CHECKLIST

For use with Yokota FTC aircraft only

N1840V (C172M) _____ Cessna 172M (1972)
N22905 (C172M) _____ Cessna 172M (1972)
N4972R (T41) _____ Cessna 172H (1967)
N5241F (T41) _____ Cessna 172F (1965)

JANUARY 2019
C172M & T41 CHECKLIST

YOKOTA FLIGHT TRAINING CENTER

CAUTION
AIRCRAFT MUST NOT MAKE CONTACT WITH THE BAK-12 ARRESTING CABLE

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AIRCRAFT MUST NOT MAKE CONTACT WITH THE BAK-12 ARRESTING CABLE

36 | 18
---|---
C2 | 3,700 ft | 7,300 ft
D2 | 7,650 ft | 3,350 ft
E2 | 9,650 ft | 1,350 ft

Practice zone 3,000 ft x 60 ft

CROSS APPROACH & DEPARTURE ENDS OF RUNWAY AT OR ABOVE 800 ft. MSL UNLESS OTHERWISE ADVISED
CABIN CHECK

Safety equipment ......................... CHECK
HOBBS ....................................... VERIFY
A.R.R.O.W documents ................... VERIFY
Gust lock ..................................... REMOVE
Throttle lock ............................... REMOVE
MAG & EIS switches ...................... VERIFY OFF
| Master Switch ........................... ON
| Aux fuel transfer switch(es).. TEST/OFF
| Fuel gauges ............................... CHECK
| Flaps ...................................... EXTEND
| Pitot heat (IFR) .......................... CHECK
| Lights (external/cabin) ................. CHECK
| Light & pitot heat switches .......... OFF
| Master Switch ........................... OFF
Fuel selector valve ..................... BOTH
CO detector ............................... TEST
Baggage .................................... STOWED/SECURE

EMPENNAGE

Baggage door ......................... CLOSED & SECURE
Autopilot static port (left side) ...... CHECK
Elevator (left/right) & trim tab ...... CHECK
Rudder ................................. CHECK
Control cables .......................... CHECK
VOR antennas ............................ CHECK
Tail tie-down ................................ REMOVE
Autopilot static port (right side) .... CHECK
Antennas .................................. CHECK
(C172M) Aux fuel tank .......... FUEL SAMPLE

LEFT WING

Fuel tank sump ....................... FUEL SAMPLE
Fuel quantity ..................... CHECK/DIPSTICK
Fuel cap ............................... SECURE
Main gear ............................... CHECK
Chock .................................... STOWED
Tie-down ................................ REMOVE
Pitot tube cover ...................... STOWED
Pitot tube ............................... CHECK
Fuel tank vent ........................... CHECK
Leading edge & strut ................. CHECK
Wing tip ................................ CHECK
Aileron ................................ CHECK
Flap ...................................... CHECK
(T41) Aux fuel tank ............ CHECK/SAMPLE

PERFORM FINAL OVERALL CHECK

ARROW DOCUMENTS

• Airworthiness Certificate
• Radio Operator’s License
• Registration Certificate
• Operating Limitations: POH & placards
• Weight & Balance calculation data

SAFETY EQUIPMENT

• Location of fire extinguishers (external)
• First aid kit (under seat)
• Life jackets (if required)
• Personal survival kit (as required)
• Clothing and personal equipment
• Night flight equipment
C172M & T41 CHECKLIST

BEFORE STARTING ENGINE
Doors ..................................CLOSED & SECURE
Seats ..................................ADJUSTED & LOCKED
Seat belts & harnesses............FASTENED
Light & pitot heat switches........OFF
Circuit breakers......................CHECK
Flight controls .......................FREE & CORRECT
Elevator trim .........................SET FOR TAKEOFF
Crew..................................BRIEFED

STARTING ENGINE
Fuel selector valve ......................BOTH
Mixture ....................................RICH
Throttle ..........................SLIGHTLY OPEN
Carburetor heat .........................OFF
Beacon light .........................ON
Primer (0~3) ..................PRIMED & LOCKED
Propeller area .......................CLEAR
Master Switch ......................ON
MAG & EIS switches ...... BOTH ON BRAKES........HOLD FIRM
IGNITION..........................START
Oil gauges (pressure / temp.) ......CHECK
Battery gauges (volts / charge).....CHECK

