C172 Vorflugkontrolle

1 Kabine

Notwendige Papiere ..... Vorhanden
Bord-, Flughandbuch, Checklisten, Abfangverfahren
Notausrüstung ..... Prüfen, gesichert
Ruderverriegelung ..... Entfernen
Hauptschalter (Bat, Alt)..... AN
PFD ..... Prüfen
Avionikgebläse ..... Beide prüfen
Kraftstoffvorrat ..... Prüfen
*Landeklappen ..... 10°
- *bei Flügen in der Nacht*
  Innenbeleuchtung ..... AN, Prüfen
  Externen Lichter..... Alle AN, Prüfen
  Taschenlampe ..... Mitführen, Prüfen

Hauptschalter..... AUS
Tankwahlschalter ..... BEIDE
Peilstab, *Drain-Becher..... Entnehmen

2 Leitwerk

Gepäckraumtür ..... Prüfen, verriegeln
Seitenruderfestellvorrichtung ..... Entfernen
Heckverankerung..... Lösen
Verankerungsring ..... Prüfen
Flugzeug-Unterseite ..... Prüfen
Ruder ..... Freigängig
Ruder, Trimmung ..... Zustand prüfen
Anschlüsse, Steuerseile, Anschlagschrauben
Positionsleuchte..... Unbeschädigt
Beacon..... Unbeschädigt
Antennen ..... Prüfen

3 Rechte Flügelhinterseite

Landeklappe ..... Prüfen
Reifen ..... Prüfen
Querruder ..... Freigängig, Zustand prüfen
Randbogen, Positionsleuchte ..... Prüfen

4 Rechte Flügelvorderkante

Flügelvorderkante, Strebe..... Prüfen
Flügel-Verankerung ..... Lösen
Kabinenlufteinlass..... Prüfen
*Flächentank (4 / S/G: 5) ..... Drainen
Kraftstoffvorrat ..... mit Peilstab prüfen
Tankdeckel ..... Schliessen

5 Flugzeugnase

Ölstand (min. 6 Quarts)..... Prüfen
*Schnellablaß Brandhahn ..... Drainen
*Krafstoffsieb-Ablaßknopf ..... Drainen
Sichtkontrolle Motorraum ..... Durchführen
Motorabdeckung ..... Prüfen
Propeller ..... Prüfen
Ölkühler ..... Prüfen
Alternator Keilriemen ..... Spannung prüfen
Vergaserluftfilter..... Prüfen
Bugrad, Reifen, Federbein..... Prüfen
Öffnung für statischen Druck ..... Prüfen

6 Linke Flügelvorderkante

*Flächentank (4)..... Drainen
Kraftstoffvorrat..... mit Peilstab prüfen
unterer Rand des Anzeigers im Füllstutzen: 49 ltr
Tankdeckel..... Schliessen
Kabinenlufteinlass ..... Prüfen
Pitot-Schutz..... Entfernen
Pitotrohr..... Prüfen
Flügelvorderkante, Strebe ..... Prüfen
Tankentlüftung ..... Prüfen
Überziehwarnung ..... Prüfen
Sauberkeit und Funktion
Lande-, Rollscheinwerfer..... Unbeschädigt
Flügel-Verankerung..... Lösen

7 Linke Flügelhinterseite

Randbogen, Positionsleuchte..... Prüfen
Querruder ..... Freigängig, Zustand prüfen
Anschlüsse, Steuerstange, Gewichte
Reifen..... Prüfen
Bremsen, Rutschmarkierung, Reifenprofil
Landeklappe..... Prüfen
*Flächentank (5)..... Drainen
Kraftstoffvorrat..... mit Peilstab prüfen
Tankdeckel..... Schliessen

Pax	M/N	S/G
800 lbs	25 USG	14 USG
600 lbs	40/50 USG	52 USG
400 lbs	40/50 USG	53 USG

Fuel Dripstick		
0	0	0
	¾	2,8
1	2	7,5
	3	11,4
2	4	15
	5	18,9
3	6	22,7
	7	26,5
4	8	30,3
	9,5	36
5	10,4	39,4
	11,5	43,5

6	12 ¾	48,3
	14	53
7	15	56,8
	16	60,6
8	17	64,4
	18	68
9	19	71,9
	20 ¼	76,7
10	21,5	81,4
	22 ¾	86
11	23 ¾	89,9
	24 ¾	93,7
12	26	98,4
	26,5	100

COCKPIT Checklist

Preflight-Inspection ..... Complete
Hobbs Hour..... Note
Seats, Seatbelts..... Locked
elec. Switches, Avionic ..... OFF
Flight Controls, Trim..... Checked
Alternate Static..... OFF
Fuel Selector..... BOTH
S/G: Fuel Shutoff Valve ..... OPEN

STARTING ENGINE Checklist

G: Stby Batt ..... Test, ARM
10 Sec on - green light
BUS Volt..... M ≥ 24 V, E ≤ 1.5 V
BATT Amps ..... S ≤ 0
STBY BATT ..... Displayed
Battery..... ON
Beacon ..... ON
M/N: Carburetor Heat..... OFF

ENGINE START (M/N)

