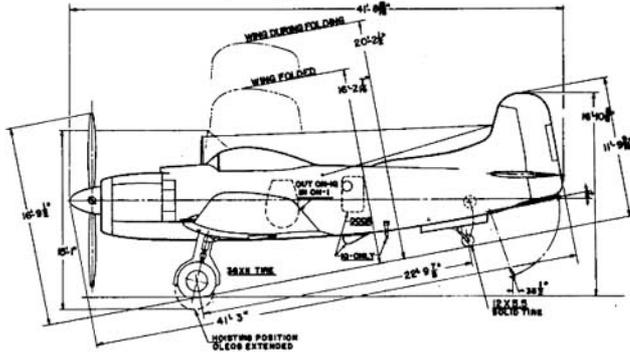
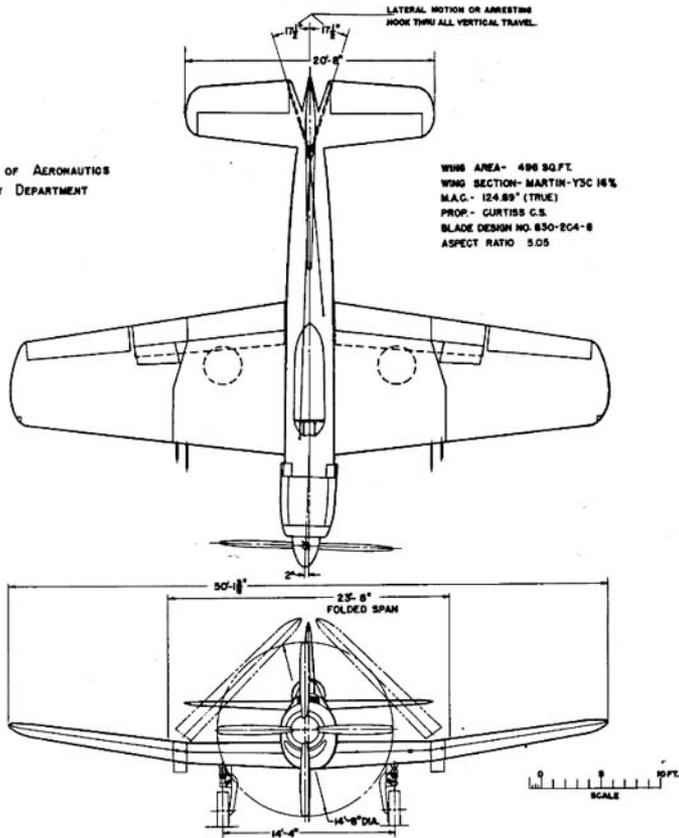


STANDARD AIRCRAFT CHARACTERISTICS
AM-1 "MAULER"

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 496 SQ. FT.
WING SECTION - MARTIN-YSC 16%
M.A.C. - 124.89" (TRUE)
PROP. - CURTISS C.S.
BLADE DESIGN NO. 830-204-B
ASPECT RATIO 5.05



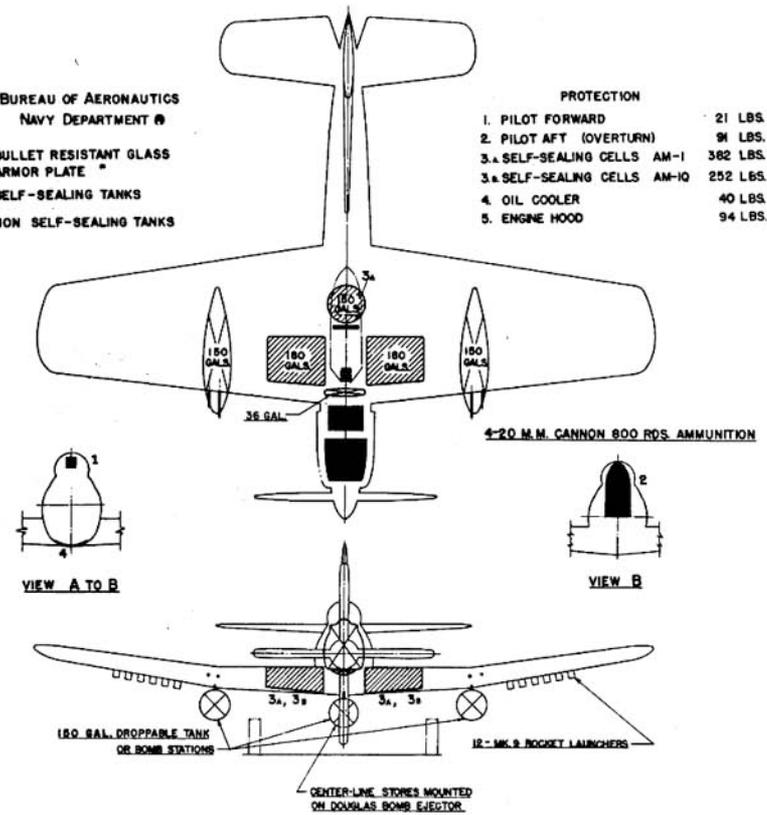
DESCRIPTIVE ARRANGEMENT

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

- BULLET RESISTANT GLASS ARMOR PLATE "
- ▨ SELF-SEALING TANKS
- ⊗ NON SELF-SEALING TANKS

PROTECTION

- | | |
|------------------------------|----------|
| 1. PILOT FORWARD | 21 LBS. |
| 2. PILOT AFT (OVERTURN) | 94 LBS. |
| 3a. SELF-SEALING CELLS AM-1 | 382 LBS. |
| 3a. SELF-SEALING CELLS AM-10 | 252 LBS. |
| 4. OIL COOLER | 40 LBS. |
| 5. ENGINE HOOD | 94 LBS. |



ARMAMENT & TANKS

MISSION AND DESCRIPTION

The AM-1 is intended for torpedo and dive-bombing, and scouting. It is presently in production.

