

Standard Aircraft Characteristics

NAVY MODEL T-39D AIRCRAFT

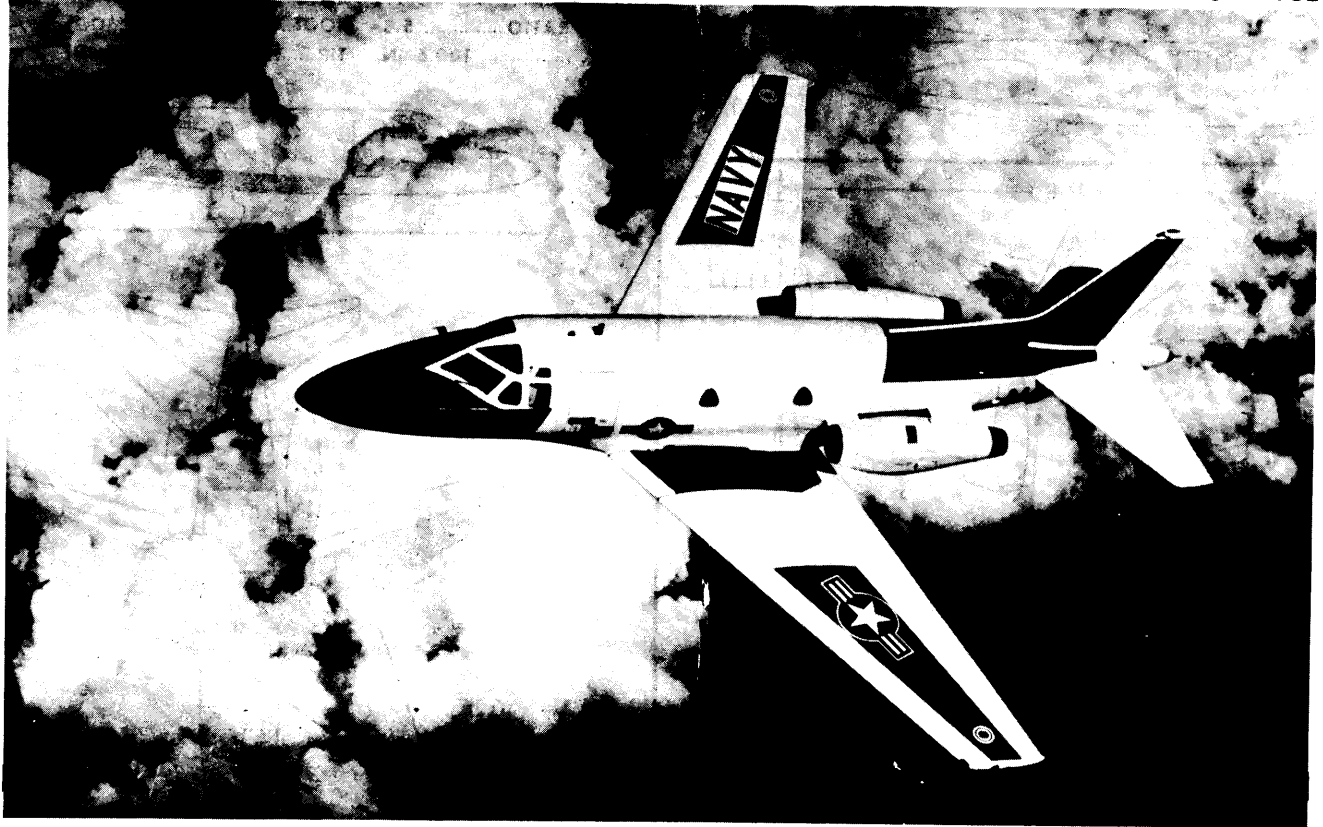
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SERVICE

