



**PHOENIX
AERO CLUB**
EST. 1977

Cessna Skyhawk II (C172N)

Quick
Reference Handbook

SHADED AREAS ARE
MEMORY ITEMS

Intentionally Blank

Pre-Flight

Cockpit

Control Wheel.....	Release Restraints
Parking Brake	Set
Avionics	Off
All Switches.....	Off
Mixture	ICO
Magneto Switches	Off
Battery Master Switch	On
Fuel Gauges.....	Check Quantity
Interior/Exterior Lights	On – Checked – Off
Pitot Heat (IFR/NVFR Only)	On – Checked – Off
Flaps	Extended
Battery Master Switch	Off

Caution

Make sure pitot cover is removed before checking pitot heat.
Ground operation of pitot heat should be limited to TWO
minutes to avoid damaging the heating element.

Left Wing

Leading Edge	Check for Damage
Fuel Tank.....	Check Quantity – Secure Cap
Fuel Drain.....	Drain and Clear of Water
Fuel Tank Vent	Clear
Stall Warning Horn	Check/Test
Pitot Tube.....	Clear
Wing Tip and Lights	Check
Aileron and Hinges	Check
Flaps and Hinges	Check
Left Wheel	Check

Fuselage

Antennas Check
Empennage Clear of Ice/Frost/Snow
Horizontal Stabiliser/Trim Tab Check
Rudder Check

Right Wing

Flaps and Hinges Check
Aileron and Hinges Check
Wing Tip and Lights Check
Leading Edge Check for Damage
Right Wheel Check
Fuel Tank Check Quantity – Secure Cap
Fuel Drain Drain and Clear of Water

Nose Section

Cowling Secure
Oil Check - Not less than 4 Quarts
Fuel Drain Drain and Clear of Water
Propeller and Spinner Check
Air Filter Clear
Nose Wheel Strut and Tire Check
Static Port Clear

~ Pre-Flight Inspection Complete ~

Before Starting Engine

Pre-Flight and Passenger Brief.....Complete
Flight LogComplete
M/R.....Signed
Seats/Belts/Harnesses..... Adjusted/Locked
Fuel Selector.....Both
Trim Tab.....Neutral
Carburettor Heat..... Cold
Switches..... Off/Beacon On
Master Switch..... On
Instruments Checked
Avionics Off
Circuit Breakers Checked In
Mixture Full Rich
Throttle 1/8 Inch (Cold) 1/4 Inch (Hot) Open
Brakes.....Test and Set

~ Before Starting Engine Checklist Complete ~

Starting Engine

Normal Start

Prime	1-3 Strokes (None if warm)
Propeller Area	Clear
Ignition Switch	Start (Release when engine starts)
Oil Pressure	Green within 30 sec

Flooded Start

Mixture	ICO
Throttle	Open Full
Primer	Locked
Ignition Switch	Start (Release when engine starts)
Mixture	Advance
Throttle	Retard

After Start Checks

Magnetos Both
Avionics and Intercom On – Set – Checked
Alternator Charging
Mixture Leaned (2 cm)
Throttle 1000 RPM
Oil Pressure Green
Taxi Lights..... On
Flaps Retracted

~ After Start Checklist Complete ~

Taxi Checks

Brakes..... Checked
Instruments AH/DI/TC/Compass Checked
Nav aids..... Checked

~ Taxi Checklist Complete ~

Do not proceed with Run-Up Checks until BOTH Oil Temperature and Oil Pressure are GREEN

Run-Up Checks

Parking Brake Set
Fuel Selector..... Both
Mixture Rich
Throttle 1700 RPM
Magnetos Check Drop
..... 125 RPM max. drop | 50 RPM differential drop
Carburettor Heat Check Drop
Engine Instruments Green
Ammeter Positive
Suction Gauge approx. 5 inHg
Throttle Idle
Throttle 1000 RPM