Mixture ..... RICH
Throttle..... 1 cm
Primer..... As required
cold engine: 1-3 times
Prop. area..... Clear
Ignition (max. 10 sec.) ..... START
Throttle..... 1000 RPM
cold weather: 1200-1500 RPM
Oil pressure ..... CHK
Ammeter, Alternator ..... CHK, ON
Mixture ..... Set

ENGINE START (S/G)

- *if cold engine:*
  Fuel Pump..... ON
  Mixture ..... RICH
  after 3-5 sec.: CUTOFF
  Fuel Pump..... OFF

Throttle..... 1 cm
Prop area..... Clear
Ignition ..... START
Mixture ..... RICH
Throttle..... 1000 RPM
Oil pressure ..... CHK
BATT Amps (M, S)..... CHK
LOW VOLTS ..... Not displayed
Mixture ..... As required

C172S/G ENG Hot Start

Normal Checklist Integrated

Battery ..... ON
Beacon ..... ON
Throttle ..... Open 1/8 Inch
Mixture..... Open 1/3 → Full RICH
Propeller Area..... Clear
Ignition (max. 10 sec.)..... START

- if Engine does not start:
  Aux Fuel Pump ..... ON
  Ignition (max. 10 sec.) ..... START
  - if Engine does not start
    Cooldown..... 1 min.
    Mixture ..... CUTOFF
    Throttle..... Full OPEN
    Ignition (max. 10 sec.) ..... START
  - if Engine fires:
    Mixture ..... Full RICH
    Throttle..... Reduce to 1/8 Inch
  - if Engine does not start
    Cooldown..... 1 min.
    Throttle..... Open 1/8 Inch
    Mixture ..... CUT-OFF
    Aux Fuel Pump ..... ON
    Mixture ..... RICH, then CUTOFF
    Ensure stable fuel flow for 1-2 sec
    Aux Fuel Pump ..... OFF
    Ignition (max. 10 sec.) .... START
    Mixture ..... Advance

Aux Fuel Pump ..... OFF
Throttle ..... 800-1000 RPM
Oil Pressure ..... CHK
Mixture..... Set

AFTER START Checklist

Avionic ..... ON, set
Transponder ..... FLT-ID, SBY / GND
VFR US: 1200, Europe: 7000
G: Fuel Computer..... Set
Flaps ..... UP / 10°
Circuit breakers ..... Checked
Altimeters (2) ..... QNH___, ___ ft
A/P Baro ..... QNH___
Autopilot..... Test completed
Electrical Trim..... Tested
Gyro-instruments ..... Checked

TAXI Checklist

Brakes ..... **Checked**
Flight-Instruments..... **Checked**
Dep., Emer. Briefing.....**Completed**

ENGINE CHECK

Brakes .....***Set***
Doors, windows..... ***Closed***
Engine-Instruments .....***CHK***
Mixture..... ***Full RICH***
Throttle... ***M/N: 1700*** | ***S/G: 1800 RPM***
Ignition ..... ***CHK, BOTH***
RPM drop ≤ M/N: 125 | S/G: 150, diff. ≤ 50
M/N: Carburetor Heat..... ***CHK, OFF***
Suction (VAC).....***CHK***
Throttle..... ***1000 RPM***
Circuit breakers.....***Check***

TAKEOFF Checklist

Tracking/Timing ..... **START**
Fuel Selector..... **BOTH**
Flaps ..... **UP / 10°**
Trim..... **T/O set**
Mixture.....**RICH**
M/N: Carburetor Heat ..... **OFF/In**
Primer.....**Locked**
G: 12V Cabin Equipment ..... **OFF**
PFD Warnings..... **Checked**
Transponder ..... **GND / ALT**
--------- immediately prior line up ---------
Lights..... **As required**
Pitot Heat..... **As required**
---------- on the runway ----------
Heading Indicator.....**CHK**

V_R ..... 55 kts
at ½ rwy-length: min. 70% of T/O-Speed (40 kts)

	N	P	S/G
Flaps UP	59	56	62 kts
Flaps 10°	73	76	74 kts

N/P: -1 kts/2000 ft
S/G: 73 (1000-7000 ft) 72 (≥8000 ft)

CLIMB Checklist

Flaps.....**UP**
Lights..... **As required**
------- when passing Transition Altitude -------
Altimeters (2) ..... **Standard, ___ ft**

APPROACH Checklist

Fuel Selector..... **BOTH**
Mixture.....**Enriched**
M/N: Carburetor Heat ..... **As required**
Landing light.....**ON**
G: 12V Cabin Equipment ..... **OFF**
Approach Briefing .....**Completed**
Altimeters (2) .....**QNH___, ___ ft**
A/P Baro ..... **QNH___**

LANDING Checklist

Flaps ..... **___°**
Mixture.....**RICH**
M/N: Carburetor Heat ..... **ON**

Go-Around

Throttle ..... *Full OPEN*
M/N: Carburetor Heat..... *OFF*
Flaps.....*20°*
continue with Climb Checklist

AFTER LANDING Checklist

Flaps ..... **UP**
M/N: Carburetor Heat ..... **OFF**
Trim.....**T/O Set**
Lights..... **As required**
Pitot Heat..... **OFF**

