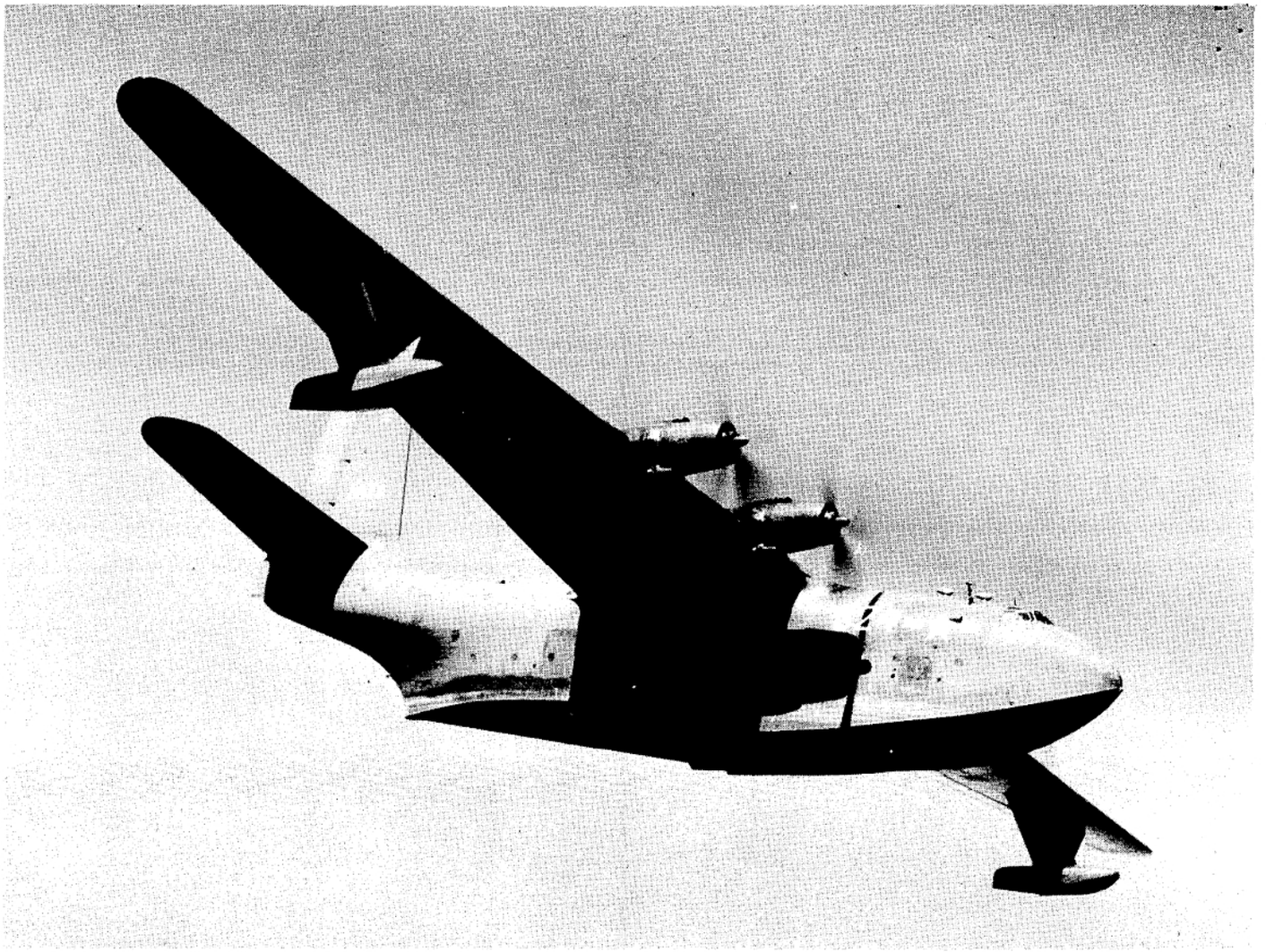
