

Standard Aircraft Characteristics

NAVY MODEL

T-2B

AIRCRAFT

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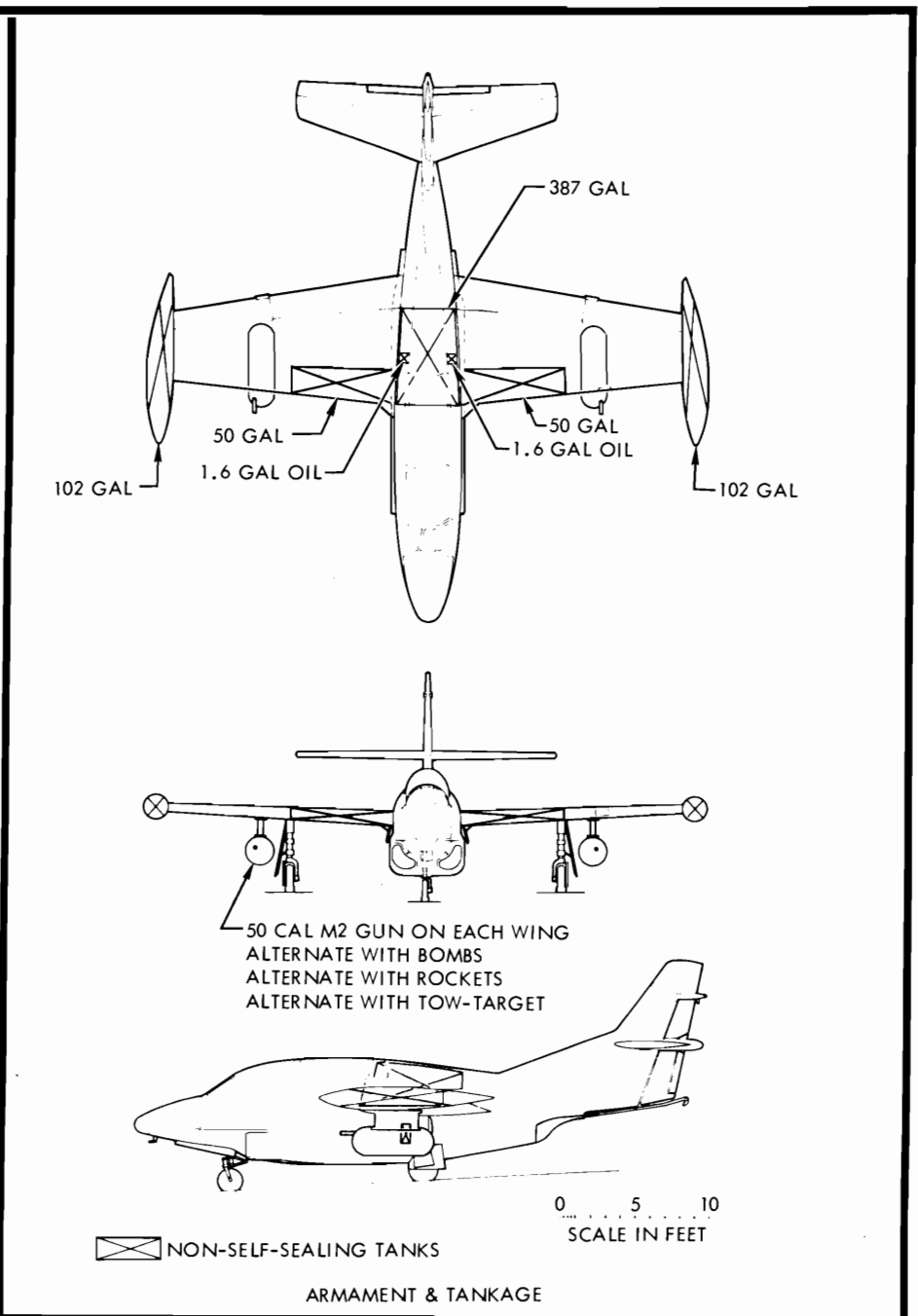