All bombs, mines, torpedoes, rockets, etc. are carried externally on three pylons on wings and fuselage. Provision for radar on right wing pylon. One-man crew.

Structure is conventional all-metal; hydraulically operated canopy. Folding wings. Slotted flaps. Split type dive brakes interlocked with landing flaps. Can carry incendiary and fragmentation clusters smoke tanks.

DIMENSIONS

WING AREA.....496 sq.ft.
SPAN.....50'-1"
LENGTH.....41'-3"
HEIGHT.....11'-10"
TREAD.....14'-4"
PROP.CLEAR.....7"
M.A.C.....9'-11"

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	15100.....	
BASIC.....	15830.....	
DESIGN.....	19450.....	7.50
COMBAT.....	20083.....	7.25
MAX.T.O.....	25000.....	*5.8
MAX.LD		

Carrier..17950.....
Shore..20600.....

Weights are actual with calculated changes.

*See Notes.

FUEL AND OIL

GAL.	NO.TANKS	LOCATION
360	2	WING, SEAL
150	1	FUSE, SEAL
450	3	DROP
	FUEL GRADE....	115/145
	FUEL SPEC....	AN-F-48

OIL

CAPACITY(GALS).....36
SPEC.....AN-O-8
GRADE.....1100-1120

ELECTRONICS

Range Rec.....R-23A/ARC-5
HF Comm.....AN/ARC-2
VHF Homing.....AN/ARR-2A
VHF Comm.....AN/ARC-1A
Altimeter.....AN/APN-1
Search Radar.....AN/APS-4
IFF.....AN/APX-2

POWER PLANT

NO. & MODEL.....(1)R-4360-4W
MFR.....P&W
SUPERCH.....1 stg, var.spd.
PROP.GEAR RATIO.....0.425
PROP.MFG.....Curtiss
PROP.DES.NO.....830-2C4-6
NO.BL./DIA.....4/14'-8"

RATINGS

T.O.	Bhp @	Rpm @	Alt.
MIL.	3000	2700	S.I.
	3000	2700	1500'
	2400	2700	13500'
NORM.	2500	2550	5000'
	2200	2550	14500'

SPEC. N-7039-C

ORDNANCE

GUNS			
No.	Size	Location	Rds.
4	20mm	Wing	800

BOMBS & ROCKETS

Type	Size	Location	No.
Bomb	2000#	External	3
Bomb	500#	External	3
Mine	2000#	External	3
Mine	1000#	External	3
D.E.	350#	External	3
Torp.	Mk-13	External	3
A.R.	11.75"	Wing	2
HVAR	5"	Wing	12

FIRE CONTROLS

Sighting Sys.....Mk.1 Mod.2
Bomb Director.....AN/ASG-10A

Max.Bomb Load.....6000 Lbs.



PERFORMANCE SUMMARY					
LOADING CONDITION		(1) ATTACK 1-2000# Bomb AN/APS-4	(3) ATTACK 1-2000# Bomb 2X150 Gal. Tanks		
TAKE-OFF WEIGHT	lbs	22166	24145		
Fuel Fixed/Drop	lbs	3060	3060/1800		
Bombs	lbs	2000	2000		
	lbs				
Wing/Power Loading (A)	lbs/sq.ft. lbs/bhp	44.7/10.1	48.7/11.0		
Stall Speed--Power off	kn	85	89		
Stall Speed--Power off - No Fuel	kn	78	79		
Stall Speed--Power on	kn	81.5	85		
Maximum Speed/Alt (B)	kn/ft	271/16000	268/16000		
Take-off Distance, deck -- calm	ft	844	1045		
Take-off Distance, deck 25 kn.	ft	405	520		
Take-off Distance, Airport	ft				
Rate of climb -- sea level (B)	ft/min	1840	1550		
Service Ceiling (B)	ft	26800	24400		
Time-to-climb 10000 ft. (B)	min	5.9	7.0		
Time-to-climb 20000 ft. (B)	min	14.6	18.6		
Combat Range/V av 15000	ft. n.mi/kn	845/175	1324/186		
Combat Radius/V av	ft. n mi/kn	360/175	670/175		
LOADING CONDITION		(2) COMBAT	(4) COMBAT	(5) COMBAT	
GROSS WEIGHT	lbs	20166	20083	20083	
Engine power		Max.	Max.	Norm.	
Fuel	lbs	3060	3060	3060	
Bombs/Tanks					
Max. speed at sea level	kn	274	283	260	
Max. speed ft.	kn	289/10500	301/10500	290/16000	
Combat speed/Alt.	kn/ft	284/15000	293/15000	287/15000	
Rate of climb SL	ft/min	3110	3130	2200	
Ceiling for 500 fpm R/C	ft	25300	25630	25670	
Time-to-climb/Alt.	min/ft				

