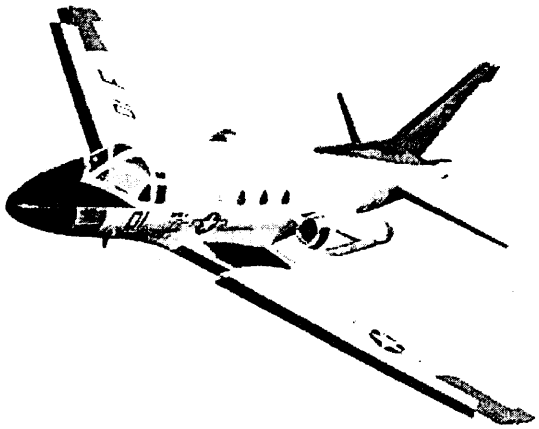


# CTW-6 IN-FLIGHT GUIDE

## SECTION III

# T-39 SABRELINER

JUN 2003

# T-39 COMM CARD

| CH | UHF | AGENCY | VHF |
|---|---|---|---|
| 1 | 267.6 | ATIS | |
| 2 | 268.7 | CLEARANCE DELIVERY | 134.1 |
| 3 | 336.4 | GROUND | 121.7 |
| 4 | 340.2 | TOWER | 120.7 |
| 5 | 372.0 | DEPT/APPCH | 120.05 |
| 6 | 270.8 | DEPT/APPCH | 120.65 |
| 7 | 314.0 | APPROACH | 125.35 |
| 8 | 239.05 | GCA | |
| 9 | 305.2 | GCA | |
| 10 | 318.8 | GCA | |
| 11 | 285.625 | GCA | |
| 12 | 348.725 | GCA | |
| 13 | 383.8 | GCA | |
| 14 | 345.0 | GCA | |
| 15 | 313.2 | SEABREEZE | |
| 16 | 280.7 | GRIT ROCK | |
| 17 | 255.4 | FSS | |
| 18 | 315.4 | VT-86 BASE | |
| 19 | 355.4 | VT-10 BASE | |
| 20 | 360.4 | VT-4 BASE | |

# T-39 MESL

**(Minimum Equipment Systems List)**

**Day or Night VMC Operations**

| | |
|---|---|
| Caution/Warning Lights | |
| Airframe | |
| Anti-collision or Strobe Lights | |
| Electrical System | |
| Emergency Equipment | |
| Engine Instruments | |
| Engines | |
| Explosive Devices | |
| Flight Controls | |
| Flight Reference | Note 1 |
| Fuel System | |
| Fuselage Compartments | |
| Hydraulic System | |
| ICS (Pilot/Co-pilot) | |
| Instruments/Instrument Systems | Note 2 |
| Landing Gear | |
| $O_2$ Systems (Cockpit) | |
| Pressurization | Note 3 |
| VHF/UHF Communications | Note 4 |
| MX Inspections | Note 5 |

**Day or Night IMC Operations**

| | |
|---|---|
| Clock | Note 11 |
| AFCS | |
| Flight Directors | |
| Vertical Gyro (#1 and #2) | |
| VOR/ILS or TACAN | |
| Weather Radar or Storm Scope | |
| Transponder | |
| Anti-Ice Systems | |
| Windshield Wipers | |
| AOA/Stall Warning | |

**Day or Night IMC/VMC Carrying Passengers**

| | |
|---|---|
| Cabin Seating | |
| Emergency Lights | |
| Cabin Communications | |
| Passenger Oxygen System | |

**Day or Night IMC/VMC CNATRA UMFO syllabus**

| | |
|---|---|
| Radar Altimeter | Note 6 |
| Aux Air Conditioner | Note 7 |
| Digital Fuel Totalizer | Note 8 |
| ICS (FWD Instructor) | |
| ICS (Aft Crew Stations, if equipped) | Note 9 |
| Aft Student Console (if equipped) | Note 9 |
| RADAR | Note 10 |