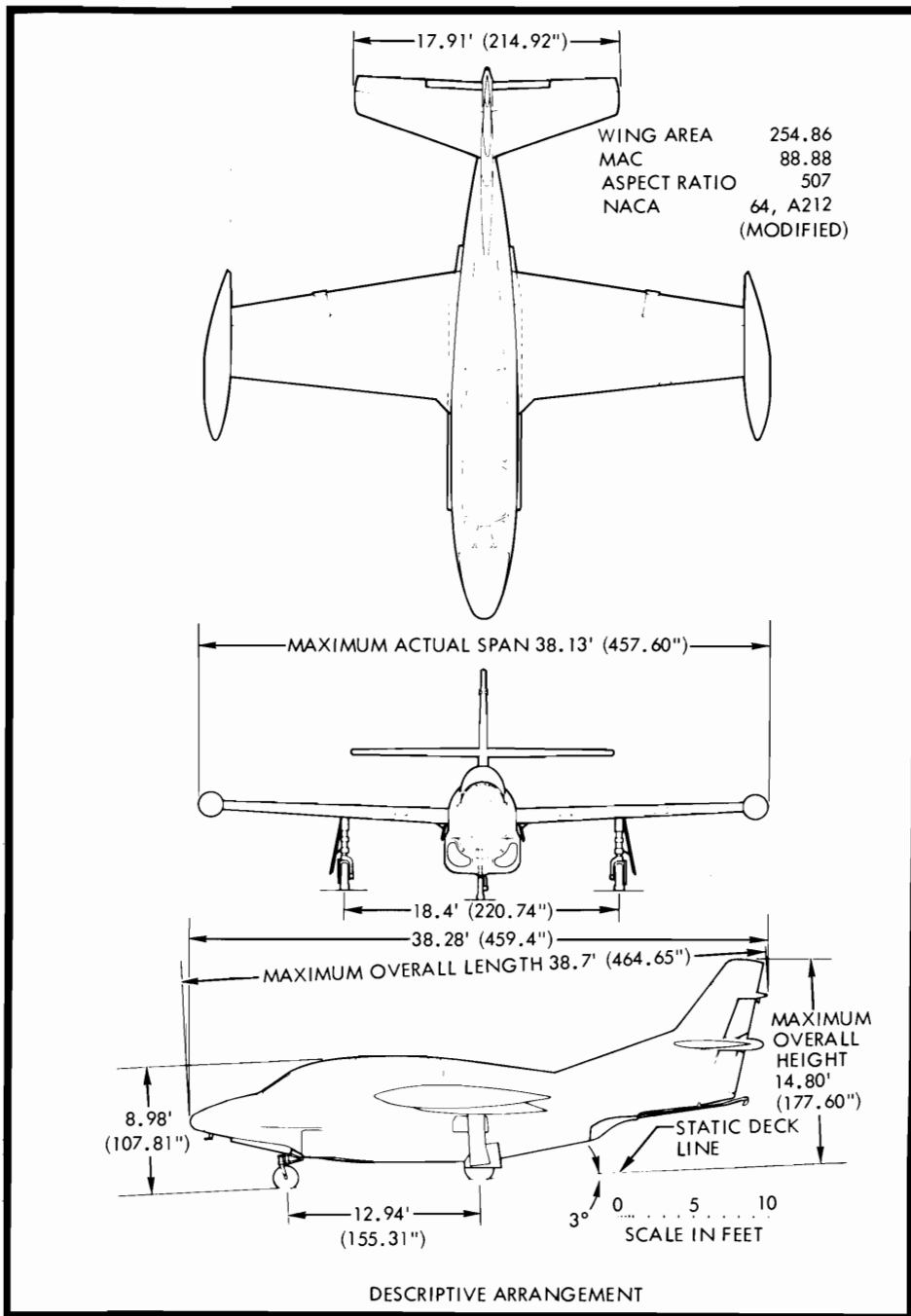
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COMMANDER OF THE NAVAL AIR SYSTEMS COMMAND

