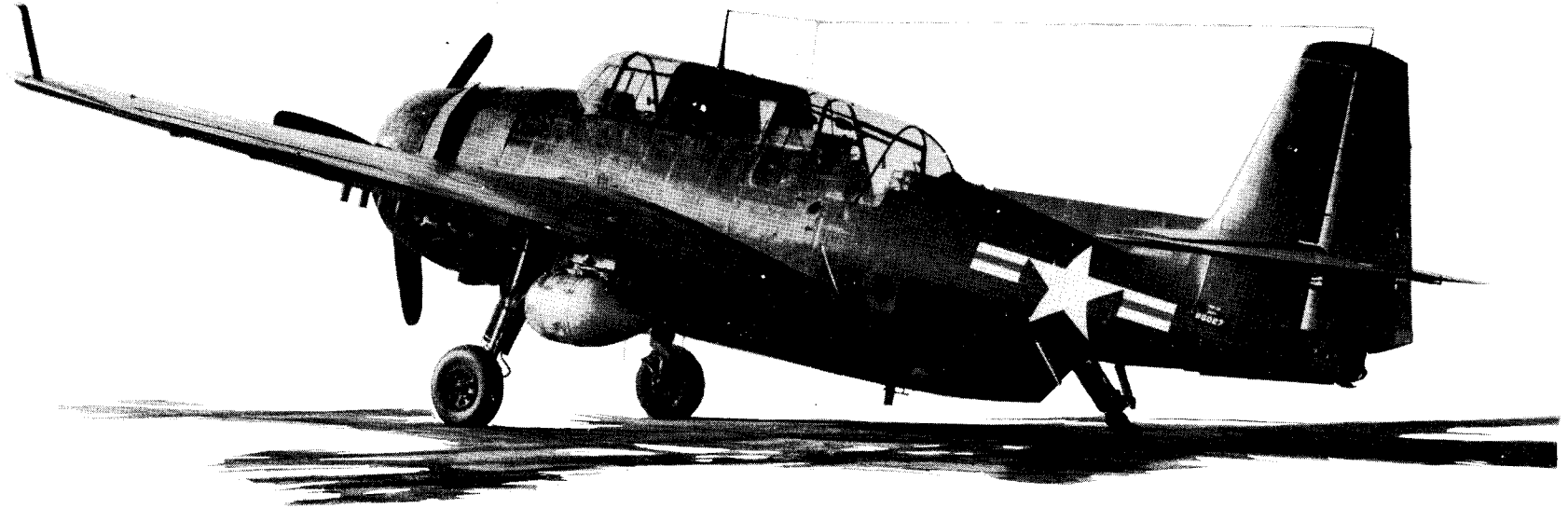


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FOR OPEN PUBLICATION

*R. C. Copeland*

MAR 16 1992

CONGRESSIONAL AND  
PUBLIC AFFAIRS OFFICE  
NAVAL AIR SYSTEMS COMMAND

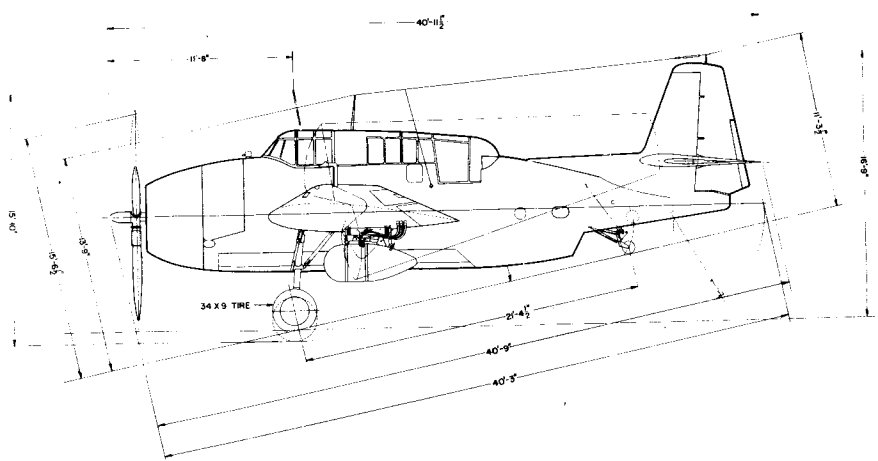
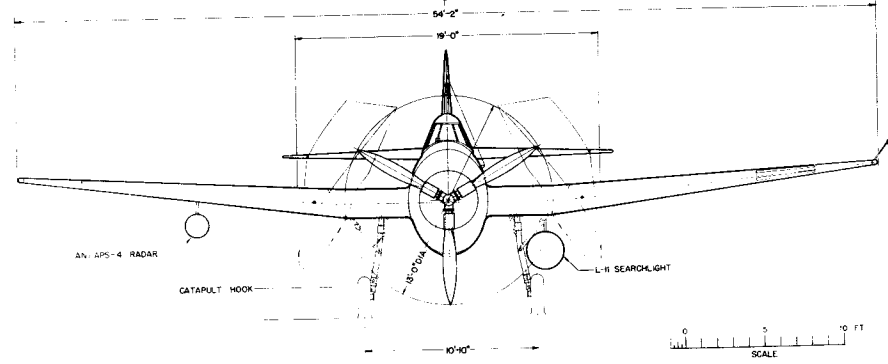
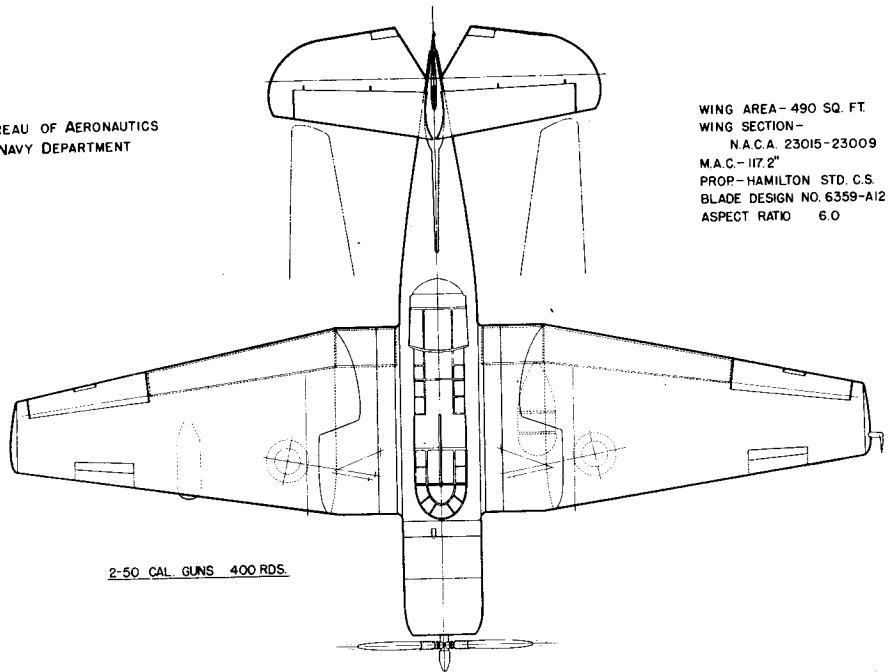


# STANDARD AIRCRAFT CHARACTERISTICS

## TBM-3S "AVENGER"

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  
ASPECT RATIO 6.0



DESCRIPTIVE ARRANGEMENT

## MISSION AND DESCRIPTION

This is a carrier based anti-submarine modification of the TBM-3E which has had wide service use as a torpedo bomber. The TBM-3S is basically similar to the TBM-3E and has the addition of electronic gear to adapt it to anti-submarine warfare. The plane is presently being evaluated and is planned as an interim ASW aircraft for use until replaced by the AF-1S and -2S.

Structure is conventional, using single spar wing, hydraulically or manually folded, carrying a split flap of 62.5 sq. ft. area.

