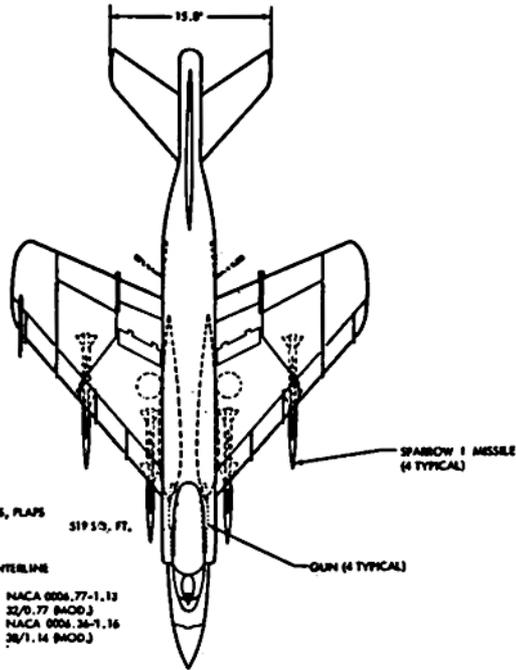


STANDARD AIRCRAFT CHARACTERISTICS

MF-3B (F3H-2M) "DEMON"

McDONNELL



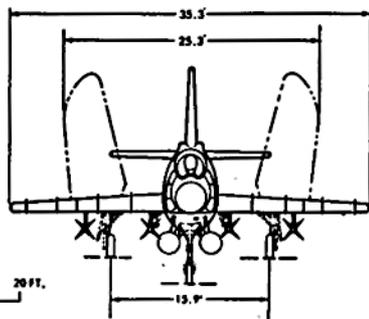
TOTAL WING AREA INCLUDING ALERONS, FLAPS AND 103.8 SQ. FT. OF FUSELAGE

AIR FOIL DESIGNATION PARALLEL TO CENTERLINE

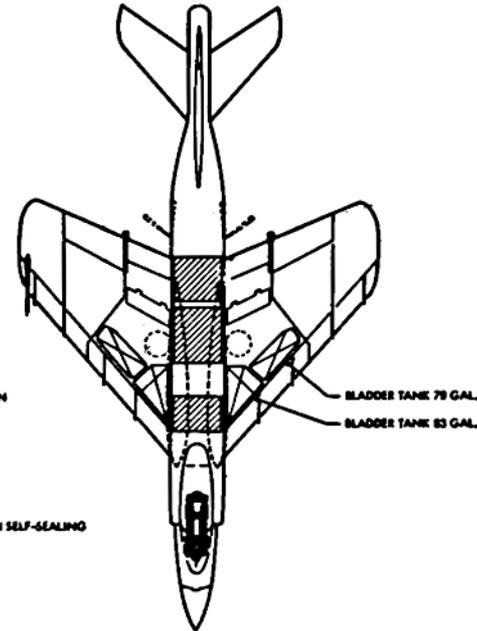
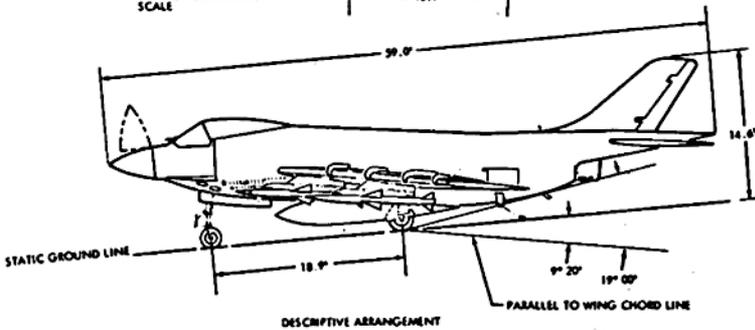
WING ROOT MACA 0008.77-1.13
 32/0.77 (MOD.)

WING TIP (CONSTRUCTION TIP) MACA 0008.26-1.16
 28/1.14 (MOD.)