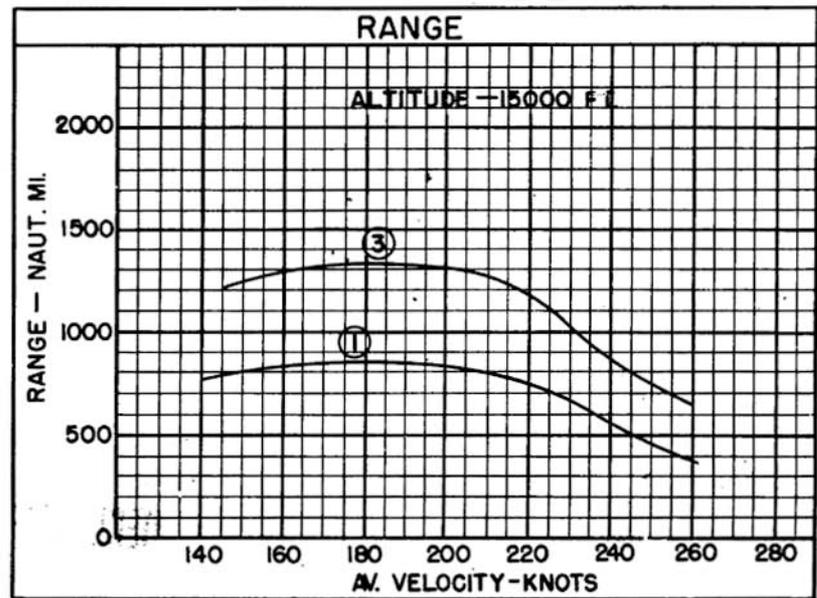
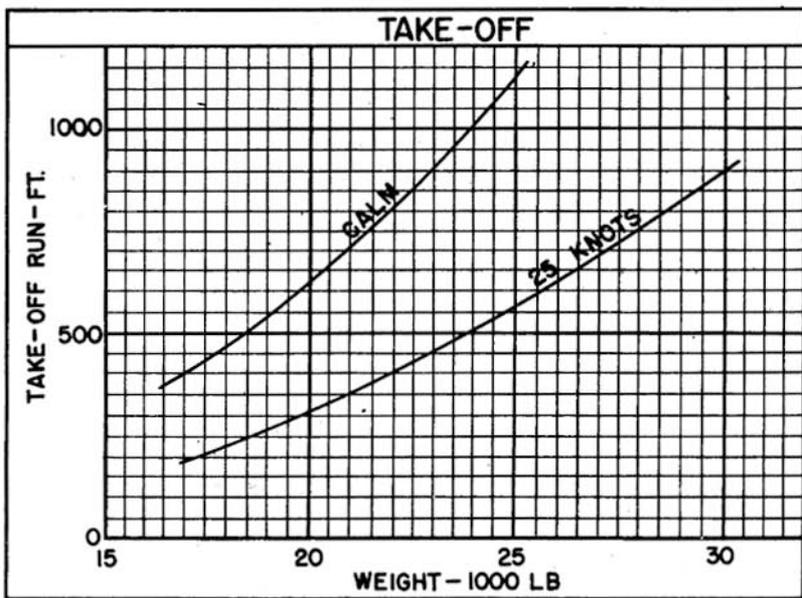
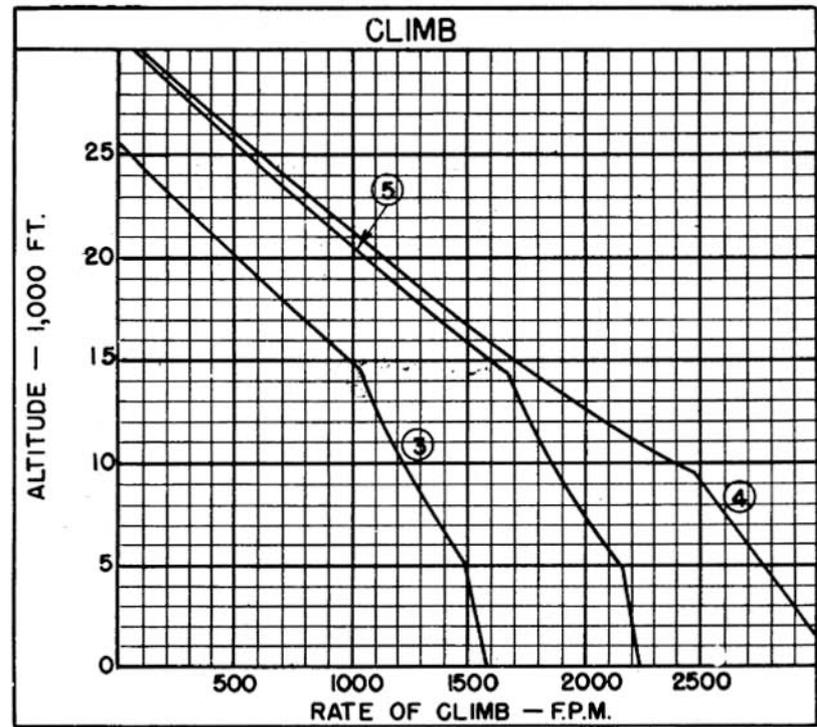
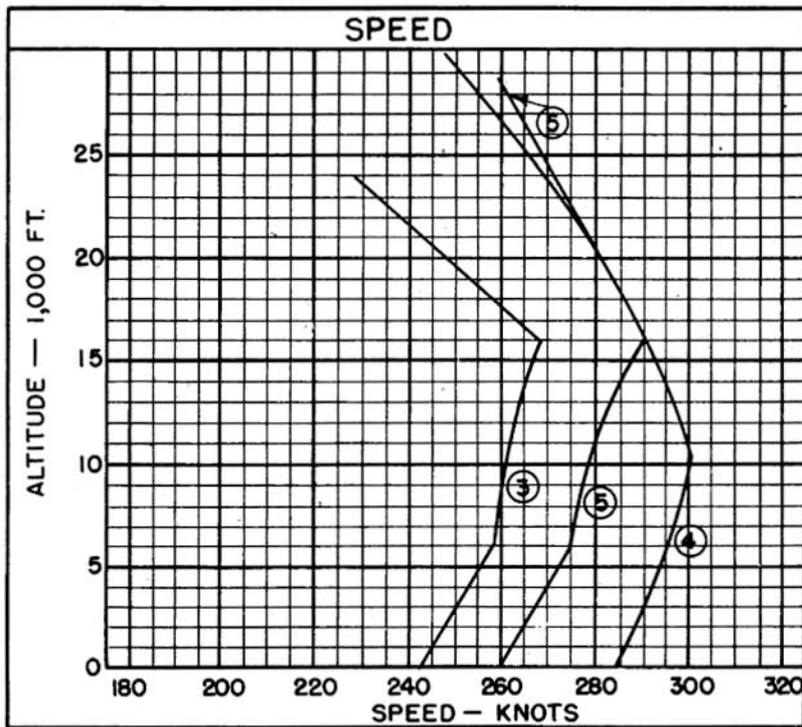
NOTES