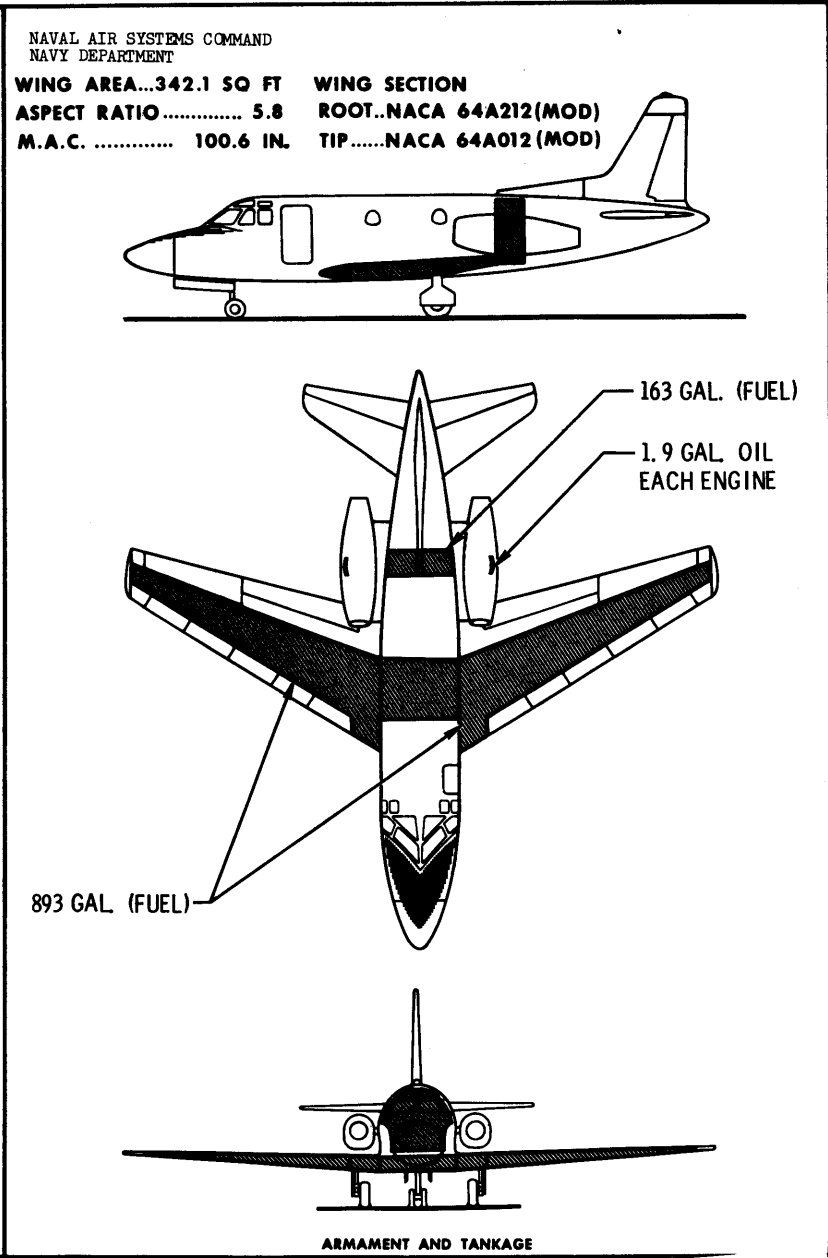
