

AIRPLANE CHARACTERISTICS & PERFORMANCE

BUREAU OF AERONAUTICS, NAVY DEPT.

COLUMN NUMBER		1		
LOADING CONDITION		RESEARCH AIRPLANE	RESEARCH AIRPLANE OVERLOAD	
GROSS WEIGHT	LBS.	11568	13170	
EMPTY WEIGHT	CALCULATED LBS.		7735	
FUEL/OIL (Turbo-Jet Engine)	GALS.	250/2-2/3	250/2-2/3	
FIXED GUNS/AMMUNITION		None		
FLEXIBLE GUNS/AMMUNITION		None		
ENGINE POWER USED FOR PERFORMANCE		MILITARY THRUST PLUS ROCKETS	MILITARY THRUST	
WING LOADING	LBS./SQ.FT.			
POWER LOADING ①	LBS./BHP.			
V-MAX. SEA LEVEL	KN.	645	490	
V-MAX.	30,000 ¹ KN/FT.	610	507	
V-STALL GROSS WEIGHT ②	KN.		123.7	
V-STALL WITHOUT FUEL ②	KN.		99.2	
TIME-TO-CLIMB -10000 FT.-	MIN.		4.8	
TIME-TO-CLIMB -20000 FT.-	MIN.		12.4	
SERVICE CEILING	FT.			
TAKE-OFF DISTANCE -CALM-	FT.		6570	
TAKE-OFF DISTANCE -15 KN-	FT.		5300	
TAKE-OFF DISTANCE -25 KN-	FT.		4532	
TAKE-OFF DISTANCE -50 FT. OBST.	FT.			
TAKE-OFF TIME	SECONDS			
RATE OF CLIMB -SL-	FT./MIN.		2550	
MAX. RANGE /V-AV.	③ N MI./KN.			
RANGE /V-AV.	-60% NSP-③- N MI./KN.			
SEARCH RADIUS /V-AV.	-20% R- N MI./KN.			
A.S.W. RADIUS/V-AV.	-20% R- N MI./KN.			
SCOUT RADIUS	N MI.			
COMBAT RADIUS	N MI.			
ENGINE / PROP. GEAR RATIO Westinghouse 24C Turbo-Jet Engine & 4 Rocket Engines				
ENGINE RATING BHP/RPM/ALT.	TURBO-JET ENGINES			
	MILITARY	NORMAL	TAKE-OFF	
	3000# Static Thrust/12500 RPM/SL	2290# Static Thrust/11500 RPM/SL	3000# Static Thrust/12500 RPM/SL	
	ROCKET ENGINES			
	1500# Thrust (Each)			
TANKAGE IN GALLONS		OIL	FUEL	
AUX. FIXED	PROTECTED			
	UNPROTECTED (Turbo-Jet)	2-2/3	250	
	TOTAL - FIXED INTERNAL			
	DROPPABLE			
DROPPABLE				
TOTAL	2-2/3	250		
NOTE	① BHP AT MAX. CRIT. ALT.			
	② STALL - WITHOUT POWER			
	③ AT ALTITUDE			
Performance is based on calculations. Operational endurance (see special problem - pg. 2) is based on turbo-jet engine specification fuel consumption data increased by 7.5% to conform with past experience and on rocket engine estimated fuel consumption.				

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Condition 1 represents the airplane with full turbo-jet fuel aboard but only one half of the rocket fuel.
Condition 2 represents the airplane with full turbo-jet and rocket fuel aboard.

Notes:

- (1) Total liquid rocket fuel capacity is 3198 pounds, of which 3118 pounds is assumed available for use in rocket engines.
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Operational Performance Endurance Problem: Condition (2)

(Except as noted operation is with military rated thrust of turbo-jet engine)