- (A) BHP at Maximum Critical Altitude
(B) Normal BHP

Performance is based on calculations and partial AM-1 flight test.

Combat range and radius are based on engine specification fuel consumption data increased 5%.

Addition of 12-5" HVAR to Col.(1) increases weight to 23900 lbs. reduces Vmax at S.L. by 6 knots, combat range by 105 naut. miles, and increases take-off (25 knot wind) by 100 ft.



○ LOADING CONDITION COLUMN NUMBER

NOTES

Maximum take-off weight of 25000 lbs. is based on 11X36X12 ply tire rated at 12,500 lbs. Future tires 11X36X14 ply rated at 14,000#, with increased braking capacity, will permit maximum take-off weights of 28000 lbs.

Attack Combat Radius Formula No. B-1

<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>
20 min.	20 min. at	to	at	<u>DESCEND</u>	15 min. at		60 min. at
20% N.Pr.	Sea Level	15000 ft.	15000 ft.	to 1500 ft.	1500 ft.	at 1500 ft.	V for
<u>TAKE-OFF</u>	at 60%	at Normal	180 kts.TAS	<u>DROP BOMBS</u>	5 min. combat	170 kts.TAS	Max. Range
1 min.	N. Pr.	S.L. Pr.	Auto Lean	<u>FIRE</u>	and 10 min.		
at T.O.Pr.	Auto Lean	Auto Rich		<u>ROCKETS</u>	N. Pr.	Auto Lean	Auto Lean

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		SCOUT	SCOUT	BOMBER 1-2000# BOMB 2-WING TANKS	BOMBER 1-2000# BOMB AN/APS-4 RADAR
GROSS WEIGHT	LBS.	19197	19197	23386	21410
EMPTY WEIGHT	Actual LBS.	14500			
FUEL/OIL	GALS.	510 /28	510 /28	810 /36	510 /28
FIXED GUNS/AMMUNITION		4-20 mm/800 rds. - Mk. I Sight System & ASQ-10A			
FLEXIBLE GUNS/AMMUNITION		None			
ENGINE POWER USED FOR PERFORMANCE		COMBAT	NORMAL	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.	38.5	38.5	47.0	43.0
POWER LOADING ①	LBS./BHP.	7.7	16.0	19.5	17.8
V-MAX. SEA LEVEL.	KN	304	268	241	245
V-MAX./CRITICAL ALT.	KN/FT.	319/11600	308/18200	272/17700	279/17800
V-STALL GROSS WEIGHT ②	KN	83.6	83.6	92.2	88.2
V-STALL WITHOUT FUEL ②	KN	76.8	76.8	82.3	81.9
TIME-TO-CLIMB -10000FT-	MIN.	4.1	5.6	8.3	6.9
TIME-TO-CLIMB -20000FT-	MIN.	10.2	12.7	21.0	16.5
SERVICE CEILING	FT.	30,500	29,600	24,100	26,700
TAKE-OFF DISTANCE -CALM-	FT.	580	580	960	773
TAKE-OFF DISTANCE -15 KN-	FT.	373	373	646	510
TAKE-OFF DISTANCE -25 KN-	FT.	258	258	468	363
TAKE-OFF DISTANCE -50 FT. OBST.	FT.				
TAKE-OFF TIME	SECONDS				
RATE OF CLIMB -SL-	FT./MIN.	2780	1810	1250	1490
MAX. RANGE / V-AV. ③	NMI./KN		1260/164	1575/165	
RANGE / V-AV. -60%NSP-③-	NMI./KN				
SEARCH RADIUS / V-AV. -20%R-	NMI./KN				
A.S.W. RADIUS / V-AV. -20%R-	NMI./KN				
SCOUT RADIUS (S-1)	N MI.		350		
COMBAT RADIUS (B-1)	N MI.			590	285
ENGINE / PROP GEAR RATIO		P & W R-4360-4/.425			T.O.
ENGINE RATING BHP/RPM/ALT.	COMBAT	MILITARY	NORMAL	2975/2700/S.L.	
	3310/2700/S.L.	2950/2700/S.L.	2425/2550/S.L.		
	2900/2700/9000	3000/2700/3000	2500/2550/5000		
		2400/2700/16200	2200/2550/15750		
Combat rating is estimated. Military and Normal ratings are from AEL calibration with "Normal" Mixture Control. T.O. Rating is from AEL calibration with "Rich" Mixture Control.					