**Notes:**

1. Flight reference includes both Vertical Gyro and Gyro Compass system
2. Flight Instruments include: Magnetic Compass, STBY Gyro, Free Air Temp Indicator, and the Pilots side: Altimeter, Airspeed Indicator, VVI.
3. Must be capable of closing BOTH engine bleed air valves. Ram and dump must also operate
4. VHF <u>or</u> UHF communication system is required.
5. As per applicable approved maintenance program directives.
6. <u>Not</u> required for DAY VMC flights.
7. Required for operations during high ambient temperature conditions.
8. Required for RDR Navigation Flights
9. Required for RIO and RNAV Missions
10. Required for RIO, RNAV, and STK/COMP missions with the exception of designated optional syllabus composites.
11. A personal clock may be substituted at the AC/MC's discretion

**DIVERSION CHART**
**DIVER FROM SEA LEVEL AND ARRIVE WITH 1100LB**

| | CRUSE ALTITUDE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **FUEL REMAINING** | SL | 5000 | 10000 | 15000 | 20000 | 25000 | 30000 | 35000 | 40000 |
| **1200** | 10 | | | | | | | | |
| **1400** | 30 | 34 | 41 | 45 | | | | | |
| **1600** | 50 | 58 | 69 | 79 | 75 | | | | |
| **1800** | 70 | 82 | 97 | 104 | 108 | 109 | | | |
| **2000** | 90 | 106 | 125 | 138 | 146 | 153 | 162 | 168 | |
| **2200** | 110 | 130 | 153 | 172 | 184 | 197 | 212 | 216 | 223 |
| *START DESCENT* | *0* | *10* | *20* | *30* | *42* | *55* | *70* | *82* | *98* |
| **CRUSE MACH** | **0.43** | **0.44** | **0.45** | **0.48** | **0.51** | **0.54** | **0.59** | **0.63** | **0.69** |

**DIVER FROM 15,000'**

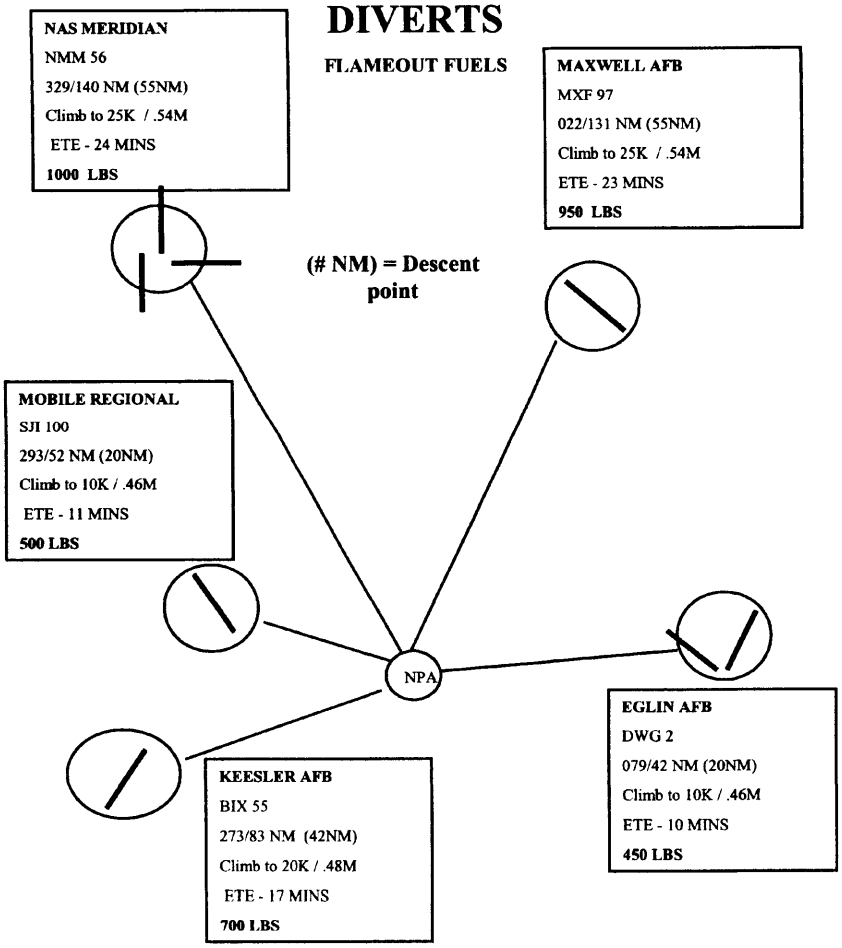
| | CRUSE ALTITUDE | | | | | |
|---|---|---|---|---|---|---|
| **FUEL REMAINING** | 15000 | 20000 | 25000 | 30000 | 35000 | 40000 |
| **1200** | 30 | | | | | |
| **1400** | 64 | 61 | | | | |
| **1600** | 98 | 101 | 102 | 105 | | |
| **1800** | 126 | 141 | 149 | 160 | 158 | |
| **2000** | 158 | 179 | 193 | 210 | 216 | 224 |
| **2200** | 190 | 217 | 237 | 260 | 274 | 288 |
| *START DESCENT* | *30* | *42* | *55* | *70* | *82* | *98* |
| **CRUSE MACH** | **0.48** | **0.51** | **0.54** | **0.59** | **0.63** | **0.69** |

