

CHECKLIST

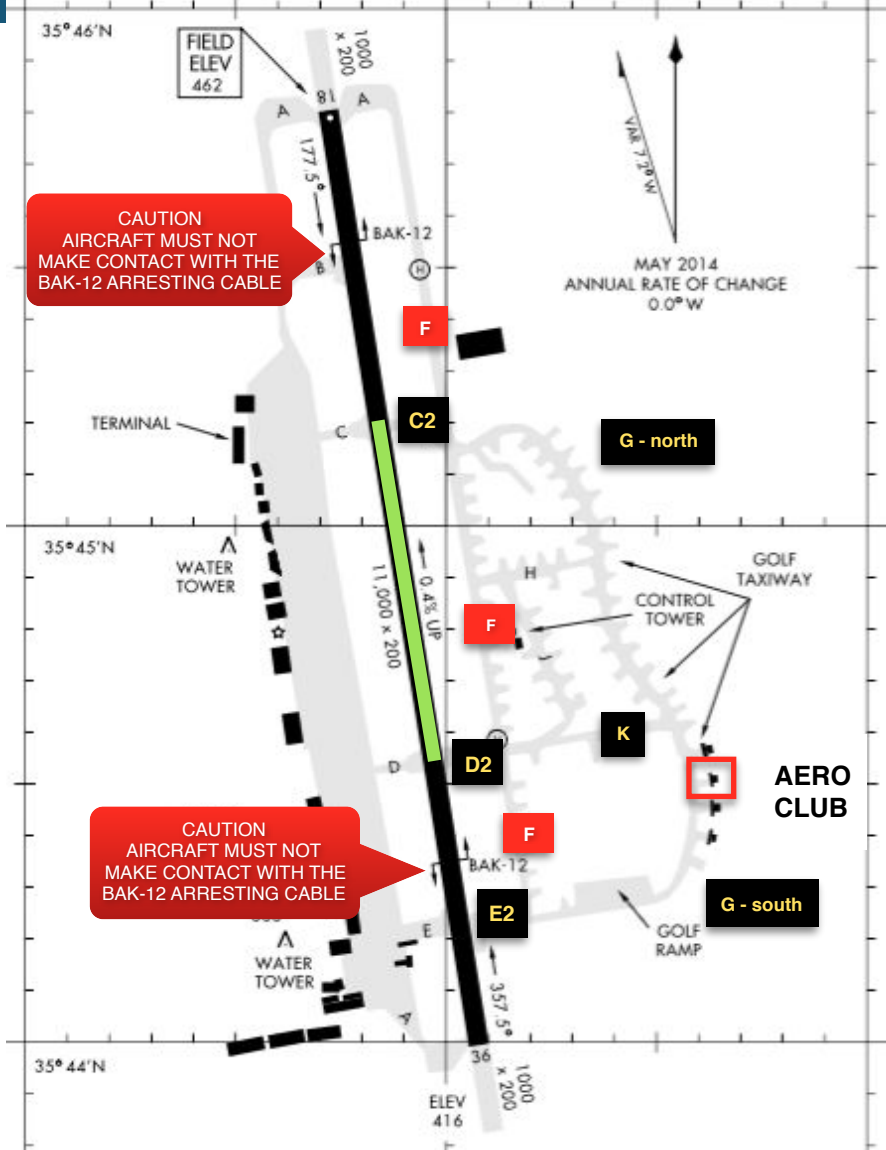


For use with Yokota FTC aircraft only

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



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
 HOBBSVERIFY
 A.R.R.O.W documentsVERIFY
 Gust lockREMOVE
 Throttle lock.....REMOVE
 MAG & EIS switches..... VERIFY OFF
 | Master Switch ON
 | Aux fuel transfer switch(es).. TEST/OFF
 | Fuel gauges..... CHECK
 | FlapsEXTEND
 | Pitot heat (IFR).....CHECK
 | Lights (external/cabin).....CHECK
 | Light & pitot heat switches..... OFF
 | Master SwitchOFF
 Fuel selector valve BOTH
 CO detectorTEST
 BaggageSTOWED/SECURE