TANKAGE IN GALLONS			OFFENSIVE ARMAMENT		
AUX. FIXED	PROTECTED		FUSELAGE - Ext. on Douglas Bomb Ejector (alternate with drop tank)		
	UNPROTECTED	36	Bombs - 1-2000#, 1-1600#, 1-1000# or 1-500#		
	TOTAL - FIXED INTERNAL	36	Depth Bombs - 1-650# or 1-325#		
	DROPPABLE		Mines - 1-2000# or 1-1000#		
	DROPPABLE 2@ 150 gal. on wing		Torpedo - 1 Mk 13-3		
TOTAL	36	810	WINGS - Ext. (Alternate with radar and drop tanks)		
NOTE			Bombs - 2-1000#, 2-500#, 2-250# or 6-100#		
	① BHP AT MAX. CRIT. ALT.		Depth Bombs - 2-650# or 2-325#		
	② STALL - WITHOUT POWER		Mines - 2-1000#		
	③ AT 1500 ALTITUDE		Rocket Launcher - Mk-9		
				Rockets 8-5" HVAR or 8-5" AR	

DATE 1 March 1947

PAGE 2

MODEL AM-1

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

Performance is based on flight tests of XB7M-1 Airplane. Range and radius are based on A.E.L. fuel consumption data increased by 15% to conform with past experience.

Scout Condition: Two wing bomb racks (Mk 51) with sway bracing and bomb ejector (fuselage) aboard. Sway bracing for bomb ejector aboard only in bomber conditions. AN/APS-4 radar and rocket launchers not aboard. Addition of 12 Mk-9 rocket launchers reduces V max S.L. to 298 kn. and V max/ACA to 313 kn/11500 ft. at combat power. Addition of 12-5" HVAR increases gross weight of condition (1) to 20922 and reduces V max S.L. to 279 kn and V max/ACA to 293 kn/11200 ft.

Notes:

1. AN/APS-4 radar is carried on port wing bomb-rack.
2. 12-100# bombs or 12-250# bombs can be carried at Mk-9 rocket launcher positions by replacing launchers with Mk-55 bomb-racks.
3. 25 gallons of AD1 fluid are available for 15 minutes at combat power.
4. 200 ft. length is required to spot 20 planes on the 96-foot wide deck immediately aft of the forward ramp on CV-9 Class Carriers.

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

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 ent. distance. Practical scout radius is reduced 6.7 nautical miles for each min. of combat power operation at 1500 ft.

BOMBER COMBAT RADIUS FORMULA NO. B-1-CONDITIONS NOS. - 3 & 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> 1 min.	at 60% N.S.P.	at Nor. Pr.	Vel. for Max. Range	DROP BOMBS FIRE ROCKETS	5 min. WEP. 10 min. Nor. Pr.	170 kts. TAS	Vel. for Max. Range
	"Normal" Mixture	"Normal" Mixture	"Normal" Mixture			"Normal" Mixture	"Normal" Mixture

10194-4

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

Performance is based on flight tests of XBTM-1 Airplane. Range and radius are based on A.E.L. fuel consumption data increased by 15% to conform with past experience.

Scout Condition: Two wing bomb racks (Mk 51) with sway bracing and bomb ejector (fuselage) aboard. Sway bracing for bomb ejector aboard only in bomber conditions. AN/APS-4 radar and rocket launchers not aboard. Addition of 12 Mk-9 rocket launchers reduces V max S.L. to 298 kn. and V max/ACA to 313 kn/11500 ft. at combat power. Addition of 12-5" HVAR increases gross weight of condition (1) to 20922 and reduces V max S.L. to 279 kn and V max/ACA to 293 kn/11200 ft.

Notes:

1. AN/APS-4 radar is carried on port wing bomb-rack.
2. 12-100# bombs or 12-250# bombs can be carried at Mk-9 rocket launcher positions by replacing launchers with Mk-55 bomb-racks.
3. 25 gallons of AD1 fluid are available for 15 minutes at combat power.
4. 200 ft. length is required to spot 20 planes on the 96-foot wide deck immediately aft of the forward ramp on CV-9 Class Carriers.