AFTER STARTING ENGINE
Fuel flow indicator ..................SET
- Full fuel = AUTO, STEP, STEP
- Not full = STEP
Fuel quantity .......................VERIFY
Flaps ....................................RETRACT
Nav lights ..........................ON
Throttle ..... 1000 RPM
Mixture ................................LEAN
AVIONICS SET-UP
Avionics switch .....................ON
EFIS & AUTOPILOT switches (4)...ALL ON
GPS/EFIS checks/warnings........VERIFY
Transponder .......................GND/1200
Autopilot .........................TEST / DISENGAGE
ATIS (or airport info) .................COPY
PFD bugs (HDG, ALT, IAS) ..........SET
PFD altimeter (BARO) ..........SET
ESIS (standby) altimeter ..........SET
Flight plan ..........................INPUT
COM/NAV frequencies ................SET
NAV 1 & 2 CDI (GPS or VLOC) ....SELECT

ENGINE RUNUP
Fuel selector valve ......................BOTH
Mixture ....................................RICH
Brakes ....................................HOLD FIRM
Throttle ..........................1800 RPM (max 2000 RPM)
MAG switch .........................CHECK OFF/ON
EIS switch .........................CHECK OFF/ON
Carburetor heat .........................CHECK ON/OFF
Engine instruments .................GREEN
Throttle .........................CHECK IDLE
Throttle .........................1000 RPM
Friction lock .........................ADJUST
Mixture ........................LEAN FOR TAXI
MAG & EIS switches ....VERIFY BOTH ON

MAG/EIS LIMITS
Engine = smooth running
EIS max drop = 40 RPM
MAG max drop = 175 RPM
exceeds limits? attempt cleaning run:
Throttle .........................2000 RPM
Mixture .........................VERY LEAN
- Run engine lean for 20 sec
Mixture .........................RICH
Throttle .........................1800 RPM
MAG/EIS switches ..................RE-CHECK
- If unsuccessful ABORT FLIGHT

CREW BRIEFING
• PIC & crew duties
• Transfer of controls
• Fuel req. & available
• Type of takeoff (normal/short/soft)
• V-speeds review
• Takeoff (distance & available)
• Initial altitude and heading
• Emergency procedures

PASSENGER BRIEFING
• Operation of seat belts & harnesses
• Operation of doors and windows
• Operation of heating & air vents
• Operation of intercom & headsets
• No smoking
• Normal & emergency exit procedure
• Emergency equipment (life vests)
• Passenger discomfort

YOKOTA FLIGHT TRAINING CENTER
PAGE 4
**TAXI**

Taxi instructions..........................VERIFY
Taxi lights...................................ON
Brakes (all crew prior to taxi)...........CHECK
Flight instruments.........................CHECK

**BEFORE TAKEOFF CHECK**

Takeoff brief (see below)...........COMPLETE
Flaps (UP or 10° as required).........SET
Carburetor heat............................OFF
Heading indicator and bug..............SET
Mixture........................................RICH
External lights............................ALL ON
Takeoff instructions....................COPY

**NORMAL TAKEOFF**

Flaps.........................................UP
Throttle......................................FULL OPEN
Rotate (C172M) 60MPH (T41) 66MPH
Climb ......................................86~98MPH

**SHORT FIELD TAKEOFF**

Flaps...........................................10°
Throttle......................................FULL OPEN
Rotate (C172M) 60MPH (T41) 66MPH
Climb 50’ ...........(C172M) 66MPH (T41) 70MPH
WHEN CLEAR OF OBSTRUCTION
Climb ......................................89MPH

**SOFT FIELD TAKEOFF**

Flaps...........................................10°
Throttle......................................FULL OPEN
Rotate......................................SOON AS ABLE
ACCELERATE TO Vy IN GROUND EFFECT
Climb ......................................89MPH
Flaps.........................................RETRACT

**ENROUTE CLIMB**

Carburetor heat..........................OFF
Throttle....................................FULL OPEN
Flaps........................................RETRACTED
Airspeed 86-98 MPH
Circuit breakers..........................CHECK

**CRUISE**

Autopilot .................................VERIFY MODE
Carburetor heat..........................OFF
Throttle ....................................CRUISE POWER

➡ 2200 RPM - 2699 RPM

Mixture ........................................LEAN
Fuel selector (> 5000 ft) ..........SELECT
External lights ..............................AS REQUIRED
Circuit breakers..........................CHECK
Oil & battery gauges....................CHECK
Fuel remaining.............................CHECK

**ENROUTE DESCENT**

Autopilot .................................VERIFY MODE
Carb. heat (<2200 RPM) ..........ON
Mixture .......................................ADJUST/RICH
Fuel selector valve ......................BOTH