EMPENNAGE

Baggage doorCLOSED & 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

RIGHT WING

Flap.....CHECK
 Aileron.....CHECK
 Wing tip.....CHECK
 Leading edge & strut..... CHECK
 Tie-downREMOVE
 Main gear.....CHECK
 ChockSTOWED
 Fuel tank sump.....SAMPLE
 Fuel quantity.....CHECK/DIPSTICK
 Fuel capSECURE
 (T41) Aux fuel tank.....CHECK/SAMPLE

FUSELAGE

Temp probe coverREMOVE
 Windshield.....CLEAN & SECURE
 Engine Oil (6~8 QTS.).....CHECK
 Fuel strainer.....FUEL SAMPLE
 Oil access panelCLOSED
 Engine inlets.....CHECK
 Propeller & spinnerCHECK
 Air filterCHECK
 Nose gear/strut (> 2").....CHECK
 Nose gear "do not tow" flagSTOW
 Static port.....CHECK

LEFT WING

Fuel tank sumpFUEL SAMPLE
 Fuel quantity.....CHECK/DIPSTICK
 Fuel capSECURE
 Main gear.....CHECK
 ChockSTOWED
 Tie-downREMOVE
 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 tankCHECK/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

BEFORE STARTING ENGINE

DoorsCLOSED & SECURE
 SeatsADJUSTED & LOCKED
 Seat belts & harnesses.....FASTENED
 Light & pitot heat switches.....OFF
 Circuit breakers.....CHECK
 Flight controlsFREE & CORRECT
 Elevator trim.....SET FOR TAKEOFF
 CrewBRIEFED

STARTING ENGINE

Fuel selector valveBOTH
 Mixture.....RICH
 ThrottleSLIGHTLY OPEN
 Carburetor heat.....OFF
 Beacon light.....ON
 Primer (0~3)PRIMED & LOCKED
 Propeller area.....CLEAR
 Master SwitchON
 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 indicatorSET
 ➔ Full fuel = AUTO, STEP, STEP
 ➔ Not full = STEP
 Fuel quantity.....VERIFY
 FlapsRETRACT
 Nav lightsON
 Throttle1000 RPM
 MixtureLEAN

AVIONICS SET-UP

Avionics switch.....ON
 EFIS & AUTOPILOT switches (4)..ALL ON
 GPS/EFIS checks/warnings.....VERIFY
 TransponderGND/1200
 Autopilot.....TEST / DISENGAGE
 ATIS (or airport info)COPY
 PFD bugs (HDG, ALT, IAS)SET
 PFD altimeter (BARO).....SET
 ESIS (standby) altimeterSET
 Flight planINPUT
 COM/NAV frequenciesSET
 NAV 1 & 2 CDI (GPS or VLOC)SELECT

ENGINE RUNUP

Fuel selector valveBOTH
 Mixture.....RICH
 BrakesHOLD FIRM
 Throttle.....**1800 RPM** (max 2000 RPM)
 MAG switch.....CHECK OFF/ON
 EIS switchCHECK OFF/ON
 Carburetor heat.....CHECK ON/OFF
 Engine instruments.....GREEN
 ThrottleCHECK IDLE
 Throttle.....**1000 RPM**
 Friction lockADJUST
 MixtureLEAN FOR TAXI
 MAG & EIS switchesVERIFY BOTH ON

MAG/EIS LIMITS

Engine = smooth running
 EIS max drop = **40 RPM**
 MAG max drop = **175 RPM**
 exceeds limits? attempt cleaning run:
 Throttle2000 RPM
 MixtureVERY LEAN
 ➔ Run engine lean for 20 sec
 Mixture.....RICH
 Throttle1800 RPM
 MAG/EIS switchesRE-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

TAXI
 Taxi instructions.....VERIFY
 Taxi lightsON
 Brakes (all crew prior to taxi)CHECK
 Flight instrumentsCHECK

ENROUTE CLIMB
 Carburetor heat.....OFF
 Throttle.....FULL OPEN
 FlapsRETRACTED
 Airspeed86-98MPH
 Circuit breakers.....CHECK

BEFORE TAKEOFF CHECK
 Takeoff brief (see below)COMPLETE
 Flaps (UP or 10° as required)SET
 Carburetor heat.....OFF
 Heading indicator and bugSET
 Mixture.....RICH
 External lightsALL ON
 Takeoff instructions.....COPY