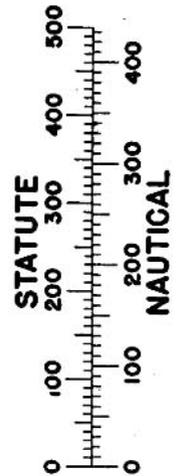
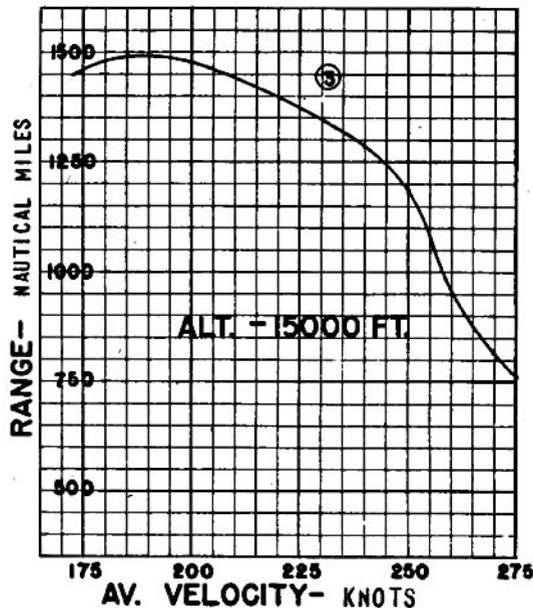
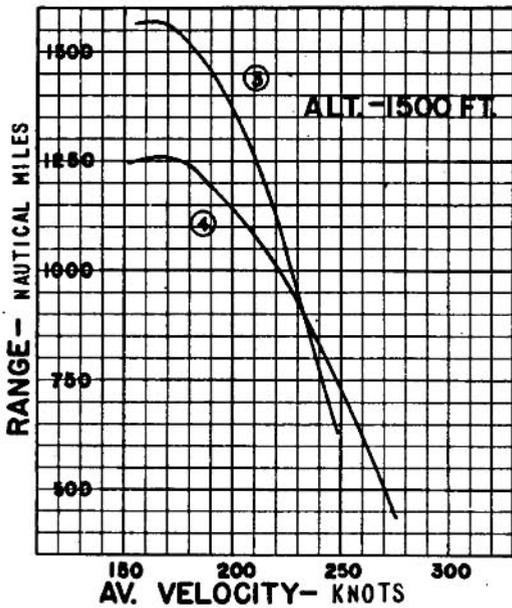
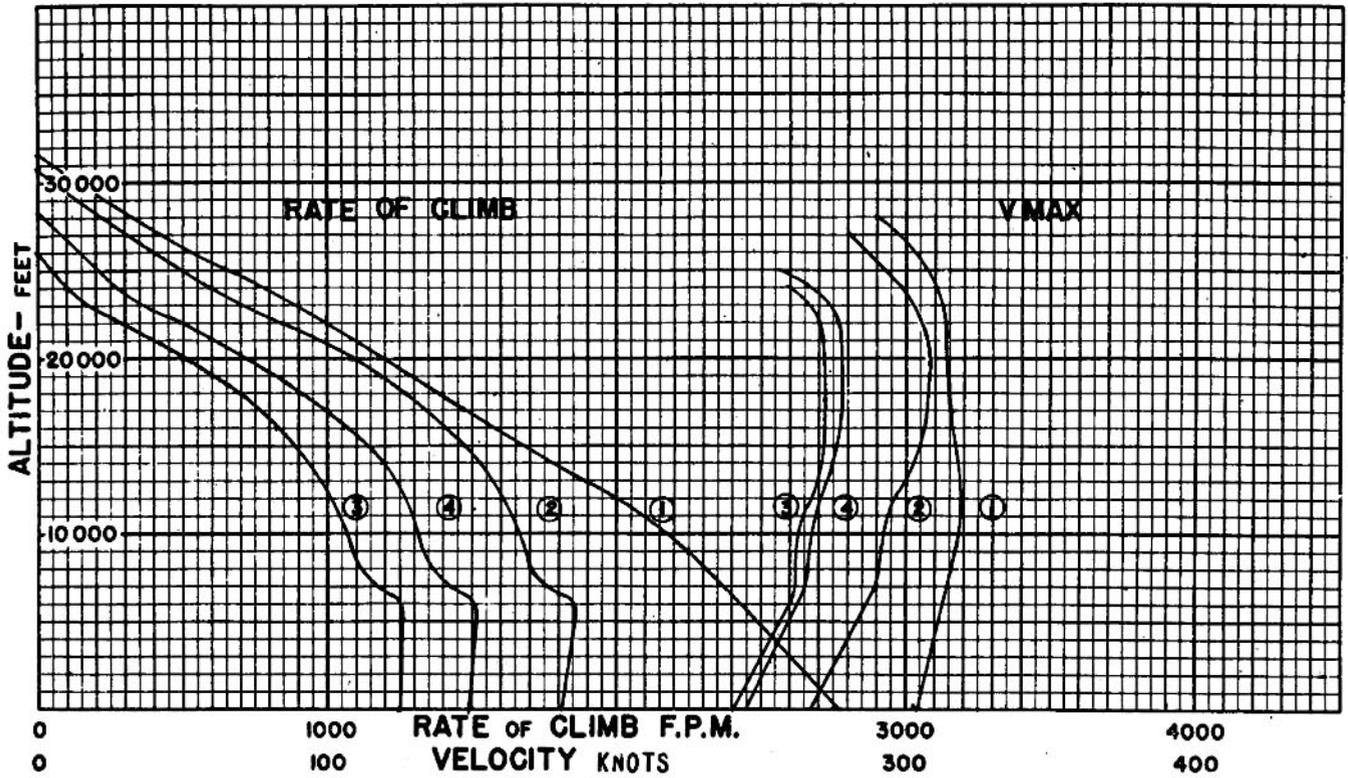
SCOUTING RADIUS FORMULA NO. S-1-CONDITIONS NOS. - 2

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 ent. distance. Practical scout radius is reduced 6.7 nautical miles for each min. of combat power operation at 1500 ft.