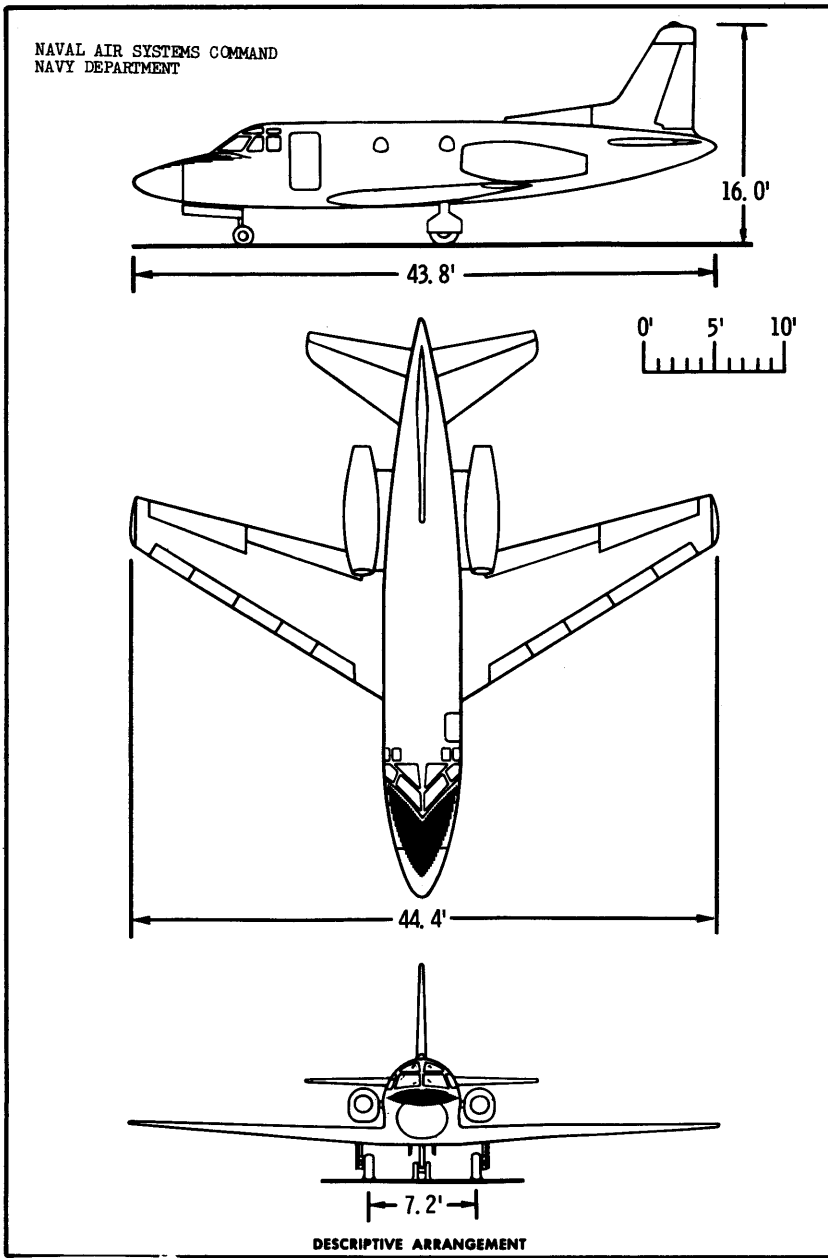


