

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		COMBAT *	COMBAT *	COMBAT *	BOMBER 1-1000#
GROSS WEIGHT	LBS.	12728	12728	12728	13871
EMPTY WEIGHT - ACTUAL -	LBS	9959			
FUEL/OIL	GALS.	275/16	275/16	275/16	275/16
FIXED GUNS/AMMUNITION		2-20 mm/400 rds.			
FLEXIBLE GUNS/AMMUNITION		None			
ENGINE POWER USED FOR PERFORMANCE		COMBAT	MILITARY	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.	33.5	33.5	33.5	36.5
POWER LOADING ①	LBS./BHP.	6.9	7.5	8.5	9.3
V-MAX. SEA LEVEL	MPH.	342	328	304	274
V-MAX./CRITICAL ALT.	MPH./FT.	373/18000	365/19000	358/20600	318/20200
V-STALL GROSS WEIGHT ②	MPH.	80.0	80.0	80.0	84.5
V-STALL WITHOUT FUEL ②	MPH.	74.6	74.6	74.6	79.4
TIME-TO-CLIMB -10000FT-	MIN.	3.3	3.6	4.1	4.6
TIME-TO-CLIMB -20000FT-	MIN.	7.5	8.0	8.9	10.2
SERVICE CEILING	FT.	33,400	33,200	33,100	31,000
TAKE-OFF DISTANCE -CALM-	FT.	419	419	419	541
TAKE-OFF DISTANCE -15 KN-	FT.	254	254	254	338
TAKE-OFF DISTANCE -25 KN-	FT.	166	166	166	228
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF TIME	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.	3550	3100	2510	2220
MAX. RANGE / V-AV. ③	ST. MI./MPH.			1405/158	1105/149
RANGE / V-AV. -60%NSP-③-	ST. MI./MPH.				
SEARCH RADIUS / V-AV. -20%R-	NMI./KN.				
A.S.W. RADIUS / V-AV. -20%R-	NMI./KN.				
COMBAT RADIUS MANUAL LEAN (B-1)	N MI.			260	220
COMBAT RADIUS AUTO-LEAN (B-1)	N MI.			200	175
ENGINE / PROP GEAR RATIO		P & W R-2800-34W (.45)			
ENGINE RATING BHP/RPM/ALT.	COMBAT	MILITARY	NORMAL	TAKE-OFF	
	2380/2800/S.L.				
	2400/2800/1000'	2100/2800/S.L. - 3400'	1700/2600/S.L. - 8500'	2100/2800/S. L.	
	1790/2800/9500'	1700/2800/9500' - 16630'	1500/2600/11700' - 18300'		
1850/2800/15500'					
ABX. FIXED	TANKAGE IN GALLONS	OIL	FUEL	OFFENSIVE ARMAMENT	
	PROTECTED		275	FUSELAGE (external):	
	UNPROTECTED	22		Bombs: 1 - 2000#, 1 - 1600#, 1 - 1000#, 1 - 500#	
	TOTAL - FIXED INTERNAL	22	275	Mines: 1 - 1000#	
	DROPPABLE - Left Wing - Ext.		100	Depth Bombs: 1-650#, or 1-325#	
DROPPABLE (Alternate with bombs)			Torpedo: 1 MK13-3		
TOTAL	22	375	Rockets - 1 - 11.75" A.R.		
NOTE	STATUTE MILES USED-EXCEPT-RADIUS IS GIVEN IN NAUTICAL MILES & KNOTS	WINGS (external): (Alternate with dropp. tank & radar)			
	① BHP AT MAX. CRIT. ALT.	Bombs: 2 - 1000#, 2 - 500#, 2 - 250#, 6 - 100#			
	② STALL-WITHOUT POWER	Mines: 2 - 1000#			
	③ AT 1500' ALTITUDE MANUAL LEAN	Depth Bombs: 2 - 650#, or 2 - 325#			
	* See page 2	Rockets: 2 - 11.75# A.R.			
			WINGS (external) on MK9-1 rocket launchers		
			Rockets: 8 - 5" HVAR or 8 - 5" A.R.		