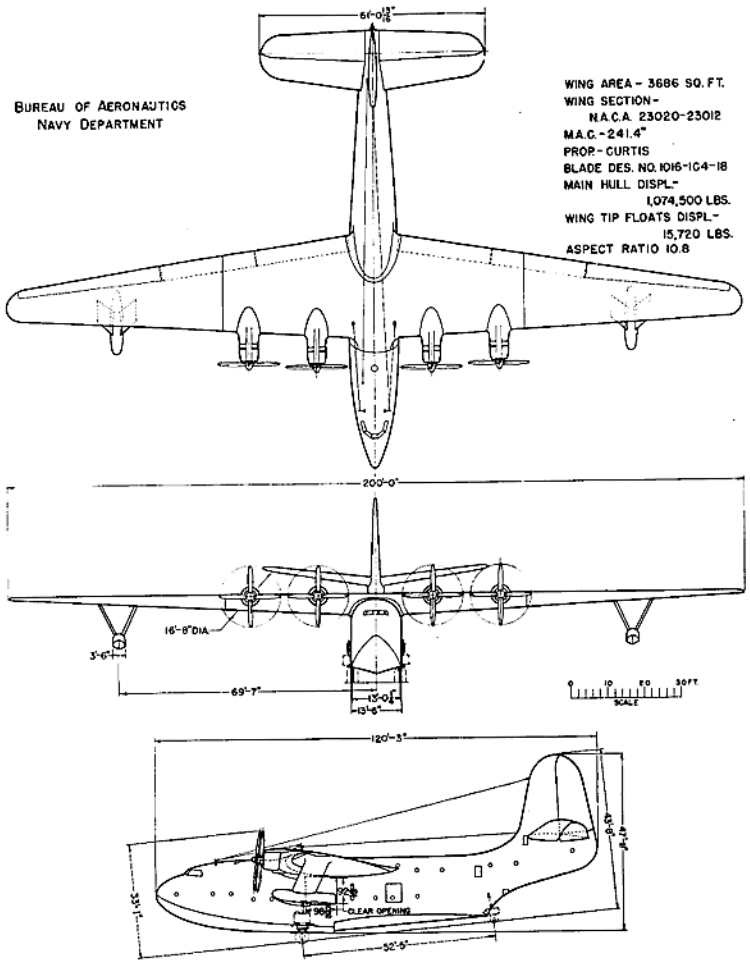