ENGINE SHUTDOWN

Throttle ..... **1000 RPM**
Avionic, A/P ..... **OFF**
Mixture.....**CUTOFF**
Electrical switches .....**All OFF**
Ignition ..... **OFF**
Master (Bat, Alt)..... **OFF**
G: Stby Batt..... **OFF**

PARKING Checklist

Parking Brake ..... **As required**
Fuel Selector.....**L / R**
Tracking/Timing..... **Stop**
Hobbs Hour..... **Note**
Personal Items..... **Remove**
Headset, Ext. GPS, Checklist, Tablet, Camera(s)
Pitot-Cover .....**Attached**
Airplane .... Secure, Tie Down, Chock

ENG Fire during Engine Start

Cabin Heat, Cabin Air ..... OFF
Ignition .....Continue START
- if engine starts:
  Throttle .....M/N: 1700
  Throttle ..... S/G: 1800 RPM
  at least 2 minutes
- if engine does not start:
  Throttle .....Full OPEN

Mixture.....CUTOFF
S/G: Fuel Shutoff Valve .....OFF/out
Fuel Pump..... OFF
Master (Bat, Alt)..... OFF
Ignition ..... OFF
Brakes ..... Release as required
Fire Extinguisher.....Take along

Evacuate Aircraft

ENG Failure during Take-Off

Throttle ..... IDLE
♦ Aircraft on the ground:
Brakes .....Apply
Flaps .....UP
to increase brake efficency
Mixture .....CUTOFF
G: Stby Batt ..... OFF
Master (Bat, Alt)..... OFF
Ignition ..... OFF
♦ Aircraft in flight:
Speed
- Flaps UP..... M/N: 65 | S/G: 68 kts
- Flaps ≥ 10° . M/N: 60 | S/G: 65 kts

Landing site .....Select
Mixture .....CUTOFF
G/S: Fuel Shutoff Valve ..... CLOSE
Ignition ..... OFF
Flaps ..... As required
G: Stby Batt ..... OFF
Master (Bat, Alt)..... OFF
Doors .....Unlock
Seatbelts .....Tighten
Touchdown ..... lowest poss. speed

ENG Failure/Fire in Flight

Speed
- Flaps UP..... M/N: 65 | S/G: 68 kts
- Flaps ≥ 10° ... M/N: 60 | S/G: 65 kts

Flaps ..... AS REQUIRED
Landing site ..... SELECT
Range appr. 1,4 NM / 1000 ft
- if Fire:

Mixture.....CUTOFF
Fuel Shutoff Valve ..... CLOSE/Pull
S: Auxiliary Fuel Pump ..... OFF
Ignition ..... OFF
Master (Bat, Alt)..... OFF
M/N: Carburetor Heat .....OFF/IN
Cabin Heat, Cabin Air..... OFF
except overhead vents
Speed..... 100 kts
- if Fire continues

Speed.....INCREASE

- if Altitude for Restart sufficient:

Fuel Selector..... BOTH
Fuel Shutoff Valve ..... OPEN
Throttle .....1/8 inch OPEN
M/N: Carburetor Heat ..... ON
Primer .....Locked
S/G: Fuel Pump..... ON
- if engines does not start:

Mixture.....RICH
Ignition ..... BOTH
- if engine does not turn:

Ignition ..... START
Throttle .....Slowly advance
Mixture.....Slowly lean
as required

♦ if engine starts:
G/S: Fuel Pump..... OFF
Fuel flow.....CHK
- if fuel flow drops to 0:

Fuel Pump..... ON

Mixture..... As required
♦ if engine does not start:
Forced Landing apply

Smoke / Fire

Cabin Heat, Cabin Air ..... OFF
Determine source of fire
G: Stby Batt..... OFF
Master (Bat, Alt)..... OFF
Electrical Equipment.....All OFF
leave Ignition on
Avionic (1+2)..... OFF
Fire Extinguisher..... Use as req.
- if Fire is confirmed extinguished:
  Cabin .....Ventilate

Land as soon as possible

- if electric power required:
  Circuit breakers.....CHK
  do not reset
  Master (Bat, Alt)..... ON
  G: Stby Batt ..... ARM
  Avionic (1+2)..... ON
  Electrical Equipment..... ON
  turn on required equipment one after the other

Wing Fire

Vents..... CLOSE
External Lights .....All OFF
Pitot Heat..... OFF
Slip.....Perform
keep flames away from fuel tank, cabin

Land as soon as possible

land with Flaps 0°: V_{REF} 70 kt

Oil-Pressure low

♦ Oil-Temperature normal:
Land at nearest suitable airfield
♦ Oil-Temperature high:
Oil-Temperature high apply

Oil -Temperature high

Throttle .....Reduce power
Land as soon as possible

Carbon monoxide high

CO LVL HIGH
CO-Sticker has black spots
Cabin Heat..... OFF
Cabin Air .....ON
Vents..... Open
Windows..... Open
Land at nearest suitable airfield

Forced Landing

Normal Checklist included
Speed
- Flaps UP.....M/N: 65 | S/G: 68 kts
- Flaps ≥ 10° ...M/N: 60 | S/G: 65 kts

