Standard Aircraft Characteristics

NAVY MODEL
T-44A
AIRCRAFT

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

SEPTEMBER 1978

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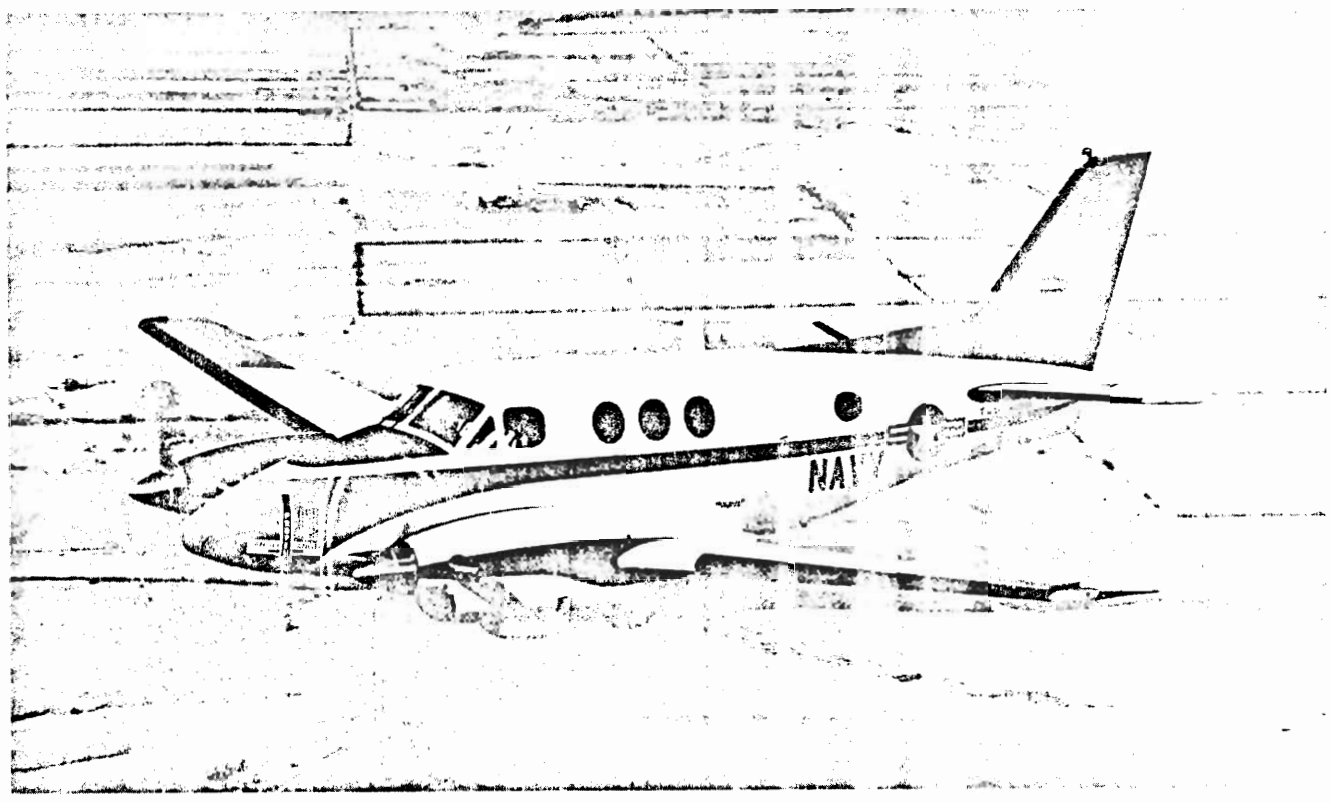


