK13-3	TORPEDO 1MK13-3	TORPEDO 1MK13-3 TWO TANKS EXTERNAL	BOMBER 2-1600#
GROSS WEIGHT	LBS.		17491	17491	18940	18621
EMPTY WEIGHT	- Calculated -	LBS.	11366			
FUEL/OIL	GALS.		317/18	317/18	517/29	317/18
FIXED GUNS/AMMUNITION			3-.50 cal./640 rds.			
FLEXIBLE GUNS/AMMUNITION			1-.50 cal./400 rds.; 1-.30 cal./500 rds.			
ENGINE POWER USED FOR PERFORMANCE			MILITARY	NORMAL	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.		39.9	39.9	43.1	42.4
POWER LOADING ①	LBS./BHP.		10.9	12.0	13.1	12.8
V-MAX. SEA LEVEL	MPH.		292	268	248	267
V-MAX. AIRPLANE CRIT. ALT.	MPH.		312/17700	304/19500	278/19300	301/19400
V-STALL GROSS WEIGHT ②	MPH.		80.4	80.4	83.8	83.1
V-STALL WITHOUT FUEL ②	MPH.		75.9	75.9	76.6	78.8
TIME-TO-CLIMB -10000 FT-	MIN.		6.3	8.1	9.9	9.1
TIME-TO-CLIMB -20000 FT-	MIN.		16.2	20.0	25.8	23.3
SERVICE CEILING	FT.		29400	29200	27100	28200
TAKE-OFF DISTANCE -CALM-	FT.		900	900	1139	1048
TAKE-OFF DISTANCE -15 KN-	FT.		579	579	748	684
TAKE-OFF DISTANCE -25 KN-	FT.		401	401	530	481
TAKE-OFF TIME	SECONDS					
RATE OF CLIMB -SL-	FT/MIN.		1770	1300	1060	1150
MAX. RANGE /V-AV. ③	STMI/MPH.			1025/156	1445/149	970/157
BOMBING RADIUS/V-AV -20%R-	N MI./KN.					
BOMBING RADIUS/V-AV -33%R-	N MI./KN.					
PATROL RADIUS/V-AV -20%R-	N MI./KN.					
PATROL RADIUS/V-AV -33%R-	N MI./KN.					
SCOUT RADIUS	N MI.					
COMBAT RADIUS	N MI.			195	410	175
ENGINE / PROP. GEAR RATIO			P. & W. R-2800-22/.45			
ENGINE RATING BHP/RPM/ALT.	MILITARY		NORMAL		TAKE-OFF	
	2100/2800/SL-4000		1700/2600/SL - 8200		2100/2800	
	1600/2800/12000-16400		1450/2600/12600-18300			
TANKAGE IN GALLONS		OIL	FUEL	OFFENSIVE ARMAMENT		
AUX. FIXED	PROTECTED	32	317	Fuselage (Internal)		
	UNPROTECTED			Bombs: 2-1600#, 2-1000#, 1-2000#		
	TOTAL - FIXED INTERNAL	32	317	4-500#, 12-100#		
	DROPPABLE			Depth Bombs: 1-650# or 4-325#		
	DROPPABLE - Wing - 2@100		200	Torpedoes: 1-MK13-2		
Alternate 2@150		300				
TOTAL	32	517	Wings (External)			
NOTE	STATUTE MILES USED-EXCEPT-RADIUS IS		Bombs: 2-1000# or 2-500#			
	GIVEN IN NAUTICAL MILES & KNOTS		Depth Bombs: 2-650# or 2-325#			
	① BHP AT MAX. CRIT. ALT.					
	② STALL-WITHOUT POWER					
③ AT 1500' ALTITUDE						

Supersedes TBY-1 of 1 Aug. 1943

DATE 1 Sept. 1944

PAGE 1

MODEL TBY-2

NAVAER-1519B (Rev. 4-44)

