

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1	2	3	4
LOADING CONDITION		SCOUT (COMBAT) *	SCOUT (COMBAT) *	SCOUT One 58 Gal. Tank External	A.S. PATROL 1-350#
GROSS WEIGHT	LBS.	5316	5316	5884	5836
EMPTY WEIGHT	ESTIMATED LBS.	3973			
FUEL/OIL	GALS.	120/8	120/8	178/10	120/8
FIXED GUNS/AMMUNITION		2-.50 Cal./400 rds.			
FLEXIBLE GUNS/AMMUNITION		NONE			
ENGINE POWER USED FOR PERFORMANCE		MILITARY	NORMAL	NORMAL	NORMAL
WING LOADING	LBS./SQ.FT.	22.3	22.3	24.7	24.5
POWER LOADING ①	LBS./BHP.	9.7	10.6	11.8	11.7
V-MAX. SEA LEVEL	KN	163	160	150	150
V-MAX./CRITICAL ALT.	KN /FT.	171/5300	172/8800	161/8700	161/8700
V-STALL GROSS WEIGHT ②	KN	53.2	53.2	55.9	55.7
V-STALL WITHOUT FUEL ②	KN	49.4	49.4	50.6	52.2
TIME-TO-CLIMB -10000 FT-	MIN.	8.5	8.8	11.3	11.3
TIME-TO-CLIMB -20000 FT-	MIN.	30.3	27.2	-	-
SERVICE CEILING	FT.	21300	22300	19600	19800
TAKE-OFF DISTANCE -CALM-	FT.	-	-	-	-
TAKE-OFF DISTANCE -15 KN-	FT.	-	-	-	-
TAKE-OFF DISTANCE -25 KN-	FT.	-	-	-	-
TAKE-OFF DISTANCE -50 FT. OBST.	FT.	-	-	-	-
TAKE-OFF TIME	SECONDS	27	27	34	33
RATE OF CLIMB -SL-	FT./MIN.	1350	1210	980	990
MAX. RANGE / V-AV. ③	NMI/KN	-	780/96	1005/94	670/96
RANGE / V-AV. -60%NSP-③-	NMI/KN	-	-	-	-
SEARCH RADIUS / V-AV. -20%R- (P 1)	NMI/KN.	-	-	-	210/97
A.S.W. RADIUS / V-AV. -20%R- (PA-1)	NMI/KN.	-	-	-	175/97
SCOUT RADIUS (S-1)	N MI.	-	220	295	-
COMBAT RADIUS	N MI.	-	-	-	-
ENGINE / PROP. GEAR RATIO		Ranger V-770-8 (3:2)			
ENGINE RATING BHP/RPM/ALT.	MILITARY	NORMAL		TAKE-OFF	
	550/3300/SL-4500	500/3150/SL-8000		550/33--/S, L.	
TANKAGE IN GALLONS		OIL	FUEL	OFFENSIVE ARMAMENT	
AUX. FIXED	PROTECTED	10	120	WINGS (External): Bombs: 2-100# Depth Bombs: 2-350#, or 2-325# NOTE: Starboard wing bomb-rack available for AN/APS-4 or bombs. Port rack available for droppable tank or bombs. A Douglas gun package may be carried on either rack/	
	UNPROTECTED				
	TOTAL - FIXED INTERNAL	10	120		
	DROPPABLE				
	DROPPABLE wing external (left)		58		
TOTAL	10	178			
NOTE	① BHP AT MAX. CRIT. ALT.				
	② STALL - WITHOUT POWER				
	③ AT 1500' ALTITUDE				

* See Page 2

NAVAER-15198 (Rev. 9-44)