STANDARD AIRCRAFT CHARACTERISTICS

T-44A KING AIR

BEECH AIRCRAFT CORPORATION

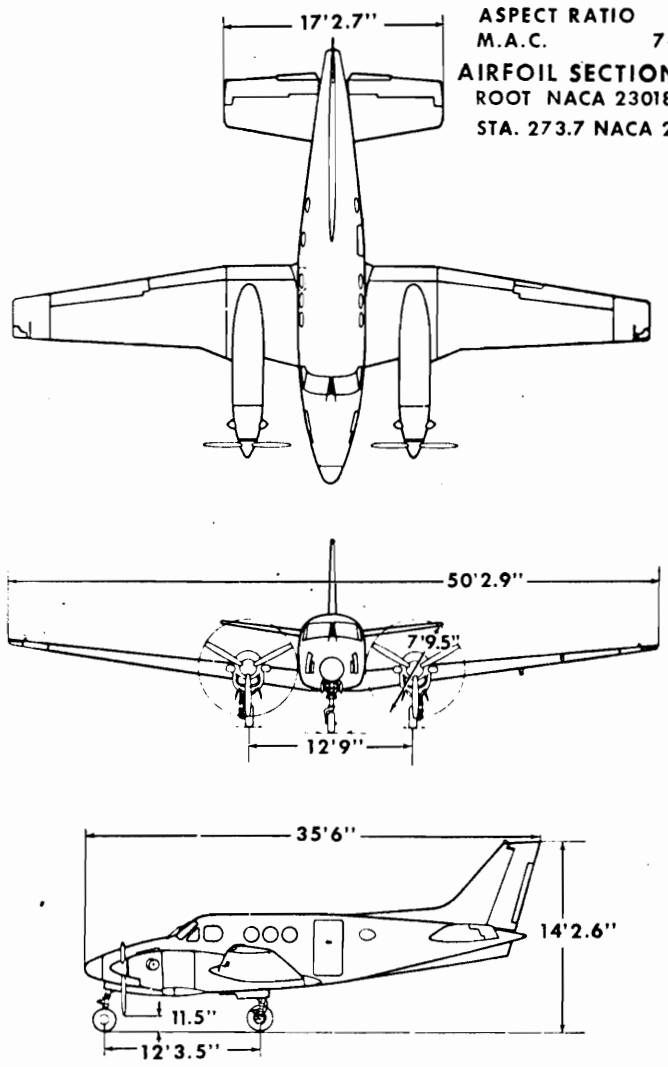
NOTE:

ALL INQUIRES CONCERNING DATA IN THIS CHART SHOULD BE DIRECTED TO NAVAIR, CODE AIR-53012

NAVAL AIR SYSTEMS COMMAND
NAVY DEPARTMENT

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

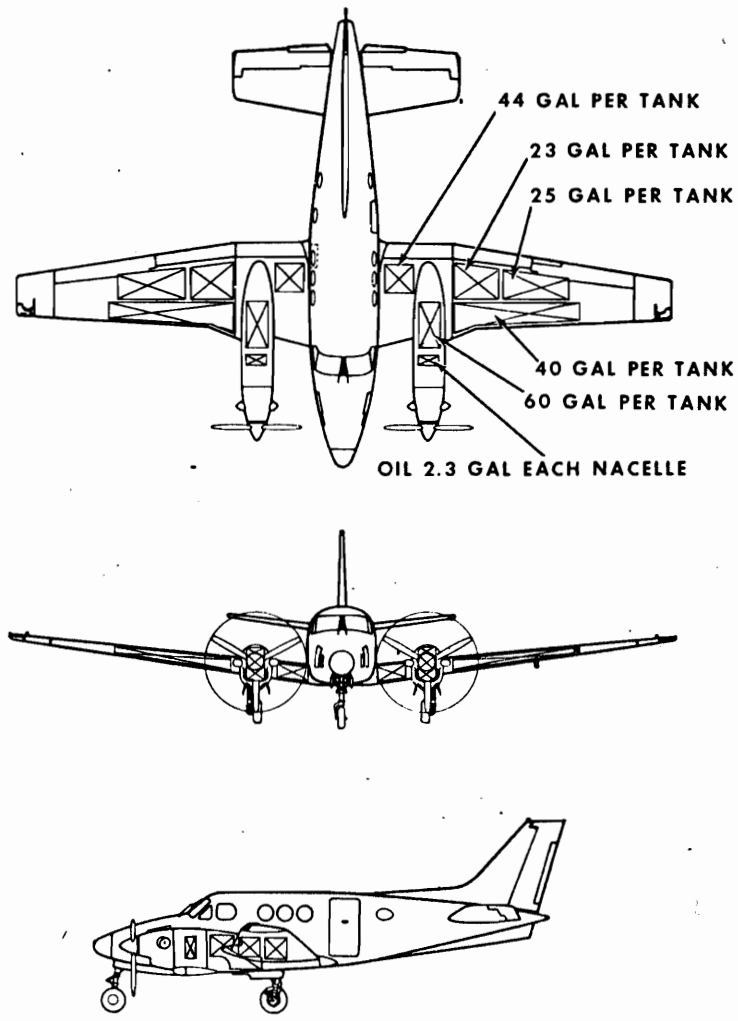
AIRFOIL SECTION
ROOT NACA 23018 (MOD)
STA. 273.7 NACA 23012



DESCRIPTIVE ARRANGEMENT

NAVAL AIR SYSTEMS COMMAND
NAVY DEPARTMENT

NON SELF SEALING TANKS



ARMAMENT AND TANKAGE

POWER PLANT

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. T10173-7.5R
Blade Type ..... F.F., C.S.
No. Blades 3
Prop. Dia. ..... 93.5"

RATINGS

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

ELECTRONICS

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

MISSION AND DESCRIPTION

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).