BOMBER COMBAT RADIUS FORMULA NO. B-1-CONDITIONS NOS. - 3 & 4

RADIUS = CLIMB + CRUISE-OUT + CRUISE BACK

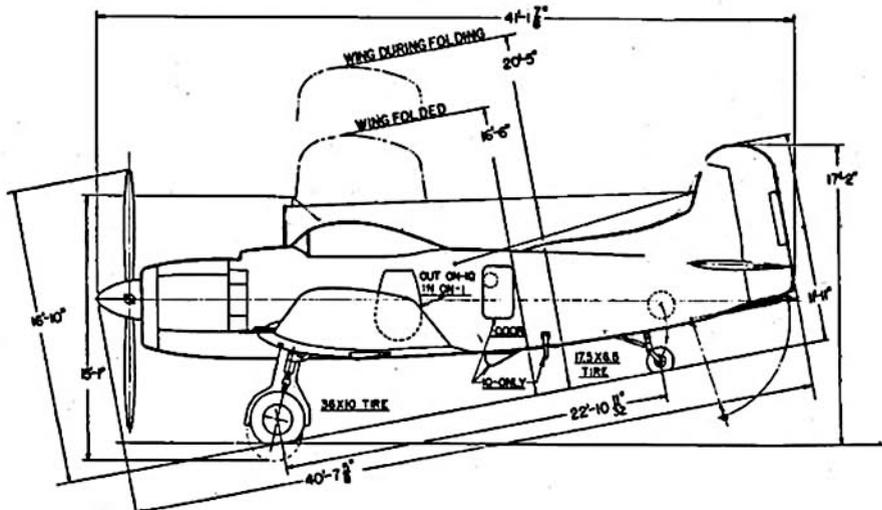
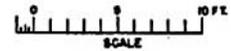
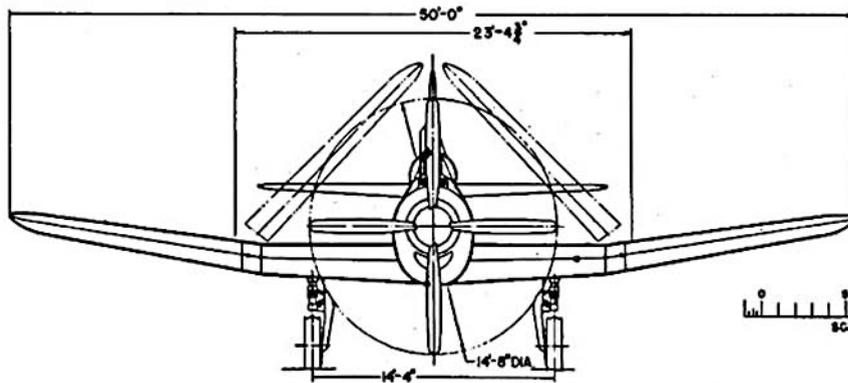
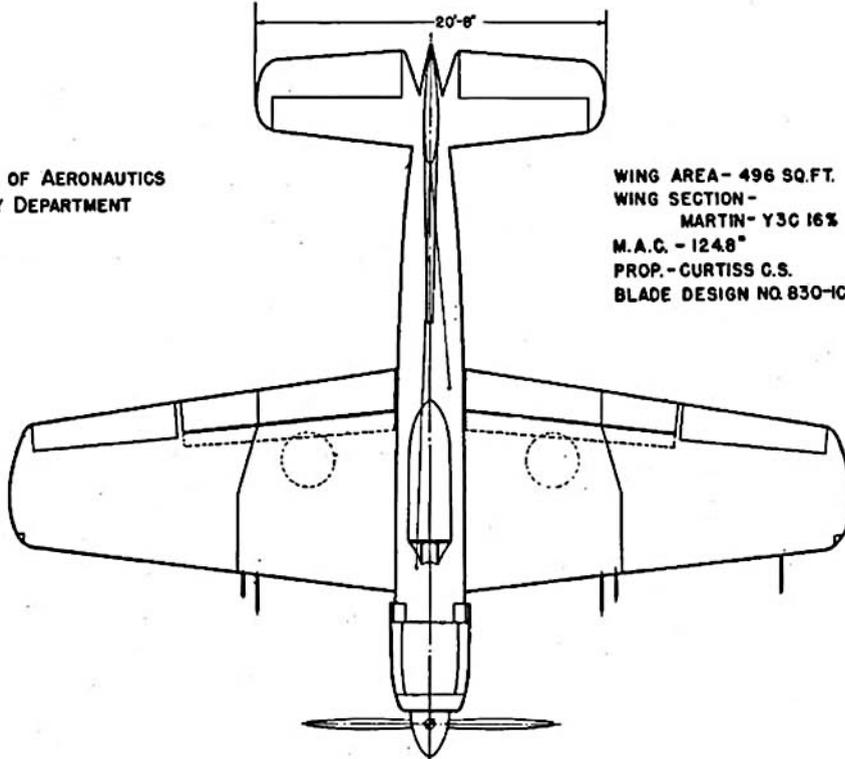
WARM-UP	RENDEZVOUS	CLIMB	CRUISE OUT	DROP TANKS	COMBAT	CRUISE BACK	RESERVE
20 min.	20 min. at sea level	to 15000 ft.	at 15000 ft.	DESCEND to 1500 ft	15 min. at 1500 ft.	at 1500 ft.	60 min. at
<u>TAKE-OFF</u> 1 min.	at 60% N.S.P.	at Nor. Pr.	Vel. for Max. Range	DROP BOMBS FIRE ROCKETS	5 min. WEP. 10 min.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



