

Standard Aircraft Characteristics

NAVY MODEL
T-44A
AIRCRAFT

PUBLISHED BY DIRECTION OF THE
COMMANDER OF THE NAVAL AIR SYSTEMS COMMAND

SEPTEMBER 1978

NAVAIR 00-110AT44-1

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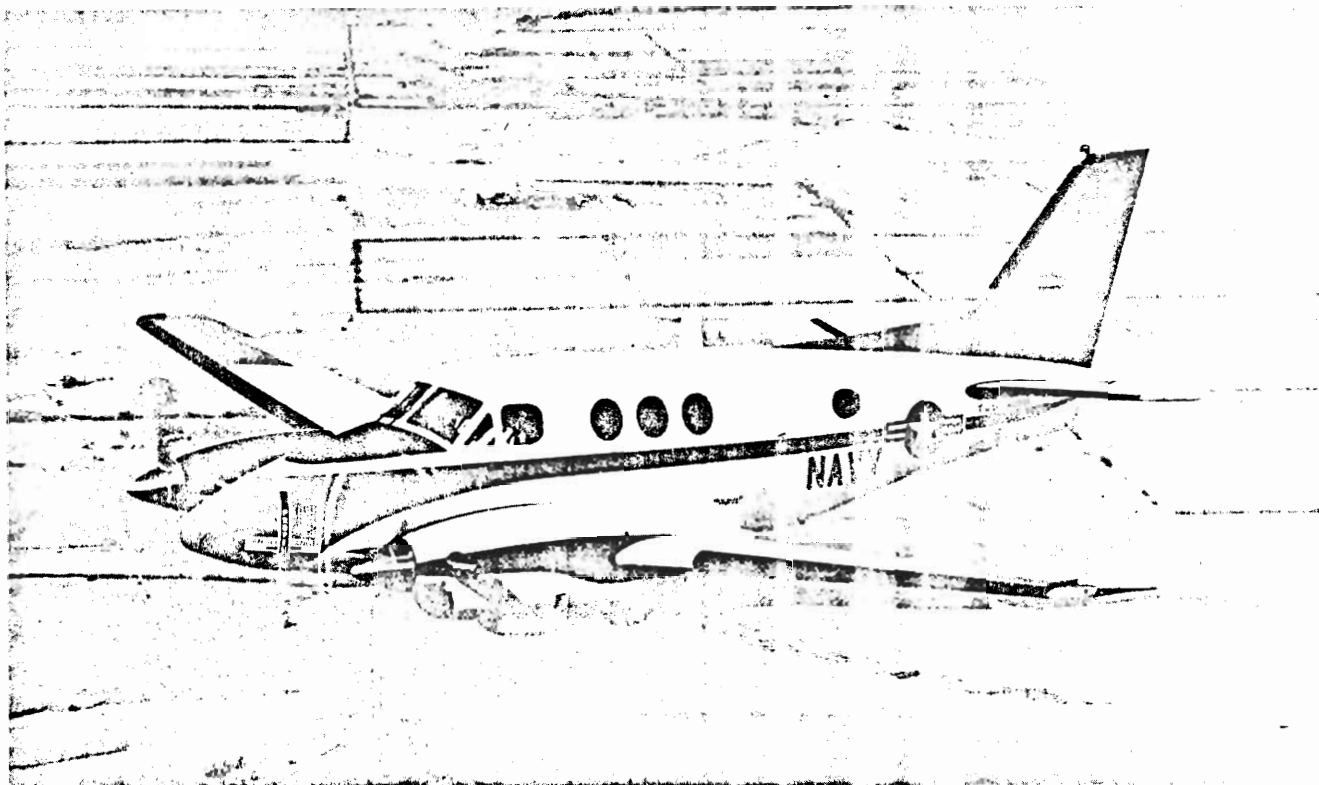
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STANDARD AIRCRAFT CHARACTERISTICS