Before Take-Off Checks

Fuel Selector.....Both
Trim Set Take-Off
Controls.....Free and Correct
Master/Alternator Switch..... On
MagnetosBoth
PrimerLocked
Flight InstrumentsSet and Checked
Radio/Nav aids/Avionics.....Checked and Set
FlapsSet 0° or 10°
Throttle Friction..... Set
Mixture Rich
Seats/Belts/Harnesses..... Adjusted
Doors/Windows..... Latched
Departure Brief..... Complete
Take-Off Safety Brief..... Complete
~ Before Take-Off Checklist Complete ~

Line Up Check

Pitot Heat.....As Required
Instruments Green/Aligned
Switches..... On
Transponder/Trim.....ALT/Set
AltimeterWithin Tolerance

~ Line Up Checklist Complete ~

Rolling Check

Power Set/Green
Engine Instruments Green
Airspeed Rising

After Take-Off

Gear..... Released/Test
Flaps Up
Power Full
Temps & Pressure Green
Switches Off
Mixture Rich
Centerline Tracking

Top of Climb/Descent

Fuel..... Logged/Correct Tank
Mixture Leaned
QNH.....Set Area
DI / Compass Aligned
Cowl FlapsAs Required
Aids..... Source/Tune/Identify/Test
Radio..... Set/Checked

Before Landing Checks

Brakes..... Released/Test
UndercarriageFixed
Mixture Rich
Fuel.....Sufficient/Selected
Instruments Aligned/Checked
Switches All Lights On
Hatches/Harnesses..... Secure
PAL A/R

Final Checks

PitchFixed
UndercarriageFixed
Flaps Set
Carburettor Heat Cold
ClearanceObtained
Conditions Checked
Stable Approach..... Confirmed

After Landing Checks

Transponder Standby
Mixture Leaned
Lights Taxi and Beacon On
Pitot Heat..... Off
Flaps Retracted
Trim Neutral

Shutdown Checks

Radios and Avionics..... Off
Throttle 1000 RPM
Magnetos Check Drop
Throttle Full Aft
MixtureICO
Magnetos Off
Master Switch..... Off

Airspeeds for Emergency Operation

Engine Failure after Take-Off

Flaps Up	65 KIAS
Flaps Down.....	60 KIAS

Manoeuvring Speed

2300 LBS	97 KIAS
1950 LBS	89 KIAS
1600 LBS	80 KIAS

Maximum Glide	65 KIAS
Precautionary Landing	60 KIAS

Landing Without Engine Power

Flaps Up	65 KIAS
Flaps Down.....	60 KIAS

Engine Failure on Take Off

Throttle	Idle
Brakes.....	As Required
Mixture	ICO
Magnetos	Off
Master Switch.....	Off

Engine Failure after Take Off

Airspeed	60 or 65 KTS (Flaps dependent)
Throttle	Idle
Mixture	ICO
Magnetos	Off
Flaps	30°
Master Switch.....	Off

Engine Failure During Flight

Airspeed	65 KTS
Carburettor Heat.....	On
Mixture	Full Rich
Fuel.....	Both
Magnetos	Both (or Start of prop is stopped)
Primer	Locked

Engine Restart

Airspeed	65 KTS
Fuel Selector.....	Both
Mixture	Cycle twice leave Full Rich
Oil	Temps/Pressure Green
Switches.....	Cycle and leave on Both
Throttle	Cycle and leave half open

Forced Landing

MAYDAY Call	Complete
Transponder	7700
Airspeed	70 KIAS
Check Fire/Smoke Behind	Complete
Airspeed	65 KIAS

~Conduct Engine Failure Checklist~

Field	Selected
Lights	All On
Passengers.....	Briefed

~Conduct Engine Restart~

Radio Call.....	Update ATC
Fuel Selector.....	Off
Magnetos	Off
Flaps	As Required
Master Switch.....	Off
Doors	Unlatch on Touchdown

Precautionary Landing

PAN-PAN Call Complete
Flaps 20°
Airspeed 65 KIAS
Passengers..... Briefed

Field Selected
Lights All On
Passengers..... Briefed

Radio Call..... Update ATC
Doors Unlatch on Touchdown

Low-Voltage Light Illumination

Avionics Off
Master Switch..... Off (both sides)
Master Switch..... On (both sides)
Low-Voltage LightCheck Off
Avionics On

If Low-Voltage Light illuminates again

Alternator Off
Non-Essential Electrical loadReduce
FlightTerminate as soon as practicable