Mixture.....CUTOFF
Throttle ..... IDLE
Fuel Selector..... OFF
G/S: Fuel Shutoff Valve .....CLOSE
Ignition ..... OFF
Radio .....Transmit Mayday
Transponder 7700
Flaps ..... As required
30°/40° recommended
Master (Bat, Alt)..... OFF
Seats.....Upright, locked
Seatbelts ..... Tighten
ELT.....ON
- when landing is assured:
  G: Stby Batt ..... OFF
  Doors..... Unlock
  Touchdown ..... lowest poss. speed
  Brakes .....Apply heavily

Spin Recovery

Aileron .....Neutral
Throttle ..... IDLE
Rudder.....Apply and hold full opposite direction of rotation
Maximum deflection
Use turn coordinator if disorientation precludes determination of direction of rotation.
Elevator ..... Move briskly forward
Move elevator briskly forwar to break the stall
Full down elevator may be req. at aft CG loading
Rudder, Elevator ..... Hold until rotation stops
premature relaxation may extend recovery
- when rotation stops:
  Rudder.....Neutralize
  Flightpath.....Recover smoothly

Door open

Speed..... 75 kts
Door .....Close
Push door outward, then close door

Precautionary Landing / Ditching

Normal Checklist included

Heavy equipment ..... Secure
jettison as required
Life vests ..... Put on
Fuel Selector ..... BOTH
Mixture ..... RICH
Carburetor Heat ..... As required
Lights ..... As required
G: 12V Cabin Equipment ..... OFF
Approach Briefing ..... Completed
Altimeter ..... QNH___, ___ ft
Seats ..... Upright, locked
Seatbelts ..... Tighten
Flaps ..... 20°
Speed ..... 60 kts
Landing site ..... Select, overfly
Autopilot, Avionic ..... OFF
ELT ..... ON
Flaps ..... As required
30°/40° recommended
Approach ..... Parallel to swells
- if high winds, heavy seas:
  Approach ..... Into the wind

Sinkrate ..... appr. 300 ft/min

- when landing is assured:

G: Stby Batt ..... OFF
Master (Bat, Alt) ..... OFF
Doors ..... Unlock
Touchdown ..... lowest poss. speed
Mixture ..... CUTOFF
Throttle ..... IDLE
G/S: Fuel Shutoff Valve ..... CLOSE
Ignition ..... OFF
Face ..... Cushion

Fuel low

LOW FUEL L **LOW FUEL R**

< 5 USG in L/R Tank / Transmitter-Failurel

Land at nearest suitable airfield

Fuel flow fluctuating

Fluctuation ≥ 1 GPH

Fuel Pump ..... ON
Mixture ..... Readjust
Fuel Selector ..... BOTH
- if fuel flow stable:
  Fuel Pump ..... OFF

Rough Engine
Loss of engine power

- Fuel flow fluctuates:
  Fuel flow fluctuating apply
- Magnetos/Ignition:
  Ignition ..... CHK on L, R, BOTH
  Mixture ..... Readjust
  for smooth engine operation
  - if engine still runs rough:
    Mixture ..... Enrich
    Ignition ..... BOTH
    Land at nearest suitable airfield
- M/N/P: Carburetor icing:
  Throttle ..... Consider Full Power
  Carburetor Heat ..... ON
  if engine still runs smooth:
  Carburetor Heat ..... As required
  Mixture ..... As required

Inadvertent Icing Encounter

Flight into icing conditins prohibited

Pitot-Heat ..... ON
Turn back or change altitude
leave icing conditions ASAP
Cabin Heat ..... ON
Deicing vent ..... OPEN
Throttle ..... Increase power
to prevent ice buildup on propeller blades
M/N: Carburetor Heat ..... ON as req.
Mixture ..... As required
Land at nearest suitable airfield

- if extreme ice buildup:
  Consider **Precautionary Landing**
  Flaps ..... UP / do not extend
- if ice accumulation at wing leading edge > 0,5 cm:
  Approach speed ..... Increase
  Required power ..... higher
  Stall Speed V_S ..... Increased
- if ice accumulation on windshield:
  Left window ..... Open
  Ice on windshield ..... Scrape off
  to retain visibility for landing
- for landing:
  Forward-Slip ..... As required
  Speed ..... ≤ + 10 kts
  depending on ice accumulation
  Perform landing in level attitude

G: High/Low Volts

HIGH VOLTS *or* LOW VOLTS *or*
M Bat > 40 Amps or M Bus < 27,5 Volts

- **LOW VOLTS or M Bus < 27,5 V:**

Throttle.....≥ 1000 RPM
Generator (Alt)..... OFF
ALT Circuit Breaker .....CHK
reset once as required
Master (Bat, Alt) ..... ON

- **if M Bus > 27,5 Volts: (END)**

Generator (Alt)..... OFF
Caution: Compass deviation ≤ 25° possible
Avionic Bus 1 ..... OFF
Pitot-Heat ..... OFF
Lights .....All OFF
12V Cabin Equipment..... OFF

♦ **if M Bus ≥ 20 Volts:**
Main & Essential Bus powered
by M BUS

♦ **if M Bus < 20 Volts:**
Stby Batt lasts for 30 min.
Audio Panel COM1 MIC NAV1 **..... Select, then**

- **in VMC (Visual flight conditions):**

Avionik Bus 2 ..... OFF
Inoperative Systems: Audio Panel, Autopilot, COM2, NAV2, Transponder, MFD
Land at nearest suitable airfield