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T-39D

NORTH AMERICAN AVIATION, INC

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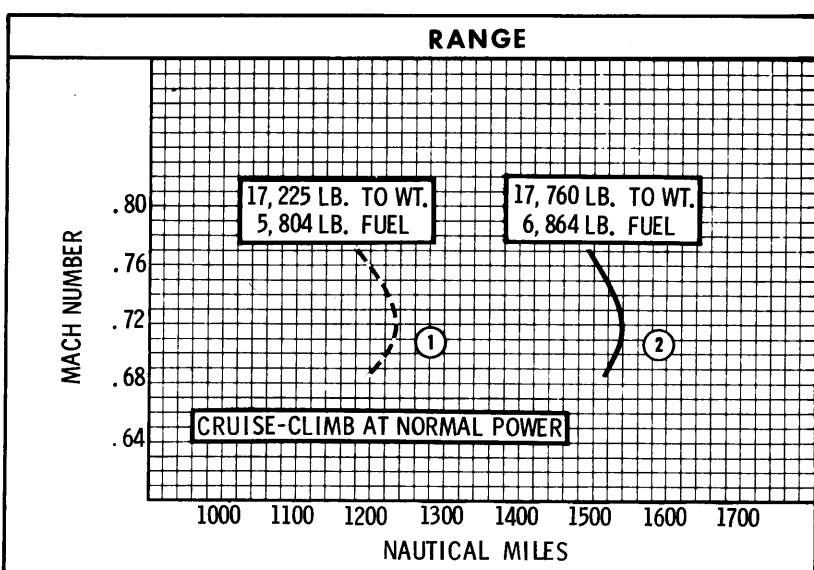
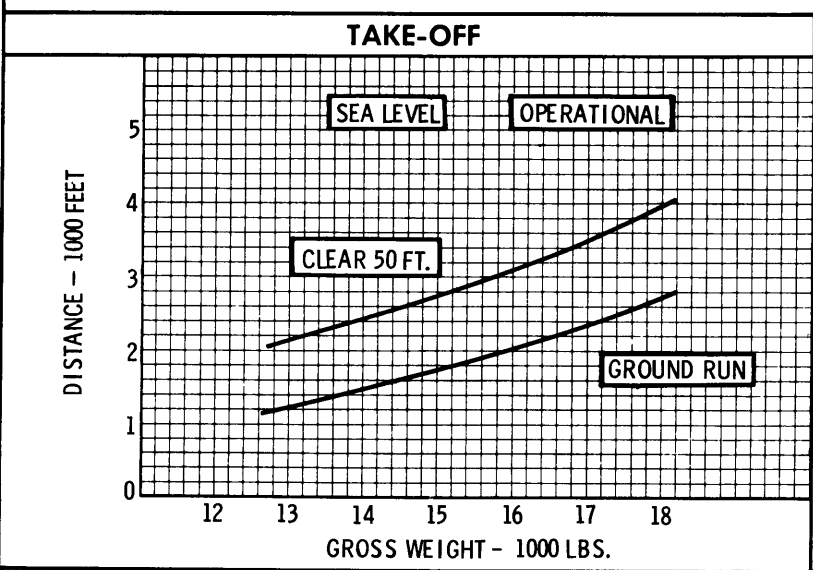
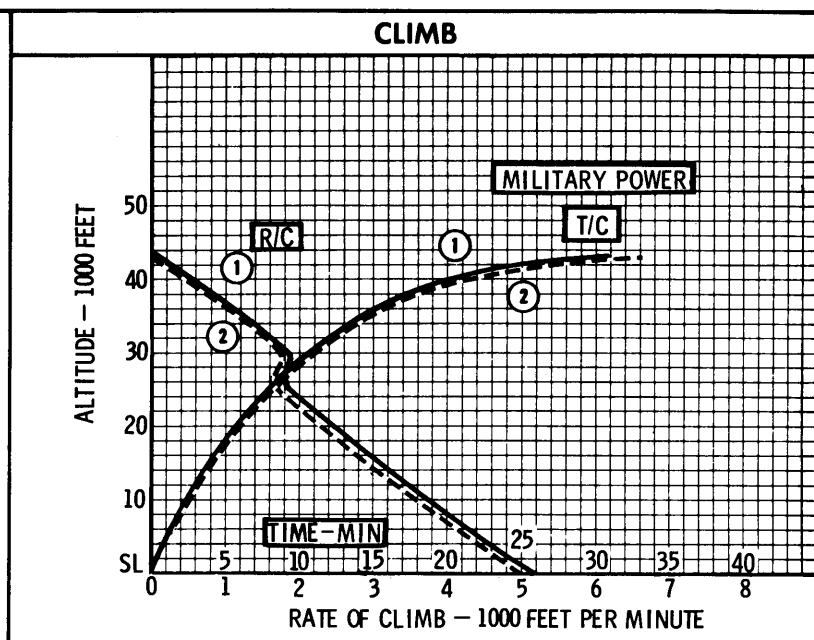
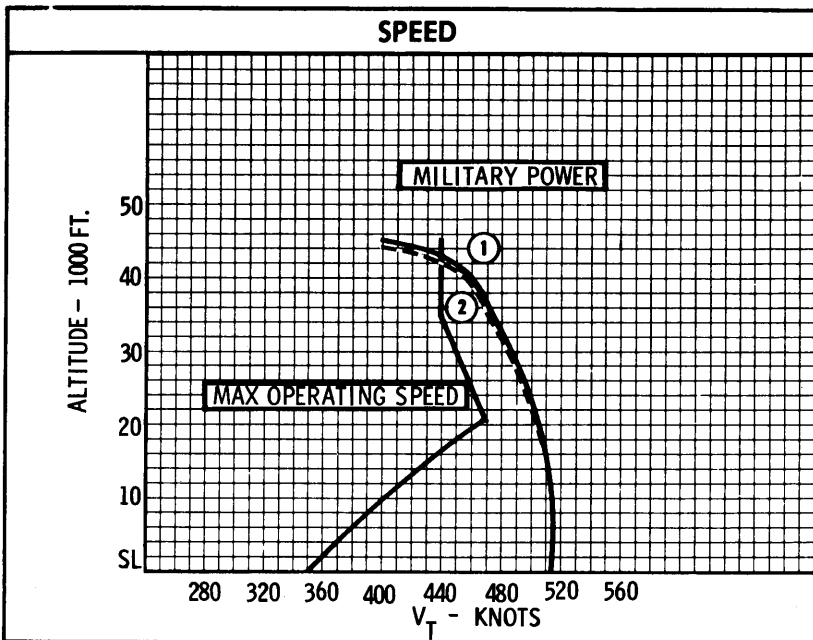
T-39D