| **DIVERT FROM CRUSE ATITTUDE** | |
|---|---|
| 35000 | 40000 |
| DESCENT | DESCENT |
| 108 | 117 |
| 166 | 181 |
| 224 | 245 |
| 282 | 309 |
| 340 | 373 |
| *82* | *98* |
| **0.63** | **0.69** |

**NOTE:** CLIMB AT 260 KIAS / 0.69 MACH. START DESCENT DISTANCE IS IN *ITALICS.*
IDLE DESCENT AT 200 KIAS **NO FUEL** FOR APPROACH

# T-39 QUICK LOOK DIVERTS

**FLAMEOUT FUELS**




•Fuel = **0 fuel overhead field** – add landing fuel

•From MAP – climb at 260 KIAS/.69M then set **Max Range** mach #

•NO WIND

# T-39 ROUTE ENTRY/FENCE CHECKS

ROUTE ENTRY CHECKLIST

1. Fuel Quantity / Balance..... CHECK
2. Route entry brief..... COMPLETE
3. RADAR setup (if applicable)..... COMPLETE
4. RAD ALT..... SET AS REQ'D
5. Altimeter..... CHECK
6. FSS Call..... COMPLETE (IF REQ'D)
7. Preflight winds..... REVIEWED
8. Base Airspeed..... CALCULATE
9. Outbound heading..... BRIEF
10. Outbound airspeed..... BRIEF
11. Altitude..... BRIEF
12. Clock brief..... COMPLETE
13. Squawk.....4000 (IF REQ'D)