Supersedes IBK-1 Sheet dated 1 Jan. 1945

DATE 1 JULY 1945

PAGE 1

MODEL XBTK-1

NAVAER-1519 (Rev. 9-66)

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		5	6	7	8
LOADING CONDITION		BOMBER 1-1000# One 100 gal. Tank External	BOMBER 1-2000# One 100 gal. Tank External	TORPEDO 1MK13-3 One 100 gal. Tank External	ROCKET 8-5" HVAR 1-1000# One Tank Ext.
GROSS WEIGHT	LBS.	14587	15587	15782	15731
EMPTY WEIGHT - Actual -	LBS.	1259			
FUEL/OIL	GALS.	375/22	375/22	375/22	375/22
FIXED GUNS/AMMUNITION		2-20mm/400 rds.			
FLEXIBLE GUNS/AMMUNITION		None			
ENGINE POWER USED FOR PERFORMANCE		NORMAL	NORMAL	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.	38.4	41.3	41.5	41.4
POWER LOADING ①	LBS./BHP	9.7	10.4	10.5	10.5
V-MAX. SEA LEVEL	MPH.	261	258	258	259
V-MAX./ CRITICAL ALT.	MPH./ FT.	303/20000	298/20000	297/20000	289/19900
V-STALL. GROSS WEIGHT ②	MPH.	87.8	90.7	91.3	93.6
V-STALL. WITHOUT FUEL ②	MPH.	80.8	83.9	84.6	86.6
TIME-TO-CLIMB -10000FT.-	MIN.	5.0	5.5	5.6	5.6
TIME-TO-CLIMB -20000FT.-	MIN.	11.1	12.4	12.7	12.7
SERVICE CEILING	FT.	29,900	28,900	29,700	29,600
TAKE-OFF DISTANCE -CALM-	FT.	629	750	763	911
TAKE-OFF DISTANCE -15 KN-	FT.	401	488	496	532
TAKE-OFF DISTANCE -25KN-	FT.	277	342	347	376
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF DISTANCE	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.				
MAX. RANGE / V-AV. ③	ST. MI. / MPH.	2050	1850	1820	1820
RANGE / V-AV. -60%NSP-③	ST. MI. / MPH.	1370/147	1260/155	1250/155	1200/151
SEARCH RADIUS/V-AV. -20%R-	NMI./KN.				
A S. W. RADIUS/V-AV. -20%R-	NMI./KN.				
COMBAT RADIUS MANUAL LEAN (B-1)	NMI.	370	340	335	370
COMBAT RADIUS AUTO - LEAN (B-1)	NMI.	315	300	300	330

PERFORMANCE IS BASED ON - CALCULATIONS

RANGE & RADIUS ARE BASED ON PRELIMINARY A.E.L.

FUEL CONSUMPTION DATA INCREASED

BY 15 PERCENT TO CONFORM WITH PAST EXPERIENCE.

*COMBAT CONDITION: Displacing gear, wing and fuselage bomb-racks and sway bracing aboard. AN/APS-4 radar and rocket launchers not aboard. Addition of 8 MK9-1 launchers reduces Vmax/S.L. by 5 mph (Combat Power).

CLEAN CONDITION: Configuration and Performance identical to COMBAT CONDITION due to retractable displacing gear and sway bracing and flush bomb-racks.

ROCKET CONDITION: Rockets suspended from MK9-1 (single post) launchers.

FERRY CONDITION: Armor, Armament, and Radar removed, Gross Weight=12653 with 375 gals. fuel. Max. Range at 1500 ft. is 1830 st. mi. at 146 mph.

NOTE: Fuselage bomb-rack, displacing gear and sway bracing, wing bomb-racks and sway bracing aboard in all conditions.

AN/APS-4 radar on right wing bomb-rack for conditions 4 through 8 inclusive.