GEOMETRIC ASPECT RATIO
WING 2.41



0 5 10 15 20 FT.
SCALE



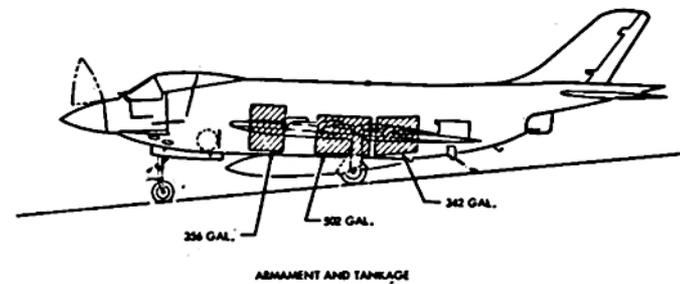
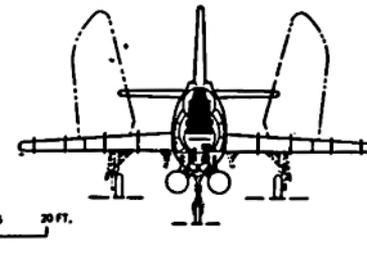
PROTECTION

PILOT FWD -79 LBS.

BACK ARMOR PLATE -50 LBS.

FLOOR PLAK PLATE -22 LBS.

SELF-SEALING FUEL CELLS 495 LBS.



SERVICE

POWER PLANT

NO. & MODEL..... (1)J71-A-2B
 MFG..... ALLISON
 SPEC..... ALLISON NO. 361-F
 TYPE ... AXIAL FLOW-TURBO JET
 AUGMENTATION ... AFTERBURNER
 LENGTH(INCL.A.B)..... 287.1"
 HEIGHT 42.0"
 WIDTH 42.6"

RATINGS**STATIC THRUST
AT SEA LEVEL**

| | LBS. | RPM |
|-----------|----------|-----------|
| MAX.(A/B) | 14400 | 6175 |
| MIL | 10000 | 6175 |
| NORM | 8700 | 6000(EST) |
| 90% NORM | 7920 | 5920 |
| 75% NORM | 6600 | 5820 |
| IDLE | 714(MAX) | 3950(MIN) |

ORDNANCE

4-20 MM. MK 12 AIRCRAFT GUNS
 600 RDS. MK 12 20MM. AMMO.
 (NORMAL LOAD)
 760 RDS. MK 12 20 MM. AMMO.
 (FOR SPECIAL LOADINGS)
 1 - AFCS MK 16 MOD B
 1 - AN-N-6A GUN CAMERA

EXTERNAL

4 - SPARROW I MISSILES
 2 - DOUGLAS EJECTOR RACKS
 (FUS.)
 4 - SIDEWINDER MISSILES
 (ALTERNATE LOAD)

MISSION AND DESCRIPTION

THE MCDONNELL MF-3B (F3H-2M) AIRPLANE IS A SINGLE PLACE, SWEEP-WING, JET-PROPELLED FIGHTER AND IS DESIGNED FOR EITHER LAND OR CARRIER BASED OPERATIONS.

THE MF-3B IS EQUIPPED WITH THE SPARROW I WEAPON SYSTEM WHICH CONSISTS OF PROVISIONS FOR CARRYING FOUR SUPERSONIC AIR-TO-AIR GUIDED MISSILES AND SPECIAL ELECTRONIC GUIDANCE EQUIPMENT. FURTHER ARMAMENT CONSISTS OF FOUR FORWARD FIRING 20 MM GUNS. PROVISIONS ARE INCLUDED FOR TWO HEAVY DUTY PYLONS ON THE UNDERSIDE OF THE FUSELAGE FOR CARRYING VARIOUS EXTERNAL STORES.

THE MF-3B IS PROVIDED WITH TRICYCLE LANDING GEAR, CATAPULT AND ARRESTING GEAR, AND FOLDING WING PANELS. EQUIPMENT INCLUDES AN AUTOMATIC PILOT, EJECTION SEAT, AND PRESSURIZED COCKPIT. AN AUXILIARY POWER UNIT MAY BE CARRIED EXTERNALLY TO PROVIDE FOR ENGINE STARTING WHEN OPERATING FROM ADVANCE BASES.