T-44A KING AIR

BEECH AIRCRAFT CORPORATION

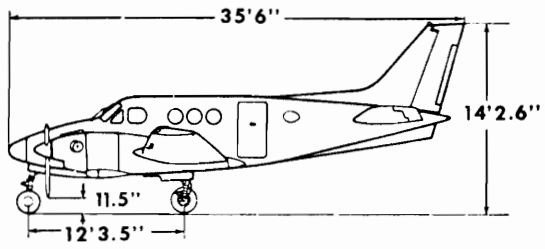
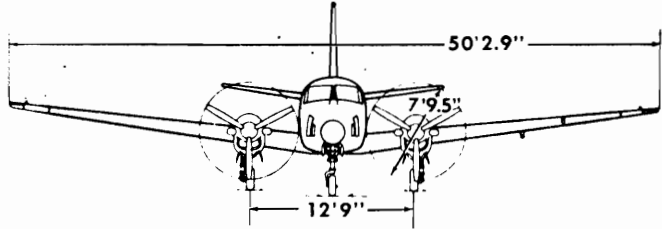
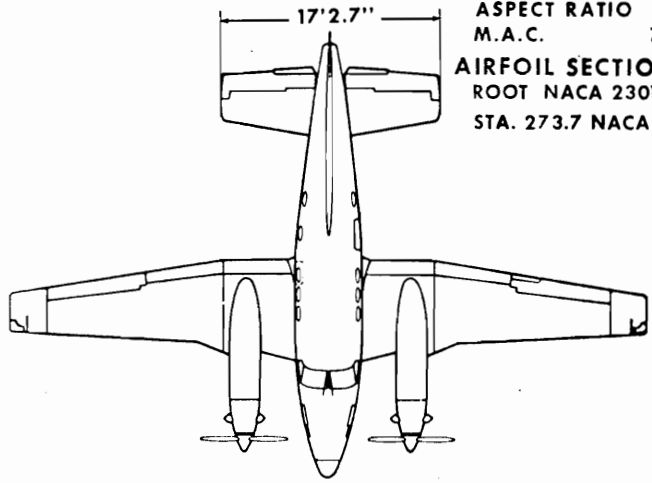
NOTE:
ALL INQUIRES CONCERNING DATA
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NAVAL AIR SYSTEMS COMMAND
NAVY DEPARTMENT

WING

AREA 293.9 SQ. FT.
ASPECT RATIO 8.590
M.A.C. 74.4 IN.

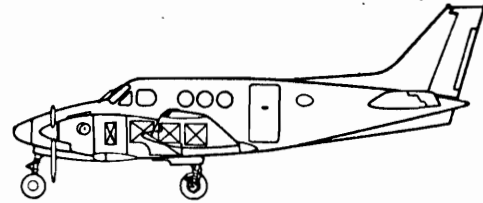
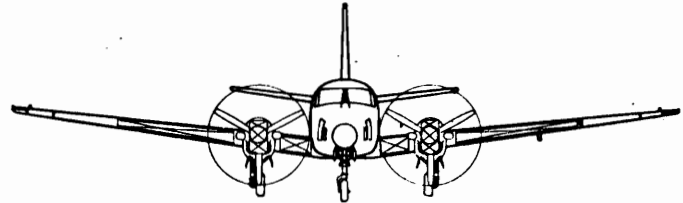
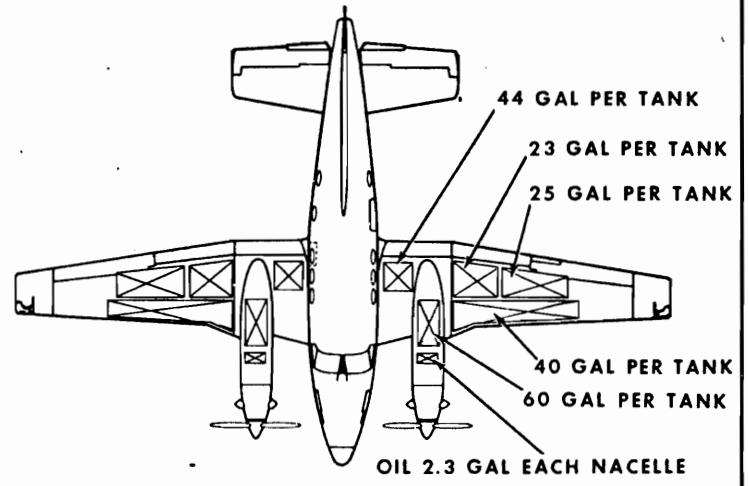
AIRFOIL SECTION
ROOT NACA 23018 (MOD)
STA. 273.7 NACA 23012