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		5	6	7	8
LOADING CONDITION		BOMBER 2-500# 2 Tanks External	SCOUT	SCOUT	SCOUT 2 Tanks External
GROSS WEIGHT	LBS.	17760	15288	15288	16737
EMPTY WEIGHT	- Calculated - LBS.	11366			
FUEL/OIL	GALS.	517/29	317/18	317/18	517/29
FIXED GUNS/AMMUNITION		3-.50 cal./640 rds.			
FLEXIBLE GUNS/AMMUNITION		1-.50 cal./400 rds; 1-30 cal./500 rds.			
ENGINE POWER USED FOR PERFORMANCE		NORMAL	MILITARY	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.	40.4	34.8	34.8	38.1
POWER LOADING ①	LBS./BHP	12.2	9.6	10.5	11.5
V-MAX. SEA LEVEL	MPH.	249	294	270	250
V-MAX. AIRPLANE CRIT. ALT.	MPH.	280/19300	316/17700	308/19500	283/19300
V-STALL. GROSS WEIGHT ②	MPH.	81.2	75.2	75.2	78.8
V-STALL. WITHOUT FUEL ②	MPH.	73.8	70.4	70.4	71.2
TIME-TO-CLIMB -10000FT.-	MIN.	8.7	5.1	6.5	7.8
TIME-TO-CLIMB -20000FT.-	MIN.	22.0	12.9	15.4	19.1
SERVICE CEILING	FT.	28500	31800	31300	29500
TAKE-OFF DISTANCE -CALM-	FT.	961	646	646	830
TAKE-OFF DISTANCE -15 KN.-	FT.	628	400	400	530
TAKE-OFF DISTANCE -25KN.-	FT.	436	270	270	363
TAKE-OFF TIME	SECONDS.				
RATE OF CLIMB -SL-	FT./MIN.	1210	2160	1610	1360
MAX. RANGE /V-AV. ③	ST. MI./MPH.	1525/146		1150/152	1615/144
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.			275	415
COMBAT RADIUS	NMI.	435			

PERFORMANCE IS BASED ON- Prototype Flight Test

RANGE & RADIUS ARE BASED ON Engine Requirements

FUEL CONSUMPTION DATA INCREASED

BY 15 PERCENT TO CONFORM WITH PAST EXPERIENCE.

Practical Combat Radius is based on 20 min. warm-up and idling; 1 min. take-off; 20 min. rendezvous at 60% normal sea-level power and auto-lean; climb to 15000 ft. at 60% n.s.p.* and auto-rich; cruise-out at 180 knots true air speed and auto-lean; drop unprotected droppable tanks; dive; drop bombs or torpedoes; combat at 1500 ft. for 5 min. 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 as allowance for rendezvous, landing, and reserve; Radius includes distance covered in climb but not in descent.

* Climb at 60% n.s.p. for condition 2 only; climb at full normal sea-level power for conditions 3, 4, 5, 9.

Practical scouting radius is 1/3 of range at V for max. range at 1500' with fuel taken out for 20 min. warm-up and idle, 1 min. take-off and 60 min. for rendezvous, landing and reserve.

Rocket launchers are carried only in condition 9.

Ferry Condition - No bombs, guns, armor plate, or radar is carried.

Clean Condition - External bomb racks and radar are removed.

ISSUE OF PAGES
AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		9	10	11
LOADING CONDITION		ROCKET 1-MK-13-3 8-5"AR	CLEAN CONDITION	FERRY 2 - TANKS EXTERNAL
GROSS WEIGHT	LBS.	18214	15000	15365
EMPTY WEIGHT	- Calculated - LBS.	11410	11366	11056
FUEL/OIL	GALS.	317/18	317/18	517/29
FIXED GUNS/AMMUNITION		3-.50cal./640 rds.		None
FLEXIBLE GUNS/AMMUNITION		1-.50/400; 1-.30/500		None
ENGINE POWER USED FOR PERFORMANCE		NORMAL	MILITARY	NORMAL
WING LOADING	LBS./SQ.FT.	41.4	34.1	34.9
POWER LOADING ①	LBS./BHP.	12.6	9.4	10.6
V-MAX. SEA LEVEL	MPH.	257	299	
V-MAX. AIRPLANE CRIT. ALT.	MPH.	290/19400	322/17700	
V-STALL GROSS WEIGHT ②	MPH.	84.0		
V-STALL WITHOUT FUEL ②	MPH.	79.5		
TIME-TO-CLIMB -10000 FT.-	MIN.	8.9		
TIME-TO-CLIMB -20000 FT.-	MIN.	22.3		
SERVICE CEILING	FT.	28200		
TAKE-OFF DISTANCE -CALM-	FT.	1061		
TAKE-OFF DISTANCE -15 KN-	FT.	700		
TAKE-OFF DISTANCE -25 KN-	FT.	498		
TAKE-OFF TIME	SECONDS			
RATE OF CLIMB -SL-	FT./MIN.	1190	2220	
MAX. RANGE /V-AV. ③	ST.MI./MPH.	928/152		1772/140
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.	170		

ENGINE / PROP. GEAR RATIO	
ENGINE RATING	
BHP/RPM/ALT.	

