

Standard Aircraft Characteristics

NAVY MODEL

T-2B

AIRCRAFT

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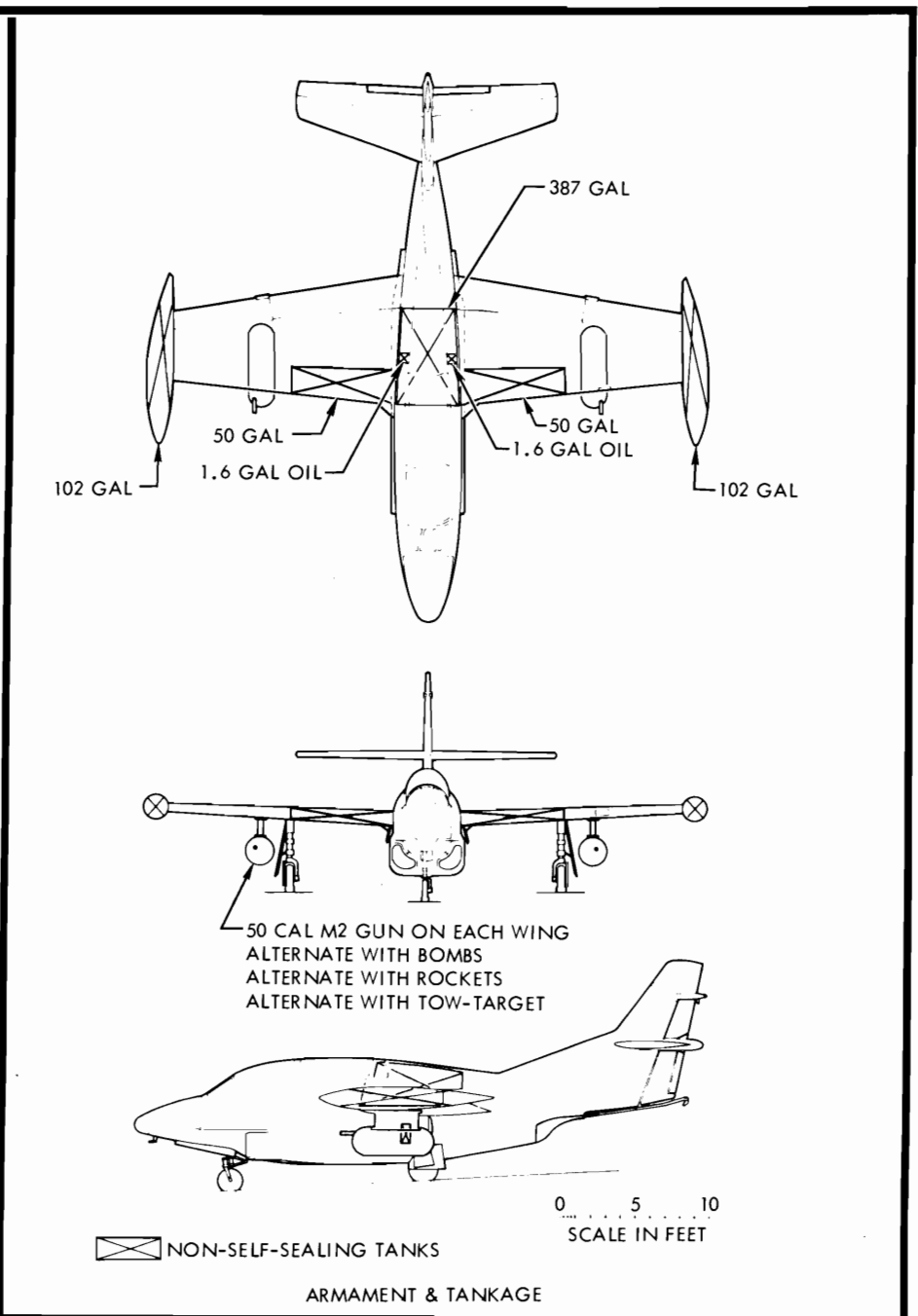