Excessive Rate of Charge (Ammeter)

Alternator Off
Non-Essential Electrical loadReduce
FlightTerminate as soon as practicable

General Data

Fuel: 21.5 USG (Standard)/ 27 USG (Long-Range)

Landing Gear Pressure

Nose Gear Tyre: 31 PSI

Main Gear Tyre: 29 PSI

Nose Gear Shock Strut: 45 PSI

TAKEOFF DISTANCE MAXIMUM WEIGHT 2300 LBS

SHORT FIELD

CONDITIONS:

- Flaps Up
- Full Throttle Prior to Brake Release
- Paved, Level, Dry Runway
- Zero Wind

NOTES:

1. Short field technique as specified in Section 4.
2. Prior to takeoff from fields above 3000 feet elevation, the mixture should be leaned to give maximum RPM in a full throttle, static runup.
3. Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
4. For operation on a dry, grass runway, increase distances by 15% of the "ground roll" figure.

WEIGHT LBS	TAKEOFF SPEED KIAS		PRESS ALT FT	0°C			10°C			20°C			30°C			40°C					
	LIFT OFF	AT 50 FT		TOTAL TO CLEAR 50 FT OBS			TOTAL TO CLEAR 50 FT OBS			TOTAL TO CLEAR 50 FT OBS			TOTAL TO CLEAR 50 FT OBS			TOTAL TO CLEAR 50 FT OBS					
				GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	GRND ROLL	
2300	52	59	S.L.	720	1300	775	1390	835	1490	895	1590	960	1700	895	1590	960	1700	895	1590	960	1700
			1000	790	1420	850	1525	915	1630	980	1745	1050	1865	980	1745	1050	1865	980	1745	1050	1865
			2000	865	1555	930	1670	1000	1790	1075	1915	1155	2055	1075	1915	1155	2055	1075	1915	1155	2055
			3000	950	1710	1025	1835	1100	1970	1185	2115	1270	2265	1185	2115	1270	2265	1185	2115	1270	2265
			4000	1045	1880	1125	2025	1210	2175	1300	2335	1400	2510	1300	2335	1400	2510	1300	2335	1400	2510
			5000	1150	2075	1240	2240	1335	2410	1435	2595	1540	2795	1435	2595	1540	2795	1435	2595	1540	2795
		6000	1265	2305	1365	2485	1475	2680	1585	2895	1705	3125	1585	2895	1705	3125	1585	2895	1705	3125	
		7000	1400	2565	1510	2770	1630	3000	1755	3245	1890	3455	1755	3245	1890	3455	1755	3245	1890	3455	
		8000	1550	2870	1675	3110	1805	3375	1945	3670	2095	3990	1945	3670	2095	3990	1945	3670	2095	3990	

Figure 5-4. Takeoff Distance (Sheet 1 of 2)

TAKEOFF DISTANCE 2100 LBS AND 1900 LBS

SHORT FIELD

REFER TO SHEET 1 FOR APPROPRIATE CONDITIONS AND NOTES.

WEIGHT LBS	TAKEOFF SPEED KIAS		PRESS ALT FT	0°C			10°C			20°C			30°C			40°C		
	LIFT OFF	AT 50 FT		GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	
2100	50	56	S.L.	585	1070	630	1140	680	1220	725	1300	780	1390	850	1520	935	1665	
			1000	640	1165	690	1245	740	1330	795	1420	850	1520	935	1665			
			2000	700	1270	755	1360	810	1455	870	1555	935	1665					
			3000	770	1390	830	1490	890	1595	955	1710	1025	1830					
			4000	845	1525	910	1640	980	1755	1050	1880	1130	2015					
			5000	930	1680	1000	1805	1075	1935	1155	2075	1240	2230					
			6000	1025	1850	1100	1990	1185	2140	1275	2300	1370	2475					
			7000	1130	2050	1215	2210	1310	2380	1410	2560	1515	2755					
			8000	1245	2275	1345	2460	1450	2655	1560	2865	1680	3090					
			1900	47	54	S.L.	470	865	505	920	540	985	580	1045	620	1115	680	1215
1000	515	940				550	1005	590	1070	635	1140	680	1215					
2000	560	1025				605	1095	645	1170	695	1245	745	1330					
3000	615	1115				660	1195	710	1275	760	1365	815	1465					
4000	670	1220				725	1305	780	1400	835	1495	895	1595					
5000	740	1340				795	1435	855	1535	920	1640	985	1755					
6000	810	1470				875	1575	940	1690	1010	1810	1085	1940					
7000	895	1620				965	1740	1035	1865	1115	2000	1195	2145					
8000	985	1790				1065	1925	1145	2065	1230	2220	1320	2385					