FENCE CHECKS

1. Altimeter..... CHECK
2. RADAR setup.....COMPLETE
3. A/A TACAN setup.....COMPLETE

## T-39 DIVERT DATA

| DIVERT BASE TACAN | FUEL REQ. @ NPA IAF (If ALT is VFR) | FUEL REQ. @ NPA IAF (If ALT is IFR) | HDG/ DIST | ALT Mach # | AFLD COORD | LENGTH ELEV | INST APPCH | FREQS |
|---|---|---|---|---|---|---|---|---|
| P'COLA REG PNS | **1500** | **NA** | 046 10 | SL .43 | N30-28 W87-11 | 7000' 121 | ILS VOR ASR | A269.375 T257.8 |
| EGLIN AFB DWG 2 | **1850** | **2500** | 079 42 | 10K .46 | N30-29 W86-32 | 12,000' 85 | TAC ILS ASR | A281.45 T353.65 |
| MOB REG SJI 100 | **1900** | **2300** | 293 52 | 10K .46 | N30-42 W88-15 | 8527' 218 | ILS TAC VOR ASR | A269.3 T239.0 |
| KEESLER AFB BIX 55 | **2100** | **2500** | 273 83 | 20K .51 | N30-25 W88-55 | 7632' 34 | ILS TAC VOR ASR | A354.1 T269.075 |
| TYNDALL AFB PAM 124 | **2150** | **2800** | 100 92 | 20K .51 | N30-04 W85-35 | 10,000' 18 | ILS PAR TAC | A392.1 T384.4 |
| MAXWELL AFB MXF 97 | **2350** | **2850** | 022 131 | 25K .54 | N32-23 W86-22 | 8006' 169 | TAC VOR ILS ASR | A380.225 T253.5 |
| NAS MERIDIAN NMM 56 | **2400** | **2900** | 329 140 | 25K .54 | N32-33 W88-33 | 8002' 317 | PAR ILS | A276.4 T340.2 |
| NAS NEW ORLEANS NBG 88 | **2400** | **3000** | 258 143 | 25K .54 | N29-50 W90-02 | 8000' 3 | TAC ILS VOR PAR | A256.9 T340.2 |

### PLANNING ASSUMPTIONS:

- This chart is used for divert **FROM** NPA to desired divert base
- **FUEL Required @ IAF** Includes: From the MAP, go Missed Approach, proceed the divert airfield to land w/ **1100 lbs (Min Fuel) AT** the divert field. **Use the correct column depending on if the divert is IFR or VFR:**
  - If Divert/Alternate field is **VFR**, Fuel is to overhead the divert airfield
  - If Divert/Alternate Field is **IFR** (but still a legal wx alternate), fuel is to farthest IAF + instrument approach **At the divert airfield**
- **From Missed Approach Pt** - climb at 260 KIAS / 0.69 MACH until indicated cruise altitude then maintain cruise mach.
- Based on 14,000 lb A/C @ +20°C
- **NO WIND** – add 10% to fuel required for a 60 kt headwind
- **MIN Fuel** = 1100 lbs, **EMER Fuel** = 800 lbs from Wing 6 SOP

# T-39 Fuel Planning

## NORMAL THRUST CLIMB (TWO ENGINES)

| ALTITUDE (1000'S ft) | TIME (Minutes) | FUEL (pounds) | DISTANCE (NM) |
|---|---|---|---|
| 10 | 3 | 230 | 12 |
| 15 | 5 | 350 | 22 |
| 20 | 7 | 470 | 32 |
| 21 | 8 | 500 | 36 |
| 23 | 9 | 530 | 40 |
| 25 | 10 | 600 | 47 |
| 27 | 12 | 680 | 55 |
| 30 | 13 | 790 | 73 |
| 33 | 16 | 900 | 94 |
| 35 | 18 | 970 | 105 |
| 37 | 20 | 1050 | 122 |
| 39 | 26 | 1180 | 152 |
| 41 | 31 | 1300 | 185 |

**Notes:**

- **Add 400 lbs for ST/TAXI/TO**
- **Descent – allow 30 lbs, 2 min, and 10 NM per 5000' of altitude**