CRUISE
 AutopilotVERIFY MODE
 Carburetor heat.....OFF
 ThrottleCRUISE POWER
 ➔ 2200 RPM - 2699 RPM
 MixtureLEAN
 Fuel selector (> 5000 ft)SELECT
 External lights.....AS REQUIRED
 Circuit breakers.....CHECK
 Oil & battery gaugesCHECK
 Fuel remaining.....CHECK

CAUTION: IMPROPER LEANING PROCEDURES WILL GREATLY REDUCE ENDURANCE

NORMAL TAKEOFF
 FlapsUP
 Throttle.....FULL OPEN
 Rotate(C172M) 60MPH (T41) 66MPH
 Climb86~98MPH

ENROUTE DESCENT
 AutopilotVERIFY MODE
 Carb. heat (<2200 RPM).....ON
 MixtureADJUST/RICH
 Fuel selector valveBOTH

SHORT FIELD TAKEOFF
 Flaps.....10°
 Throttle.....FULL OPEN
 Rotate(C172M) 60MPH (T41) 66MPH
 Climb 50'(C172M) 66MPH (T41) 70MPH

WHEN CLEAR OF OBSTRUCTION
 Climb89MPH

TRAINING MANEUVERS
 Autopilot.....DISENGAGE
 Area.....CLEAR
 Fuel selector.....BOTH
 Mixture.....RICH
 External lights.....ON
 Airspeed.....BELOW Va
 Emergency landing siteIDENTIFY

SOFT FIELD TAKEOFF
 Flaps.....10°
 Throttle.....FULL OPEN
 Rotate.....SOON AS ABLE
ACCELERATE TO Vy IN GROUND EFFECT
 Climb89MPH
 FlapsRETRACT

V-speeds	C172M	T41
Vr	60 MPH	66 MPH
Vx	71 MPH	73 MPH
Vy	84 MPH	89 MPH
Va (max gross wt.)	112 MPH	122 MPH
Vg	78 MPH	86 MPH

Yokota Frequencies	
ATIS (Yokota)	128.40
YOKOTA GROUND	133.20
YOKOTA TOWER	134.30
YOKOTA APPROACH	123.80

APPROACH FOR LANDING

ATIS (or airport info)COPY
 ATC instructionsCOPY
 AltimeterSET
 Approach briefCOMPLETE

BEFORE LANDING

Landing brief (see below)..... 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
 Flaps RETRACT
 Climb 89 MPH

AFTER CLEARING RUNWAY

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

SHUTDOWN

Brakes HOLD
 EFIS & autopilot switches (4) ALL OFF
 Avionics switch OFF
 Throttle 1000 RPM
 MAG & EIS switches TEST OFF/ON
 Mixture IDLE/CUTOFF
 MAG & EIS switches OFF
 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
 MASTER SWITCH **VERIFY OFF**
 MAG & EIS SWITCHES **VERIFY OFF**

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

Yokota Frequencies	
ATIS (Yokota)	128.40
YOKOTA APPROACH	123.80
YOKOTA TOWER	134.30
YOKOTA GROUND	133.20

	C172M	T41
MAX OPERATING WEIGHTS		
Max gross weight	2550 lbs	2500 lbs
Max baggage	108 lbs	120 lbs
Caution: baggage weight in C172M models includes any AUX fuel carried to a maximum total of 108lbs		
FUEL		
Main fuel - usable - (total)	Two tanks 38 US GAL (42 US GAL)	Two tanks 36 US GAL (39 US GAL)
Aux fuel - usable - (total)	One tank (baggage area) 18 US GAL (18 US GAL)	Two tanks (wing tips) 23 US GAL (24 US GAL)
Fuel types	MoGas or Avgas (OK to mix)	
Main fuel drains	One under each wing root	
Fuel strainer knob	Next to oil dipstick	Left side of control panel
Aux fuel drain(s)	Under fuselage	Under each wing tip
OIL		
Capacity	6-8 QTS. for all FTC sorties	
Type	SAE 20WT-50 ashless dispersant	
POWERPLANT		
Engine	Lycoming O-360	
Power	180 HP	
Normal operating range	2200 - 2699 RPM	
Mag/EIS limits	175 RPM drop or 50 RPM difference in drops	
ENVIRONMENTAL		
Heat & air	Cabin heat (exhaust manifold) Cabin air (fuselage inlet) Windows (max open: Vne)	
Vents	Crew & pax	Crew only