- **when landing is assured:**

Flaps.....As required
Flap motor is a large electrical load

G: Stby Batt Voltage low

STBY BATT
Land at nearest suitable airfield

G: Dispay Cooling

PFD1 Cooling / MFD1 Cooling
♦ **PFD1 or MFD1 Cooling displayed:**
Cabin Heat..... Reduce
to minimum required
Forward Avionic Fan.....CHK
CHK for airflow at display

- **if Forward Avionic Fan inop:**

Stby Batt ..... OFF
♦ **PFD1 and MFD1 Cooling displayed:**
Stby Batt..... OFF
Land at nearest suitable airfield

Electrical Power Supply Malfunction

Ammeter.....CHK
♦ **Ammeter ind. excessive charge:**
Full scale deflection
Alternator ..... OFF
ALT. Circuit breaker.....Pull
Electrical Equipment..... OFF
leave only essential equipment on
Land at nearest suitable airfield
♦ **Ammeter indicates discharge (negative values) or large fluctuationsc or Low-Voltage Light illumniates (< 24,5 V):**
Avionic ..... OFF
ALT Circuit breaker..... CHK in
Master (Bat, Alt)..... OFF, then ON

- **Low-Voltage Light extinguished:**

Avionic .....ON

- **Low-Voltage Light illuminated:**

Generator (Alt)..... OFF
Electrical Equipment..... OFF
leave only essential equipment on
Land at nearest suitable airfield

Static Port blocked

Pitot-Heat .....ON
V/S Indicator ..... Smash glas
Speed.....CHK
see POH-Performance for correction of airspeed
Altitude (Cruise) .....+ 50 ft
Altitude (Approach).....+ 30 ft

Suction low

VAC Indication < 4,5" (green area)
Autopilot..... OFF
♦ **M/N/S:**
Horizon .....Unreliable
Heading Indicator.....Unreliable
Turn Coordinator.....Use
Magnetic compass .....Use
Throttle ..... Increase power
Descent ..... Initiate as req.
to maintain suction in green arc
♦ **G: LOW VACUUM**
Standby-Horizon .....Unreliable

Landing with damaged tire

Approach ..... Perform normal

♦ **Main tire damaged:**

Flaps ..... 30°

Touchdown ..... with good wheel

keep damaged tire in the air as long as possible

♦ **Nose tire damaged:**

Flaps ..... As required

Touchdown ..... on main tires

keep nose tire in the air as long as possible

- after nose tire landing:

Elevator ..... Full pull

Landing without Elevator control

Control aircraft with Elevator Trim and Throttle, plan a long final
Normal Checklist included

Cabin ..... Prepared
Fuel Selector ..... BOTH
Mixture ..... RICH
Carburetor Heat ..... As required
Lights ..... As required
G: 12V Cabin Equipment ..... OFF
Approach Briefing ..... Complete
Altimeter ..... QNH___, ___ ft
Seats ..... Upright, locked
Seatbelts ..... Tighten
Flaps ..... 20°
Speed ..... 65 kts
Horizontal flight ..... Achieve with Elevator trim and throttle
Throttle ..... As required
Rate of descent < 500 ft/min
Elevator trim ..... Do NOT change

- for landing:

Throttle ..... Close
Elevator trim ..... Nose-up to touchdown attitude

G: Red X in PFD

♦ **Red X for Speed or Altitude:**

ADC Circuit breaker ..... CHK
(ESS BUS) reset once as required
Standby-Instrument(s) ..... Use

♦ **Red X for Horizon or HIS:**

AHRS Circuit breaker ..... CHK
(AVN BUS 1) reset once as required
Standby-Instrument(s) ..... Use

	N	S/G
Stall		
V_{S0} ..... Clean	48	48 kts
..... Flaps 40° | 30°	41	40 kts
V_{S1}	53	53 kts
	48	48 kts
Takeoff & Climb		
V_Y (Best Rate)	73	74 kts
V_X (Best Angle)	59	62 kts
V_R	55	55 kts
Enroute	75-85	75-85 kts
Maneuvering		
V_A (2550 lbs)		105 kts
V_A (2200 lbs)		98 kts
V_A (1600 lbs)		80 kts
Operating		
V_{NE}	160	163 kts
V_{NO}	128	129 kts
V_{FE} (Flaps 10°)	85	110 kts
V_{FE} (Flaps 20°)		85 kts
V_{FE} (Flaps 30°)	70	85 kts
V_{FE} (Flaps 40°)	70	
Descent		
V_{GLIDE} (Flaps Up)	65	68 kts
Flaps Up	60-70	65-75 kts
Flaps 0° - 10°	< 110	< 110 kts
Flaps 10° - 40°/30°	< 85	< 85 kts
Flaps Down	55-65	60-70 kts
Short Field	60	61 kts
Max. CWC (demonstrated) ..	15	15 kts

Fuel Capacity	N	S/G
Both Tanks	43,0	56,0 USG
Each Tanks	21,5	28,0 USG
Unusable fuel (each tank)	1,5	1,5 USG

