

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		ATTACK 60% FUEL	ATTACK FULL INTERNAL FUEL	ATTACK 2 DROP TANKS	ATTACK 2 DROP TANKS 1-2000# BOMB
GROSS WEIGHT	LBS.	16224	17424	19724	21764
EMPTY WEIGHT (CALCULATED)	LBS.	12944			
FUEL/OIL	GALS.	300/8	500/8	800/8	800/8
FIXED GUNS/AMMUNITION		4-20 mm M-3/800 Rds.			
FLEXIBLE GUNS/AMMUNITION		NONE			
ENGINE POWER USED FOR PERFORMANCE		MILITARY	MILITARY	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.	40.6	43.6	49.3	54.4
POWER LOADING ①	LBS./BHP.				
V-MAX. SEA LEVEL	KN.	392	391	354	343
V-MAX./ALTITUDE	KN./FT.	429/27000	427/27000	398/29000	384/29000
V-STALL GROSS WEIGHT ②	KN.	81.8	84.7	90.1	94.6
V-STALL WITHOUT FUEL ②	KN.	77.0	77.0	78.4	83.6
TIME-TO-CLIMB -10000FT-	MIN.	1.6	1.7	2.3	2.6
TIME-TO-CLIMB -20000FT-	MIN.	3.5	3.8	5.2	6.1
SERVICE CEILING	FT.	48100	47400	43400	41800
TAKE-OFF DISTANCE -CALM-	FT.		477	672	857
TAKE-OFF DISTANCE -15 KN-	FT.		330	481	624
TAKE-OFF DISTANCE -25 KN-	FT.		246	370	488
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF TIME	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.	7280	6750	4990	4360
MAX. RANGE /V-AV. ③	N MI./KN.		1285/240	1910/247	1650/260
RANGE /V-AV. -80% NSP-④-	N MI./KN.				
ENDURANCE (SEE NOTE)	HRS.			7.25	
A.S.W. RADIUS/V-AV. -20% R-	N MI./KN.				
COMBAT RADIUS, F-3 Mod.	N MI.			695	
COMBAT RADIUS B-3 Mod.	N MI.				635
ENGINE / PROP GEAR RATIO Allison XT40-A-2 (Turbo-Prop)/15.67:1					
ENGINE RATING BHP/RPM/ALT.	MILITARY S.L. STATIC	NORMAL S.L. STATIC		TAKE-OFF S.L. STATIC	
	5100 SHP + 830 lb/13620/2160°R	4500 SHP + 800 lb/13620/2060°R		5100 SHP + 830 lb/13620/2160°R	
TANKAGE IN GALLONS		OIL	FUEL	OFFENSIVE ARMAMENT	
AUX. FIXED	PROTECTED	8	500	1-2000 lb. bomb under fuselage. This is a high speed store; performance has been calculated for high speed bomb and tanks. Standard items may be carried, but at the expense of performance decrease.	
	UNPROTECTED				
	TOTAL-FIXED INTERNAL	8	500		
	DROPPABLE 2 @ 150 Gals.		300		
	DROPPABLE				
	TOTAL	8	800		
NOTE	① BHP AT MAX. CRIT. ALT.				
	② STALL - WITHOUT POWER				
	③ AT 30,000' ALTITUDE				

A 8034
MODEL XA2D-1

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Performance is based on flight tests of XBT2D-1 airplane. Range and radius are based on engine specification data increased by 7.5% to conform with past experience.

Attack Conditions 1 & 2: two external racks.

FIGHTER COMBAT RADIUS FORMULA NO. F-3-MODIFIED CONDITION NO. - 3 RADIUS=CLIMB+CRUISE-OUT+CRUISE BACK

<u>WARM-UP</u>	<u>RENDEZVOUS</u>	<u>CLIMB</u>	<u>CRUISE OUT</u>	<u>DROP TANKS</u>	<u>COMBAT</u>	<u>CRUISE BACK</u>	<u>RESERVE</u>
30 sec. at Max Stat. Thrust	Climb to 5000 ft.	to 30000 ft.	at 30000 ft.	and DESCEND to 15000 ft.	15 min. -V max. at 15000 ft.	at 30000 ft.	15 min. at 10000 ft.
<u>TAKE-OFF</u> 1 min. at T.O. Thrust	Mil. Thrust 10 min. REND. Vel. for Max. Range	Mil. Thrust	at Vel. for Max. Range		Mil. Thrust <u>RETURN</u> to 30000 ft. Mil. Thr.	at Vel. for Max. Range	15 min. at S.L. Vel. for max. End.