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

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)

Press. Alt Feet	RPM	20°C Below Standard Temp.		Standard Temperature		20°C Above Standard Temp.	
		% BHP	GPH	% BHP	GPH	% BHP	GPH
2000	2550	---	---	76	10.2	72	9.6
	2500	77	10.3	72	9.6	68	9.1
	2400	69	9.2	64	8.7	61	8.3
	2300	61	8.3	58	7.9	55	7.6
	2200	55	7.5	52	7.2	49	6.9
	2100	49	6.8	46	6.6	43	6.3
4000	2600	---	---	76	10.2	72	9.6
	2500	73	9.7	68	9.2	65	8.7
	2400	65	8.8	62	8.3	58	8.0
	2300	58	8.0	55	7.6	52	7.3
	2200	52	7.3	49	6.9	47	6.6
	2100	46	6.6	44	6.3	41	6.1
6000	2650	---	---	76	10.1	72	9.6
	2600	77	10.3	72	9.6	68	9.1
	2500	69	9.3	65	8.8	62	8.4
	2400	62	8.4	59	8.0	56	7.6
	2300	56	7.7	53	7.3	50	7.0
	2200	50	7.0	47	6.7	44	6.4
8000	2700	---	---	76	10.1	71	9.5
	2600	73	9.8	69	9.2	65	8.7
	2500	66	8.8	62	8.4	59	8.0
	2400	59	8.1	56	7.7	53	7.3
	2300	53	7.4	50	7.0	47	6.7
	2200	47	6.7	45	6.4	42	6.1
10,000	2700	77	10.2	72	9.6	68	9.1
	2600	69	9.3	65	8.8	62	8.4
	2500	63	8.5	59	8.1	56	7.7
	2400	57	7.8	53	7.4	50	7.0
	2300	51	7.1	48	6.8	45	6.5
	2200	47	6.7	45	6.4	42	6.1
12,000	2700	69	9.3	65	8.8	62	8.4
	2600	66	8.9	62	8.4	59	8.0
	2500	60	8.2	56	7.7	53	7.4
	2400	54	7.5	51	7.1	48	6.7
	2300	48	6.8	45	6.5	42	6.2

TAKEOFF DISTANCE (hard surface runway with flaps up)

GROSS WEIGHT POUNDS	IAS AT 50' MPH	HEAD WIND KNOTS	AT SEA LEVEL & 59°F		AT 2500 FT. & 50°F		AT 5000 FT. & 41°F		AT 7500 FT. & 32°F	
			GROUND RUN	TOTAL TO CLEAR 50 FT OBS	GROUND RUN	TOTAL TO CLEAR 50 FT OBS	GROUND RUN	TOTAL TO CLEAR 50 FT OBS	GROUND RUN	TOTAL TO CLEAR 50 FT OBS
2300	68	0	865	1525	1040	1910	1255	2480	1565	3855
		10	615	1170	750	1485	920	1955	1160	3110
		20	405	850	505	1100	630	1480	810	2425
2000	63	0	630	1095	755	1325	905	1625	1120	2155
		10	435	820	530	1005	645	1250	810	1685
		20	275	580	340	720	425	910	595	1255
1700	58	0	435	780	520	920	625	1095	765	1370
		10	290	570	355	680	430	820	535	1040
		20	175	385	215	470	270	575	345	745

- 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 7% 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

WEIGHT LBS	SPEED AT 50 FT IAS	PRESS ALT FT.	0°C		10°C		20°C		30°C		40°C	
			GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS.	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL FT	TOTAL FT TO CLEAR 50 FT OBS
2550	71	S.L.	545	1290	585	1320	585	1350	605	1380	625	1415
		1000	565	1320	585	1350	605	1385	625	1420	650	1450
		2000	585	1355	610	1385	630	1420	650	1455	670	1490
		3000	610	1385	630	1425	655	1460	675	1495	695	1530
		4000	630	1425	655	1460	675	1495	700	1535	725	1570
		5000	655	1460	680	1500	705	1535	725	1575	750	1615
		6000	680	1500	705	1540	730	1580	755	1620	780	1660
		7000	705	1545	730	1585	760	1625	785	1665	810	1705
		8000	735	1585	760	1630	790	1670	815	1715	840	1755