**TRAINING MANEUVERS**

Autopilot .................................DISENGAGE
Area ........................................CLEAR
Fuel selector ..............................BOTH
Mixture ......................................RICH
External lights ..............................ON
Airspeed .................................BELOW Va
Emergency landing site ...............IDENTIFY

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**V-speeds**

<table>
<thead>
<tr>
<th>V-speeds</th>
<th>C172M</th>
<th>T41</th>
</tr>
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<tbody>
<tr>
<td>Vr</td>
<td>60 MPH</td>
<td>66 MPH</td>
</tr>
<tr>
<td>Vx</td>
<td>71 MPH</td>
<td>73 MPH</td>
</tr>
<tr>
<td>Vy</td>
<td>84 MPH</td>
<td>89 MPH</td>
</tr>
<tr>
<td>Va (max gross wt.)</td>
<td>112 MPH</td>
<td>122 MPH</td>
</tr>
<tr>
<td>Vg</td>
<td>78 MPH</td>
<td>86 MPH</td>
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**Yokota Frequencies**

<table>
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<tr>
<th>Yokota</th>
<th>Frequency (MHz)</th>
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<tbody>
<tr>
<td>ATIS (Yokota)</td>
<td>128.40</td>
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<tr>
<td>YOKOTA GROUND</td>
<td>133.20</td>
</tr>
<tr>
<td>YOKOTA TOWER</td>
<td>134.30</td>
</tr>
<tr>
<td>YOKOTA APPROACH</td>
<td>123.80</td>
</tr>
</tbody>
</table>
APPROACH FOR LANDING
ATIS (or airport info) COPY
ATC instructions COPY
Altimeter SET
Approach brief COMPLETE

BEFORE LANDING
Landing brief COMPLETE
Seat belts & harnesses SECURE
External lights ALL ON
Carburetor heat ON
Mixture RICH
Fuel selector valve BOTH
Autopilot DISENGAGE

NORMAL LANDING
73MPH FLPS 30°
Flaps AS REQUIRED
Airspeed (FLPS UP) 77~86 MPH
Airspeed (FLPS DN) 70~81 MPH
Brakes APPLY BELOW 40 MPH

SHORT FIELD LANDING
Flaps 30°
Approach [C172M] 71 MPH [T41] 69 MPH
Brakes APPLY HEAVY

SOFT FIELD LANDING
Flaps 30°
Approach [C172M] 71 MPH [T41] 69 MPH
Brakes APPLY AS REQUIRED

GO AROUND
Throttle FULL OPEN
Carburetor heat OFF
Flaps RETRACT TO 20°
Airspeed [C172M] 69 MPH [T41] 70 MPH
Climb 89 MPH

AFTER CLEARING RUNWAY
Flaps RETRACT
Carburetor heat OFF
Transponder squawk code 1200
Pitot heat OFF
Exterior lights AS REQUIRED
Mixture LEAN FOR TAXI
Taxi instructions LEAN FOR TAXI

SHUTDOWN
Brakes HOLD
EFIS & autopilot switches (4) ALL OFF
Avionics switch OFF
Throttle 1000 RPM
MAG & EIS switches TEST OFF/ON
Mixture IDLE/CUTOFF
Light & pitot heat switches ALL OFF
Interior lights ALL OFF
Hobbs & tach time NOTE
Master Switch OFF

REFUELING
Fuel types MOGAS or AVGAS
Fuel types can be mixed
Always ground aircraft
Never fuel in: night, rain, lightning

PARKING & SECURING
Chocks SECURE
Pitot tube cover ATTACH
Temp probe cover ATTACH
 Tie-downs (if available) SECURE
Throttle lock INSTALL
Gust lock (outside only) INSTALL
Sun visor (outside only) INSTALL
Flight log (binder) RECORD
Squawks RECORD & REPORT
Windows & vents CLOSE
Heating plug (winter only) ATTACH

WARNING: LEAVING EIS SWITCH IN THE ON POSITION COULD LEAD TO SERIOUS INJURY OR DEATH IN THE EVENT OF INADVERTENT PROPELLER ENGAGEMENT

Yokota Frequencies

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>ATIS (Yokota)</td>
<td>128.40</td>
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<tr>
<td>YOKOTA APPROACH</td>
<td>123.80</td>
</tr>
<tr>
<td>YOKOTA TOWER</td>
<td>134.30</td>
</tr>
<tr>
<td>YOKOTA GROUND</td>
<td>133.20</td>
</tr>
<tr>
<td><strong>MAX OPERATING WEIGHTS</strong></td>
<td><strong>C172M</strong></td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Max gross weight</td>
<td>2550 lbs</td>
</tr>
<tr>
<td>Max baggage</td>
<td>108 lbs</td>
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</table>

Caution: baggage weight in C172M models includes any AUX fuel carried to a maximum total of 108 lbs.