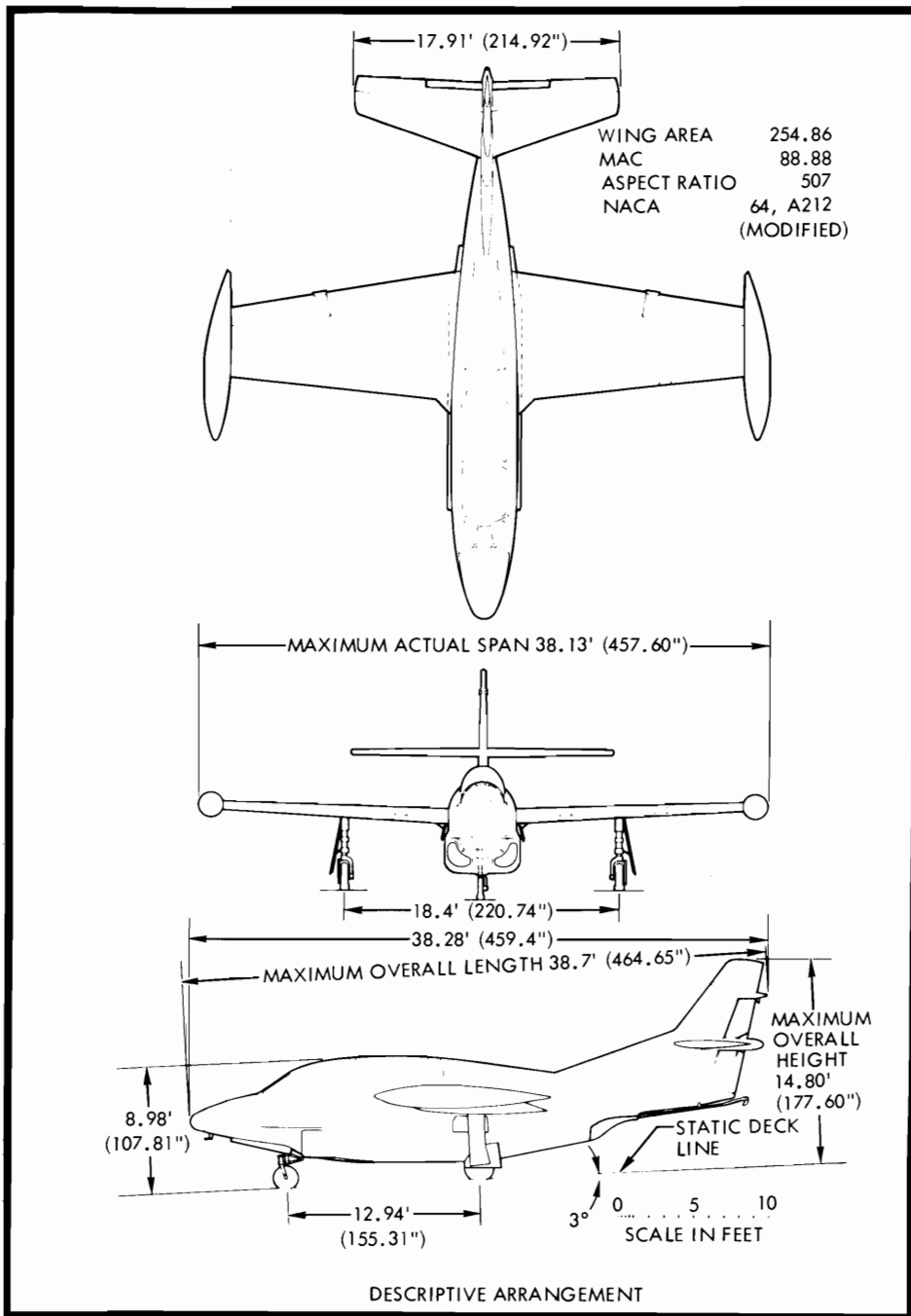
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COMMANDER OF THE NAVAL AIR SYSTEMS COMMAND