POWER ACTUATED LEADING EDGE SLATS AND TRAILING EDGE PLAN FLAPS INCREASE LIFT FOR LANDING AND TAKE-OFF, AND FUSELAGE MOUNTED SPEED BRAKES PROVIDE DRAG CONTROL IN FLIGHT. THE PRIMARY CONTROL SYSTEM INCORPORATES POWER ACTUATION WITH ARTIFICIAL FEEL FORCES. PROVISIONS ARE INCLUDED FOR OBTAINING MODERATE CONTROL FORCES DURING EMERGENCY OPERATION.

DEVELOPMENT

FIRST FLIGHT AUGUST 1955
 SERVICE USE AUGUST 1956

DIMENSIONS

WING
 AREA 519 SQ.FT.
 SPAN 35' - 4"
 MAC 15' - 6"
 SWEEPBACK(∠CHORD)..... 43° - 12'
 LENGTH(OVERALL)..... 58' - 11.5"
 HEIGHT 14' - 6.6"
 TREAD 15' - 10.4"

WEIGHTS

| LOADING | LBS | L.F. |
|--------------------------|--------|------|
| EMPTY | 21292 | — |
| BASIC | 22028 | — |
| DESIGN | 26000 | 7.5 |
| COMBAT | 30547 | 6.0 |
| MAX. TO | 39000 | — |
| MAX. -CARRIER LAND... | 267000 | — |

FUEL AND OIL

| NO. TANKS | GAL/TANK | LOCATION |
|-----------|----------|----------------|
| 1 | 356 | FUSELAGE, FWD. |
| 1 | 502 | FUSELAGE, CEN. |
| 1 | 342 | FUSELAGE, AFT. |
| 2 | 166 | WING, INBOARD |
| 2 | 140 | WING, OUTBOARD |
| 2 | 282 | EXTERNAL TANKS |

FUEL GRADE...MIL-F-5624D OR
 CHEAPEST MIL-F-5572
 FUEL SPEC... MIL-F-5624D OR
 MIL-F-5572
 FUSELAGE TANKS SELF-SEALING
 WING TANKS BLADDER TYPE

OIL

INTEGRAL WITH ENGINE
 SPEC MIL-L-7808

ELECTRONICS

UHF..... AN/ARC-27A
 UHF DF AN/ARA-25
 SHORT RANGE NAV. .. AN/ARN-6
 RADIO ALTIMETER .. AN/APN-22
 IFF IDENTIFIER ... AN/APX-6B
 RADAR AN/APQ-51
 VIDEO CODER AN/APA-89
 SPECIAL EQUIPMENT
 PROVISIONS FOR ADF AN/ARN-21
 (ALTERNATE FOR AN/ARN-6)