○ LOADING CONDITION COLUMN NUMBER

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA - 496 SQ.FT.
WING SECTION -
MARTIN - Y3C 16%
M.A.C. - 124.8"
PROP. - CURTISS C.S.
BLADE DESIGN NO. 830-1C4-6

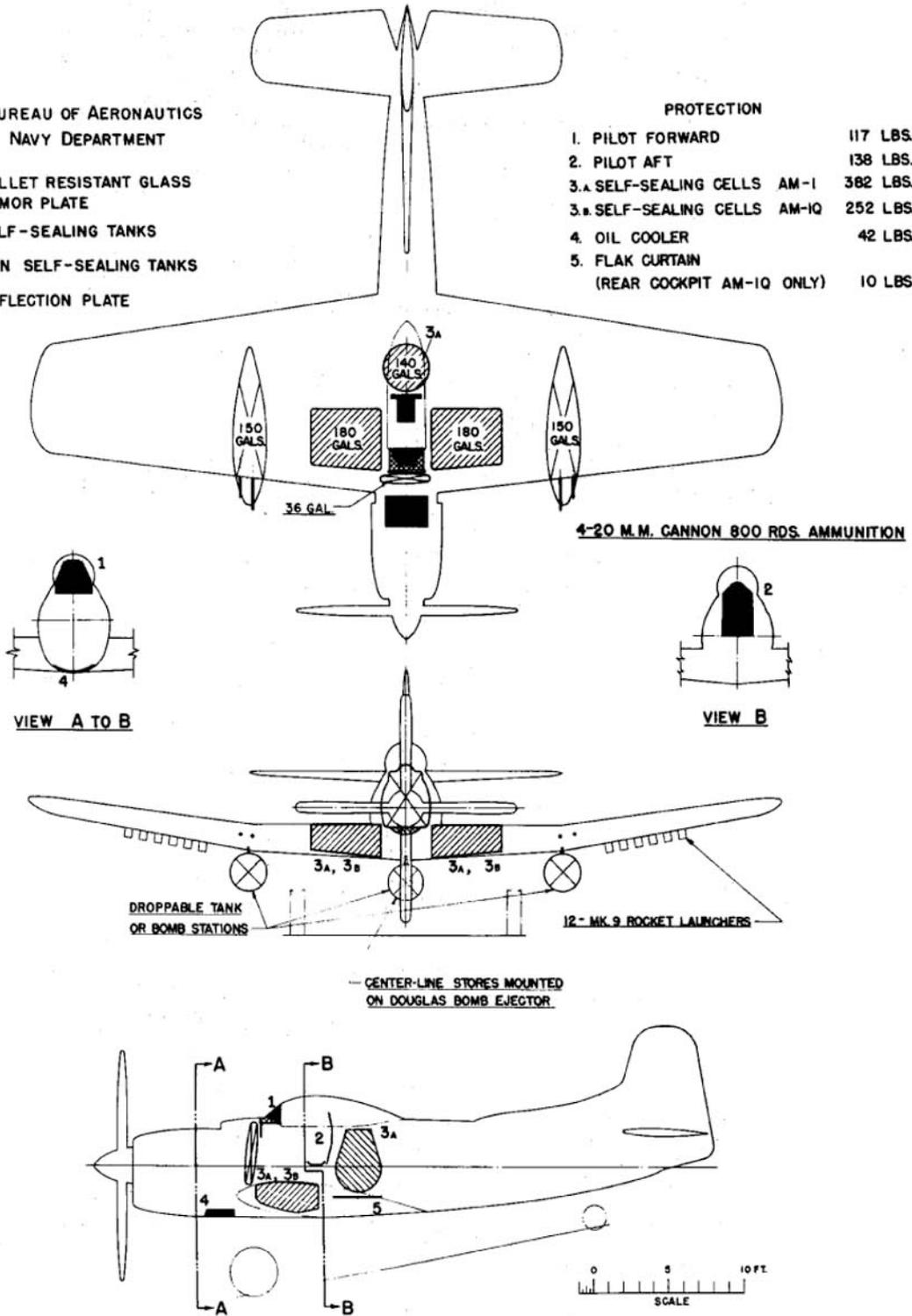


BUREAU OF AERONAUTICS
NAVY DEPARTMENT

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

PROTECTION

- | | |
|--|----------|
| 1. PILOT FORWARD | 117 LBS. |
| 2. PILOT AFT | 138 LBS. |
| 3. SELF-SEALING CELLS AM-1 | 382 LBS. |
| 3. SELF-SEALING CELLS AM-IQ | 252 LBS. |
| 4. OIL COOLER | 42 LBS. |
| 5. FLAK CURTAIN
(REAR COCKPIT AM-IQ ONLY) | 10 LBS. |



VIEW A TO B

VIEW B

DROPPABLE TANK
OR BOMB STATIONS

12 MK 9 ROCKET LAUNCHERS

CENTER-LINE STORES MOUNTED
ON DOUGLAS BOMB EJECTOR

0 5 10 FT.
SCALE