<table>
<thead>
<tr>
<th><strong>FUEL</strong></th>
<th><strong>C172M</strong></th>
<th><strong>T41</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Main fuel - usable (total)</td>
<td>Two tanks 38 US GAL (42 US GAL)</td>
<td>Two tanks 36 US GAL (39 US GAL)</td>
</tr>
<tr>
<td>Aux fuel - usable (total)</td>
<td>One tank (baggage area) 18 US GAL (18 US GAL)</td>
<td>Two tanks (wing tips) 23 US GAL (24 US GAL)</td>
</tr>
<tr>
<td>Fuel types</td>
<td>MoGas or Avgas (OK to mix)</td>
<td></td>
</tr>
<tr>
<td>Main fuel drains</td>
<td>One under each wing root</td>
<td></td>
</tr>
<tr>
<td>Fuel strainer knob</td>
<td>Next to oil dipstick</td>
<td>Left side of control panel</td>
</tr>
<tr>
<td>Aux fuel drain(s)</td>
<td>Under fuselage</td>
<td>Under each wing tip</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th><strong>OIL</strong></th>
<th><strong>C172M</strong></th>
<th><strong>T41</strong></th>
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</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>6-8 QTS. for all FTC sorties</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>SAE 20WT-50 ashless dispersant</td>
<td></td>
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<thead>
<tr>
<th><strong>POWERPLANT</strong></th>
<th><strong>C172M</strong></th>
<th><strong>T41</strong></th>
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</thead>
<tbody>
<tr>
<td>Engine</td>
<td>Lycoming O-360</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>180 HP</td>
<td></td>
</tr>
<tr>
<td>Normal operating range</td>
<td>2200 - 2699 RPM</td>
<td></td>
</tr>
<tr>
<td>Mag/EIS limits</td>
<td>175 RPM drop or 50 RPM difference in drops</td>
<td></td>
</tr>
</tbody>
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<thead>
<tr>
<th><strong>ENVIRONMENTAL</strong></th>
<th><strong>C172M</strong></th>
<th><strong>T41</strong></th>
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<tbody>
<tr>
<td>Heat &amp; air</td>
<td>Cabin heat (exhaust manifold)</td>
<td>Cabin air (fuselage inlet)</td>
</tr>
<tr>
<td></td>
<td>Windows (max open: Vne)</td>
<td></td>
</tr>
<tr>
<td>Vents</td>
<td>Crew &amp; pax</td>
<td>Crew only</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>ELECTRICAL</strong></th>
<th><strong>C172M</strong></th>
<th><strong>T41</strong></th>
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<tbody>
<tr>
<td>Electrical power</td>
<td>14V Alternator x 1</td>
<td>12V Battery x 1</td>
</tr>
<tr>
<td></td>
<td>Max 60 amps</td>
<td></td>
</tr>
<tr>
<td>Busses</td>
<td>x 2 = primary and avionics</td>
<td></td>
</tr>
<tr>
<td>Ignition</td>
<td>Engine driven magneto x 1</td>
<td>Electronic ignition x 1 (alt/bat)</td>
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<table>
<thead>
<tr>
<th><strong>AVIONICS</strong></th>
<th><strong>C172M</strong></th>
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<tbody>
<tr>
<td>PFD</td>
<td>Aspen EFD 1000 (SV)</td>
<td></td>
</tr>
<tr>
<td>MFD</td>
<td>Aspen EFD 500</td>
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<tr>
<td>MFD</td>
<td>Aspen EFD 1000</td>
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<tr>
<td>COM/NAV 1</td>
<td>Garmin GTN 650</td>
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<tr>
<td>COM/NAV 2</td>
<td>Garmin GTN 650</td>
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<tr>
<td>Transponder</td>
<td>Garmin GTX 300</td>
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<tr>
<td>Audio panel</td>
<td>Garmin GMA 340</td>
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<td>TCAS</td>
<td>Garmin GTS 800</td>
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<tr>
<td>Autopilot</td>
<td>S-Tec Thirty</td>
<td></td>
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<tr>
<td>Stormscope</td>
<td>WX-500</td>
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<tr>
<td>Backup</td>
<td>L-3 Electronic Standby</td>
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<thead>
<tr>
<th><strong>V-SPEEDS</strong></th>
<th><strong>C172M</strong></th>
<th><strong>T41</strong></th>
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<tbody>
<tr>
<td>Va (max wt.)</td>
<td>112 MPH</td>
<td>122 MPH</td>
</tr>
<tr>
<td>Va (2150 lbs)</td>
<td>109 MPH</td>
<td>109 MPH</td>
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<tr>
<td>Va (1750 lbs)</td>
<td>98 MPH</td>
<td>98 MPH</td>
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<tr>
<td>Max X/W</td>
<td>14 KTS</td>
<td>14 KTS</td>
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<tr>
<td>Vso</td>
<td>56 MPH</td>
<td>56 MPH</td>
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<tr>
<td>Vs1</td>
<td>64 MPH</td>
<td>64 MPH</td>
</tr>
<tr>
<td>Vx</td>
<td>71 MPH</td>
<td>73 MPH</td>
</tr>
<tr>
<td>Vy</td>
<td>84 MPH</td>
<td>89 MPH</td>
</tr>
<tr>
<td>Vg</td>
<td>78 MPH</td>
<td>86 MPH</td>
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<tr>
<td>Vfe</td>
<td>100 MPH</td>
<td>100 MPH</td>
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<tr>
<td>Vno</td>
<td>145 MPH</td>
<td>145 MPH</td>
</tr>
<tr>
<td>Vne</td>
<td>182 MPH</td>
<td>182 MPH</td>
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</tbody>
</table>
PILOT IN COMMAND