SERVICE

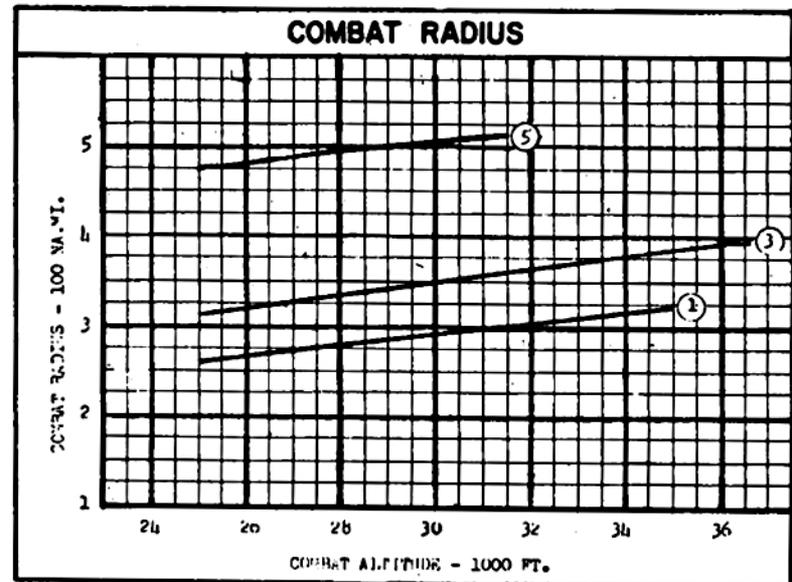
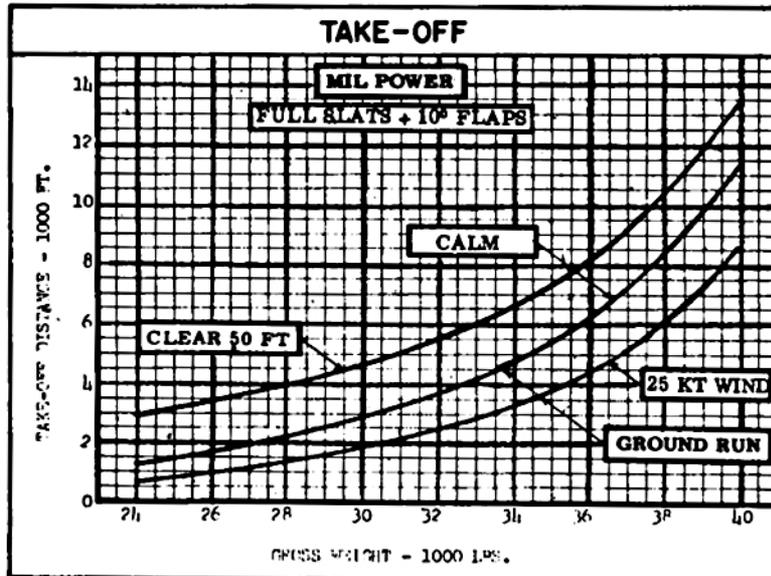
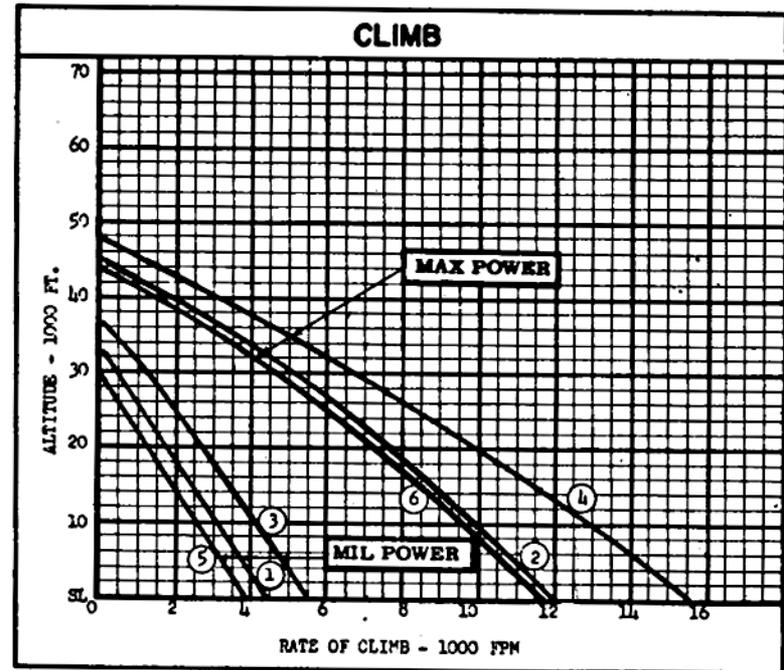
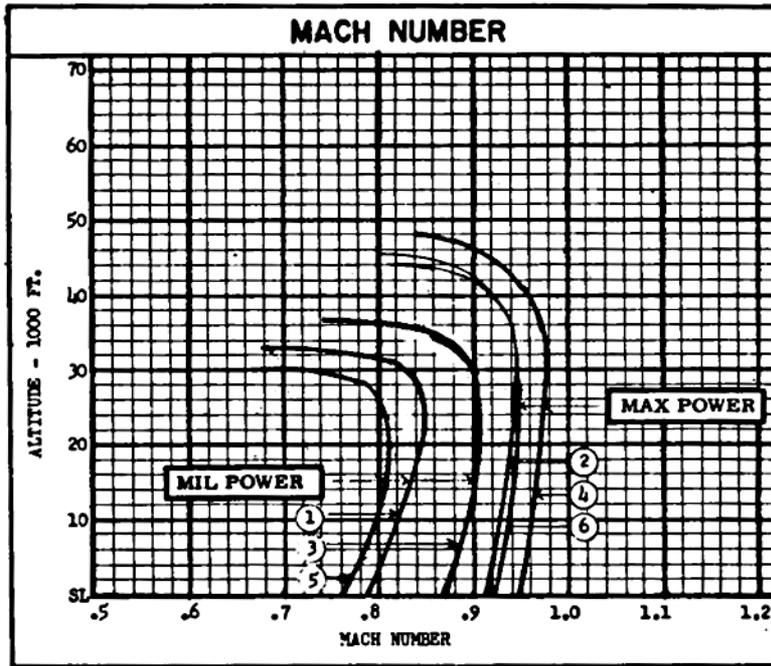
| PERFORMANCE SUMMARY | | | | | |
|--|---|--------------------------|---|-----------------------------------|------------|
| TAKE-OFF LOADING CONDITION | (1) G.P. FIGHTER (4) SP. 1 MISSILES | (3) G.P. FIGHTER GUNS | (5) G.P. FIGHTER (2) SP. 1 + (282 GAL. TKS. | (7) G.P. FIGHTER (2) SPARROW 1 | |
| TAKE-OFF WEIGHT | lb. | 34641 | 32901 | 38168 | 33771 |
| Fuel internal/external (JP-5) | lb./lb. | 10241/ | 10241/ | 10241/3835 | 10241/ |
| Payload AMMO./MISSILES | lb./lb. | 432/1340 | 432/ | 432/670 | 432/670 |
| Wing loading | lb./sq.ft. | 66.7 | 63.4 | 73.5 | 65.1 |
| Stall speed - power-off | kn. | 117 | 114 | 122 | 115 |
| Take-off run at S.L. - calm (A)/(B) | ft. | 5110/2330 | 4110/2075 | 8690/2895 | 4580/2210 |
| Take-off run at S.L. 25 kn. wind (A)/(B) | ft. | 3560/1550 | 2790/1360 | 6380/1970 | 3140/1450 |
| Take-off to clear 50 ft. - calm (A)/(B) | ft. | 6950/3685 | 5900/3340 | 10600/4445 | 6390/3515 |
| Max. speed/altitude (A) | M./ft. | .85/25000 | .91/25000 | .81/20000 | .88/25000 |
| Rate of climb at S.L. (A) | fpm. | 4425 | 5510 | 3800 | 4910 |
| Time: S.L. to 20000 ft. (A) | min. | 6.98 | 5.48 | 7.18 | 6.15 |
| Time: S.L. to 30000 ft. (A) | min. | 15.75 | 10.53 | 23.95 | 12.85 |
| Service ceiling (100 fpm) | ft. | 32450 | 36150 | 29250 | 34300 |
| Combat range | n.mi. | 861 | 1124 | 1295 | 974 |