JANUARY 1970



STANDARD AIRCRAFT CHARACTERISTICS
T-2B
TRAINER

NORTH AMERICAN AVIATION, INC.

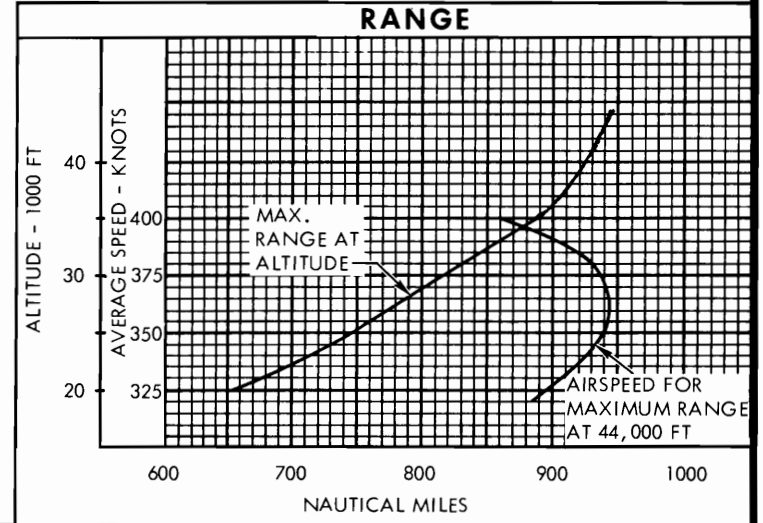
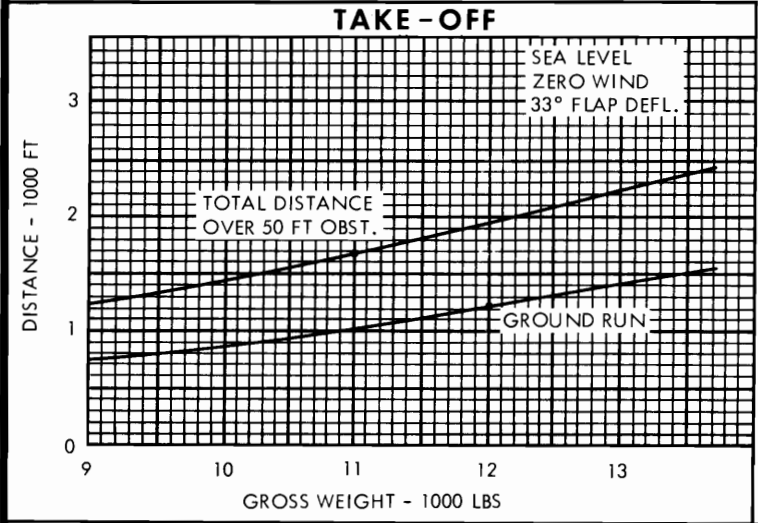
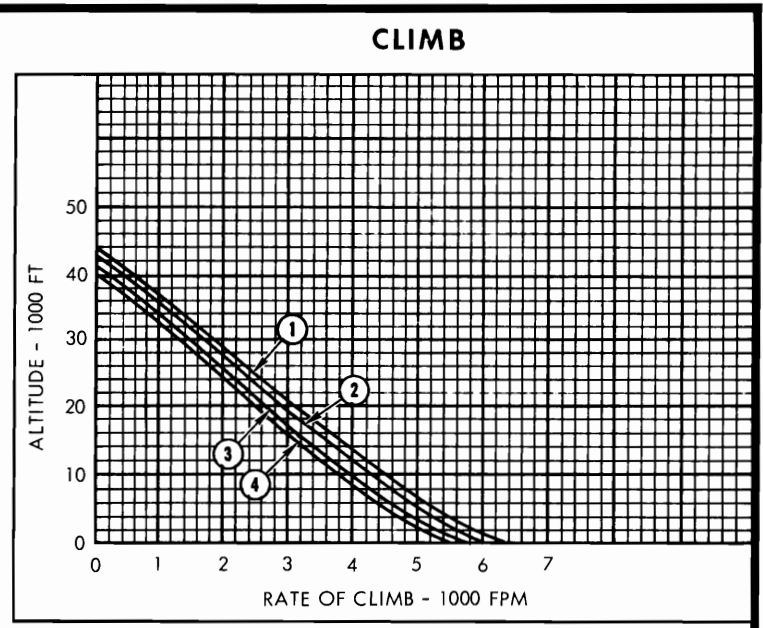
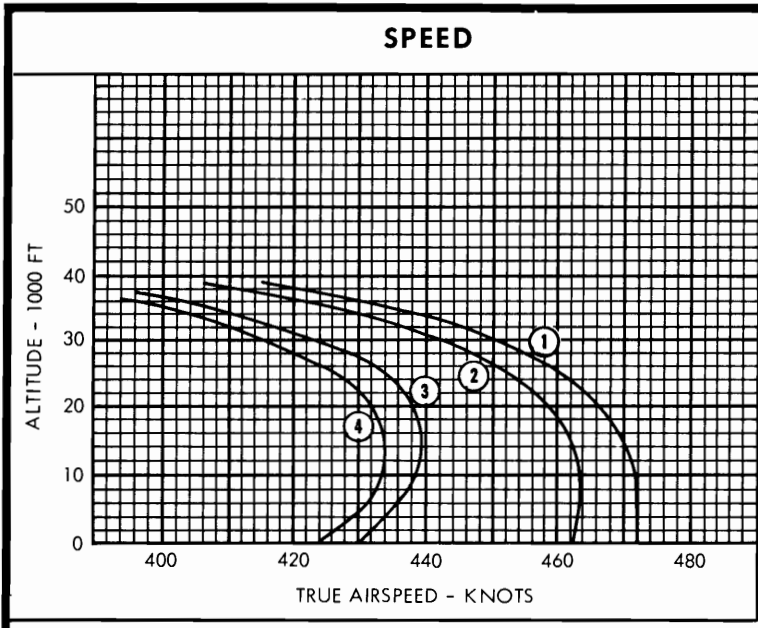