## CRUISE FUEL – NORMAL THRUST – TWO ENGINES

| ALTITUDE | TAS | PPH | MAX RANGE (MACH / PPH) |
|---|---|---|---|
| SEA LEVEL | 300 | 3000 | |
| | 350 | 3500 | |
| 10K | 300 | 2600 | .475 / 2300 |
| 15K | 300 | 2400 | .51 / 2050 |
| | 360 | 2500 | |
| 20K | 360 | 2200 | .52 / 1700 |
| 23K | 360 | 2100 | .54 / 1600 |
| | 390 | 2300 | |
| | 420 | 2400 | |
| 25K | 360 | 2000 | .56 / 1550 |
| | 390 | 2150 | |
| | 420 | 2300 | |
| 27K | 360 | 1950 | .58 / 1500 |
| | 390 | 2050 | |
| | 420 | 2200 | |
| 29K | 360 | 1850 | .59 / 1430 |
| | 420 | 2100 | |
| 31K | 360 | 1700 | .61 / 1410 |
| | 390 | 1850 | |
| | 420 | 2000 | |
| 33K | 420 | 1950 | .63 / 1340 |
| 35K | 390 | 1750 | .64 / 1300 |
| | 420 | 1850 | |
| 37K | 390 | 1700 | .66 / 1270 |
| | 420 | 1800 | |
| 39K | 390 | 1650 | .68 / 1250 |
| | 420 | 1750 | |
| 41K | 390 | 1550 | .69 / 1200 |
| | 420 | 1650 | |
| 43K | 420 | 1500 | .71 / 1160 |
| 45K | 420 | 1400 | .72 / 1140 |

**Note:** PPH # = NATOPS PCL chart**+200lbs** to reflect accurate T-39N/G mission planning

# T-39 N/G VFR RTB CHART

| FROM | DIST (NM) | OPT ALT | CRUISE MACH | DESCENT POINT | FUEL REQD @ Pt |
|---|---|---|---|---|---|
| EGLIN AFB | 40 | 10K | .46 | 20 | 1550 |
| MOBILE Regional | 50 | 10K | .46 | 20 | 1600 |
| VR-1020/1024 Exit | 60 | 15K | .48 | 30 | 1850 |
| | 70 | 15K | .48 | 30 | 1900 |
| VR-1022 G (exit)<br>KEESLER AFB | 80 | 20K | .51 | 42 | 1950 |
| W155B<br>TYNDALL AFB | 90 | 20K | .51 | 42 | 2000 |
| | 100 | 20K | .51 | 42 | 2050 |
| VR-1031 M (exit) | 110 | 25K | .54 | 55 | 1900 |
| GULFPORT | 120 | 25K | .54 | 55 | 1960 |
| MONTGOMERY | 130 | 25K | .54 | 55 | 2010 |
| VR-1024 G<br>NAS MERIDIAN<br>NAS NEW ORLEANS | 140 | 25K | .54 | 55 | 2050 |
| VR-1021 J<br>VR-1055 G (exit) | 150 | 25K | .54 | 55 | 2095 |
| TALLAHASEE | 160 | 30K | .59 | 70 | 2190 |
| | 170 | 30K | .59 | 70 | 2230 |
| VR-1023 H | 180 | 30K | .59 | 70 | 2270 |
| VR-1031 F | 190 | 30K | .59 | 70 | 2310 |
| VR-1050 K (exit) | 200 | 35K | .63 | 82 | 2325 |
| | 210 | 35K | .63 | 82 | 2360 |
| | 220 | 35K | .63 | 82 | 2400 |
| VR-1032 J (entry/exit) | 230 | 35K | .63 | 82 | 2430 |
| | 250 | 35K | .63 | 82 | 2280 |
| VR-1006 I (exit)<br>VR-1032 G<br>VR-1050 E | 300 | 35K | .63 | 82 | 2669 |
| VR-1182 F (exit)<br>VR-1056 H (exit) | 350 | 35K | .63 | 82 | 2840 |
| VR-1006 I | 400 | 35K | .63 | 82 | 3010 |
| VR-189 H (exit)<br>VR-1059 K (exit) | 450 | 35K | .63 | 82 | 3185 |

**PLANNING ASSUMPTIONS:**

- **Direct** from Pt to arrive overhead NPA **w/ 1100 lbs**
- These are **VFR Recovery Fuels** - **DOES NOT** include IFR Alternate fuel! Add divert fuel for IFR alternate + 400 lbs for each instrument approach if required
- Climb from **SL** at 260 KIAS/.69M to cruise altitude then set max range cruise Mach #
- Based on 17,000 lb A/C @ +20°C
- **NO WIND** – add 10% to fuel required for a 60 kt headwind