XA2D-1 is equipped with fuel transfer system, no fuel dropped before entering combat

FIGHTER ENDURANCE FORMULA NO. F-3-MODIFIED CONDITION NO. - 3

<u>WARM-UP</u>	<u>RENDEZVOUS</u>	<u>CLIMB</u>	<u>ENDURANCE</u>	<u>RESERVE</u>
30 sec. at Max Stat. Thrust	Climb to 5000 ft.	to 30,000 ft.	at 30000 ft. at Vel. for Max. Endurance	15 min. at 10000 ft. 15 min. at S.L. Vel. for Max. End.
<u>TAKE-OFF</u> 1 min. at T. O. Thrust	Mil. Thrust 10 min. REND. Vel. for Max. Range	Mil. Thrust		

Endurance is reduced 17 minutes for each 5 minutes of combat power operation at 30,000 ft. altitude.

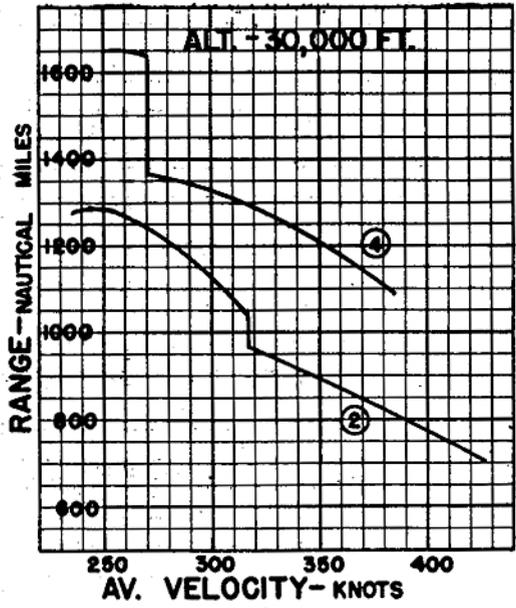
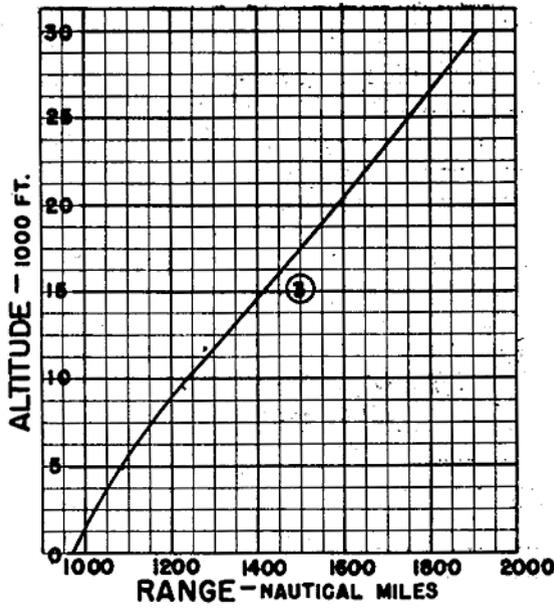
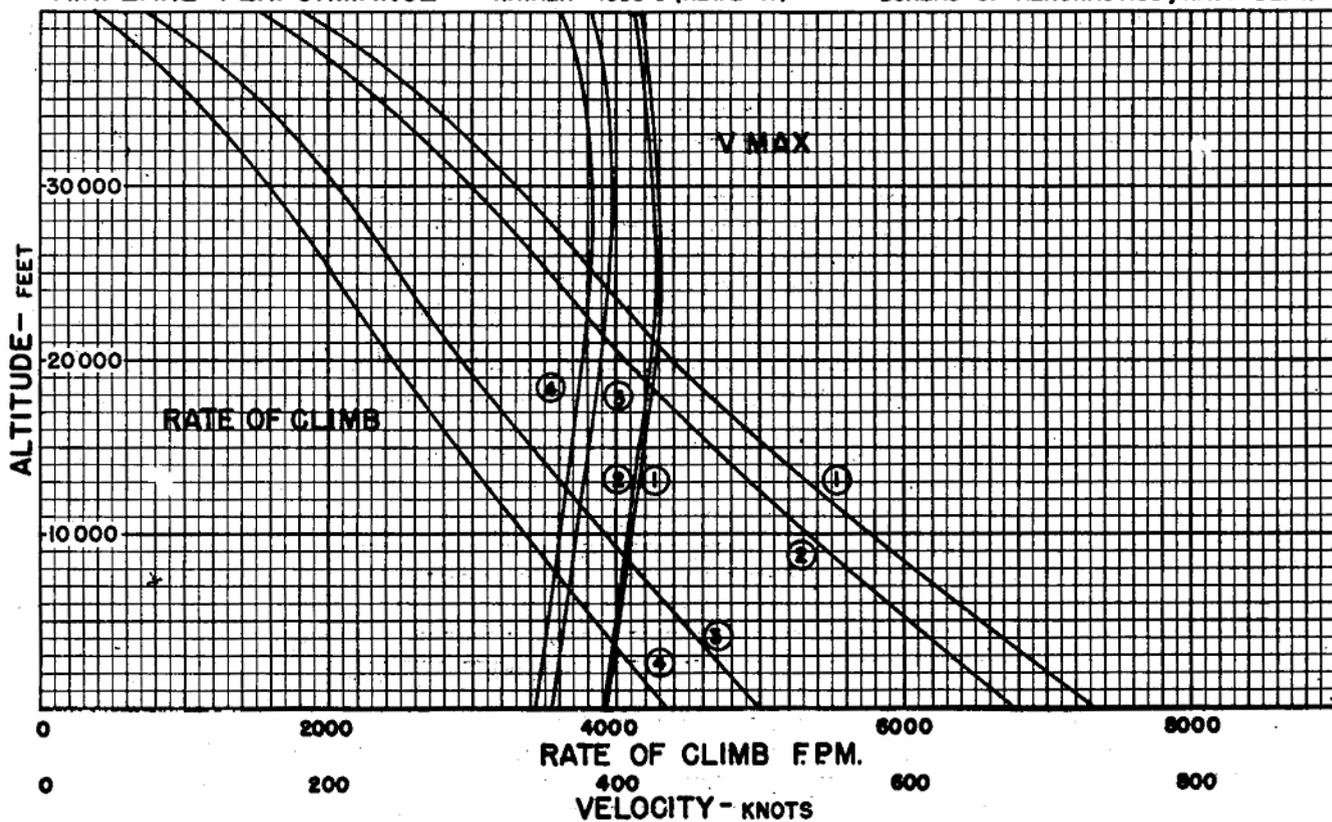
BOMBER COMBAT RADIUS FORMULA NO. B-3-MODIFIED CONDITION NO. - 4 RADIUS=CLIMB+CRUISE OUT+CRUISE BACK