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COLUMN NUMBER		5	6	7	
LOADING CONDITION		A.S.PATROL 1-350# One 58 gal. Tank External	RESCUE 2- CELLS	RESCUE 1- CELLS One 58 gal. Tank External	
GROSS WEIGHT	LBS.	6064	5456	5784	
EMPTY WEIGHT	- ESTIMATED - LBS.		3973		
FUEL/OIL	GALS.	178/10	120/8	178/10	
FIXED GUNS/AMMUNITION		2-.50 Cal./400 Rds.			
FLEXIBLE GUNS/AMMUNITION		NONE			
ENGINE POWER USED FOR PERFORMANCE		NORMAL	NORMAL	NORMAL	
WINGLOADING	LBS./SQ.FT.	25.5	22.9	24.3	
POWER LOADING ①	LBS./BHP	12.1	10.9	11.6	
V-MAX SEA LEVEL	KN	151	148	150	
V-MAX./ CRITICAL ALT.	KN/ FT.	162/8700	160/8700	161/8700	
V-STALL GROSS WEIGHT ②	KN	56.8	53.8	55.4	
V-STALL WITHOUT FUEL ②	KN	51.6	50.2	50.1	
TIME-TO-CLIMB -10000FT.-	MIN.	12.0	9.7	10.8	
TIME-TO-CLIMB -20000FT.-	MIN.	-	32.6	41.7	
SERVICE CEILING	FT.	19200	21000	20000	
TAKE-OFF DISTANCE -CALM-	FT.	-	-	-	
TAKE-OFF DISTANCE -15 KN-	FT.	-	-	-	
TAKE-OFF DISTANCE -25KN-	FT.	-	-	-	
TAKE-OFF DISTANCE -50 FT. OBST.	FT.	-	-	-	
TAKE-OFF TIME	SECONDS	37	29	33	
RATE OF CLIMB -SL-	FT./MIN.	920	1120	1010	
MAX. RANGE / V-AV. ③	NMI. /KN	1000/97	685/93	1020/95	
RANGE / V-AV. -60%NSP-③-	NMI. /KN	-	-	-	
SEARCH RADIUS / V-AV. -20%R-(P-1)	NMI. /KN.	315/98	-	-	
A. S. W. RADIUS / V-AV. -20%R-(PA-1)	NMI. /KN.	265/98	-	-	
SCOUT RADIUS	NMI.	-	-	-	
RESCUE RADIUS	NMI.	-	250	420	

PERFORMANCE IS BASED ON-

CALCULATIONS

RANGE & RADIUS ARE BASED ON

ENGINE REQUIREMENT

FUEL CONSUMPTION DATA INCREASED

BY 15 PERCENT TO CONFORM WITH PAST EXPERIENCE.

* COMBAT CONDITION: Two MK51-7 bomb racks, adapters and non-droppable sway braces aboard, AN/APS-4 radar not aboard.

CLEAN CONDITION: Same as COMBAT CONDITION (1) with bomb-racks, adapters and non-droppable sway bracing all removed. V max/S.L. = 166 kn; V max/ACA = 174 kn at military power.

NOTE: AN/APS-4 in Columns (3) and (4).

Two MK51-7 bomb-racks, adapters and non-droppable sway bracing in all conditions.

Condition (1) plus Douglas gun packages (one under each wing) totaling 4-.50 cal/600 rds., decreases V max/S.L. to 151 kn; V max/ACA to 157 kn; R/C-S.L. to 1040 FT/MIN. and max. Range at 1500 Ft. to 625 NMI/96Kn.

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SCOUTING RADIUS FORMULA NO. S-1-CONDITIONS NOS. 2 & 3

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.

NOTE: SCOUTING RADIUS IS REDUCED APPROXIMATELY 3 NAUTICAL MILES FOR EACH MINUTE OF MAXIMUM RATED POWER OPERATION AT 1500 FT.

SEARCH RADIUS FORMULA NO. P-1 CONDITIONS NOS. -4, and -5

RADIUS IS 40% RANGE AT VEL. FOR MAX. RANGE AT 1500 FT. Allowance of 20% of initial fuel load for warm-up, take-off, climb and reserve is carried entire distance. Bombs, radar, tanks also carried entire distance.

NOTE: SEARCH RADIUS IS REDUCED APPROXIMATELY 3 NAUTICAL MILES FOR EACH MINUTE OF MAXIMUM RATED POWER OPERATION AT 1500 FT.

A.S.W. RADIUS FORMULA NO. PA-1 - CONDITIONS NOS. -4 and -5.

RADIUS IS 1/3 RANGE AT VEL. FOR MAX. RANGE AT 1500 FT. Allowance of 20% of initial fuel load for warm-up, take-off, climb and reserve is carried entire distance. Bombs, radar, tanks also carried ent. distance.