DESCRIPTIVE ARRANGEMENT

NAVAL AIR SYSTEMS COMMAND
NAVY DEPARTMENT

NON SELF SEALING TANKS

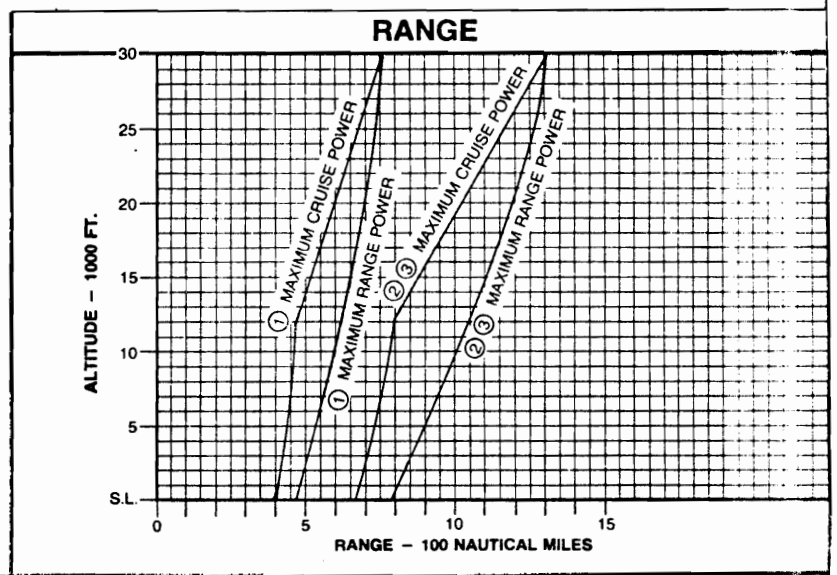