| Average cruising speed | M. | .73 | .79 | .74 | .78 |
| INITIAL CRUISING ALTITUDE | ft. | 29900 | 35900 | 25900 | 32300 |
| FINAL CRUISING ALTITUDE | FT. | 35600 | 40200 | 36800 | 37900 |
| COMBAT RAD./DECK CYCLE TIME N. MI/HR | | 302/2.09 | 385/2.37 | 510/3.05 | 344/2.25 |
| AVERAGE CRUISING SPEED | M. | .75 | .79 | .75 | .77 |
| CAP LOITER TI./DECK CYCLE TI. HR/HR | | 74/2.13 | 1.06/2.40 | 1.79/3.19 | .91/2.28 |
| IFR RAD/DECK CYCLE TI. (C) NMI/HR. | | 573/3.41 | 684/3.75 | - 742/4.21 | 623/3.57 |
| COMBAT LOADING CONDITION | (2) SPARROWS RETAINED | (4) CLEAN | (6) TANKS OFF SPARROWS ON | (8) SPARROWS OFF | |
| COMBAT WEIGHT | lb. | 30547 | 28807 | 32272 | 29007 |
| Engine power | | MAXIMUM | MAXIMUM | MAXIMUM | MAXIMUM |
| Fuel | lb. | 6147 | 6147 | 8446 | 6147 |
| Combat speed/combat altitude | M/ft. | .95/31600 | .92/35000 | .95/31500 | .96/34000 |
| Rate of climb/combat altitude | fpm/ft. | 4680/31600 | 5140/35000 | 4400/31500 | 4800/34000 |
| Combat ceiling (500 fpm) | ft. | 43550 | 46500 | 42700 | 45700 |
| Rate of climb at S.L. | fpm. | 12030 | 15430 | 11830 | 14690 |
| Max. speed at S.L. | M. | .91 | .95 | .92 | .94 |
| Max. speed/altitude | M./ft. | .95/30000 | .98/35000 | .95/35000 | .96/35000 |
| LANDING WEIGHT | lb. | 25001 | 24597 | 25291 | 24798 |
| Fuel | lb. | 1941 | 1937 | 2135 | 1938 |
| Stall speed - power-off/appr. power | kn./kn. | 97/93 | 96/92 | 98/93 | 97/93 |
| Distance - ground roll/appr 50 ft. obst. | ft./ft. | 4700/6755 | 4655/6700 | 4725/6795 | 4680/6730 |