T-2B

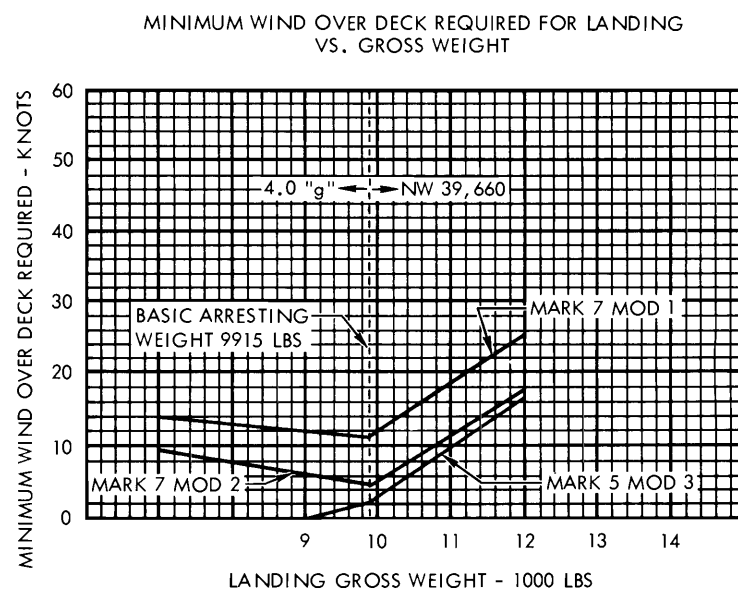
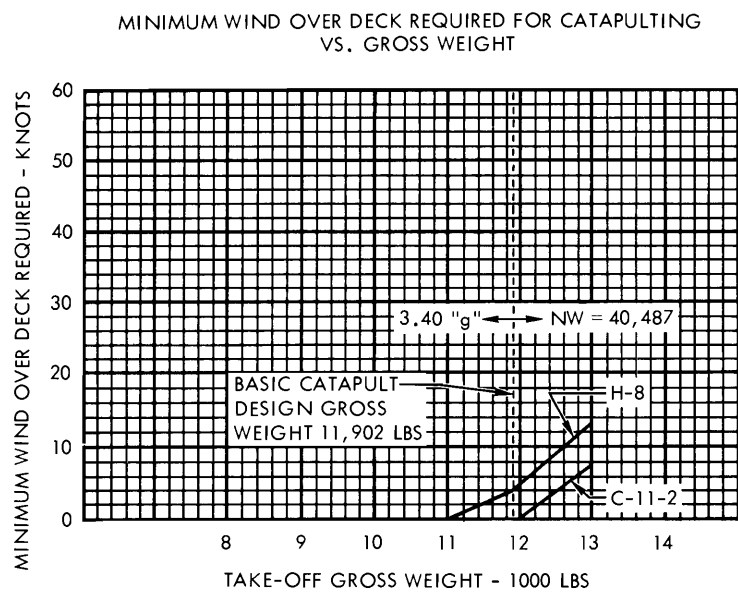
| POWER PLANT | | | | | MISSION AND DESCRIPTION | | WEIGHTS | | |
|--|---|---------------------|----------|----|---|---|-----------------------------|----------------|-----------|
| NO. & MODEL | (2) J60-P-6 | | | | <p>This airplane is a follow-on production configuration of the Model YT-2B (T2J-2) Prototype 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 | | | | | FUEL AND OIL | | | | |
| NO. | CAL. | ROUNDS | LOCATION | | LOCATION | FUEL TANKS | GAL. | | |
| 2 | .50 | 100 each | Wings | | Fuselage | 1 | 387 | | |
| 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. | | | | | Wing Leading Edge | 2 | 100 | | |
| BOMBS | | | | | Tip-Tanks | 2 | 204 | | |
| External, one location under each wing (W.S. 134.5) | | | | | Grade | | JP-4 or JP-5 MIL-J-5624D | | |
| NO. | TYPE | | | | OIL | | | | |
| 2 | MK 86 practice bombs | | | | Engine Tank | 2 | 3.2 | | |
| or 2 | MK 15 practice bombs | | | | Specification | | MIL-L-23699 | | |
| or 2 | A/A37B-3 practice racks and 12 MK76 Mod 4 or 5 practice bombs | | | | | | | | |
| or 2 | A/A 37B-3 practice racks and 12 MK 106-3 practice bombs | | | | | | | | |
| ROCKETS | | | | | ELECTRONICS | | | | |
| External, one location under each wing (W.S. 134.5) | | | | | IFF/SIF Identification | AN/APX-64 | | | |
| NO. | SIZE | TYPE | | | UHF Command | AN/ARC-52X | | | |
| 2 | 2.25 in. | Practice Rocket | | | TACAN Equipment | AN/ARN-52(V) | | | |
| 14 | 2.75 in. | Mighty Mouse Rocket | | | Receiving Set | AN/ARR-40 | | | |
| 2 | 2.75 in. | Single-Mounted | | | Direction Finder | AN/ARA-25A | | | |
| 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. | | | | | Interphone | C-2379/AIC | | | |
| | | | | | Provisions for: | | | | |
| | | | | | Fire Control System | AN/AWG-6 (MK6 MOD 4 + AN/APG-30A) | | | |
| DIMENSIONS | | | | | Wing Area | 254.86 Sq. Ft. | | | |
| | | | | | Span | 38.13 Ft. | | | |
| | | | | | Length | 38.28 Ft. | | | |
| | | | | | Height | 14.80 Ft. | | | |
| | | | | | Tread | 18.40 Ft. | | | |