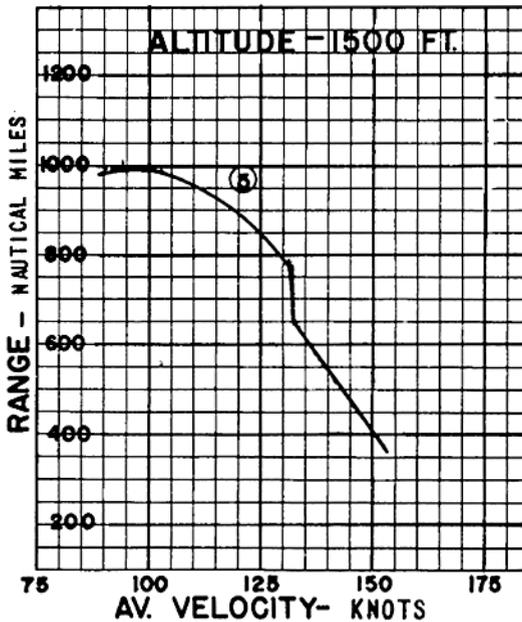
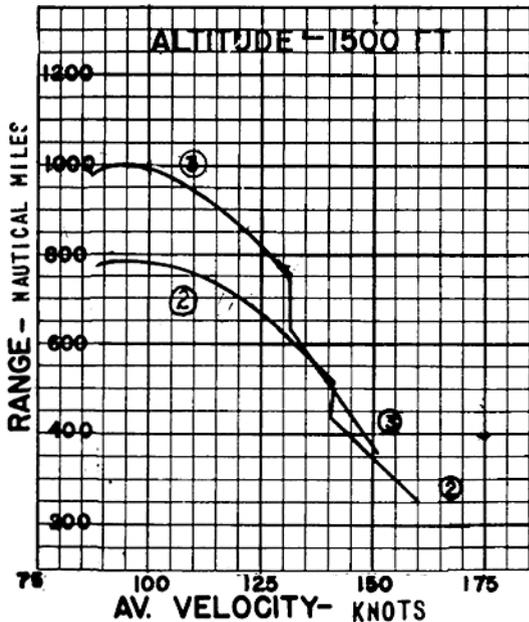
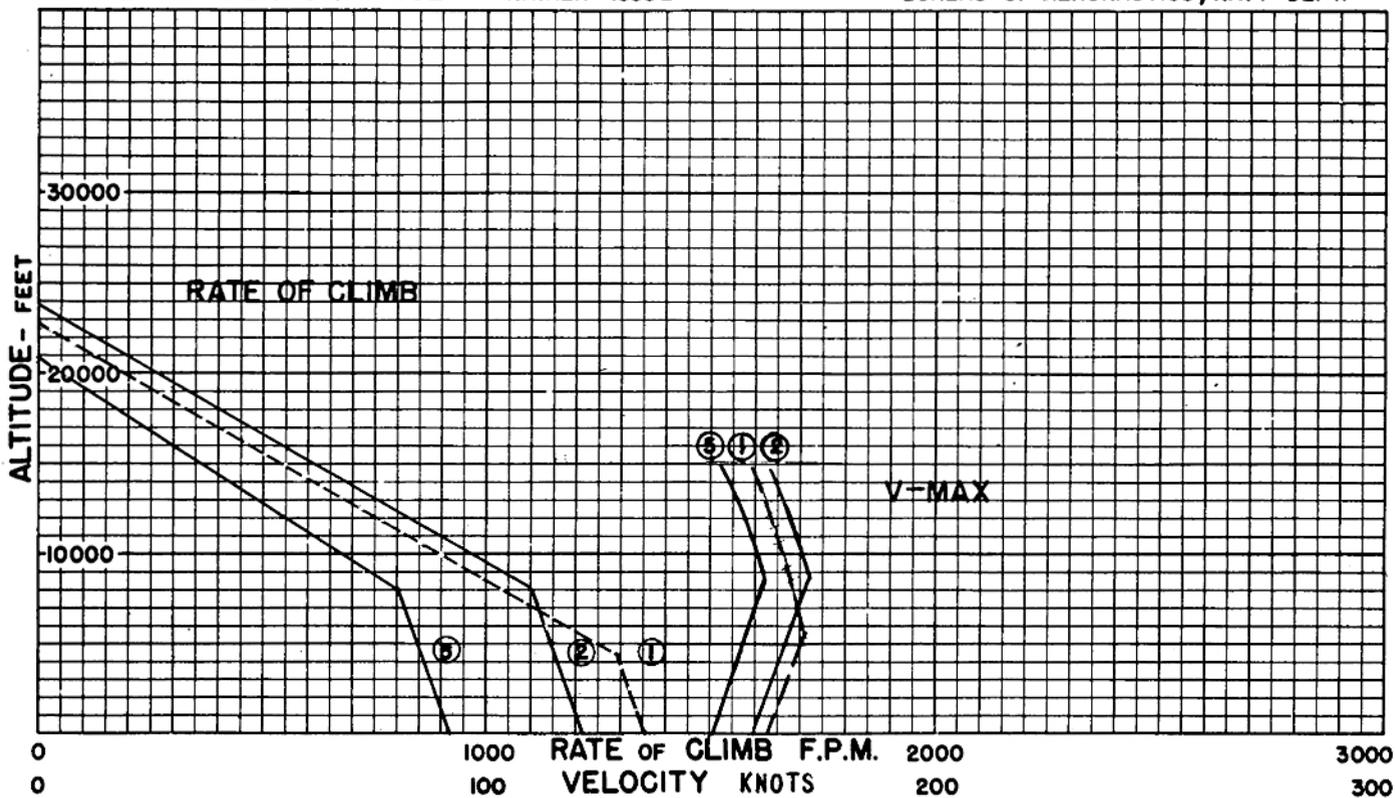
NOTE: ASW RADIUS IS REDUCED APPROXIMATELY 3 NAUTICAL MILES FOR EACH MINUTE OF MAXIMUM RATED POWER OPERATION AT 1500 FT.