SHORT Field Takeoff

	Flaps	VR	50ft	VR	50ft	VR	50ft
N	**UP**	2300 lbs		2100 lbs		1900 lbs	
		52	**59**	50	56	47	54
P	*10°*	*2400 lbs*		*2200 lbs*		*2000 lbs*	
		51	***56***	*49*	*54*	*46*	*51*
S/G	**10°**	2550 lbs		2400 lbs		2200 lbs	
		51	**56**	48	54	44	50

Throttle Full OPEN before releasing Brakes

Accelerate ..... Slightly Tail Low

Pr. Alt.	OAT		0°		10°		20°	
		Fl.	Gnd	50ft	Gnd	50ft	Gnd	50ft
0	N	UP	**720**	1300	**775**	1390	**835**	1490
	P	***10***	***795***	***1460***	***860***	***1570***	***925***	***1685***
	S/G	10	**860**	1465	**925**	1575	**995**	1690
1000	N	UP	**790**	1420	**850**	1525	**915**	1630
	P	***10***	***875***	***1605***	***940***	***1725***	***1015***	***1860***
	S/G	10	**940**	1600	**1010**	1720	**1090**	1850
2000	N	UP	**865**	1555	**930**	1670	**1000**	1790
	P	***10***	***960***	***1770***	***1035***	***1910***	***1115***	***2060***
	S/G	10	**1025**	1755	**1110**	1890	**1195**	2035
3000	N	UP	**950**	1710	**1025**	1835	**1100**	1970
	P	***10***	***1055***	***1960***	***1140***	***2120***	***1230***	***2295***
	S/G	10	**1125**	1925	**1215**	2080	**1310**	2240

Pr. Alt.	OAT		20°		30°		40°	
		Fl.	Gnd	50ft	Gnd	50ft	Gnd	50ft
0	N	UP	**835**	1490	**895**	1590	**960**	1700
	P	***10***	***925***	***1685***	***995***	***1810***	***1065***	***1945***
	S/G	10	**995**	1690	**1070**	1810	**1150**	1945
1000	N	UP	**915**	1630	**980**	1745	**1050**	1865
	P	***10***	***1015***	***1860***	***1090***	***200***	***1170***	***2155***
	S/G	10	**1090**	1850	**1170**	1990	**1260**	2135
2000	N	UP	**1000**	1790	**1075**	1915	**1155**	2055
	P	***10***	***1115***	***2060***	***1200***	***2220***	***1290***	***2395***
	S/G	10	**1195**	2035	**1285**	2190	**1380**	2355
3000	N	UP	**1100**	1970	**1185**	2115	**1270**	2265
	P	***10***	***1230***	***2295***	***1325***	***2480***	***1425***	***2685***
	S/G	10	**1310**	2240	**1410**	2420	**1515**	2605

2 kts TWC: +10% | 9 kts HWC: -10%
Slope 1% down: -5% | 1% up: +7%

SOFT Field Takeoff

Short grass: +15% TOD | Tall grass: +25% TOD
Mud/snow: >+25% TOD

Flaps ..... 10°
Elevator during Taxi ..... FULL BACK
Trim .....2 Strokes NOSE DOWN
Do not stop prior T/O
Accelerate ..... TAIL LOW
Level off in Ground Effect and accelerate.

SHORT Field Landing

Brakes ..... APPLY

Pr. Alt.	OAT	Fl.	0° Gnd	0° 50ft	10° Gnd	10° 50ft	20° Gnd	20° 50ft
0	N	40	**495**	**1205**	**510**	**1235**	**530**	**1265**
	P	***30***	***510***	***1235***	***530***	***1265***	***550***	***1295***
	S/G	30	**545**	**1290**	**565**	**1320**	**585**	**1350**
2000	N	40	**530**	**1265**	**550**	**1300**	**570**	**1335**
	P	***30***	***550***	***1295***	***570***	***1330***	***590***	***1360***
	S/G	30	**585**	**1355**	**610**	**1385**	**630**	**1420**

Pr. Alt.	OAT	Fl.	20° Gnd	20° 50ft	30° Gnd	30° 50ft	40° Gnd	40° 50ft
0	N	40	**530**	**1265**	**545**	**1295**	**565**	**1330**
	P	***30***	***550***	***1295***	***570***	***1325***	***585***	***1350***
	S/G	30	**585**	**1350**	**605**	**1380**	**625**	**1415**
2000	N	40	**570**	**1335**	**590**	**1370**	**610**	**1405**
	P	***30***	***590***	***1360***	***610***	***1390***	***630***	***1425***
	S/G	30	**630**	**1420**	**650**	**1455**	**670**	**1490**

2 kts TWC: +10% | 9 kts HWC: -10%
Slope 1% down: -5% | 1% up: +7%
Dry grass: +45% Gnd Roll
*Flaps UP: +35% (add **P**: 7 | **S/G**: 9 kts)*

SOFT Field Landing

Just before T/D add 100-200 RPM

Elevator during Taxi....FULL BACK
Braking .....AVOID

Reference speed	
Flaps	V_{REF}
0°/10°	70 kts
20°	65 kts
30°/40°	60 kts

$V_{TGT} = V_{REF} + ½$ Headwind + Gusts
(min 5 kts, max 15 kts)