Rocket launchers carried in rocket condition only.

190 foot length is required to spot 25 airplanes on the 96 foot wide deck immediately aft of the forward ramp on CV-9 carriers.

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

BOMBER COMBAT RADIUS FORMULA NO. B-1-CONDITIONS NOS.- 3 - 8

RADIUS = CLIMB + CRUISE-OUT + CRUISE BACK

WARM-UP	RENDEZVOUS	CLIMB	CRUISE OUT	DROP TANKS	COMBAT	CRUISE BACK	RESERVE
20 min.	20 min. at	to		<u>DESCEND</u>	15 min.		60 min.
	sea level	15000 ft.	at 15000 ft.	to 1500 ft.	at 1500 ft.	at 1500 ft.	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.	60% N.S.P.	Auto Lean.	FIRE	10 min.Nor.Pr.	**	Max. Range
	Auto Lean.	Auto Rich.	Auto Lean.	ROCKETS		Auto Lean.	Auto Lean.

BOMBER COMBAT RADIUS FORMULA NO. B-1-CONDITIONS NOS.- 3 - 8

RADIUS = CLIMB + CRUISE-OUT + CRUISE BACK

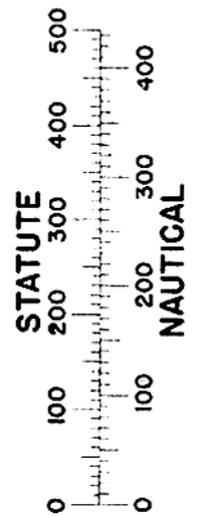
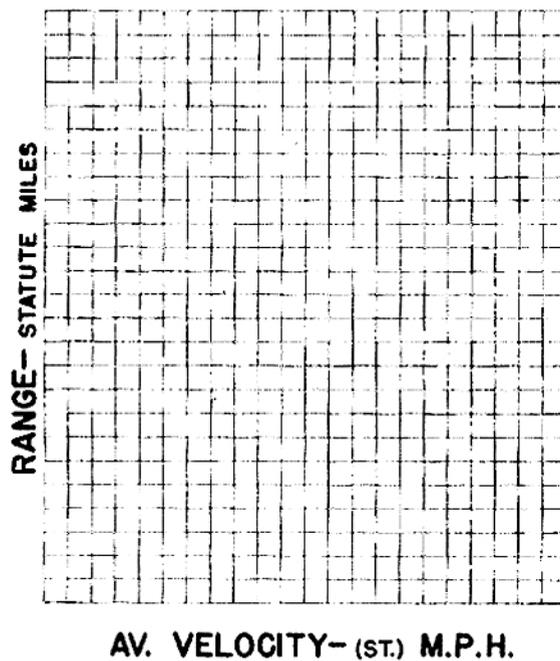
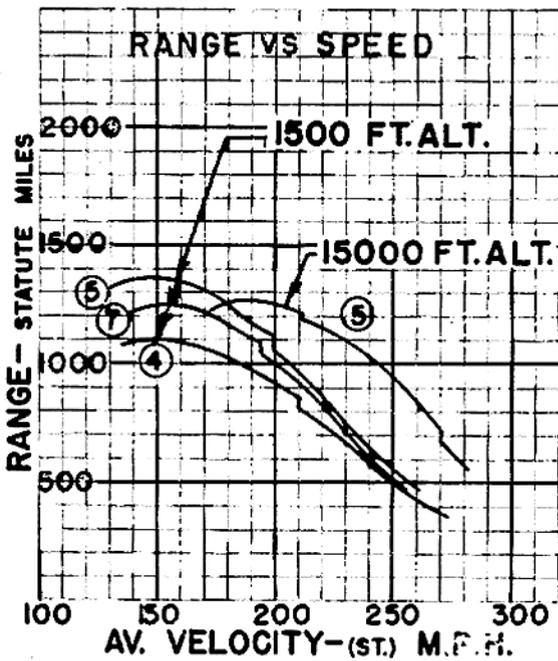
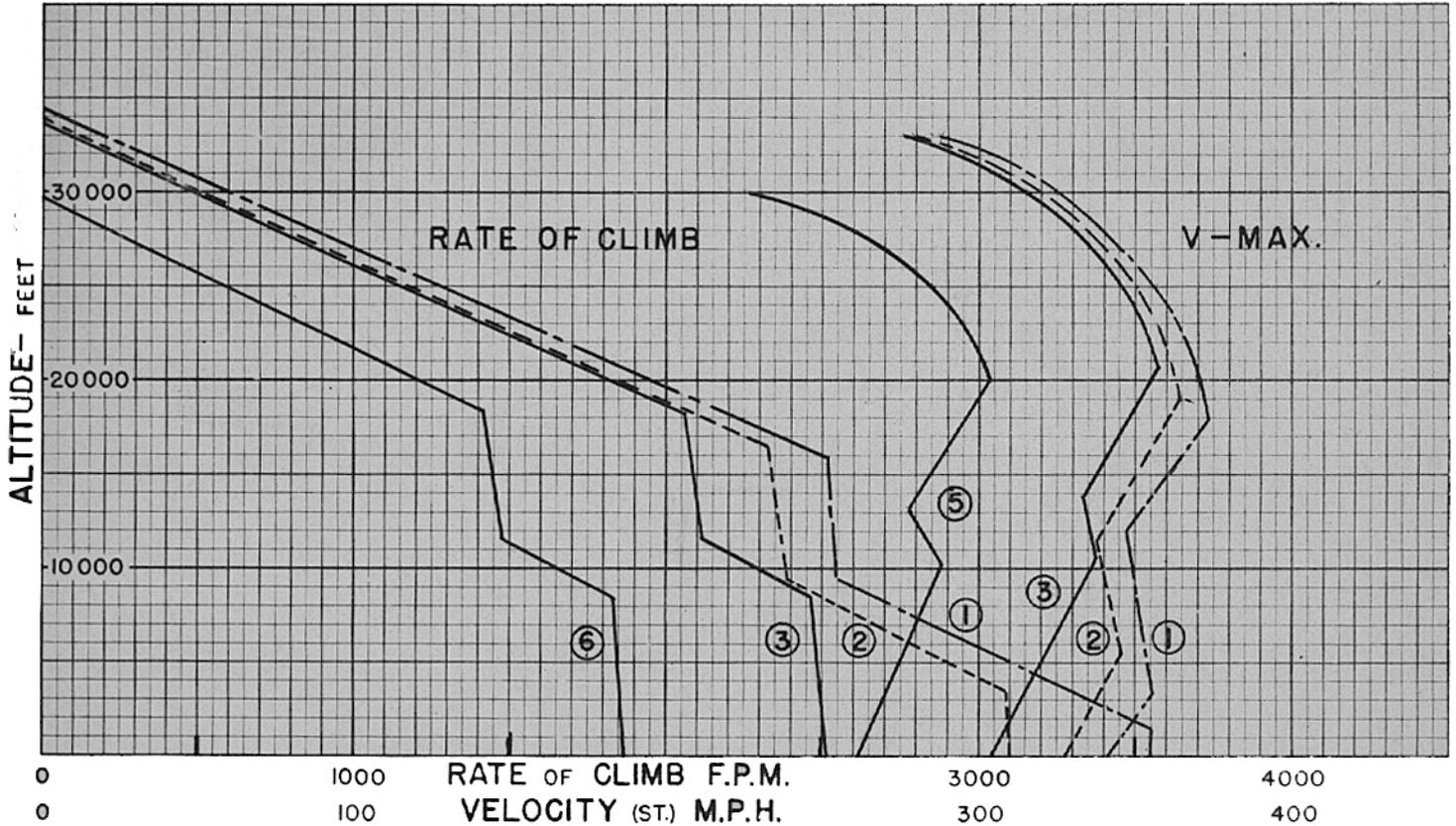
WARM-UP	RENDEZVOUS	CLIMB	CRUISE OUT	DROP TANKS	COMBAT	CRUISE BACK	RESERVE
20 min.	20 min. at	to		<u>DESCEND</u>	15 min.		60 min.
	sea level	15000 ft.	at 15000 ft.	to 1500 ft.	at 1500 ft.	at 1500 ft.	at
<u>TAKE-OFF</u>	at	at	180 kts.TAS	DROP BOMBS	5 min. WEP.	170 kts.TAS	Vel.for
1 min.	60% N.S.P.	60%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