RESCUE RADIUS FORMULA CONDITIONS NOS. 6 & 7

Top off and catapult; climb to 1500 feet at 60% n.s.p. and auto rich; cruise out at 1500 feet at V for max. range; 30 minutes search at 1500 feet at V for max. range; 20 minutes to land and effect rescue; 1 minute take-off; climb to 1500 feet at 60% n.s.p. and auto rich; cruise back at 1500 feet at V for max. range; 60 minutes fuel for rendezvous, landing, and reserve at V for max. range. No fuel or tanks are dropped. Fuel consumed and distance covered in climb to 1500' are not considered.

CONDITION 6. Two - 70 pound rescue cells are used to rescue two survivors at 180# each making a Gross Weight of 5476 pounds for take-off after rescue.

CONDITION 7. One - 70 pound rescue cell used to rescue one survivor at 180#, making a Gross Weight of 5449 pounds for take-off after rescue.

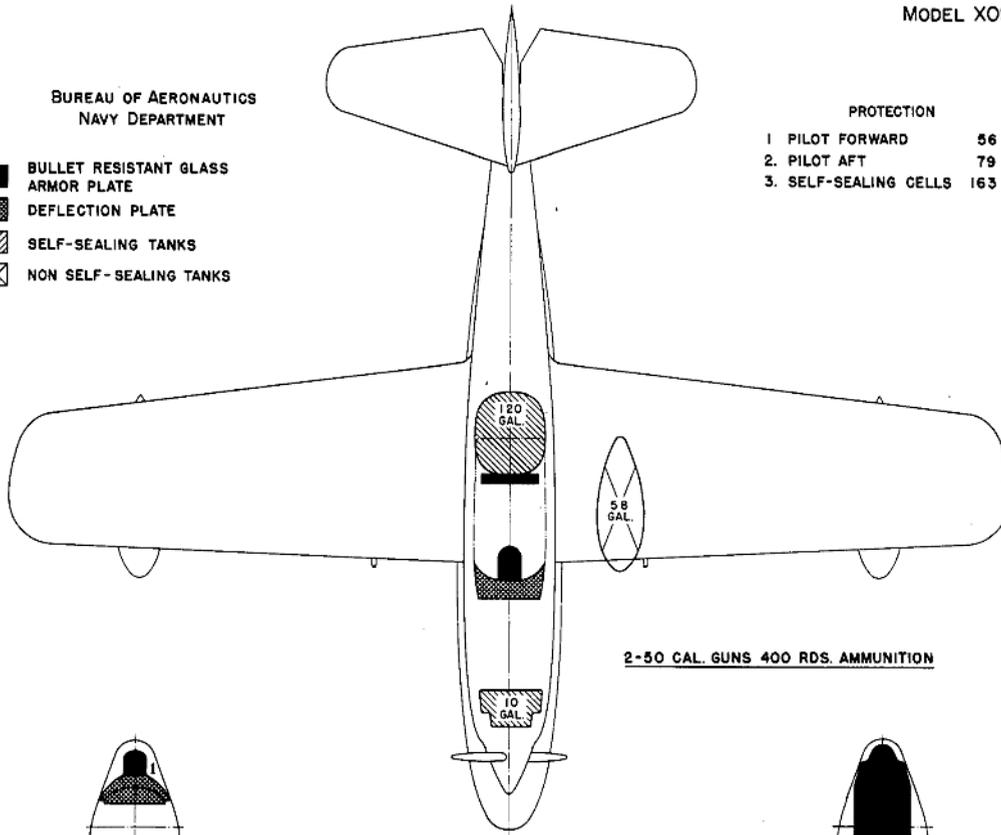


○ LOADING CONDITION COLUMN NUMBER

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

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

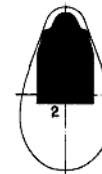
- PROTECTION
- 1. PILOT FORWARD 56 LBS.
 - 2. PILOT AFT 79 LBS.
 - 3. SELF-SEALING CELLS 163 LBS.



2-50 CAL. GUNS 400 RDS. AMMUNITION



VIEW A TO B



VIEW B