WCA = (Windangle x Windspeed)/TAS
CWC = (Windangle + 20) % Windspeed
HWC = (110 - Windangle) % Windspeed
max. demonstrated CWC:
M/N: 12 kts | S/G: 15 kts

Mixture setting (leaning)
Taxiing: until RPM rises by 25-50 or RPM drops.
Cruise w/EGT: set power, then 50°F RoP
Descent (rule of thumb):
2 turns clockwise per 1000 ft or per 3 NM distance to destination

C172N - Cruise Power - 2300 lbs

P.A. ISA	RPM	ISA - 20° BHP	ISA - 20° TAS	ISA - 20° GPH	ISA BHP	ISA TAS	ISA GPH	ISA + 20° BHP	ISA + 20° TAS	ISA + 20° GPH
2000	**2500**	--	--	--	**75**	**116**	**8,4**	71	115	7,9
11°C	**2400**	72	111	8,1	**67**	**111**	**7,5**	63	110	7,1
	2300	64	106	7,1	**60**	**105**	**6,7**	56	105	6,3
	2200	56	101	6,3	**53**	**100**	**6,1**	50	99	5,8
	2100	50	95	5,8	**47**	**94**	**5,6**	45	93	5,4
4000	**2550**	--	--	--	**75**	**118**	**8,4**	71	118	7,9
7°C	**2500**	76	116	8,5	**71**	**115**	**8,0**	67	115	7,5
	2400	68	111	7,6	**64**	**110**	**7,1**	60	109	6,7
	2300	60	105	6,8	**57**	**105**	**6,4**	54	104	6,1
	2200	54	100	6,1	**51**	**99**	**5,9**	48	98	5,7
	2100	48	94	5,6	**46**	**93**	**5,5**	44	92	5,3
6000	**2600**	--	--	--	**75**	**120**	**8,4**	71	120	7,9
3°C	**2500**	72	116	8,1	**67**	**115**	**7,6**	64	114	7,1
	2400	64	110	7,2	**60**	**109**	**6,8**	57	109	6,4
	2300	57	105	6,5	**54**	**104**	**6,2**	52	103	5,9
	2200	51	99	5,9	**49**	**98**	**5,7**	47	97	5,5
	2100	46	93	5,5	**44**	**92**	**5,4**	42	91	5,2
8000	**2650**	--	--	--	**75**	**122**	**8,4**	71	122	7,9
-1°C	**2600**	76	120	8,6	**71**	**120**	**8,0**	67	119	7,5
	2500	68	115	7,7	**64**	**114**	**7,2**	60	113	6,8
	2400	61	110	6,9	**58**	**109**	**6,5**	55	108	6,2
	2300	55	104	6,2	**52**	**103**	**6,0**	50	102	5,8
	2200	49	98	5,7	**47**	**97**	**5,5**	45	96	5,4
10000	**2650**	76	122	8,5	**71**	**122**	**8,0**	67	121	7,5
-5°C	**2600**	72	120	8,1	**68**	**119**	**7,6**	64	118	7,1
	2500	65	114	7,3	**61**	**114**	**6,8**	58	112	6,5
	2400	58	109	6,5	**55**	**108**	**6,2**	52	107	6,0
	2300	52	103	6,0	**50**	**102**	**5,8**	48	101	5,6
	2200	47	97	5,6	**45**	**96**	**5,4**	44	95	5,3
12000	**2600**	68	119	7,7	**64**	**118**	**7,2**	61	117	6,8
-9°C	**2500**	62	114	6,9	**58**	**113**	**6,5**	55	111	6,2
	2400	56	108	6,3	**53**	**107**	**6,0**	51	106	5,8
	2300	50	102	5,8	**48**	**101**	**5,6**	46	100	5,5
	2200	46	96	5,5	**44**	**95**	**5,4**	43	94	5,3