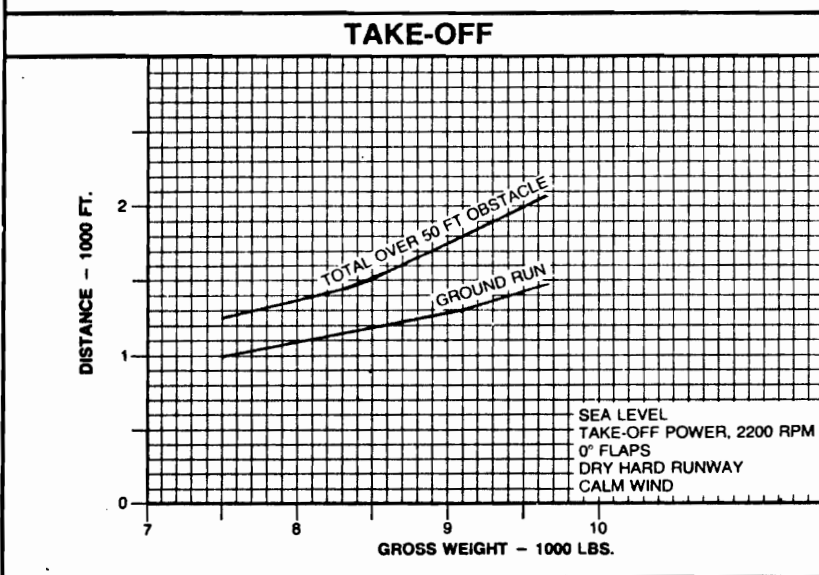
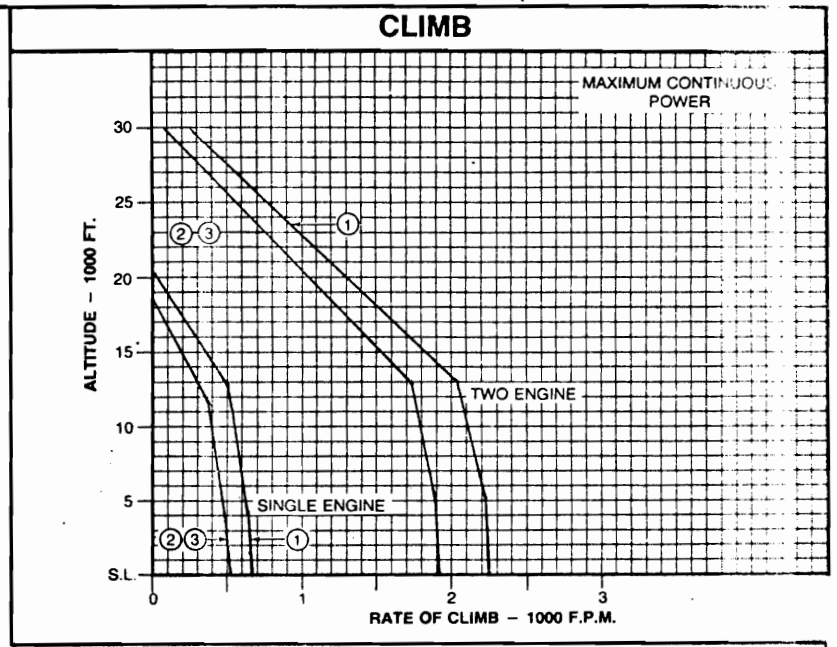
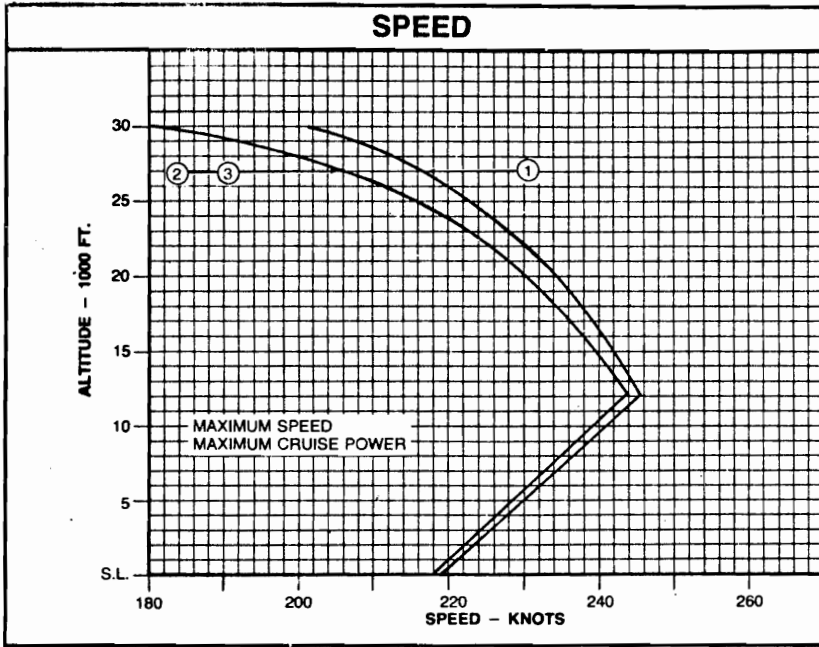