CRUISE FUEL CONSUMPTION (2500 pounds, recommended lean mixture)

Press. Alt Feet	RPM	20°C Below Standard Temp.		Standard Temperature		20°C Above Standard Temp.	
		% BHP	GPH	% BHP	GPH	% BHP	GPH
2000	2550	---	---	76	10.2	72	9.6
	2500	77	10.3	72	9.6	68	9.1
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	2600	77	10.3	72	9.6	68	9.1
	2500	69	9.3	65	8.8	62	8.4
8000	2400	62	8.4	59	8.0	56	7.6
	2300	56	7.7	53	7.3	50	7.0
	2200	50	7.0	47	6.7	44	6.4
	2700	---	---	76	10.1	71	9.5
	2600	73	9.8	69	9.2	65	8.7
10,000	2500	66	8.8	62	8.4	59	8.0
	2400	59	8.1	56	7.7	53	7.3
	2300	53	7.4	50	7.0	47	6.7
	2200	47	6.7	45	6.4	42	6.1
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	2500	63	8.5	59	8.1	56	7.7
	2400	57	7.8	53	7.4	50	7.0
	2300	51	7.1	48	6.8	45	6.5
	2700	69	9.3	65	8.8	62	8.4
	2600	66	8.9	62	8.4	59	8.0
	2500	60	8.2	56	7.7	53	7.4
	2400	54	7.5	51	7.1	48	6.7
	2300	48	6.8	45	6.5	42	6.2

TAKEOFF DISTANCE (hard surface runway with flaps 10°)