NOTES

PERFORMANCE BASIS: CONTRACTOR AND NATC FLIGHT TEST
 RANGE AND/OR RADIUS ARE BASED ON FLIGHT TEST FUEL CONSUMPTION DATA

- (A) MILITARY RATED THRUST
- (B) MAXIMUM RATED THRUST
- (C) COMBAT AIR PATROL-150 NAUTICAL MILE RADIUS

ALL LOADINGS INCLUDE GUNS.



○ LOADING CONDITION COLUMN NUMBER

SERVICE

NOTES

SPOTTING: A TOTAL OF 64 AIRPLANES CAN BE ACCOMODATED IN A LANDING SPOT ON THE FLIGHT AND HANGER DECKS OF A CVA-19 CLASS CANTED DECK CARRIER.

GENERAL PURPOSE & ESCORT FIGHTER

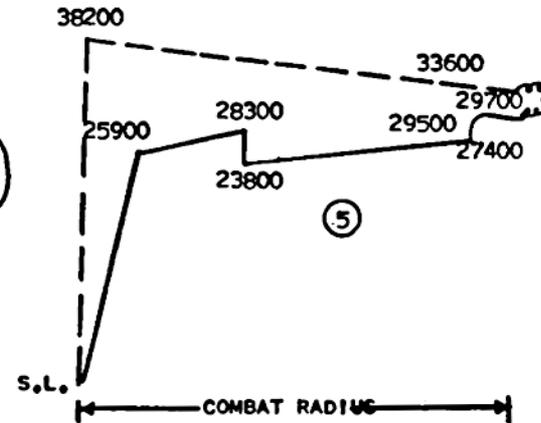
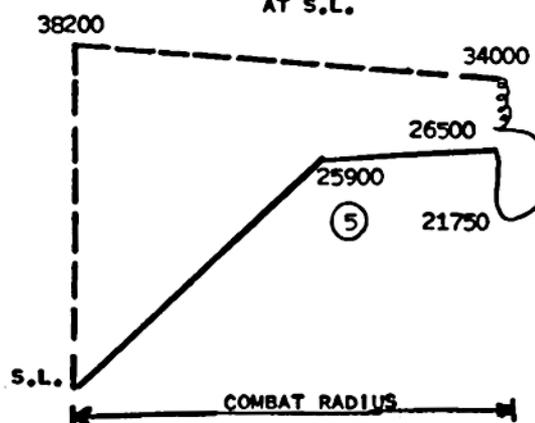
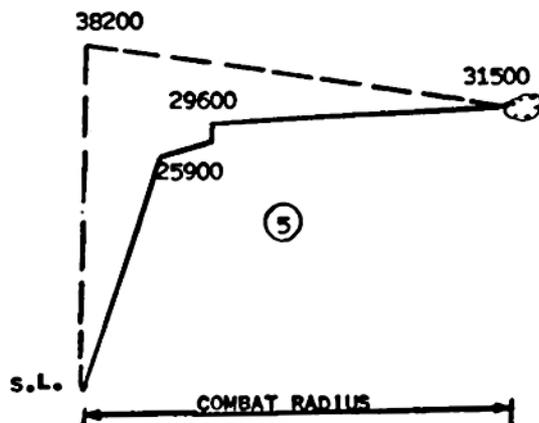
1. WARM-UP: FUEL FOR 5 MIN. WITH NORMAL THRUST
2. CLIMB: WITH MIL. THRUST TO OPT. CRUISE ALT.
3. CRUISE-OUT: AT ALT. & SPEED FOR MAX. RANGE
4. COMBAT ALLOWANCE:
ALTITUDE: OPT. CRUISE ALT. CORRESPONDING TO GROSS WEIGHT PRIOR TO COMBAT OR 35000 FT. WHICHEVER IS LOWER.
FUEL FOR: (A) 15 MIN. MIL. THRUST AT MMAX.
(B) 5 MIN. AB THRUST AT MMAX.
5. CRUISE-BACK: AT ALT. & SPEED FOR MAX. RANGE
6. RESERVE: (A) 5% INITIAL FUEL.
(B) FUEL FOR 20 MIN. MAX. ENDURANCE AT S.L.