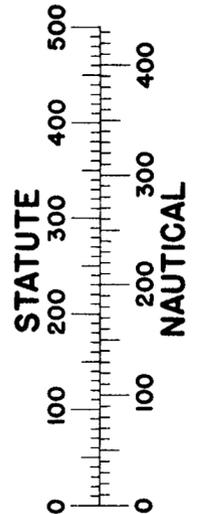
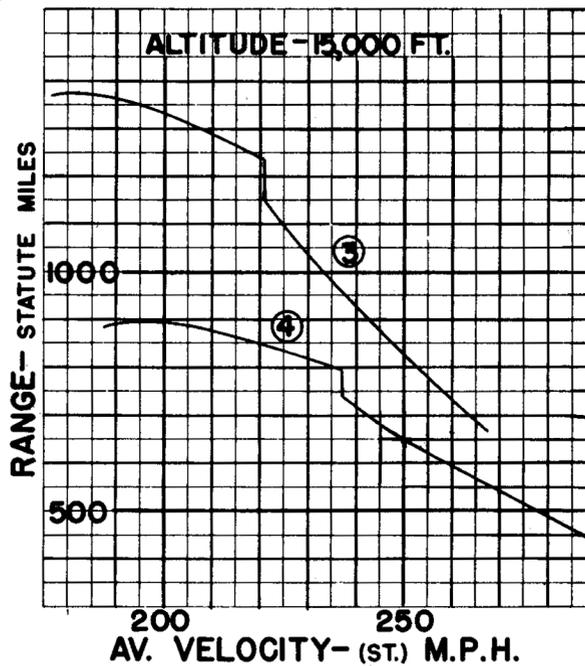
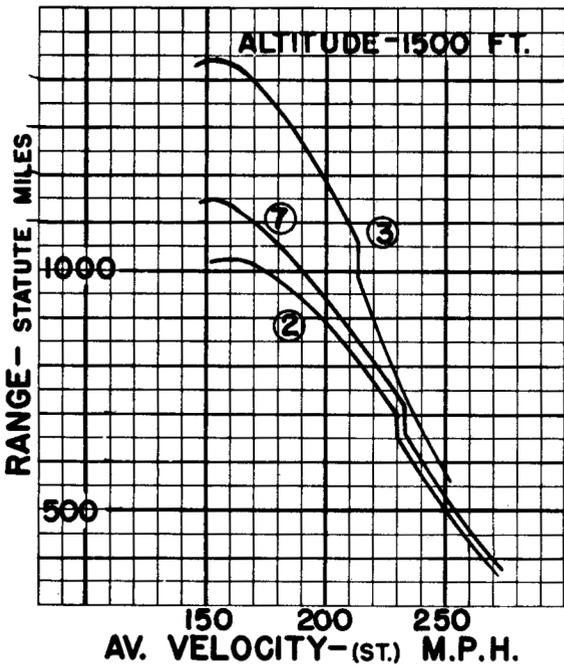
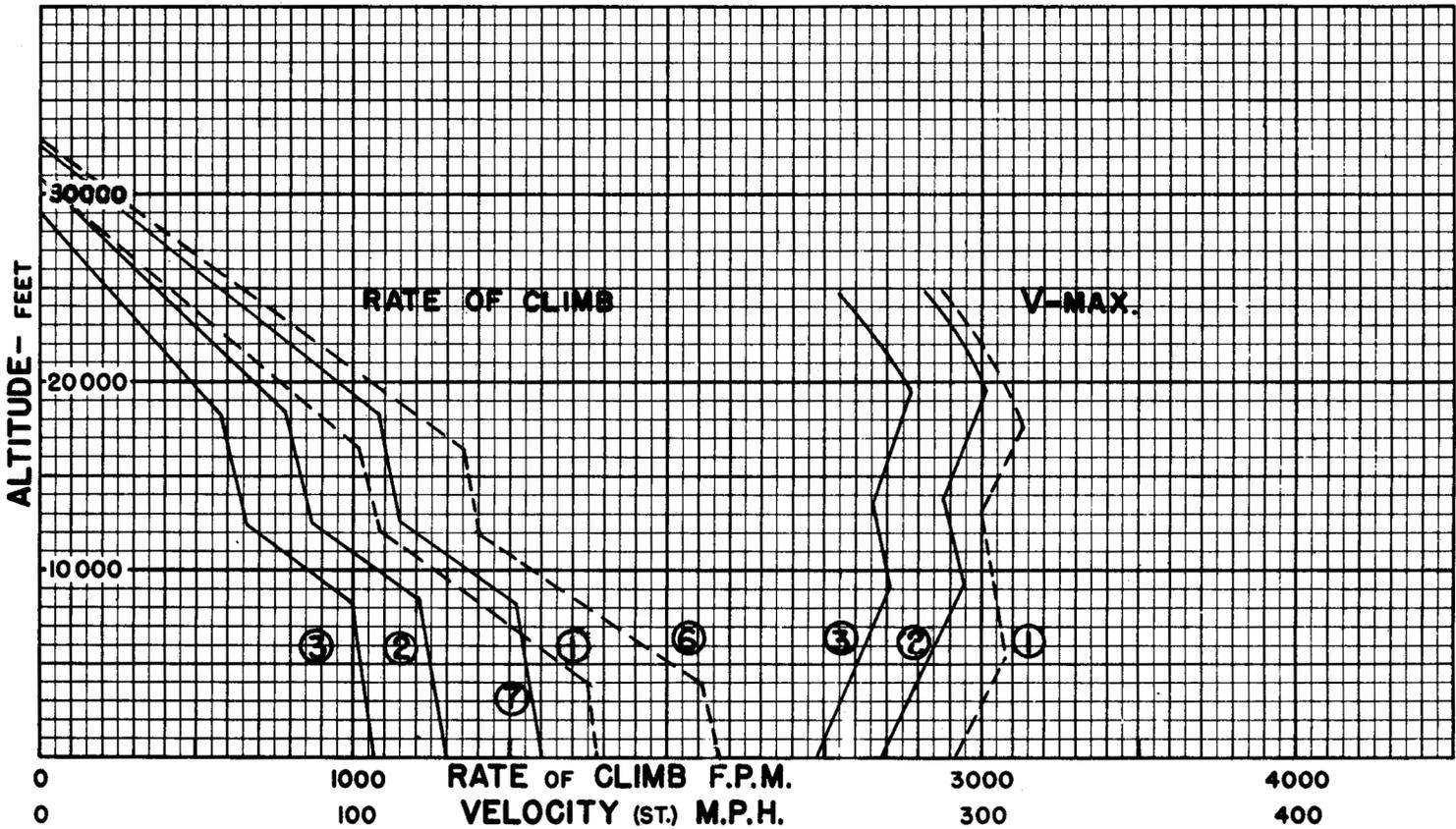
TANKAGE IN GALLONS		OIL	FUEL
AUX. FIXED	PROTECTED		
	UNPROTECTED		
	TOTAL - FIXED INTERNAL		
	DROPPABLE		
	DROPPABLE		
TOTAL			