JANUARY 1970



STANDARD AIRCRAFT CHARACTERISTICS
T-2B
TRAINER

NORTH AMERICAN AVIATION, INC.

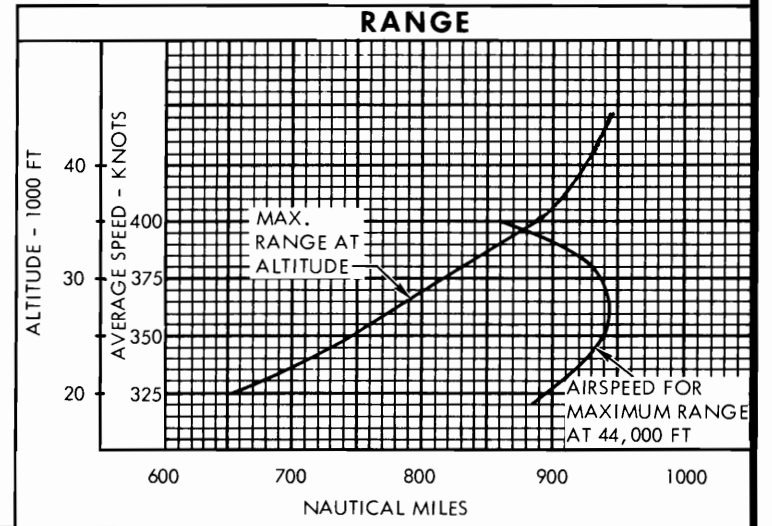
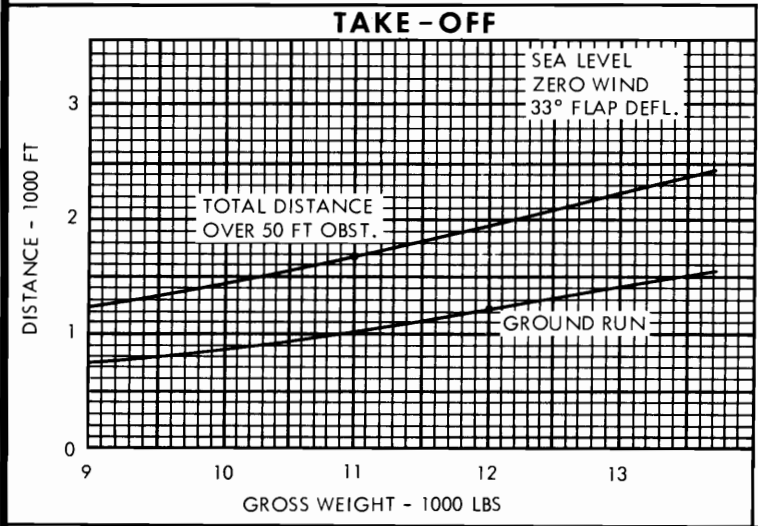
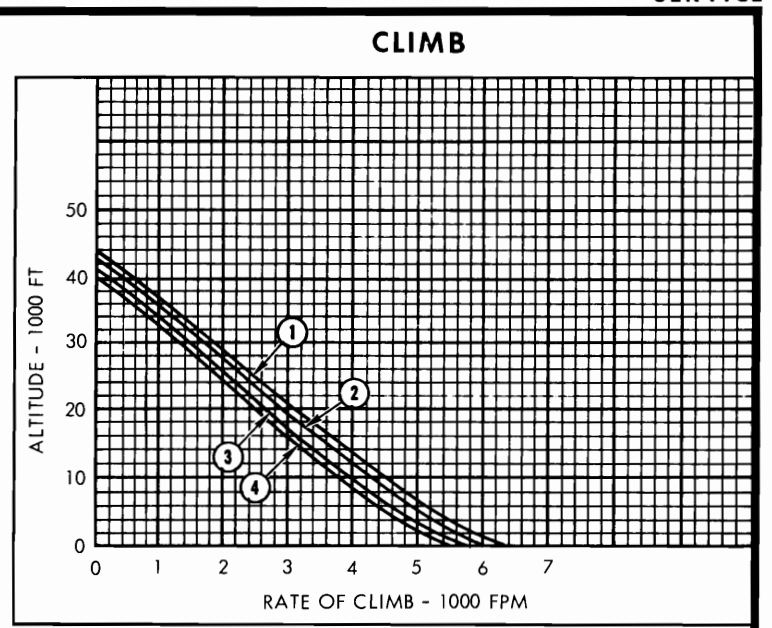
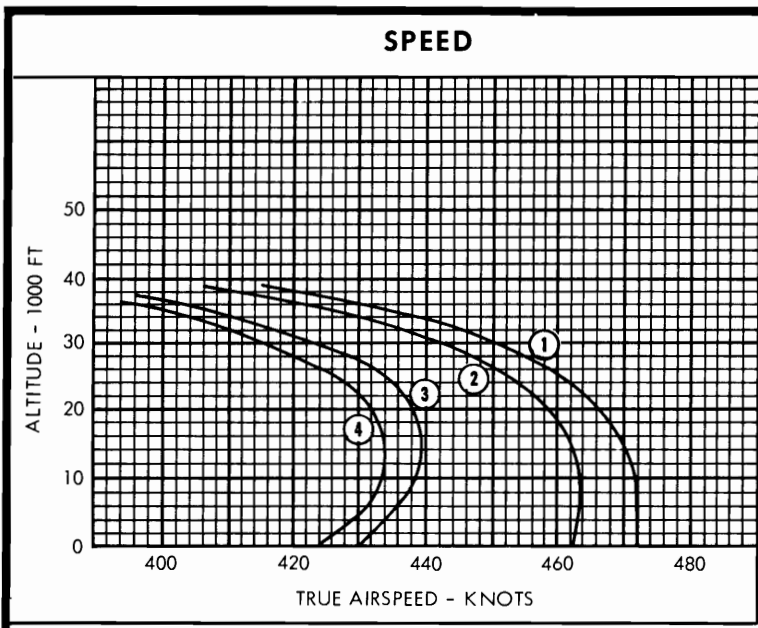