COMBAT AIR PATROL

1. WARM-UP: FUEL FOR 5 MIN. WITH NORM. THRUST
2. CLIMB: WITH MIL. THRUST TO OPT. CRUISE ALT.
3. CRUISE-OUT: TO A POINT 150 NA. MI. FROM BASE AT ALT. & SPEED FOR MAX. RANGE.
4. LOITER: ON STATION AT ALT. & SPEED FOR MAX. ENDURANCE.
5. COMBAT ALLOWANCE:
ALTITUDE: OPT. CRUISING ALT. CORRESPONDING TO GROSS WEIGHT PRIOR TO COMBAT OR 35000 FT. WHICHEVER IS LOWER.
FUEL FOR: (A) 15 MIN. MIL. THRUST AT MMAX
(B) 5 MIN. MAX. THRUST AT SPEED MIDWAY BETWEEN MIL. MMAX AND AB MMAX.
6. CRUISE-BACK: AT SPEED & ALT. FOR MAX. RNG.
7. RESERVE: (A) 5% INITIAL FUEL
(B) FUEL FOR 20 MIN. MAX. ENDURANCE AT S.L.

GENERAL PURPOSE FIGHTER WITH IN-FLIGHT REFUELING

1. WARM-UP: FUEL FOR 5 MIN. WITH NORMAL THRUST.
2. CLIMB: WITH MIL. THRUST TO OPT. CRUISE ALT.
3. CRUISE-OUT: AT ALT. & SPEED FOR MAX. RANGE.
4. REFUELING ALLOWANCE FOR HOOK-UP AND FLT. CONTINGENCIES: FUEL FOR 5 MIN. AT SPD. & ALT. FOR MAX. ENDURANCE. NO FUEL USED OR DISTANCE GAINED DURING TRANSFER.
5. CRUISE-OUT: AT ALT. & SPEED FOR MAX. RANGE.
6. COMBAT ALLOWANCE
7. CRUISE BACK
8. RESERVE



MISSION TIME EXCLUDES WARM-UP, TAKE-OFF & RESERVE FUEL
CYCLE TIME EXCLUDES WARM-UP, TAKE-OFF FUEL

IF JP-4 FUEL IS USED, THE FOLLOWING ARE APPLICABLE:
G.P. FIGHTER - GUNS/2 SPARROWS
G.P. FIGHTER - GUNS/2 SPARROWS
PLUS 2-282 GAL. TANKS
G.P. FIGHTER - GUNS/2 SPARROWS
PLUS 2-282 GAL. TANKS - IFR

| Δ WEIGHT | Δ RANGE | Δ RADIUS | Δ DECK CYCLE TIME |
|-----------------|----------------|-----------------|--------------------------|
| -380 | -55 | -28 | -.13 |
| -621 | -59 | -30 | -.14 |
| -621 | -78 | -39 | -.18 |

○ LOADING CONDITION COLUMN NUMBER