STANDARD AIRCRAFT CHARACTERISTICS

JRM-1 "MARS"



DESCRIPTIVE ARRANGEMENT

MISSION AND DESCRIPTION

Primary mission is for cargo and personnel transport. It is also designed for employment as troop (138 fully equipped men) and for casualty transport (100 litters plus ten attendants). The airplane takes off and lands on water and can be handled ashore using beaching gear.

This airplane is a development of the Model XPB2M-1R airplane (MARS) which was originally designed in 1935. It is a high-wing, all-metal, four-engine seaplane of conventional design. Numerous large hatches and hull doors with powered cargo hoist facilitate loading. Tie down fittings are provided in cargo compartments. Built for the U. S. Navy by Glenn L. Martin Co., to meet Navy and CAA transport specifications. Elevator and rudder control systems have boost assist. Inboard engines have reversible pitch propellers. Has jato-assisted take-off.

Rearward-moving slotted flaps fitted.

WEIGHTS

Loadings	Lbs.	L.F.
EMPTY	77609	
BASIC	80229	
DESIGN	165000	2.5
MAX.T.O	155000*	2.7
MAX. LD	155000	

*Limited by 3-Engine climb after T.O.

Max. Wt. on Beaching Gear.....100,000

All weights are actual.

FUEL AND OIL

Gal.	No. Tanks	Location
1220	2	Wing
12000	6	Hull

FUEL GRADE.....100/130

FUEL SPEC. AN-F-48

OIL

CAPACITY (gal.).....616

SPEC.....AN-O-8

GRADE.....1120

DIMENSIONS

SPAN.....200'-0"

LENGTH.....120'-3"

HEIGHT..... 43'-8"*

WING AREA.....3686 sq. ft.

M.A.C.....20'-1"

*Height is for airplane on beaching gear.

ELECTRONICS

VHF COMMAND.....AN/ARC-1

LORAN.....AN/APN-4

COMPASS.....SCR-269

LF-MF-HF LIAISON...AN/ART-13 and AN/ARC-5

P/A SYSTEM.....

MARKER BEACON REC...AN/ARN-8

ALTIMETER.....AN/APN-1

IFF.....AN/APX-2

POWER PLANT

NO. & MODEL.....(4) R-3350-8

MFR.....Wright

SUPERCH.....1 Stage, 2 Speed

PROP.GEAR RATIO.....16:7

PROP MFR. .....Curtiss

PROP DESIGN NO....1016-1C4-18

NO.BL./DIA.....4/16'-6"

RATINGS

	Bhp.	@ Rpm.	@ Alt.
T.O.	2400	2600	S.L.
Mil.	2250	2600	4700
	1900	2600	15800
Norm.	2100	2400	4000
	1800	2400	16400

SEE NOTE

SPEC NO. N-779-F

ACCOMMODATIONS

CREW.....11

TROOPS.....138

LITTERS.....100 (plus 10 seats)

PASSENGERS.....63

CARGO SPACE.....455 sq. ft.

FLOOR LOADING.....300 psf

Miniature bridge crane under wing root with 5000# electric hoist.

PERFORMANCE SUMMARY

LOADING CONDITION		(1) Cargo Overload	(2) Cargo Passenger	(3) Troop Transport 132 Troops	
TAKE-OFF WEIGHT	lbs	155000	145000	145000	
Fuel	lbs	49356	39810	26718	
Bombs	lbs				
Payload	lbs	20000	20000	34000	
Wing/Power loading (A)lbs/sq.ft./lbs/	bhp	42.1/21.5	39.4/20.1	39.4/20.1	
Stall Speed--Power off	kn	79.4	76.8	76.8	
Stall Speed--Power off - No Fuel	kn	65.5	65.4	69.4	
Stall Speed--Power on	kn	69.2	62.0	62.0	
Maximum Speed/Alt (B)	kn/ft	194/5800	197/5800	197/5800	
Take-off Distance, deck -- calm	ft				
Take-off Distance, deck kn.	ft				
Take-off Time	Sec.	155	55	55	
Rate of climb -- sea level (B)	ft/min	615	720	720	
Service Ceiling (B)	ft	19100	20800	20800	
Time-to-climb 10000 ft. (B)	min	20.5	16.6	16.6	
Time-to-climb 20000 ft. (B)	min		49.0	49.0	
Combat Range/V av 1500 ft.	n.mi/kn	3075/126	2500/125	1600/126	
Combat Radius/V av ft.	n.mi/kn				
LOADING CONDITION					
GROSS WEIGHT	lbs				
Engine power					
Fuel	lbs				
Bombs/Tanks					
Max. speed at sea level	kn				
Max. speed ft.	kn				
Combat speed/Alt.	kn/ft				
Rate of climb SL	ft/min				
Ceiling for 500 fpm R/C	ft				
Time-to-climb/Alt.	min/ft				