<u>WARM-UP</u>	<u>RENDEZVOUS</u>	<u>CLIMB</u>	<u>CRUISE OUT</u>	<u>DROP TANKS</u>	<u>COMBAT</u>	<u>CRUISE BACK</u>	<u>RESERVE</u>
30 sec. at Max Stat. Thrust	Climb to 5000 ft.	to 30000 ft.	at 30000 ft.	to 1500 ft.	10 min. -V max. at 1500 ft.	at 30000 ft.	15 min. at 10000 ft.
<u>TAKE-OFF</u> 1 min. at T.O. Thrust	Mil. Thrust 10 min. REND. Vel. for Max. Range	Mil. Thrust	at Vel. for Max. Range	<u>DROP BOMBS</u>	Mil. Thrust <u>RETURN</u> to 30000 ft. Mil. Thr.	at Vel. for Max. Range	15 min. at S. L. Vel. for max. End.

XA2D-1 is equipped with fuel transfer system. No fuel is dropped before entering combat.

200 ft. length is required to spot 20 airplanes on the 96ft. wide deck immediately aft of the forward ramp on CV-9 class carriers.

A 8034



○ LOADING CONDITION COLUMN NUMBER

A 8034

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 400 SQ. FT.
WING SECTION:
ROOT - N.A.C.A. 0012 (4.4) 45/45 -15°
TIP - N.A.C.A. 0012 -63/30 -15°
MAC - 99.5"