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.

During normal training mission the crew will consist of one instructor pilot and two student pilots.

DEVELOPMENT

First Flight ..... January 1977
First Acceptance ..... April 1977
First Service ..... April 1977

DIMENSIONS

Wing Area ..... 293.9 Sq. Ft.
Wing Span ..... 50 Ft. 2.9 In.
Aircraft Length ..... 35 Ft. 6 In.
Aircraft Heighth (Tail) ..... 14 Ft. 2.6 In.
Maximum Tread ..... 12 Ft. 9 In.
Propeller Ground Clearance ..... 11.5 In.

WEIGHTS

LOADING	LB	L.F.
Empty	6246	N.A.
*Basic Empty	6375	N.A.
Max. T.O.	9650	+3.0, -1.0
Max. Ldg. (10 ft/sec rate of descent)	9168	+3.0

*Empty weight as defined in SD-566-1 with the addition of oil, unusable fuel, O_2 and survival kits.

FUEL AND OIL

FUEL

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

Grade – JP-5

OIL

Engine ..... 2 ..... (2.3) 4.6
Grade MIL-L-23699

ORDNANCE

NONE

PERFORMANCE SUMMARY

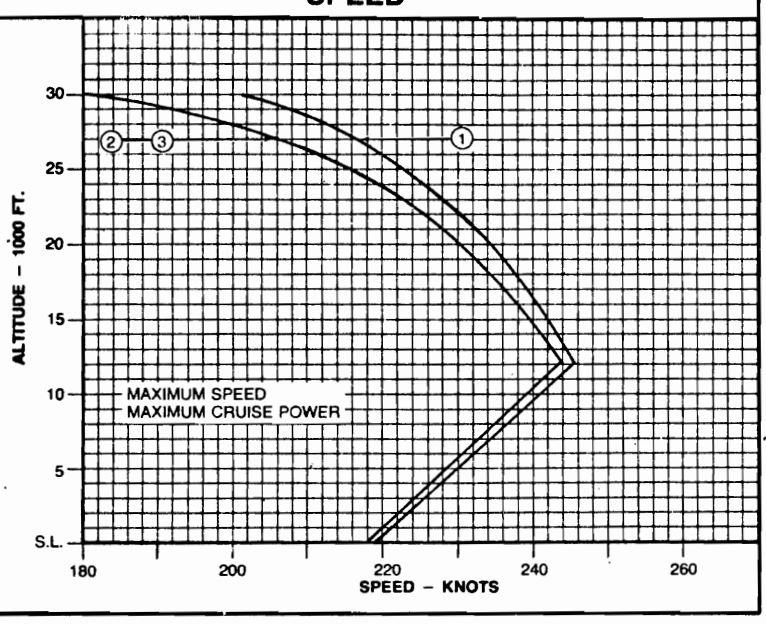
TAKE-OFF LOADING CONDITION		DESIGN ①	LOW ALTITUDE ②	HIGH ALTITUDE ③	CARGO	FERRY ⑤
TAKE-OFF WEIGHT/RAMP WEIGHT	lb.	8600/8658	9603/9661	9603/9661	9650/9708	9378/9436
Fuel internal/external (JP-4)	lb./lb.	1607	2611	2611	2082	261
Payload	lb.	225	225	225	800	–
Wing loading	lb./sq. ft.	29.3	32.7	32.7	32.8	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	973	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/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	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

NOTES

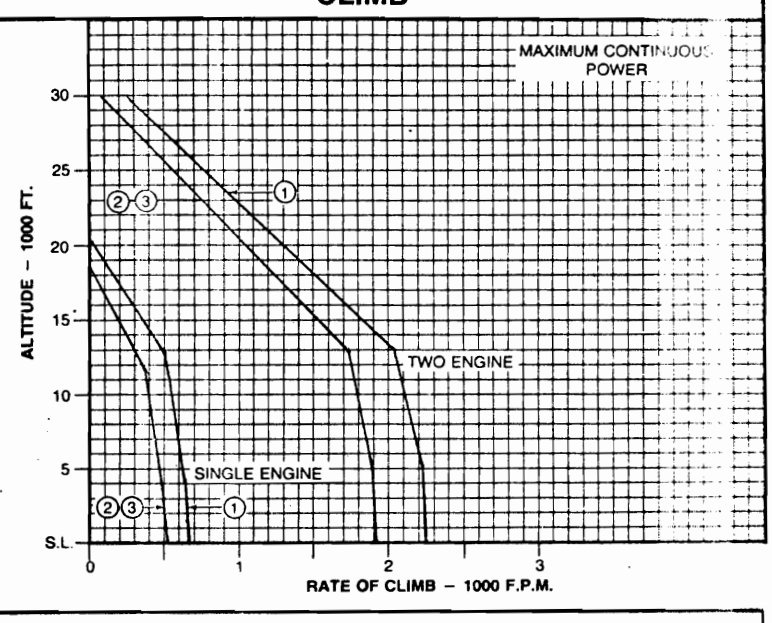
① FLAPS UP
② MAXIMUM CONTINUOUS POWER
③ LANDING FLAPS
④ POWER: FOR LEVEL FLIGHT
⑤ NO REVERSE THRUST