ARMAMENT AND TANKAGE

POWER PLANT	MISSION AND DESCRIPTION	WEIGHTS																																			
<p>No. and Model(2) PT6A-34B Mfg.Pratt and Whitney of Canada, Ltd. or United Technologies Corp., Pratt and Whitney Division Eng. Spec. No..... P & WC Spec. No. 765 Prop. Mfg..... Hartzell Blade Design No. T10173-7.5 R Blade Type..... F.F., C.S. No. Blades 3 Prop. Dia..... 93.5"</p> <p style="text-align: center;">RATINGS</p> <table border="1"> <thead> <tr> <th>POWER SETTING</th> <th>SHP</th> <th>POWER TURBINE RPM</th> <th>PROP RPM</th> <th>TORQUE FT LB</th> </tr> </thead> <tbody> <tr> <td>Takeoff</td> <td>550</td> <td>33,000</td> <td>2200</td> <td>1315</td> </tr> <tr> <td>Max Continuous</td> <td>550</td> <td>33,000</td> <td>2200</td> <td>1315</td> </tr> <tr> <td>Max Cruise</td> <td>550</td> <td>28,500</td> <td>1900</td> <td>1520</td> </tr> </tbody> </table>	POWER SETTING	SHP	POWER TURBINE RPM	PROP RPM	TORQUE FT LB	Takeoff	550	33,000	2200	1315	Max Continuous	550	33,000	2200	1315	Max Cruise	550	28,500	1900	1520	<p>The primary mission of this airplane shall be to train student naval aviators to fly multi-engine turboprop airplanes. The syllabus shall include familiarization, instruments, night flying, radio instruments, and tactical orientation. The secondary mission shall be to transport passengers and/or light cargo (up to 800 lbs).</p> <p>The T-44A is a high performance, fixed wing, conventional tail, pressurized, twin engine turboprop trainer. Primary flight control is provided by manually operated rudder, ailerons, and elevators. Trim tabs are installed on all primary flight control surfaces. Individual side by side control wheels for the pilot and copilot control the elevators and ailerons. The rudder is controlled by a pair of toe brake type pedals in the cockpit floor. Wing flaps are of the single slotted type. The crew compartment is pressurized to a cabin altitude of 10,000 feet at an airplane altitude of 25,000 feet.</p> <p>During normal training mission the crew will consist of one instructor pilot and two student pilots.</p>	<table border="1"> <thead> <tr> <th>LOADING</th> <th>LB</th> <th>LF.</th> </tr> </thead> <tbody> <tr> <td>Empty</td> <td>6246</td> <td>N.A.</td> </tr> <tr> <td>*Basic Empty.....</td> <td>6375</td> <td>N.A.</td> </tr> <tr> <td>Max. T.O.....</td> <td>9650</td> <td>+3.0, -1.0</td> </tr> <tr> <td>Max. Ldg.....</td> <td>9168</td> <td>+3.0</td> </tr> </tbody> </table> <p>(10 ft/sec rate of descent)</p> <p>*Empty weight as defined in SD-566-1 with the addition of oil, unusable fuel, O₂ and survival kits:</p>	LOADING	LB	LF.	Empty	6246	N.A.	*Basic Empty.....	6375	N.A.	Max. T.O.....	9650	+3.0, -1.0	Max. Ldg.....	9168	+3.0
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<p style="text-align: center;">ELECTRONICS</p> <p>Comm. No. 1 Collins Type VHF-20B Comm. No. 2 Collins AN/ARC-159 UHF Direction Finder Collins OA-8697/ARD Nav. No. 1 Collins VIR-30 AGM Nav. No. 2 Collins VIR-30 AGM Audio System Collins Type 356F-3 ADF Collins Type ADF 60 RDR-130 Radar Bendix RT-131A Tacan Collins TCN-40 Compass System (2)C14-43 Sperry 656520 Transponder Collins TDR-90 Radio Altimeter Collins 860 F-2 Area Navigation Collins NCS-31 Flight Director (2) Collins FD-112V Radio Magnetic Indicator Collins Type 332C-1D Avionics Fault Insertion Circuitry</p>	<p style="text-align: center;">DEVELOPMENT</p> <p>First Flight January 1977 First Acceptance April 1977 First Service April 1977</p>	<p style="text-align: center;">FUEL AND OIL</p> <table border="1"> <thead> <tr> <th>LOCATION</th> <th>NO. TANKS</th> <th>GAL</th> </tr> </thead> <tbody> <tr> <td>Outboard Wing</td> <td></td> <td></td> </tr> <tr> <td>L.E. 2</td> <td></td> <td>(40) 80</td> </tr> <tr> <td>T.E. Inb'd 2</td> <td></td> <td>(23) 46</td> </tr> <tr> <td>T.E. Outb'd 2</td> <td></td> <td>(25) 50</td> </tr> <tr> <td>Nacelle 2</td> <td></td> <td>(60) 120</td> </tr> <tr> <td>Wing Center 2</td> <td></td> <td>(44) 88</td> </tr> <tr> <td></td> <td>Total</td> <td>(192) 384</td> </tr> </tbody> </table> <p style="text-align: center;">OIL</p> <p>Engine 2 (2.3) 4.6 Grade MIL-L-23699</p>	LOCATION	NO. TANKS	GAL	Outboard Wing			L.E. 2		(40) 80	T.E. Inb'd 2		(23) 46	T.E. Outb'd 2		(25) 50	Nacelle 2		(60) 120	Wing Center 2		(44) 88		Total	(192) 384											
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	<p style="text-align: center;">DIMENSIONS</p> <p>Wing Area 293.9 Sq. Ft. Wing Span 50 Ft. 2.9 In. Aircraft Length 35 Ft. 6 In. Aircraft Height (Tail) 14 Ft. 2.6 In. Maximum Tread 12 Ft. 9 In. Propeller Ground Clearance 11.5 In.</p>	<p style="text-align: center;">ORDNANCE</p> <p style="text-align: center;">NONE</p>																																			