Figure 5-4. Takeoff Distance (Sheet 2 of 2)

RATE OF CLIMB

MAXIMUM

CONDITIONS:

Flaps Up
Full Throttle

NOTE:

Mixture leaned above 3000 feet for maximum RPM.

WEIGHT LBS	PRESS ALT FT	CLIMB SPEED KIAS	RATE OF CLIMB - FPM			
			-20°C	0°C	20°C	40°C
2300	S.L.	73	875	815	755	695
	2000	72	765	705	650	590
	4000	71	655	600	545	485
	6000	70	545	495	440	385
	8000	69	440	390	335	280
	10,000	68	335	285	230	---
	12,000	67	230	180	---	---

Figure 5-5. Rate of Climb

CRUISE PERFORMANCE

CONDITIONS:

2300 Pounds

Recommended Lean Mixture

PRESSURE ALTITUDE FT	RPM	20°C BELOW STANDARD TEMP			STANDARD TEMPERATURE			20°C ABOVE STANDARD TEMP		
		% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2000	2500	---	---	---	75	116	8.4	71	115	7.9
	2400	72	111	8.0	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
	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
	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
	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
10,000	2650	76	122	8.5	71	122	8.0	67	121	7.5
	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
12,000	2600	68	119	7.7	64	118	7.2	61	117	6.8
	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

Figure 5-7. Cruise Performance

LANDING DISTANCE

SHORT FIELD

CONDITIONS:

- Flaps 40°
- Power Off
- Maximum Braking
- Paved, Level, Dry Runway
- Zero Wind

NOTES:

1. Short field technique as specified in Section 4.
2. Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots
3. For operation on a dry, grass runway, increase distances by 45% of the “ground roll” figure.

WEIGHT LBS	SPEED AT 50 FT KIAS	PRESS ALT FT	0°C		10°C		20°C		30°C		40°C	
			GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS	GRND ROLL	TOTAL TO CLEAR 50 FT OBS
2300	60	S.L.	495	1205	510	1235	530	1265	545	1295	565	1330
		1000	510	1235	530	1265	550	1300	565	1330	585	1365
		2000	530	1265	550	1300	570	1335	590	1370	610	1405
		3000	550	1300	570	1335	590	1370	610	1405	630	1440
		4000	570	1335	590	1370	615	1410	635	1445	655	1480
		5000	590	1370	615	1415	635	1450	655	1485	680	1525
		6000	615	1415	640	1455	660	1490	685	1535	705	1570
		7000	640	1455	660	1495	685	1535	710	1575	730	1615
8000	665	1500	690	1540	710	1580	735	1620	760	1665		

Figure 5-10. Landing Distance

Passenger Brief Items

- No Smoking in aircraft
- Proper usage and adjustments of seatbelts
- Emergency Procedures
- Location and operation of Emergency Exits
- Location of emergency items
 - Life Jackets
 - Life Rafts
 - Fire Extinguishers
- Requirements of PAX in Control Seat
 - Constant Communication
 - Remain Clear of Controls
- Baggage

Take-Off Safety Brief

- If there is an engine failure/fire/abnormality whilst on the runway, I will close the throttle and brake as required
- If there is an engine failure/fire/abnormality after take-off with runway remaining, I will lower the nose, select full flap, land and brake as required
- If there is an engine failure/fire/abnormality after take-off with insufficient runway remaining, I will lower the nose, maintain **65 KTS**, select a suitable field 30 degrees either side of the nose, and land in the field using flaps as required
- I will only turn back to the runway if I am at or above 1000ft AGL or on the downwind leg