FITNESS FOR FLIGHT
ILLNESS
MEDICATION (any, including OTC)
STRESS (current and reserves)
ALCOHOL (8 hours 0.04% BAC)
FATIGUE (current and reserves)
EATING & HYDRATION

REQUIRED DOCUMENTS
PILOT CERTIFICATE
CURRENT MEDICAL
PHOTO ID
LOGBOOK ENDORSEMENTS (students)

CURRENCY
FLIGHT REVIEW (24 months)
T/O & LAND logged (90 days)
DUAL TRAINING 10 hrs/30 days (students)
FTC CURRENCY & QUALS.

PROFICIENCY
FLIGHT EXPERIENCE (total / recent)
TRAINING (total/recent/recurrent)
FAMILIARITY (aircraft and area)

AIRCRAFT

REQUIRED DOCUMENTS
AIRWORTHINESS CERTIFICATE (no exp.)
REGISTRATION (3 years)
RADIO OPERATORS LICENSE (intl. pilots)
OPERATING LIMITATIONS & placards
WEIGHT & BALANCE DATA for the aircraft

REQUIRED MAINTENANCE
AIRWORTHINESS DIRECTIVES (as required)
VOR CHECKS (30 days for IFR by pilot)
INSPECTIONS (annual & 100 hour)
ALTImETER/PITOT-STATIC SYS. (24 mo.)
TRANSPONDER (24 mo.)
ELT (24 mo.)

REQUIRED VFR EQUIPMENT (§91.205)
[DAY/NIGHT] “GOOSE A CAT”
Gas gauges, Oil temp gauge, Oil pressure
gauge, Safety belts, ELT, Altimeter, Compass,
Airspeed indicator, Tachometer
[NIGHT] “FLAPS”
Fuses (circuit breakers), Landing light, Anti-
collision lights, Position lights (aka nav
lights), Source of adequate electrical power

ENVIRONMENT

WEATHER
METAR & TAF (airport weather)
AREA/ROUTE CONDITIONS & WINDS ALOFT
IFR (>1000FT/3SM) MVFR (>3000FT/5SM)
THUNDERSTORMS (CB/VCTS)
AREA/ROUTE FORECASTS
SIGNIFICANT WEATHER

AIRPORTS & AIRSPACE
NOTAMS (departure and destination)
TEMPORARY FLIGHT RESTRICTIONS
AIRSPACE & SUA
TERRAIN
FUEL STOPS & ALTERNATE AIRPORTS

PERSONAL SAFETY MINIMA
CROSSWIND & TOTAL WIND
TAILWIND
CEILING
VISIBILITY
FUEL RESERVES
CONDITIONS (RAIN ETC.)
FTC LIMITATIONS (pilots & students)

EXTERNAL FACTORS

HUMAN FACTORS
ANTI-AUTHORITY
MACHO
RESIGNATION
IMPULSIVENESS
INVULNERABILITY

PITFALLS
GET-THERE-ITIS / PRESSURE
SCUD RUNNING
FLIGHT INTO IMC
RUSHING (PREFLIGHT ETC)
COMPLACENCY / ROUTINE

MISSION FOCUS
MISSION PURPOSE
IMPORTANCE OF MISSION
COMPLEXITY OF MISSION
PLAN B
## CRUISE FUEL CONSUMPTION (2550 pounds, recommended lean mixture)