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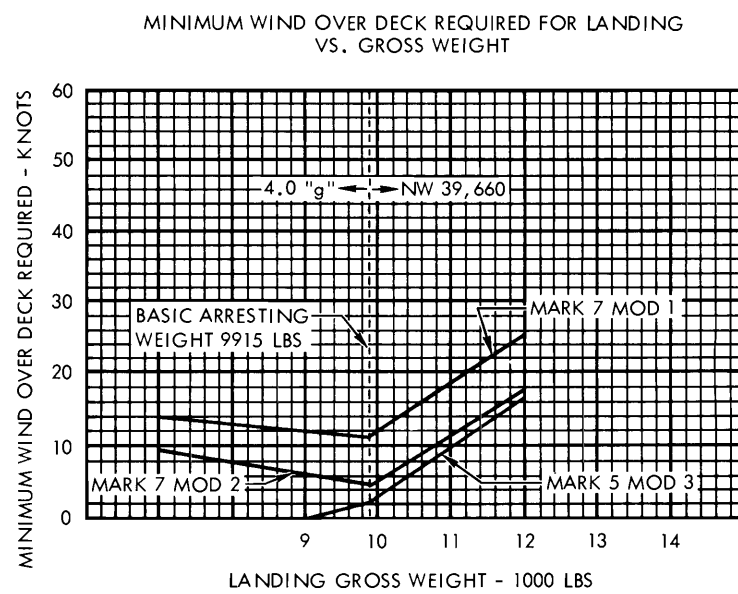
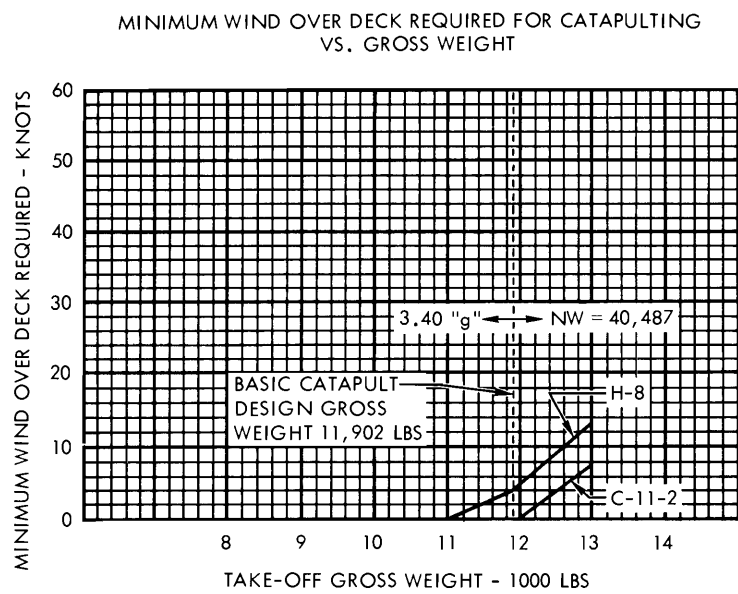
POWER PLANT					MISSION AND DESCRIPTION		WEIGHTS			
NO. & MODEL	(2) J60-P-6				<p>This airplane is a follow-on production configuration of the Model YT-2B (T2J-2) Prototype Trainer which was a development of a dual engine configuration of the T-2A (T2J-1) Airplane. The primary purpose of this airplane is to provide performance and versatility so as to logically and systematically present the complexities of modern service aircraft.</p> <p>The T-2B Airplane incorporates in its design an NACA low-drag, laminar-flow airfoil section, a power-operated, clam-shell type canopy, speed brakes, a catapult hook and an arresting gear. The wing incorporates single-slotted flaps. Flight controls, excluding the mechanical rudder system, are power operated (elevator power-boosted and aileron irreversible system). A large baggage compartment is located in the nose section.</p> <p>A low level escape system is also featured in the T-2B Airplane which provides safe ejection throughout the flight envelope down to zero altitude and a speed of 75 knots.</p> <p>Flaps and landing gear may be extended up to a speed of 165 knots. The maximum permissible dive speed above 7500 feet is Mach number 0.85. The maximum structural design speed is 485 knots.</p> <p>Mfg. Model: NA-288, 291, and 294</p> <p>First Flight Date: 21 May 1965</p>		LOADING	LBS	LF	
MFR.	Pratt & Whitney Aircraft N-2444						Empty (S)	8220		
ENG. SPEC. NO.	N-2444						Design	9915	6.5	
TYPE	Axial Flow						Basic	13,284	4.85	
WEIGHT (DRY)	500.3 lbs						Combat	not applicable		
LENGTH (APPROX.)	70.45 in.						Max. Take-Off	14,048	4.59	