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

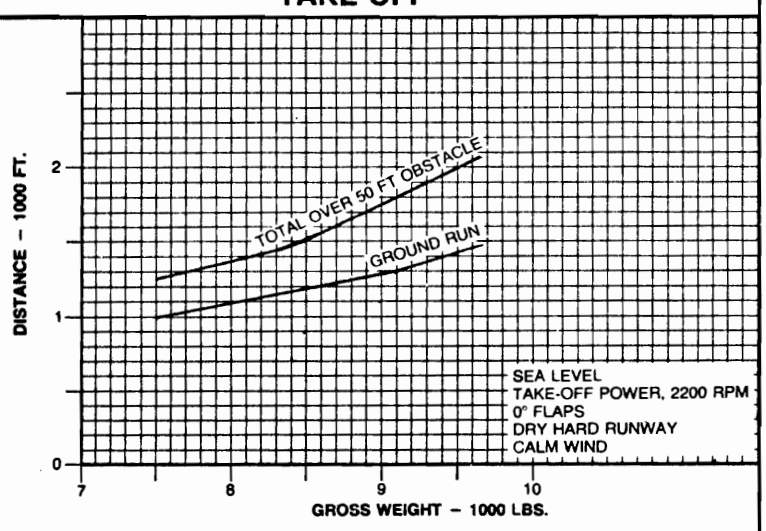
SPEED



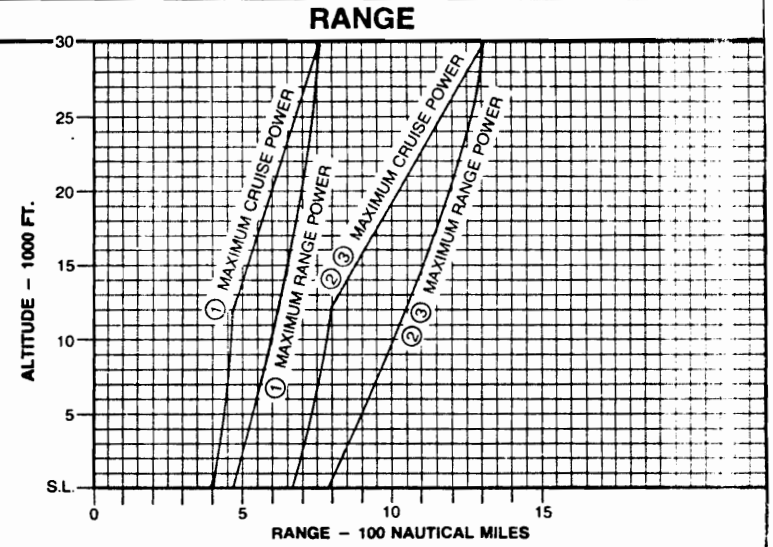
CLIMB



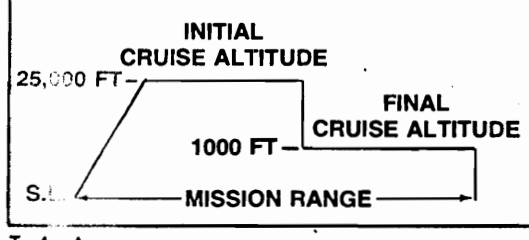
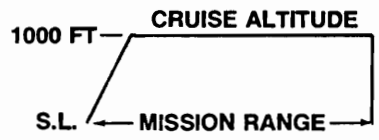
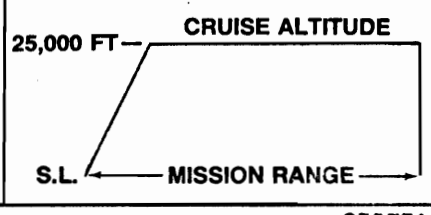
TAKE-OFF



RANGE



◯ 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.