<table>
<thead>
<tr>
<th>Press. Alt Feet</th>
<th>RPM</th>
<th>% BHP</th>
<th>GPH</th>
<th>% BHP</th>
<th>GPH</th>
<th>% BHP</th>
<th>GPH</th>
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<tbody>
<tr>
<td>2000</td>
<td>2550</td>
<td>77</td>
<td>10.3</td>
<td>76</td>
<td>10.2</td>
<td>72</td>
<td>9.6</td>
</tr>
<tr>
<td>2500</td>
<td>2400</td>
<td>69</td>
<td>9.2</td>
<td>64</td>
<td>8.7</td>
<td>61</td>
<td>9.3</td>
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<tr>
<td>2300</td>
<td>2200</td>
<td>61</td>
<td>8.3</td>
<td>58</td>
<td>7.9</td>
<td>55</td>
<td>8.6</td>
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<td>55</td>
<td>7.5</td>
<td>52</td>
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<td>4000</td>
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<tr>
<td>6000</td>
<td>2650</td>
<td>46</td>
<td>6.6</td>
<td>44</td>
<td>6.3</td>
<td>41</td>
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<tr>
<td>8000</td>
<td>2700</td>
<td>46</td>
<td>6.6</td>
<td>43</td>
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<td>2760</td>
<td>46</td>
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<td>43</td>
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<td>41</td>
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<td>12,000</td>
<td>2760</td>
<td>46</td>
<td>6.6</td>
<td>43</td>
<td>6.1</td>
<td>41</td>
<td>6.1</td>
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</tbody>
</table>

If a landing with flaps up is necessary, increase approach speed by 10 mph IAS and allow for 35% longer distance.

## TAKEOFF DISTANCE (hard surface runway with flaps up)

<table>
<thead>
<tr>
<th>GROSS WEIGHT POUNDS</th>
<th>IAS AT 50' MPH</th>
<th>HEAD WIND KNOTS</th>
<th>AT SEA LEVEL &amp; 59°F</th>
<th>AT 2500 FT. &amp; 50°F</th>
<th>AT 5000 FT. &amp; 41°F</th>
<th>AT 7500 FT. &amp; 32°F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>GROUND RUN</td>
<td>TOTAL TO CLEAR 50 FT OBS</td>
<td>GROUND RUN</td>
<td>TOTAL TO CLEAR 50 FT OBS</td>
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<tr>
<td>2300</td>
<td>68</td>
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<td>1170</td>
<td>750</td>
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<td>405</td>
<td>850</td>
<td>505</td>
<td>1100</td>
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<td>20</td>
<td>175</td>
<td>385</td>
<td>215</td>
<td>470</td>
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</table>

**NOTES:**
1. Increase distance 10% for each 25°F above standard temperature for particular altitude.
2. For operation on a dry, grass runway, increase distances (both "ground run" and "total to clear 50 ft. obstacle") by 3% of the "total to clear 50 ft. obstacle" figure.

## LANDING DISTANCE - SHORT FIELD (flaps 30°)

If a landing with flaps up is necessary, increase approach speed by 10 mph IAS and allow for 35% longer distance.
### CRUISE FUEL CONSUMPTION (2500 pounds, recommended lean mixture)

<table>
<thead>
<tr>
<th>Press. Alt Feet</th>
<th>RPM</th>
<th>% BHP</th>
<th>GPH</th>
<th>% BHP</th>
<th>GPH</th>
<th>% BHP</th>
<th>GPH</th>
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<td>2100</td>
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<td>42</td>
<td>6.2</td>
<td></td>
</tr>
</tbody>
</table>

### TAKEOFF DISTANCE (hard surface runway with flaps 10°)

### LANDING DISTANCE - SHORT FIELD (flaps 30°, hard surface, no wind)
### WIND Limitations

<table>
<thead>
<tr>
<th>Category</th>
<th>Max wind</th>
<th>Max X-wind (Yokota)</th>
<th>Max X-wind (cross country)</th>
<th>Max demonstrated X-wind component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Pilots</td>
<td>20 kts</td>
<td>10 kts</td>
<td>8 kts</td>
<td></td>
</tr>
<tr>
<td>Private Pilots or higher</td>
<td>30 kts</td>
<td>25 kts</td>
<td>25 kts</td>
<td>15 kts</td>
</tr>
</tbody>
</table>
ENGINE FAILURE - TAKEOFF ROLL

Throttle .......................................... IDLE
Brakes .............................................. APPLY
Flaps ............................................... RETRACT
Mixture .......................................... CUTOFF
Mag & EIS switches ......................... OFF
Master switch ............................... OFF