DIAMETER (APPROX.)	22.00 in.						Max. Landing	13,661	(field)	
TAIL PIPE NOZZLE (TYPE)	Fixed Convergent						Max. Landing	11,958	(carrier)	
RATING							(S) SD-524-2-1			
LBS THRUST	MAX RPM	ALT	MIN							
MIL	3000	16,700	SL	30						
NOR.	2570	15,750	SL	-						
MAX (S)	2905	-	SL	30						
T.O.	2905	-	SL	30						
(S) Installed rating, limited by full power lever position.										
ORDNANCE					DIMENSIONS		FUEL AND OIL			
NO.	CAL.	ROUNDS	LOCATION		Wing Area	254.86 Sq. Ft.	FUEL			
2	.50	100 each	Wings		Span	38.13 Ft.	LOCATION	TANKS	GAL.	
Removable gun package, P/N 200-89045, one gun package location under each wing (W.S. 134.5) Gun camera, (1) type KB-9A location on gun sight.					Length	38.28 Ft.	Fuselage	1	387	
BOMBS					Height	14.80 Ft.	Wing Leading Edge	2	100	
External, one location under each wing (W.S. 134.5)					Tread	18.40 Ft.	Tip-Tanks	2	204	
NO.	TYPE				Grade JP-4 or JP-5 MIL-J-5624D					
2	MK 86 practice bombs				OIL					
or 2	MK 15 practice bombs				Engine Tank 2 3.2					
or 2	A/A37B-3 practice racks and 12 MK76 Mod 4 or 5 practice bombs				Specification MIL-L-23699					
or 2	A/A 37B-3 practice racks and 12 MK 106-3 practice bombs				ELECTRONICS					
ROCKETS					IFF/SIF Identification AN/APX-64					
External, one location under each wing (W.S. 134.5)					UHF Command AN/ARC-52X					
NO.	SIZE	TYPE			TACAN Equipment AN/ARN-52(V)					
2	2.25 in.	Practice Rocket			Receiving Set AN/ARR-40					
14	2.75 in.	Mighty Mouse Rocket			Direction Finder AN/ARA-25A					
2	2.75 in.	Single-Mounted			Interphone C-2379/AIC					
Fire control system MK-6 MOD 4 including MK-8 MOD 9 gunsight. Guns can be carried in lieu of, but not in combination with, bombs or rockets. Provisions for aerial tow target.					Provisions for: AN/AWG-6 (MK6 MOD 4 + AN/APG-30A)					