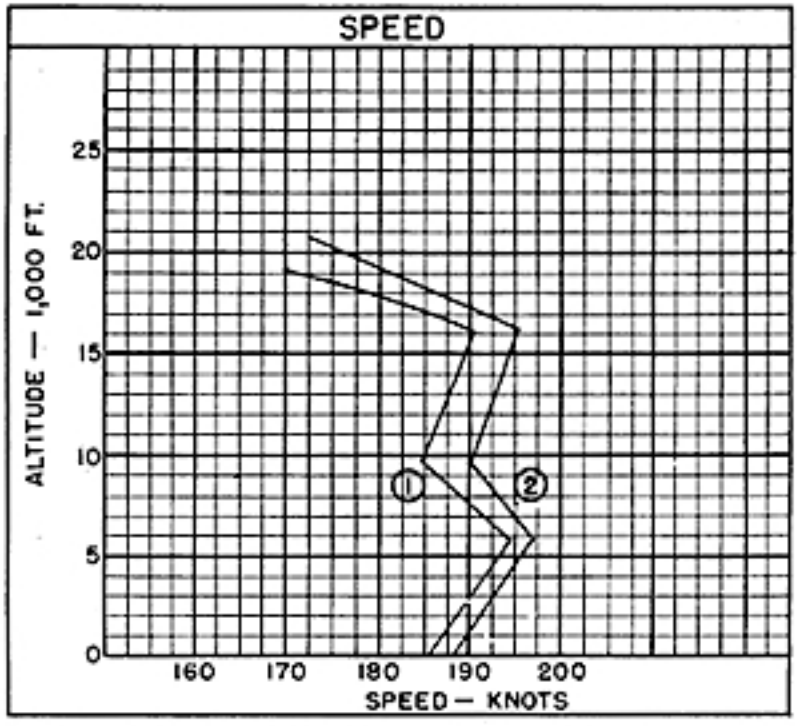
NOTES

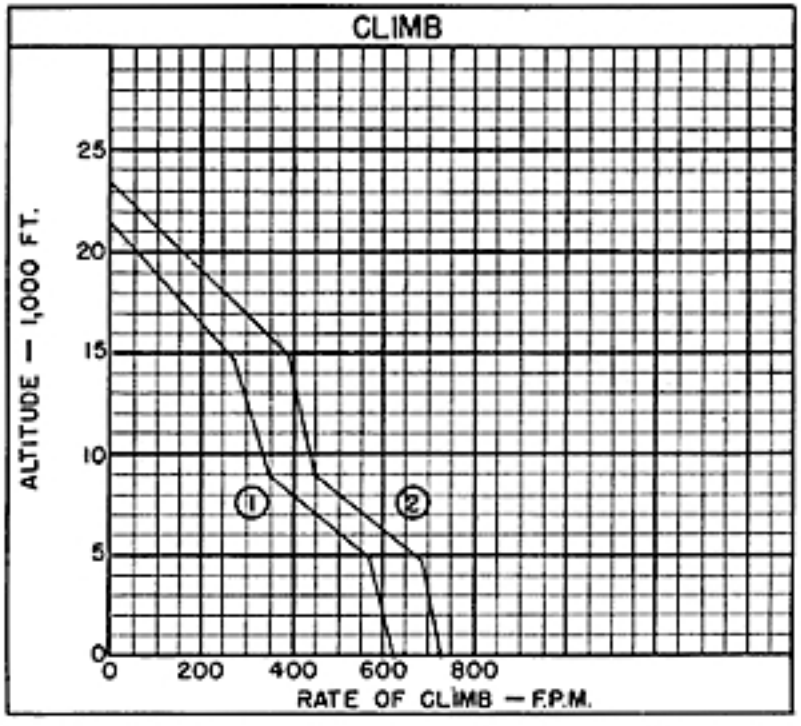
(A) BHP at Maximum Critical Altitude
(B) Normal BHP