ENGINE FAILURE - AFTER TAKEOFF

Airspeed
Flaps up ...........(C172M) 79-88MPH (T41) 77-86MPH
Flaps down .......(C172M) 71-83MPH (T41) 70-81MPH

Mixture .......................................... CUTOFF
Fuel selector .............................. OFF
Mag & EIS switches ........... OFF
Flaps ......................................... AS REQUIRED
Master switch ............................. OFF

ENGINE FAILURE - DURING FLIGHT

Airspeed ......(C172M) 78MPH (T41) 86MPH

Primer ...................... CHECK IN
EIS & MAG switches ................. ON
Master switch ......................... ON
Carb heat .................................. ON
Mixture ...................................... RICH
Fuel selector .......................... BOTH
Starter (if prop stopped) ............... ENGAGE
Throttle/mixture .TRY DIFFERENT SETTINGS

If power is not restored, execute Emergency Landing w/out Engine Power

EMERGENCY LANDING WITHOUT ENGINE POWER

Airspeed
Flaps up ...........(C172M) 79-88MPH (T41) 77-86MPH
Flaps down .......(C172M) 71-83MPH (T41) 70-81MPH

EIS & MAG switches ...................... OFF
Mixture .......................................... CUTOFF
Fuel selector .............................. CUTOFF
Transponder .............................. 7700
Radio call (121.5) ...................... “MAYDAY”
ELT remote switch ................. ON
Loose objects ......SECURE OR JETTISON
Seat belts and harnesses ......TIGHTEN

If power is not available, approach at (C172M) 80MPH (T41) 86MPH with flaps UP or (C172M) 78MPH (T41) 81MPH with flaps 10°

Unlatch cabin doors prior to touchdown

Touchdown in a level attitude at a minimum descent rate

Cushion face during touchdown

Evacuate airplane & inflate life vests

PARTIAL POWER/ENGINE LOSS

Fuel selector .SWITCH TANKS (60 SEC.)
Fuel selector ......................... SELECT

PRECAUTIONARY LANDING WITH ENGINE POWER

Seat belts and harnesses .... TIGHTEN
Transponder .............................. 7700
Radio call (121.5) ...................... “MAYDAY”
ELT remote switch ................. ON
Flaps ......................................... 20°
Airspeed ...........(C172) 70MPH (T41) 76MPH
Selected field ..OVERFLY & INVESTIGATE
Flaps ...................... RETRACT WHEN SAFE
Avionics switch ...................... OFF
Electrical switches ...................... OFF

DITCHING (WATER LANDING)

Transponder .............................. 7700
Radio call (121.5) ...................... “MAYDAY”
ELT remote switch ................. ON
Loose objects ......SECURE OR JETTISON
Seat belts and harnesses ......TIGHTEN

High winds and/or heavy seas - land into the wind. Light winds and/or heavy swells - land parallel to swells

Flaps (recommended) 20°-30°
Throttle 300 FPM descent at 76MPH
If power is not available, approach at (C172M) 80MPH (T41) 86MPH with flaps UP or (C172M) 78MPH (T41) 81MPH with flaps 10°
Unlatch cabin doors prior to touchdown

Touchdown in a level attitude at a minimum descent rate
Cushion face during touchdown
Evacuate airplane & inflate life vests

PARTIAL POWER/ENGINE LOSS

Fuel selector .SWITCH TANKS (60 SEC.)
Fuel selector ......................... SELECT
**ENGINE FIRE DURING START**

**Starter**

- **CONTINUE CRANKING**

**Throttle**

- FULL OPEN

- If engine starts:
  - Power (few minutes) .......... 1700 RPM

- If engine fails to start:
  - Throttle FULL OPEN
  - Mixture CUTOFF
  - Starter CONTINUE CRANKING
  - Master switch OFF
  - EIS & MAG switches OFF
  - Fuel selector OFF

- Abandon aircraft and use fire extinguisher

- Call 911

---

**ENGINE FIRE ON THE GROUND**

**Fuel selector**

- OFF

**Mixture**

- CUTOFF

**EIS & MAG switches**

- OFF

**Master switch**

- OFF

- Abandon aircraft and use fire extinguisher

- Call 911

---

**ENGINE FIRE IN FLIGHT**

**Fuel selector**

- OFF

**Mixture**

- CUTOFF

**Master switch**

- OFF

- Execute Emergency Landing Without Engine Power

---

**WING FIRE IN FLIGHT**

**External lights**

- ALL OFF

**Pitot heat**

- OFF

**Master switch**

- OFF

- Slip to keep flames away from fuel tanks and cabin

- Taxi lights may be used as required if not on the affected wing

---

**CABIN OR ELECTRICAL FIRE IN FLIGHT**

**Master switch**

- OFF

**Vents**

- CLOSED

**Cabin air & heat**

- OFF

- Open cabin air, vents and/or windows when fire is out

- Land as soon as practicable

- If fire is out and electrical equipment is required:
  - Electrical switches .......... ALL OFF
  - Circuit breakers .... CHECK BUT DO NOT RESET
  - Master switch ................... ON