## DIMENSIONS

SPAN.....54'-2"  
LENGTH.....41'-0"  
HEIGHT.....15'-7"  
WING AREA.....490 sq. ft.  
M.A.C.....117.2"  
TREAD.....10'-10"

## WEIGHTS

Loadings	Lbs.	L.F.
EMPTY.....	11055.....	
BASIC.....	11870.....	
DESIGN.....	14500.....	4.0
COMBAT.....	15097.....	3.7
MAX.T.O.....	17600.....	2.8
MAX.LAND....	16000.....	

## FUEL AND OIL

Gals. - No. Tanks - Location  
335.....3..Fuselage(protect.  
150.....1..Wing (drop)  
FUEL GRADE.....100/130  
FUEL SPEC.....AN-F-48

## OIL

CAPACITY (Gals.).....32  
SPEC.....AN-O-8  
GRADE.....1120

## ELECTRONICS

SEARCH RADAR.....AN/APR-1  
SONOBUOY REC.....AN/APR-16B  
RCM.....AN/APA-70  
RANGE RECEIVER.....AN/ARC-5  
VHF COMMAND.....AN/ARC-1  
HOMING.....AN/ARR-2  
IFF.....AN/APX-2  
RADAR.....AN/APS-4  
ALTIMETER.....AN/APN-1  
SEARCHLIGHT.....L-11  
HF LIAISON.....AN/ART-13

## POWER PLANT

NO. & MODEL....(1) R-2600-20  
MFR.....WAC  
SUPERCH.....1 Stage, 2 Speed  
PROP.GEAR RATIO.....16:9  
PROP. MFR.....Ham. Std.  
PROP.DES.NO.....6359-A12  
NO.BL./DIA.....3/13'-0"

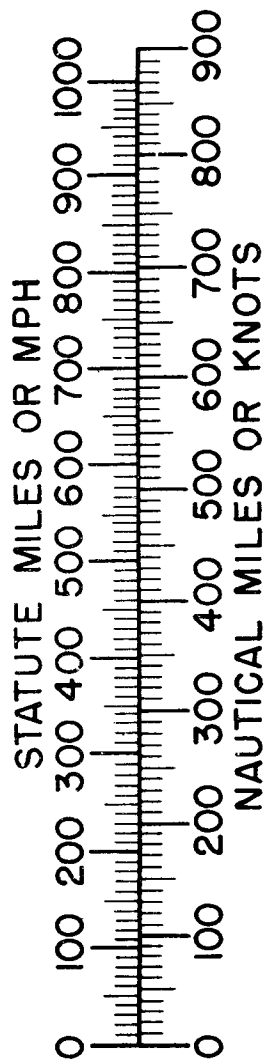
## RATINGS

	Bhp. @	Rpm. @	Alt.
T.O.	1900	2800	S.L.
	or 1800	2600	S.L.
MIL.	1750	2600	3200'
	1450	2600	15000'
NORMAL	1600	2400	5000'
	1350	2400	14800'

SEE NOTE  
SPEC NO. N-776-B

## ORDNANCE

GUNS  
No. Size Location Rds.  
2 .50 Cal. Wing 400  
MK. 8 Illum. - Sight  
BOMBS & ROCKETS  
Type Size Location No.  
Torp. Mk. 34 B.B. 1  
HVAR 5" Wing 8  
MK. 23-6 Bombsight  
MK. 41-1 Aircraft Periscope  
Camera K-25  
2 Sonobuoys, D  
12 Sonobuoys, N.D.  
18 Float lights, MK.5  
2 Flares MK.6