NOTE	STATUTE MILES USED-EXCEPT-RADIUS IS GIVEN IN NAUTICAL MILES & KNOTS	
	①	BHP AT MAX. CRIT. ALT.
	②	STALL - WITHOUT POWER
	③	AT 1500' ALTITUDE

AIRPLANE PERFORMANCE

NAVAER - 1335 D

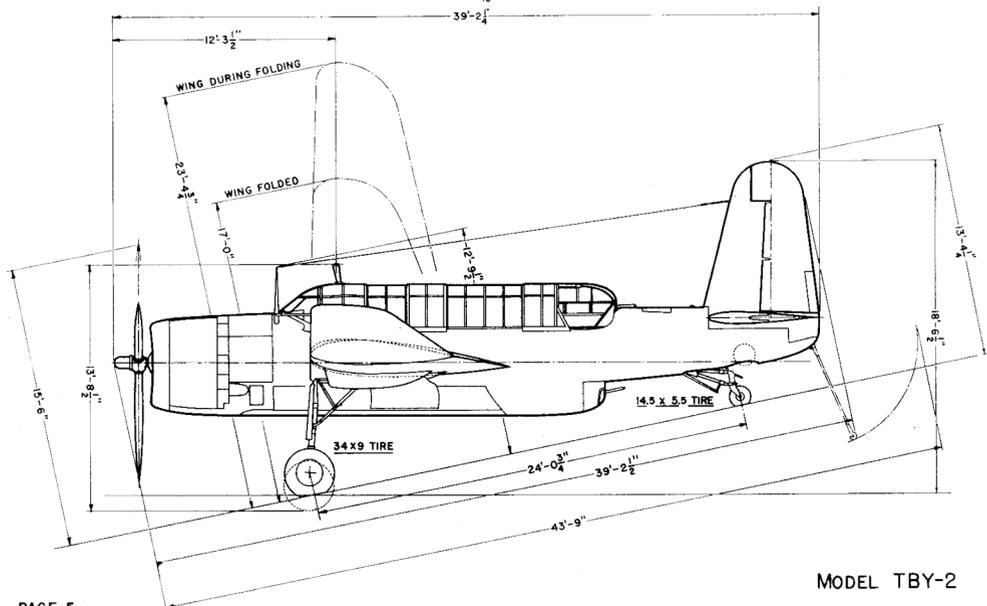
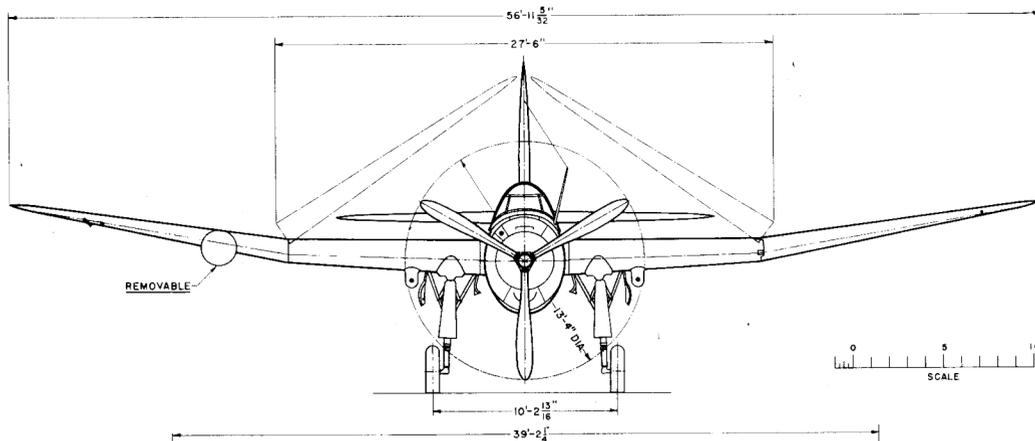
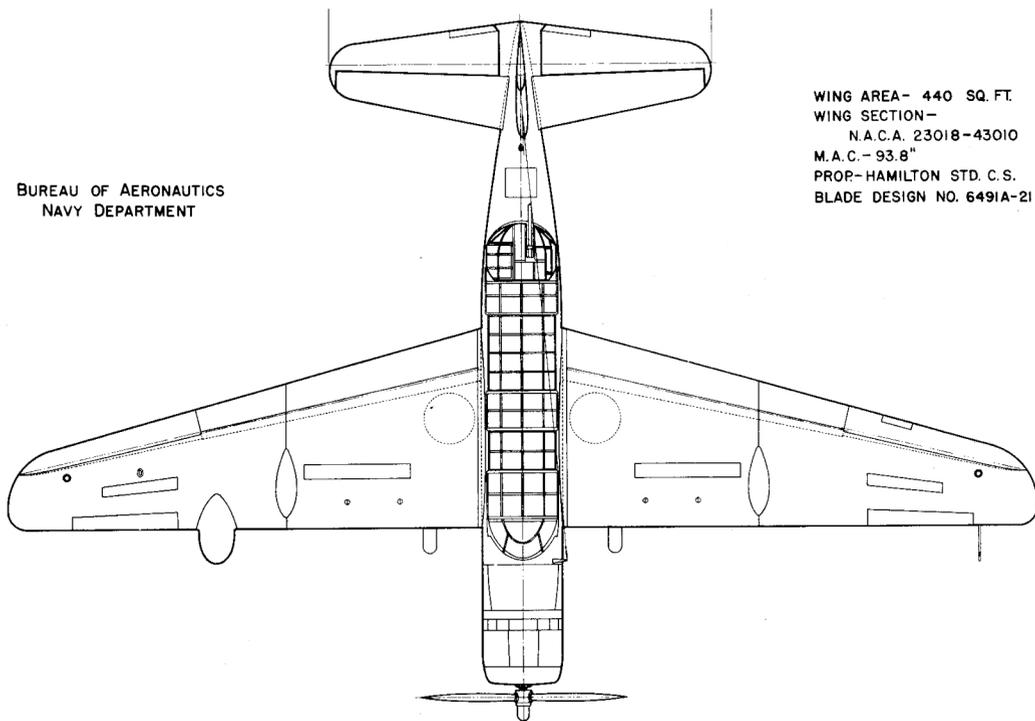
BUREAU OF AERONAUTICS, NAVY DEPT.



○ LOADING CONDITION COLUMN NUMBER

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 440 SQ. FT.
WING SECTION -
N.A.C.A. 23018-43010
M.A.C. - 93.8"
PROP - HAMILTON STD. C.S.
BLADE DESIGN NO. 6491A-21



BUREAU OF AERONAUTICS
 NAVY DEPARTMENT

PROTECTION

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

- 1. PILOT FORWARD 33 LBS.
- 2. PILOT AFT 123 LBS.
- 3. TURRET 104 LBS.
- 4. TUNNEL 84 LBS.
- 5. SELF-SEALING CELLS 481 LBS.
- 6. PILOT'S B. R. GLASS 46 LBS.