** Condition 3 only: - Cruise back at V for max. range since 170 knots is less than V for max. range.

Provisions are incorporated for fuel pump-back from droppable to main tanks after take-off.

Water available for approximately 10 min. at combat power.

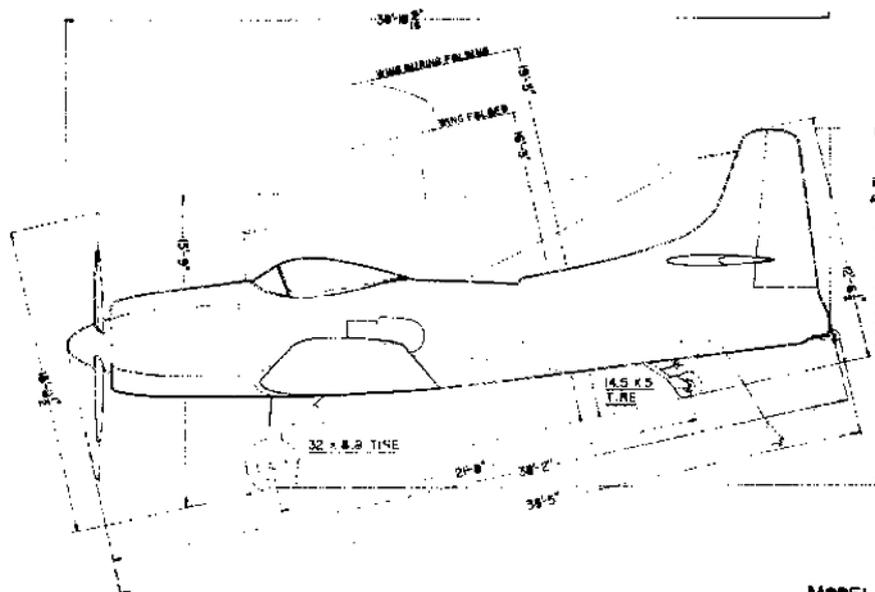
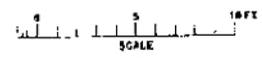
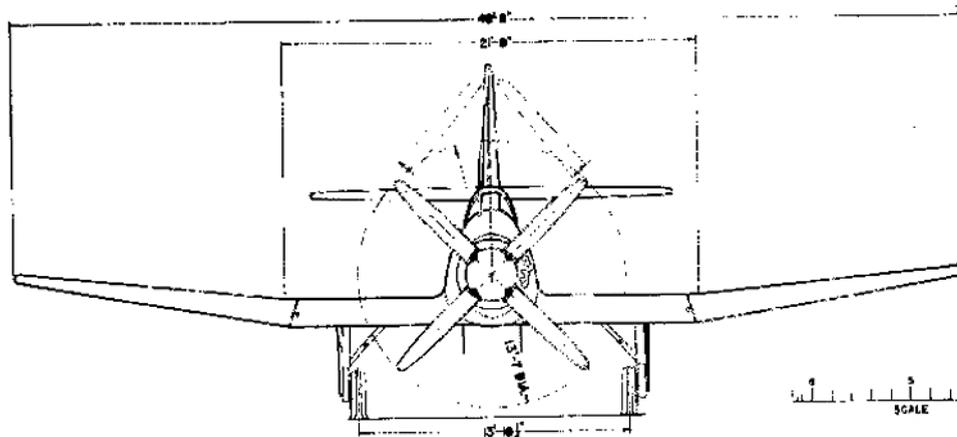
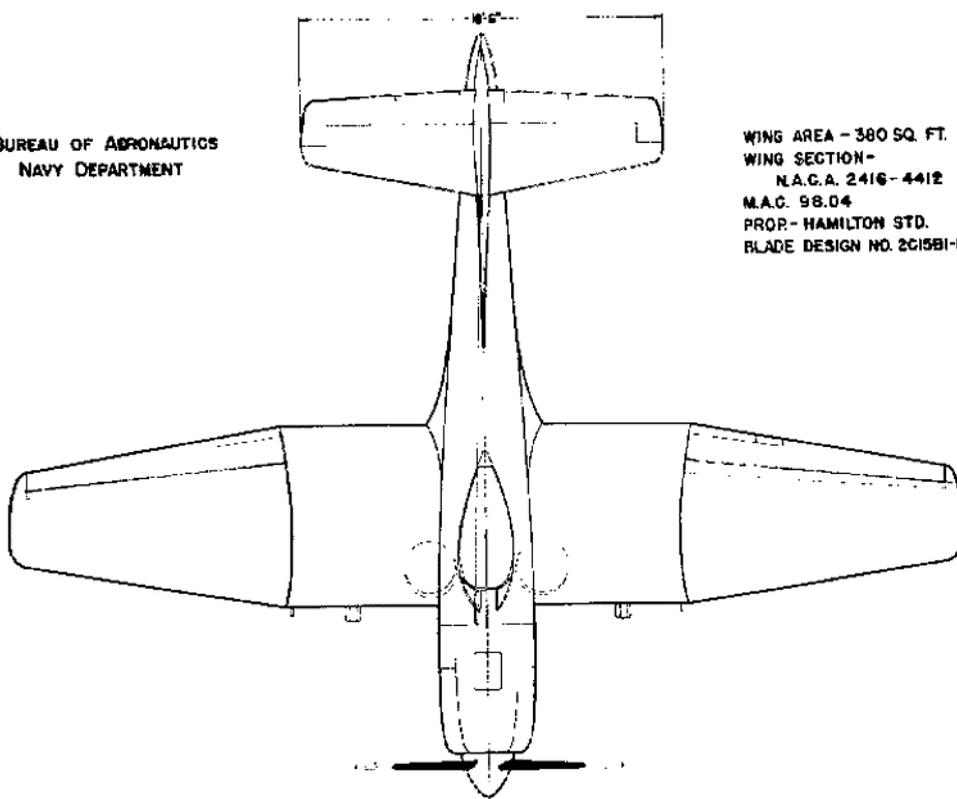
NOTE ON COMBAT RADIUS: The present carburetor on the R-2800-34W engine used in this airplane is designed to give sufficient enrichment at low power in automatic lean setting to provide satisfactory engine operation and entails a penalty in specific fuel consumption increasing rapidly below 635 H.P. The XBTK-1, with its exceedingly low power loading, will cruise on the return flight and during rendezvous at powers well below 635 H.P. Therefore, in order to obtain greater combat radii it will be necessary to use manual lean adjustment during cruiseback and rendezvous. The effect of this operation is shown in the two values of combat radius shown.



○ LOADING CONDITION COLUMN NUMBER

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 380 SQ. FT.
WING SECTION -
N.A.C.A. 2416-4412
M.A.C. 98.04
PROP. - HAMILTON STD.
BLADE DESIGN NO. 2C15B1-16N



BUREAU OF AERONAUTICS
NAVY DEPARTMENT

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

PROTECTION

- 1. OIL COOLER 36 LBS.
- 2. PILOT FORWARD 67 LBS.
- 3. PILOT AFT 127 LBS.
- 4. SELF-SEALING CELLS 225 LBS.