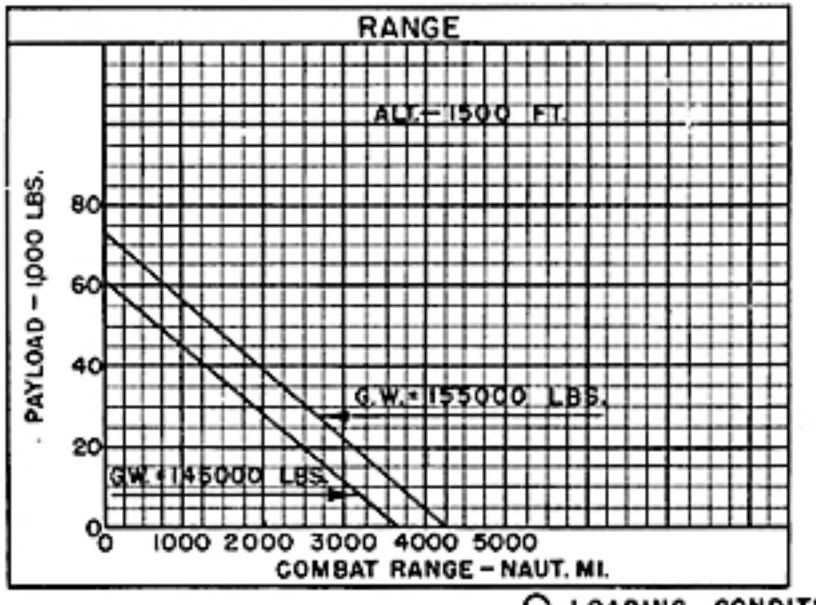
Performance is based on flight test of the JRM-1 airplane. Range is based on flight test fuel consumption data of the JRM-1 increased by 5%.

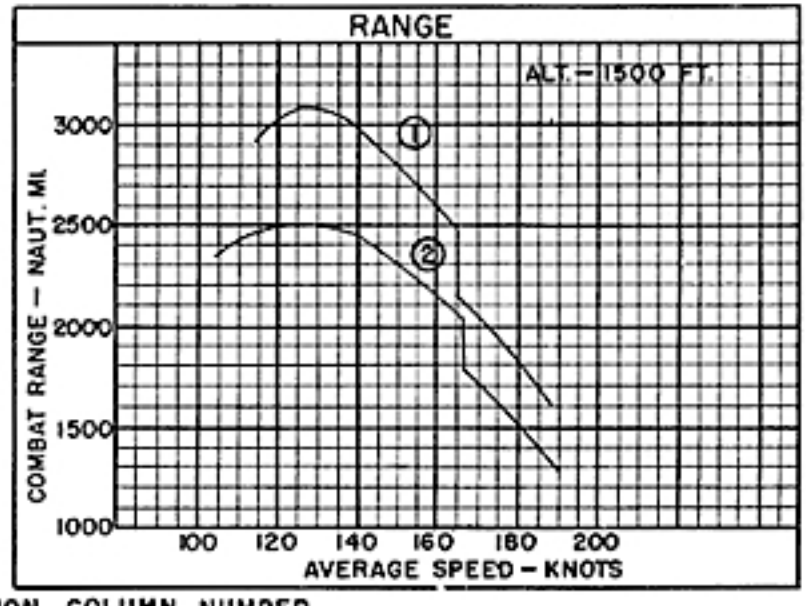
Performance calculated without de-icing equipment. Addition of de-icing equipment reduces Vmax by 4 knots and maximum combat range at 1500 ft. by 2.5%.

NOTES CONTINUED ON LAST PAGE









○ LOADING CONDITION COLUMN NUMBER

NOTES

Performance with one engine inoperative, flaps neutral, and feathered propeller is estimated to be:

Gross Weight.....145,000#
Rate of Climb-S.L. - T.O. Power.....510 ft/min.
Service Ceiling - Normal Power.....9,000 ft.

Take-off time in parenthesis is for JATO, using twelve 14-AS-1000-D4 units fired in banks of four.

Engine ratings from Flight Test:

	Bhp.	Rpm.	Alt.
T.O.	2400	2600	S.L.
Norm.	2100	2400	S.L. to 4800
	1800	2400	9000' to 14300