## PERFORMANCE SUMMARY

LOADING CONDITION		(1) Torpedo 1-MK. 34 Torp. 1-150 Gal. Ext. Tank	(3) Rocket-Torp. 8-5" HVAR 1 MK34 Torp.
TAKE-OFF WEIGHT	lbs	17280	17377
Fuel	Fixed/Drop	2010/900	2010
Bombs	lbs	1160	1160
	lbs		
Wing/Power Loading (A)	lbs/sq.ft. lbs/ bhp	35.3/11.9	35.5/12.0
Stall Speed--Power off	kn	70.8	71.0
Stall Speed--Power off - No Fuel	kn	64.6	66.8
Stall Speed--Power on	kn	68.4	68.6
Maximum Speed/Alt (B)	kn/ft	208/17300	207/17300
Take-off Distance, deck -- calm	ft	964	978
Take-off Distance, deck 25 kn.	ft	423	430
Take-off Distance, Airport	ft		
Rate of climb -- sea level (B)	ft/min	1395	1295
Service Ceiling (B)	ft	25600	25500
Time-to-climb 10000 ft. (B)	min	9.0	9.1
Time-to-climb 20000 ft. (B)	min	23.9	24.0
Combat Range/V av 1500	ft. n.mi/kn	965/124	630/126
Combat Radius/V av 1500	ft. n.mi/kn	385/124	250/126
LOADING CONDITION		(2) Combat	(4) Combat
GROSS WEIGHT	lbs	15097	15097
Engine power		Military	Normal
Fuel	lbs	2010	2010
Bombs/Tanks			
Max. speed at sea level	kn	205	198
Max. speed/ACA ft.	kn	223/16400	218/17400
Combat speed/Alt.	kn/ft	208/1500	200/1500
Rate of climb SL	ft/min	1860	1645
Ceiling for 500 fpm R/C	ft	23700	23100
Time-to-climb/Alt.	min/ft	15.4/20000	17.1/20000