C172P - Cruise Power - 2400 lbs

P.A. ISA	RPM	ISA - 20° BHP	ISA - 20° TAS	ISA - 20° GPH	**ISA BHP**	**ISA TAS**	**ISA GPH**	ISA + 20° BHP	ISA + 20° TAS	ISA + 20° GPH
2000	2500	--	--	--	**76**	**114**	**8,5**	72	114	8,1
11°C	2400	72	110	8,1	**69**	**109**	**7,7**	65	108	7,3
	2300	65	104	7,3	**62**	**103**	**6,9**	59	102	5,6
	2200	58	99	6,6	**55**	**97**	**6,3**	53	96	6,1
	2100	52	92	6,0	**50**	**91**	**5,8**	48	89	5,7
4000	2550	--	--	--	**76**	**117**	**8,5**	72	116	8,1
7°C	2500	77	115	8,6	**73**	**114**	**8,1**	69	113	7,7
	2400	69	109	7,8	**65**	**108**	**7,3**	62	107	7,0
	2300	62	104	7,0	**59**	**102**	**6,6**	57	101	6,4
	2200	56	98	6,3	**54**	**96**	**6,1**	51	94	5,9
	2100	51	91	5,8	**48**	**59**	**5,7**	47	88	5,5
6000	2600	--	--	--	**77**	**119**	**8,6**	72	118	8,1
3°C	2500	73	114	8,2	**69**	**113**	**7,8**	66	112	7,4
	2400	66	108	7,4	**63**	**107**	**7,0**	60	106	6,7
	2300	60	103	6,7	**57**	**101**	**6,4**	55	99	6,2
	2200	54	96	6,1	**52**	**95**	**5,9**	50	92	5,8
	2100	49	90	5,7	**47**	**88**	**5,5**	46	86	5,5
8000	2650	--	--	--	**77**	**121**	**8,6**	73	120	8,1
-1°C	2600	77	119	8,7	**73**	**118**	**8,2**	69	117	7,8
	2500	70	113	7,8	**66**	**112**	**7,4**	53	111	7,1
	2400	63	108	7,1	**60**	**106**	**6,7**	58	104	6,5
	2300	57	101	6,4	**55**	**100**	**6,2**	53	97	6,0
	2200	52	95	6,0	**50**	**93**	**5,8**	49	91	5,7
10000	2600	74	118	8,3	**70**	**117**	**7,8**	66	115	7,4
-5°C	2500	67	112	7,5	**64**	**111**	**7,1**	61	109	6,8
	2400	61	106	6,8	**58**	**105**	**6,5**	56	102	6,3
	2300	55	100	6,3	**53**	**98**	**6,0**	51	96	5,9
	2200	50	93	5,8	**49**	**91**	**5,7**	47	89	5,6
12000	2550	67	114	7,5	**64**	**112**	**7,1**	61	111	6,9
-9°C	2500	64	111	7,2	**61**	**109**	**6,8**	59	107	6,6
	2400	59	105	6,6	**56**	**103**	**6,3**	54	100	6,1
	2300	53	98	6,1	**51**	**96**	**5,9**	50	94	5,8

C172S/G - Cruise Power - 2550 lbs

P.A. ISA	RPM	ISA - 20° BHP	ISA - 20° TAS	ISA - 20° GPH	ISA BHP	ISA TAS	ISA GPH	ISA + 20° BHP	ISA + 20° TAS	ISA + 20° GPH
2000	**2550**	83	117	11,1	**77**	**118**	**105**	72	117	9,9
11°C	**2500**	78	115	10,6	**73**	**115**	**9,9**	68	115	9,4
	2400	69	111	9,6	**64**	**110**	**9,0**	60	109	8,5
	2300	61	105	8,6	**57**	**104**	**8,1**	53	102	7,7
	2200	53	99	7,7	**50**	**97**	**7,3**	47	95	6,9
	2100	47	92	6,9	**44**	**90**	**6,6**	42	89	6,3
4000	**2600**	83	120	11,1	**77**	**120**	**10,4**	72	119	9,8
7°C	**2550**	79	118	10,6	**73**	**117**	**9,9**	68	117	9,4
	2500	74	115	10,1	**69**	**115**	**9,5**	64	114	8,9
	2400	65	110	9,1	**61**	**109**	**8,5**	57	107	8,1
	2300	58	104	8,2	**54**	**102**	**7,7**	51	101	7,3
	2200	51	98	7,4	**48**	**96**	**7,0**	45	94	6,7
	2100	45	91	6,6	**42**	**89**	**6,4**	40	87	6,1
6000	**2650**	83	122	11,1	**77**	**122**	**10,4**	72	121	9,8
3°C	**2600**	78	120	10,6	**73**	**119**	**9,9**	68	118	9,4
	2500	70	115	9,6	**65**	**114**	**9,0**	60	112	8,5
	2400	62	109	8,6	**57**	**108**	**8,2**	54	106	7,7
	2300	54	103	7,8	**51**	**101**	**7,4**	48	99	7,0
	2200	48	96	7,1	**45**	**94**	**6,7**	43	92	6,4
8000	**2700**	83	125	11,1	**77**	**124**	**10,4**	71	123	9,7
-1°C	**2650**	78	122	10,5	**72**	**122**	**9,9**	67	120	9,3
	2600	74	120	10,0	**68**	**119**	**9,4**	64	117	8,9
	2500	65	114	9,1	**61**	**112**	**8,6**	57	111	8,1
	2400	58	108	8,2	**54**	**106**	**7,8**	51	104	7,4
	2300	52	101	7,5	**48**	**99**	**7,1**	46	97	6,8
	2200	46	94	6,8	**43**	**92**	**6,5**	41	90	6,2
10000	**2700**	78	124	10,5	**72**	**123**	**9,8**	67	122	9,3
-5°C	**2650**	73	122	10,0	**68**	**120**	**9,4**	63	119	8,9
	2600	69	119	9,5	**64**	**117**	**9,0**	60	115	8,5
	2500	62	113	8,7	**57**	**111**	**8,2**	54	109	7,8
	2400	55	106	7,9	**51**	**104**	**7,5**	49	102	7,1
	2300	49	100	7,2	**46**	**97**	**6,8**	44	95	6,5
12000	**2650**	69	121	9,5	**64**	**119**	**8,9**	60	117	8,5
-9°C	**2600**	65	118	9,1	**61**	**116**	**8,5**	57	114	8,1
	2500	58	111	8,3	**54**	**109**	**7,8**	51	107	7,4
	2400	52	105	7,5	**49**	**102**	**7,1**	46	100	6,8
	2300	47	98	6,9	**44**	**95**	**6,6**	41	92	6,3