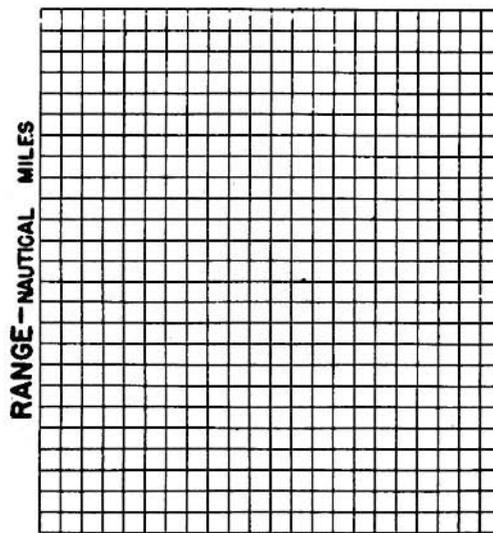
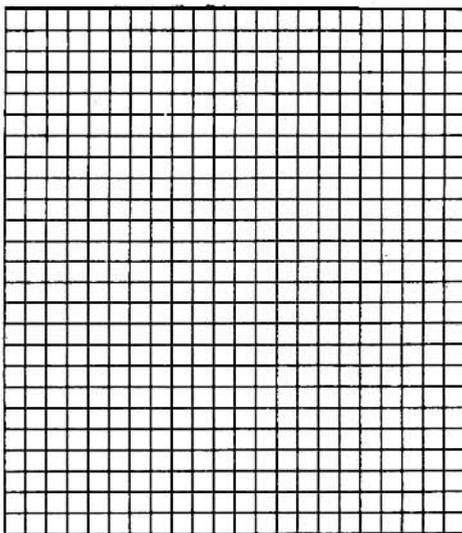
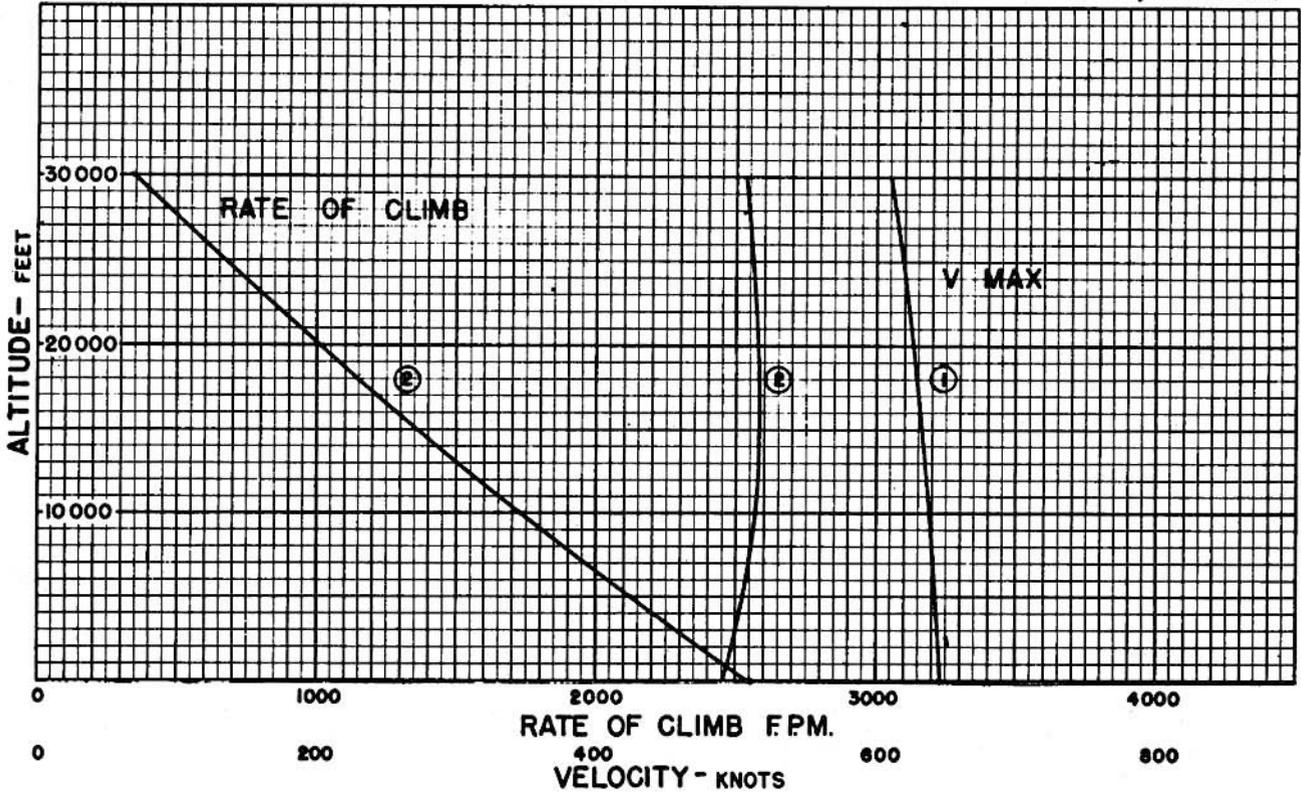
- (a) 1 min. warm-up.
 - (b) Take-off.
 - (c) Accelerate to velocity of climb (equal to 1.5 vel. T.O.)
 - (d) Climb to 2000 ft. at vel. of climb.
 - (e) Accelerate to optimum velocity of climb at 2000 ft.
 - (f) Climb to 20000 ft. at optimum vel. of climb.
 - (g) Accelerate to 500 m.p.h. (true).
 - (h) Fire rockets (at 5 sec. intervals) and accelerate to stabilized flight (includes use of turbo-jet engine).
 - (i) Make high speed run (721 mph, true vel.) until rocket fuel is expended. (includes use of turbo-jet engine).
 - (j) Descend to sea level at 2000 ft/min. (constant rate of descent) with idling jet.
 - (k) Final rendezvous at sea level at speed for maximum endurance.
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Endurance in final rendezvous - 20 minutes.

AIRPLANE PERFORMANCE

NAVAER - 1335 C (REV. 2-47)

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AV. VELOCITY - KNOTS

○ LOADING CONDITION COLUMN NUMBER

BUREAU OF AERONAUTICS
NAVY DEPARTMENT

WING AREA	175 SQ. FT.
WING SECTION	63-010 ROOT 63-012 TIP
M.A.C.	7.28 FT.
SPEED RETARDER AREA	
TOTAL AREA	5.25 SQ. FT.