PERFORMANCE SUMMARY

TAKE-OFF LOADING CONDITION		BASIC TRAINER (Tiptanks)	BASIC TRAINER & ROCKETS	BASIC TRAINER & GUN PACKAGES	BASIC TRAINER & BOMBS
TAKE-OFF WEIGHT	lb.	13,284	13,771	13,771	14,048
Fuel Internal/External	lb.	3166/1326	3166/1326	3166/1326	3166/1326
Payload	lb.	0	252	60	300
Wing loading	lb./sq. ft.	52.0	54.0	54.0	55.2
Stall speed - power-off	kn.	99.5	101.5	101.5	102.5
Take-off run at S.L. - calm	(A) ft.	1460	1550	1550	1630
Take-off run at S.L. 25 kn. wing	(A) ft.	920	1000	1000	1040
Take-off to clear 50 ft. - clam	(A) ft.	2300	2450	2450	2540
Max. speed/altitude	(B) kn./ft.	472/4000	464/6000	439/15000	434/15000
Rate of climb at S.L.	(B) fpm.	6100	5800	5550	5300
Time: S.L. to 20,000 ft.	(B) (C) min.	4.5	4.8	5.2	5.4
Time: S.L. to 30,000 ft.	(B) (C) min.	8.1	8.7	10.2	10.8
Service ceiling (100 fpm)	(B) ft.	42,600	41,400	39,950	39,250
Combat range	(D) n.mi.	966 (I)	903 (I)	758 (I)	720 (I)
Average cruising speed	kn.	360	356	352	345
Cruising altitude (avg)	ft.	44,000	43,000	41,500	40,600
Combat radius	n.mi.	498 (II)	337 (III)	235 (IV)	165 (V)
Average curising speed out/inbound	kn./kn.	360/360	356/356	352/352	238/263
Mission time	hr.	3.21	2.53	2.19	1.90
COMBAT LOADING CONDITION					
COMBAT WEIGHT	(E) lb.	11,487	11,722	11,914	11,951
Engine power		max. power	max. power	max. power	max. power
Fuel	lb.	2695	2695	2695	2695
Combat speed/combat altitude	(B) kn./ft.	462/25000	465/5000	437/25000	432/5000
Rate of climb/combat altitude	(B) fpm/ft.	3200/25000	5920/5000	2350/25000	5280/5000
Combat ceiling (500 fpm)	(B) ft.	42,800	41,900	40,100	39,750
Rate of climb at S.L.	(B) fpm.	7150	6900	6450	6380
Max. speed at S.L.	(B) kn.	472	464	432	427
Max. speed/altitude	(B) kn./ft.	472/S.L.	465/8000	442/15000	436/15000
LANDING WEIGHT	lb.	9660	10091	10123	10428
Fuel	lb.	788	812	854	872
Stall speed-power-off/with approach power	kn./kn.	85/85	86.5/86.5	87/87	88/88
Landing Distance-grd. roll/over 50 foot obst.	ft/ft.	1520/2060	1680/2220	1700/2240	1810/2360
<p>NOTES: (A) Take-off Power (D) Ranges are Based on Flight Test Fuel Consumption Data</p> <p>(B) Maximum Power (E) Represents Combat Training Missions (Less Pay Load & 40% Fuel)</p> <p>(C) Allows for Weight Reduction During Ground Operations and Climb</p> <p style="text-align: center;">External Fuel is Carried in Fixed Tip Tanks</p>					



CARRIER SUITABILITY



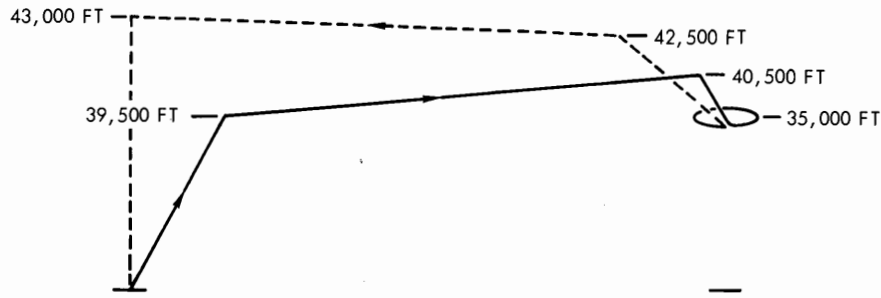
NOTES:

1. No Wind Over Deck is Required for C-7, C-11 and C-13 Catapults.

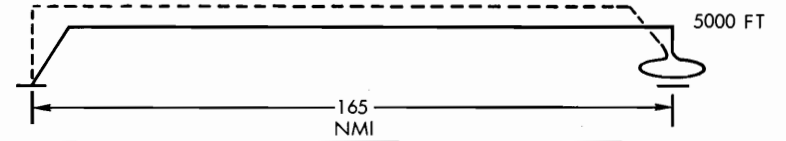
1. Approach Speeds are Based on Approach Speeds Recommended from Ship Board Carrier Suitability Trails for T-2A (T2J-1) Airplane.

RECONNAISSANCE MISSION CONFIGURATION 1				GROUND SUPPORT MISSION CONFIGURATION 2			
OPERATION	Fuel Used lbs	Distance (nmi)	Time (hrs.)	OPERATION	Fuel Used (lbs.)	Distance (nmi)	Time (hrs.)
Warm-up and Take-off Accelerate to Climb Speed (5 min Normal Rated Thrust at S.L.)	370	0	0.083	Warm-up and Take-off Accelerate to Climb Speed (5 min Normal Rated Thrust at S.L.)	370	0	0.083
Climb to Cruise Ceiling at Maximum Thrust	800	109	0.325	Climb to Cruise Ceiling at Maximum Thrust	840	108	0.333
Cruise out and Back at cruise Ceiling at speed for Maximum Range	2534	887	2.465	Cruise out at cruise ceiling at speed for Maximum Range	753	229	0.644
Reserve (20 min at Speed for Maximum Endurance at S.L. + 5% Initial Fuel Load)	788	0	0.333	Descend to S.L. Loiter for 10 min at Speed for Maximum Endurance. (Fire Rockets)	327	0	0.167
Total	4492	996	3.206	Climb to Cruise Ceiling at Maximum Thrust	710	99	0.300
				Cruise in at Cruise Ceiling at speed for Maximum Range	680	238	0.668
				Reserve (20 min at speed for Maximum Endurance at S.L. + 5% Initial Fuel Load)	812	0	0.333
				Total	4492	674	2.528

**GENERAL PURPOSE AND ESCORT MISSION
CONFIGURATION 3**



**LOW ALTITUDE ATTACK MISSION
CONFIGURATION 4**



OPERATION	Fuel Used (lbs.)	Distance (nmi)	Time (hrs.)	OPERATION	Fuel Used (lbs.)	Distance (nmi)	Time (hrs.)
Warm-up and Take-off Accelerate to Climb Speed (5 min Normal Rated Thrust at S.L.)	370	0	0.083	Warm-up and Take-off Accelerate to Climb Speed (5 min. Normal Rated Thrust at S.L.)	370	0	0.083
Climb to Cruise Ceiling at Maximum Thrust	890	102	0.347	Climb to 5000 feet at Maximum Thrust	85	4	0.017
Cruise out at Cruise Ceiling at speed for Maximum Range	511	133	0.378	Cruise out at 5000 feet at speed for Maximum Range	1463	161	0.676
Descended to 35,000 feet for 20 min combat (max fuel flow) expend ammo	631	0	0.333	Descended to S.L. Loiter for 10 min at speed for maximum endurance. Drop Bombs	344	0	0.167
Climb to Cruise Ceiling at Maximum Thrust	760	95	0.316	Climb to 5000 feet at Maximum Thrust	70	4	0.013
Cruise back at Cruise Ceiling at speed for Maximum Range	476	140	0.398	Cruise back at 5000 at speed for Maximum Range	1288	161	0.613
Reserve (20 min at Speed for Maximum Endurance at S.L. + 5% Initial Fuel Load)	854	0	0.333	Reserve (20 min at speed for Maximum Endurance at S.L. + 5% Initial Fuel Load)	872	0	0.333
Total	4492	470	2.188	Total	4492	330	1.902

T-2B