**Electrical switches**

- ON AS REQUIRED

---

**LOW OIL PRESSURE (NORMAL OIL TEMP)**

- Make minimum power changes practical

- Conserve altitude until landing is assured

- Land as soon as practicable

---

**LOW OIL PRESSURE (HIGH OIL TEMP)**

- Reduce power to min. necessary

- Execute Precautionary Landing with Engine Power

---

**AMMETER EXCESSIVE RATE OF CHARGE**

**Alternator circuit breaker**

- PULL

**Non-essential equipment**

- OFF

- Terminate flight as soon as practical

---

**AMMETER DISCHARGE**

**Avionics switch**

- OFF

**Alternator circuit breaker**

- CHECK & RESET

**Master switch**

- OFF THEN ON

**Ammeter**

- CHECK BATTERY CHARGING

**Avionics switch**

- ON

- If low voltage light remains on or ammeter still indicates discharge:
  - Non-essential equipment .......... OFF

- Terminate flight as soon as practical

- Note: if the master switch is turned off after the battery has drained below current level to activate battery contactor, subsequent activation of master switch will be ineffective
LANDING GEAR - FLAT MAIN TIRE
Flaps ........................................ AS REQUIRED
- Use fuel selector to reduce weight on the side of the flat tire
- If practical, land with crosswind on the side opposite the flat tire
- Line up for landing on the same side of the runway as the good tire
- Touchdown slightly wing low on the side of the good tire
- Lower the nose gear for directional control
- Use aileron to keep weight off the flat tire as long as possible
- Use brakes on the side of the good tire only

LANDING GEAR - FLAT NOSE TIRE
Flaps ........................................ 30°
- Touchdown on the runway centerline
- Use yoke full aft to minimize weight on the nose gear
- Use minimum braking required

SPIN
Throttle ........................................... IDLE
Ailerons ........................................... NEUTRAL
- FULL RUDDER DEFLECTION
  OPPOSITE TO THE DIRECTION OF THE SPIN
- Control wheel (yoke) forward to break the stall
- Neutral rudder after rotation stops
- Control wheel (yoke) back to smoothly recover from the ensuing dive

CABIN DOOR OPEN IN FLIGHT
- Fly the airplane - keep positive control at all times
- Land the airplane and close door on the ground - approach is unaffected
- If landing is impractical, climb to a safe altitude then:
  Airspeed .................. (C172) 70MPH (T41) 76MPH
  Vents .................................. CLOSED
  Window .................................. OPEN
- Push door ajar then slam it closed

AUTOPilot FAILURE
Autopilot ..................................... DISENGAGE
Autopilot master switch ............... OFF

AFTER EMERGENCY LANDING
Master switch ................................. OFF
ELT ............................................ ACTIVATE
- Abandon aircraft until all danger of fire has passed
- When safe to return to the aircraft, remove the ELT and install the antenna (ELT is behind the rear panel of the baggage area), then turn the ELT on
- If the radio is still operative make periodic calls on 121.5 and monitor the frequency for instructions

RADIO FAILURE
- Check audio panel for improper settings (volume, squelch, com selector, pilot/pax/crew mutes)
- Check com for volume, squelch and frequency
- Switch coms and attempt radio calls
- Switch headphone jacks to another seating position
- Check circuit breakers (reset only once)
- Squawk 7600 on transponder
- Make calls “into the blind”
- Monitor and join the traffic pattern when safe and look for tower light gun signals

LIGHT GUN SIGNALS IN FLIGHT
FLASHING RED .................. AIRPORT UNSAFE
STEADY RED .......................... HOLD IN POSITION
FLASHING RED/GREEN ............. CAUTION
FLASHING GREEN ................... RETURN FOR LANDING
STEADY GREEN ...................... CLEARED TO LAND

EMERGENCY DESCENT
Carb heat ................................. ON
Throttle ................................. IDLE
Mixture .................................... RICH
Flaps ........................................ 30°
Airspeed .................................. 100MPH