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



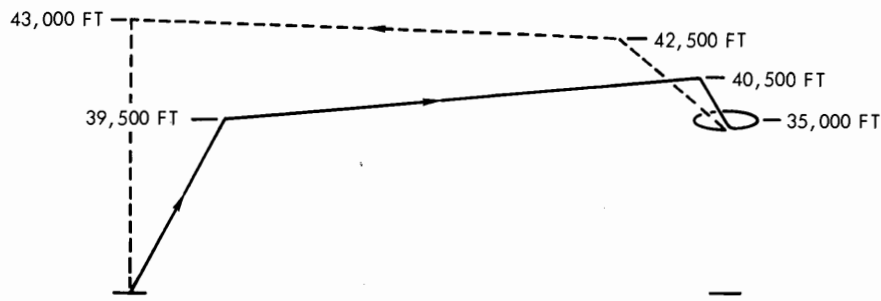
NOTES:

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

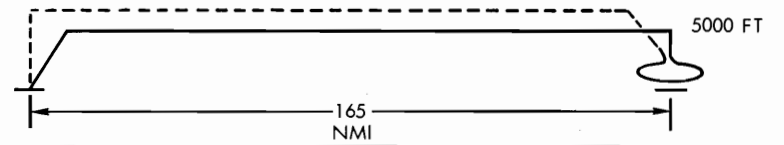
1. Approach Speeds are Based on Approach Speeds Recommended from Ship Board Carrier Suitability Trails for T-2A (T2J-1) Airplane.

| 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