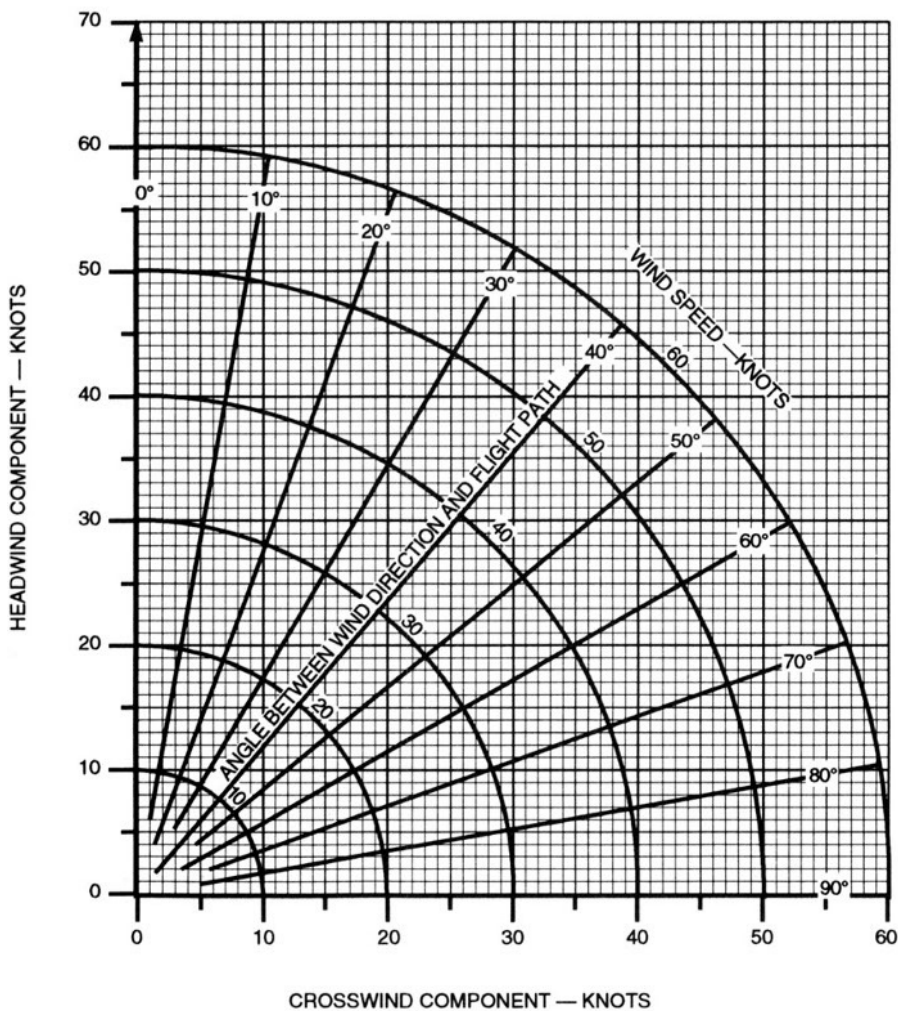
TAKE-OFF
TAKE OFF DISTANCE FROM HARD SURFACE RUNWAY

MODEL	GROSS WEIGHT LBS	IAS AT 50 FT. MPH	HEAD WIND KNOTS	@ S.L. & 59° F		@ 2500 ft & 50° F		@ 5000 ft & 41° F		@ 7500 ft & 32° F	
				GROUND ROLL	TOTAL To Clear 50' OBS.	GROUND ROLL	TOTAL To Clear 50' OBS.	GROUND ROLL	TOTAL To Clear 50' OBS.	GROUND ROLL	TOTAL To Clear 50' OBS.
180HP 172 D-H	1900	61	0	320	715	380	820	460	960	545	1115
			10	205	520	245	600	300	710	365	830
			20	110	345	140	405	175	485	220	580
	2200	65	0	445	935	535	1085	645	1290	770	1525
			10	295	690	355	810	440	970	530	1160
			20	170	475	215	565	270	690	335	835
	2500	70	0	600	1205	720	1420	875	1715	1050	2080
			10	405	905	495	1075	610	1315	745	1610
			20	250	640	310	770	390	955	485	1190

NOTE: 1- Increase distance 10% for each 25°F above standard temperature for particular altitude

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

MODEL	GROSS WEIGHT LBS	APPROACH IAS MPH	@ S.L. & 59° F		@ 2500 ft & 50° F		@ 5000 ft & 41° F		@ 7500 ft & 32° F	
			GROUND ROLL	TOTAL To Clear 50' Obs.	GROUND ROLL	TOTAL To Clear 50' Obs.	GROUND ROLL	TOTAL To Clear 50' Obs.	GROUND ROLL	TOTAL To Clear 50' Obs.
180HP 172 D-H	1900	60	500	980	520	1030	550	1080	580	1140
	2200	64	560	1100	590	1155	620	1220	660	1290
	2500	69	610	1200	640	1260	685	1335	725	1410



WIND Limitations	Max wind	Max X-wind (Yokota)	Max X-wind (cross country)	Max demonstrated X-wind component
Student Pilots	20 kts	10 kts	8 kts	15 kts
Private Pilots or higher	30 kts	25 kts	25 kts	

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"**
 Seat belts and harnesses **TIGHTEN**
 Cabin doors **UNLATCH**

once landing is assured

ELT remote switch **ON**
 Flaps (recommended) **30°**
 Final approach speed **69MPH**
 Master switch **OFF**
 Touchdown **TAIL SLIGHTLY LOW**

**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**

once landing is assured

Flaps (final approach) **30°**
 Final approach **76MPH**
 Master switch (prior to touchdown) **OFF**
 Cabin doors (prior to touchdown) ... **UNLATCH**
 Touchdown **TAIL SLIGHTLY LOW**
 EIS & MAG switches (upon touchdown) ... **OFF**
 Mixture (upon touchdown) **OFF**
 Brakes **AS REQUIRED**

DITCHING (WATER LANDING)

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

approach

- ➔ 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

- ➔ 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

Engine.....**SHUTDOWN**

➔ 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**Cabin air & heat **OFF**Airspeed **110MPH**

➔ Execute Emergency Landing Without Engine Power

WING FIRE IN FLIGHT**External lights**..... **ALL OFF****Pitot heat** **OFF**Master switch..... **OFF**Cabin air & heat **OFF**Airspeed **110MPH**

➔ 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 CHARGEAlternator circuit breaker **PULL**Non-essential equipment **OFF**

➔ Terminate flight as soon as practical

AMMETER DISCHARGEAvionics 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

FlapsAS 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

SPINThrottle **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 FAILUREAutopilot **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 REDHOLD IN POSITION

FLASHING RED/GREENCAUTION

FLASHING GREENRETURN FOR LANDING

STEADY GREENCLEARED TO LAND

EMERGENCY DESCENT

Carb heat ON

Throttle..... IDLE

Mixture..... RICH

Flaps..... 30°

Airspeed 100MPH