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION	DESIGN ①	LOW ALTITUDE ②	HIGH ALTITUDE ③	CARGO	FERRY ⑤	
TAKE-OFF WEIGHT/RAMP WEIGHT	lb. 8600/8658	8673/8661	9603/9661	9650/9706	9378/9473	
Fuel internal/external (JP-8)	lb./lb. 1607	2611	2611	2082	261	
Payload	lb. 225	225	225	800	-	
Wing loading	lb./sq. ft. 29.3	32.7	32.7	32.8	31.9	
Stall speed—power-off/take-off power ①	kn. 82/66	86/71	86/71	85/71	85/70	
Take-off run at S.L.— calm/25 kn.wind	ft. 1107/588	1460/834	1460/834	1473/843	1372/772	
Take-off to clear 50 ft.— calm/25 kn.wind	ft. 1549/914	2028/1261	2028/1261	2045/1273	1909/1174	
Max. effort take-off — calm	ft. -	-	-	-	-	
Max. speed/altitude ②	kn./ft. 245/12000	243/12000	243/12000	243/12000	244/12000	
Rate of climb at S.L.	fpm. 2265	1942	1942	1928	2009	
Time: S.L. to 20,000 ft.	min. 10	12	12	12	12	
Time: S.L. to 30,000 ft.	min. 25	35	35	35	32	
Service ceiling (100 fpm)	ft. 31300	29800	29800	29700	30200	
Mission range	n.mi. 568	513	1269	962	1284	
Average cruising speed	kn. 178	192	194	191	196	
Cruising altitude(s)	ft. 25000/1000	1000	25000	25000	25000	
Mission Time	hr. 3.33	3.12	6.72	5.21	6.74	
COMBAT LOADING CONDITION						
COMBAT WEIGHT	lb.					
Engine power						
Fuel	lb.					
Combat speed/altitude	kn./ft.					
Rate of climb/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	lb.	7260	7296	7296	7832	7055
Fuel	lb.	210	246	246	223	244
Stall speed—power-off/approach power ③ ④	kn./kn.	71/59	71/59	71/59	72/61	71/58
Landing distance-groundroll/over 50 ft. obst ⑤	ft./ft.	987/1668	987/1672	987/1672	1013/1762	982/1641
① FLAPS UP ② MAXIMUM CONTINUOUS POWER ③ LANDING FLAPS ④ POWER: FOR LEVEL FLIGHT ⑤ NO REVERSE THRUST			NOTES		PERFORMANCE BASIS: BASED ON INSTALLED SPECIFICATION FUEL FLOW VERIFIED BY FLIGHT TEST AND CONTRACTOR FLIGHT TEST DRAG POLARS. MISSION TIME IS EXCLUSIVE OF TAXI, TAKEOFF, ACCELERATION TO CLIMB SPEED AND RESERVE TIMES	



○ LOADING CONDITION COLUMN NUMBER

NOTES		
DESIGN TRAINING ①	LOW ALTITUDE TRAINING ②	HIGH ALTITUDE TRAINING, CARGO, AND FERRY ③ ④ ⑤
OPERATION	OPERATION	OPERATION
Start Engine, Taxi, Takeoff Accelerate To Climb Speed: 5 Minutes At Maximum Continuous Power At Sea Level.	Start Engine, Taxi, Takeoff Accelerate To Climb Speed: 5 Minutes At Maximum Continuous Power At Sea Level.	Start Engine, Taxi, Takeoff Accelerate To Climb Speed: 5 Minutes At Maximum Continuous Power At Sea Level.
INITIAL Climb: On Course To Initial Cruise Altitude With Maximum Continuous Power.	Climb: On Course To Cruise Altitude With Maximum Continuous Power.	Climb: On Course To Cruise Altitude With Maximum Continuous Power.
Cruise: At Speed For Maximum Range At An Altitude Of 25,000 Feet.	Cruise: At Maximum Cruise Power At An Altitude Of 1000 Feet.	Cruise: At Speed For Maximum Range At An Altitude Of 25,000 Feet.
Descend: To Final Cruise Altitude, No Fuel Used, No Distance Gained.	Reserve: 5% Of Initial Fuel Load Plus Fuel For 20 Minutes At Speed For Maximum Endurance At Sea Level.	Reserve: 5% Of Initial Fuel Load Plus Fuel For 20 Minutes At Speed For Maximum Endurance At Sea Level.
Cruise: At Speed For Maximum Range At An Altitude Of 1000 Feet.		
Reserve: 5% Of Initial Fuel Load Plus Fuel For 20 Minutes At Speed For Maximum Endurance At Sea Level.		