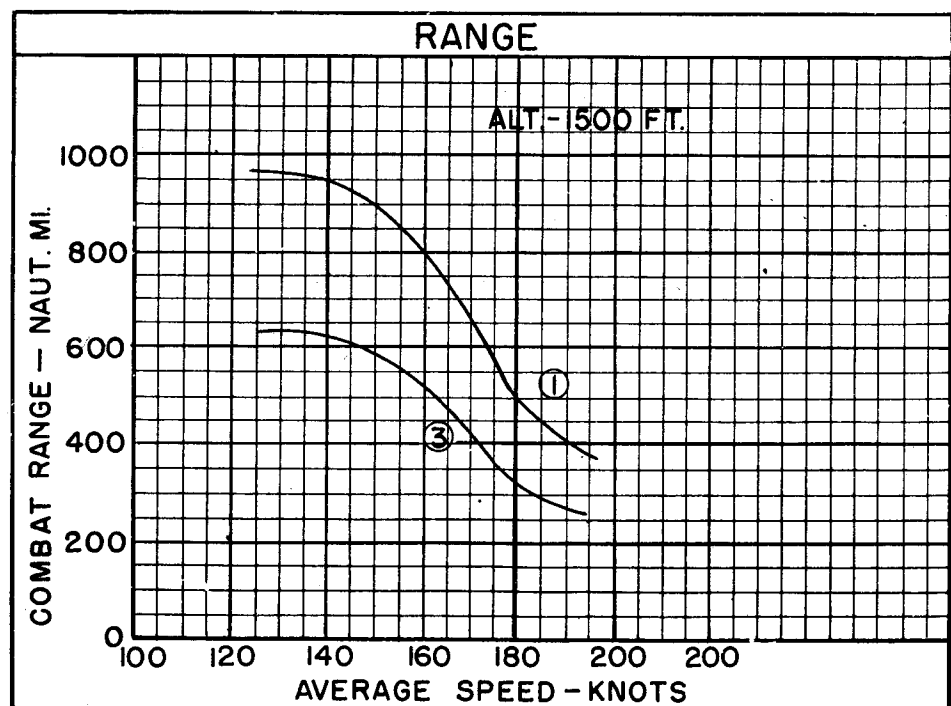
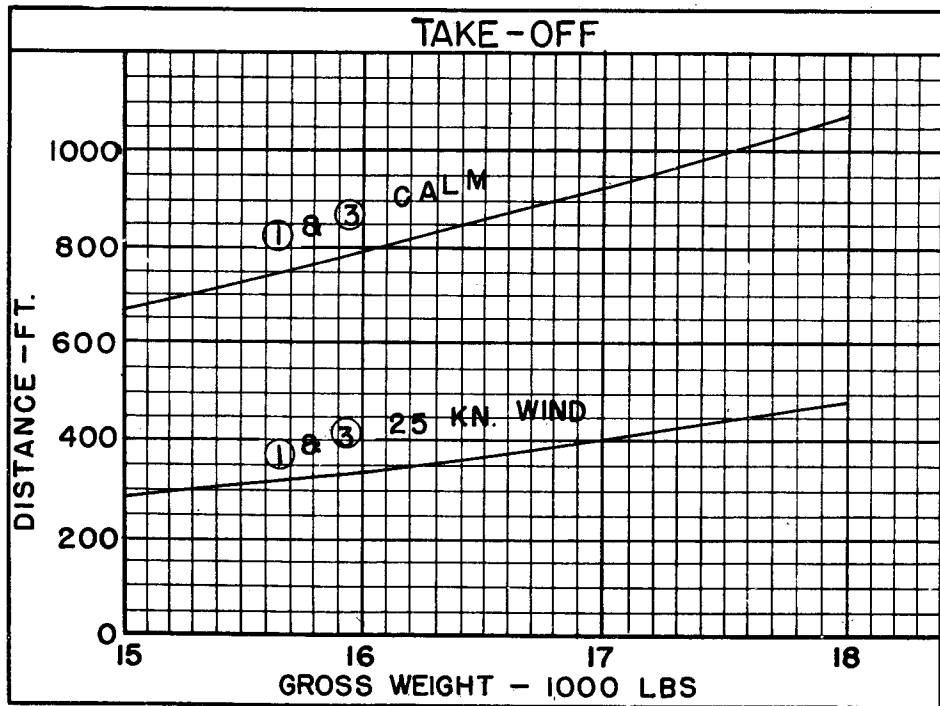
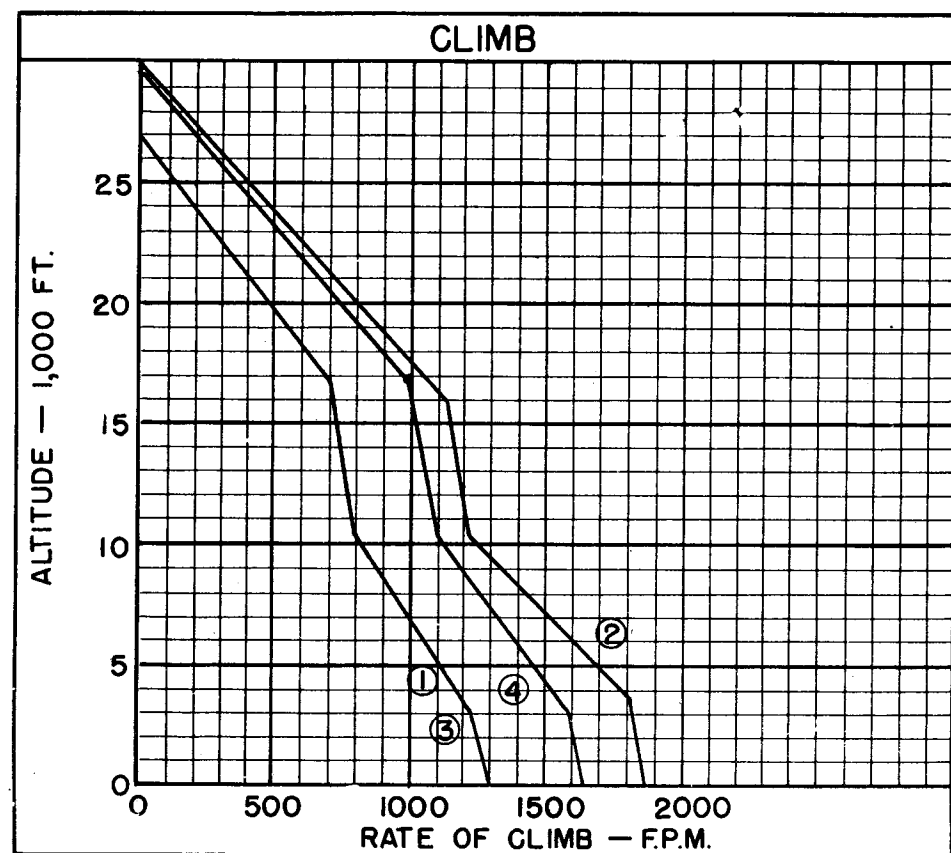
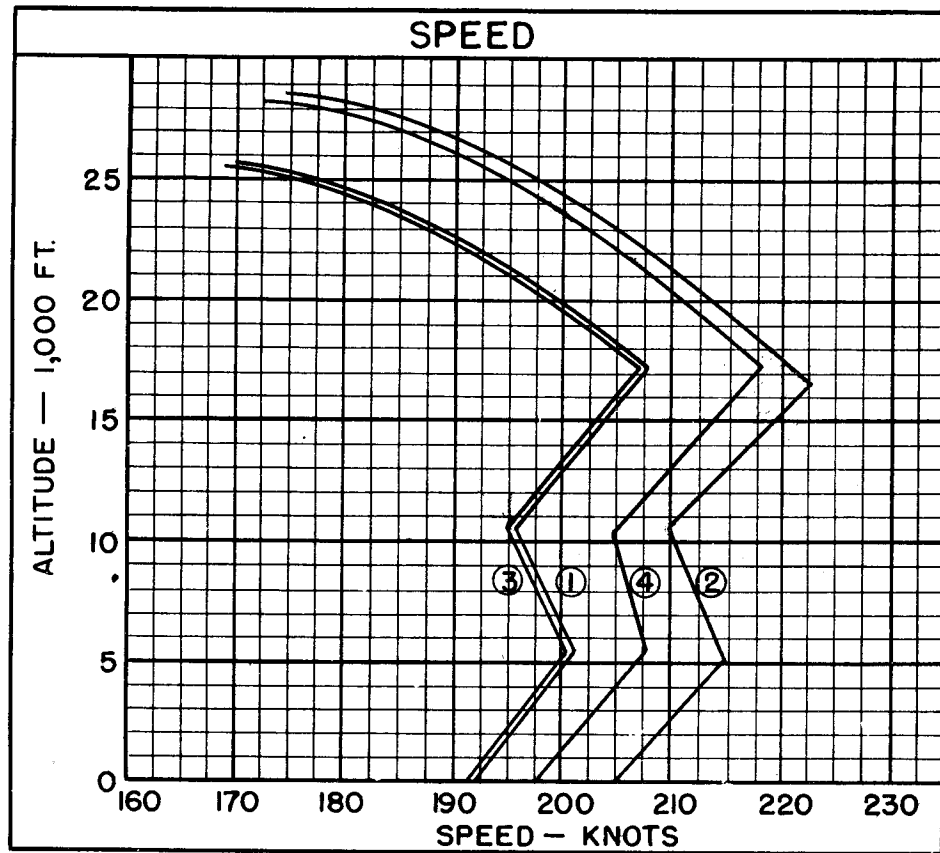
### NOTES

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

Performance is based on flight test of the TEM-3 airplane.

Range and radius are based on flight test fuel consumption of the TEM-3 airplane increased by 5%.

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 Rocket launchers, AN/APS-4, searchlight, and camera aboard in all conditions, sway bracing and rack installed only when drop tank is carried.  
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# NOTES

Spotting: 200ft. length is required to spot 25 airplanes on the 96 ft. wide deck immediately aft of the forward ramp on CV-9 Class carriers.

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Combat Radius is .4 of maximum combat range at 1500 ft.

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Engine ratings from Flight Test:

	<u>Bhp.</u>	<u>Rpm.</u>	<u>Alt.</u>
T.O.	1900	2800	S.L.
Mil.	1750	2600	3700
	1450	2600	15900
Norm.	1600	2400	4200
	1350	2400	16900