POWER PLANT	MISSION AND DESCRIPTION	WEIGHTS																																																
<p>No. & Model (2) J60-P-3A Mfr. Pratt & Whitney Engine Spec. No. A-2412 E Type Axial Turbojet Length 76.0 in. Diameter 21.4 in. Weight (Dry) 448 lb. Tail Pipe Fixed Area Augmentation None</p> <p style="text-align: center;">RATINGS</p> <table border="1"> <thead> <tr> <th>S. L. S.</th> <th>LB.</th> <th>RPM</th> <th>MIN.</th> </tr> </thead> <tbody> <tr> <td>Max:</td> <td>3000</td> <td>16,200</td> <td>30</td> </tr> <tr> <td>Normal:</td> <td>2570</td> <td>15,360</td> <td>Cont.</td> </tr> </tbody> </table>	S. L. S.	LB.	RPM	MIN.	Max:	3000	16,200	30	Normal:	2570	15,360	Cont.	<p>Air Force Equivalent: T-39B Mfr's Model: NA-277</p> <p>The primary mission of this airplane will be flight training in radarscope interpretation.</p> <p>Special features of this airplane are aerodynamically balanced control surfaces, hydraulically operated speed brake, and automatic leading edge slats. The crew will consist of a pilot and a copilot (main student). Provisions are made in the aft cabin for an instructor, two standby students, and a navigators station. The airplane is designed in conformance with FAA certification procedures.</p> <p>The cabin and cockpit are pressurized to 8000-foot-cabin altitude for an airplane altitude from 8000 feet to 45,000 feet. Adequate heating and air conditioning is provided for cabin and cockpit.</p> <p>Structural design maximum dive speed is 508 knots EAS.</p> <p style="text-align: center;">DEVELOPMENT</p> <table border="1"> <tbody> <tr> <td>First Flight (UTX)</td> <td>Sep 58</td> </tr> <tr> <td>First Flight (T-39A)</td> <td>Jun 60</td> </tr> <tr> <td>First Flight (T-39B)</td> <td>Nov 60</td> </tr> <tr> <td>First Flight (T-39D)</td> <td>Dec 62</td> </tr> </tbody> </table>	First Flight (UTX)	Sep 58	First Flight (T-39A)	Jun 60	First Flight (T-39B)	Nov 60	First Flight (T-39D)	Dec 62	<table border="1"> <thead> <tr> <th>Loading</th> <th>LB.</th> <th>L. F.</th> </tr> </thead> <tbody> <tr> <td>Empty</td> <td>10,250</td> <td></td> </tr> <tr> <td>Basic</td> <td>10,341</td> <td></td> </tr> <tr> <td>Performance</td> <td>*14,930</td> <td>3.5</td> </tr> <tr> <td>Max Design Flt.</td> <td></td> <td></td> </tr> <tr> <td>Basic Mission</td> <td>16,870</td> <td>3.5</td> </tr> <tr> <td>Extended Range</td> <td>17,375</td> <td>2.5</td> </tr> <tr> <td>Max T. O.</td> <td>17,760</td> <td></td> </tr> <tr> <td>Design Landing</td> <td>13,000</td> <td></td> </tr> </tbody> </table> <p>* For Basic Mission</p>	Loading	LB.	L. F.	Empty	10,250		Basic	10,341		Performance	*14,930	3.5	Max Design Flt.			Basic Mission	16,870	3.5	Extended Range	17,375	2.5	Max T. O.	17,760		Design Landing	13,000		
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PERFORMANCE SUMMARY				
TAKE-OFF LOADING CONDITION		BASIC MISSION	EXTENDED RANGE MISSION	
TAKE-OFF WEIGHT	lb.	17,255	17,760	
Fuel internal/external (JP-4)	lb./lb.	5804 / N. A.	6864 / N. A.	
Payload	lb.	7005	7510	
Wing loading	lb./sq. ft.	50.4	51.8	
Stall speed—power-off	kn.	101.4	102.8	
Take-off run at S.L.— calm	ft.	2410	2600	
Take-off run at S.L.— 25 kn. wind	ft.	Not Applicable	Not Applicable	
Take-off to clear 50 ft.— calm	ft.	3610	3835	
Max. speed/altitude	kn./ft.	482/21,000	482/20,000	
Rate of climb at S.L.	fpm.	5130	4940	
Time: S.L. to 20,000 ft.	min.	5.5	5.9	
Time: S.L. to 30,000 ft.	min.	10.4	11.0	
Service ceiling (100 fpm)	ft.	43,100	42,500	
Combat range	n.mi.	1195	1505	
Average cruising speed	kn.	436	436	
Cruising altitude(s)	ft.	40,600 - 45,000	40,000 - 45,000	
Combat radius/mission time	n.mi./hr.	Not Applicable	Not Applicable	
Average cruising speed	kn.	Not Applicable	Not Applicable	
COMBAT LOADING CONDITION				
		Not Applicable	Not Applicable	
COMBAT WEIGHT	lb.			
Engine power				
Fuel	lb.			
Combat speed/combat altitude	kn./ft.			
Rate of climb/combat altitude	fpm/ft.			
Combat ceiling (500 fpm)	ft.			
Rate of climb at S.L.	fpm.			
Max. speed at S.L.	kn.			
Max. speed/altitude	kn./ft.			
LANDING WEIGHT (5% INITIAL FUEL)	lb.	11,741	11,240	
Fuel	lb.	290	344	
Stall speed—power-off/approach power	kn./kn.	77.6/N. A.	75.8/N. A.	
Landing distance—ground roll/over 50 ft. obst.	ft./ft.	1720/2750	1610/2620	

- NOTES**
1. Military power
 2. Normal power
 3. Allows for weight reduction during ground operation and climb
 4. Detailed descriptions of RANGE missions given on page 6
 5. Flaps 25°, slats open
 6. Flaps 0°, slats operable
 7. 60% Total fuel
- PERFORMANCE BASIS:**
- (a) Data source: Estimated from flight test
 - (b) Performance is based on powers shown on page 6
 - (c) Fuel flow data used in computing RANGE missions are increased 5%

T-39D



○ LOADING CONDITION COLUMN NUMBER

NOTES

FORMULA: RANGE MISSION ① ②

Take-off with military power; climb on course to initial cruise altitude with military power; cruise-climb to 45,000 feet with normal power at .76 M; cruise at .76 M at 45,000 feet. Range free allowances include 5 minutes normal power at sea level for fuel used in starting engines and take-off, and a reserve equal to 30 minutes loiter at sea level at speeds for maximum endurance plus 5% of initial fuel.

GENERAL DATA:

(a) Engine values shown under Power Plant are guaranteed values. Installed values used in performance calculations are as follows:

(2) J60-P-3A		
S. L. STATIC	LB	RPM
Mil:	2920	16,010
Nor:	2525	15,310

PERFORMANCE BASIS

North American Report No. NA-59-390 "Aerodynamic and Thermodynamic Data for a Twin Engine Turbojet Utility Trainer with a Pratt & Whitney J60 Engine (NAA Designation NA-265)," Appendix I, dated 20 June 1962.

North American Report No. NA-62-137 "FAA Type Inspection Report, Model NA-265."

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