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Reality Expansion Pack for X-Plane

Cessna 172SP Skyhawk

Checklists & References

ENGINE START

1. Seatbelts/Shoulder Harness ..... FASTENED
2. Brakes ..... TEST & SET
3. Fuel Selector ..... BOTH
4. Fuel Shutoff Valve ..... ON (IN)
5. Circuit Breakers ..... CHECK
6. Beacon ..... ON
7. Avionics Switch ..... OFF
8. Master Switch ..... ON
9. Throttle ..... OPEN 1/4 INCH
10. Mixture ..... IDLE CUTOFF

If engine cold:

a. Aux. Pump.....ON

b. Mixture.....Rich until 3-5 GPH then CUT OFF

c. Aux. Pump.....OFF

11. Propeller Area ..... CLEAR
12. Starter ..... ENGAGE

AFTER ENGINE START

1. Ignition Switch ..... START
2. Mixture (At Engine Start) ..... RICH
3. Engine ..... RPM 1000 RPM
4. Oil Pressure ..... CHECK
5. Mixture ..... LEANED MAX
6. Flaps ..... RETRACT
7. Avionics ..... ON
8. Instruments ..... SET

TAXI

1. Brakes ..... CHECK
2. Magnetic Compas ..... MOVEMENT FREE
3. Flight Instruments ..... CHECK

BEFORE TAKEOFF

1. Parking Brakes ..... SET
2. Flight Controls ..... FREE & CORRECT
3. Flight Instruments ..... SET
4. Fuel Selector ..... BOTH
5. Elevator Trim ..... SET
6. Mixture ..... RICH FOR RUNUP
7. Autopilot ..... CHECK DISCONNECT
8. Throttle ..... 1800 RPM
9. Ammeter ..... CHECK
10. Engine Instruments ..... CHECK
11. Suction ..... CHECK
12. Magnetos ..... CHECK (125/50)
13. Throttle ..... IDLE CHECK
14. Radios ..... SET
15. Brakes ..... RELEASE
16. Door/Windows ..... CLOSED
17. Flaps ..... AS REQUIRED
18. Mixture ..... RICH (BELOW 3000 FT)

TAKEOFF

1. Lights ..... ON AS REQUIRED
2. Transponder ..... ON
3. Throttle ..... FULL POWER
4. Climb Speed ..... 79 KTS

BEFORE LANDING

1. Seatbelts ..... ADJUST
2. Fuel Selector ..... BOTH
3. Engine Gauges ..... CHECK
4. Heading Indicator ..... ALIGNED
5. Altimeter Setting ..... CHECK
6. Radios ..... SET
7. Autopilot ..... OFF
8. Mixture ..... RICH
9. Flaps ..... DOWN
10. Approach Speed ..... 65-75 KTS

AFTER LANDING CHECK

1. Lights (Except Beacon) ..... OFF
2. Transponder ..... OFF
3. Flaps ..... UP
4. Trim ..... NEUTRAL

ENGINE SHUTDOWN

1. Throttle ..... IDLE
2. Mags GROUND ..... CHECK
3. Throttle ..... 1000 RPM
4. Avionics/Electrical Equip. ..... OFF
5. Mixture ..... CUTOFF
6. Master/Alternator Switch ..... OFF
7. Ignition Switch ..... OFF
8. Ignition Key ..... GLARESHIELD

SECURING AIRCRAFT

1. Hobbs & Tach ..... RECORD
2. Control Lock ..... INSTALL
3. Tiedowns/Chocks ..... INSTALL
4. Propeller (For Fuel) ..... VERTICAL
5. Fuel ..... RIGHT TANK

AIRSPEEDS FOR EMERGENCY OPERATIONS

Engine Failure After T.O. (Flaps Up)	70 KTS
Engine Failure After T.O. (Flaps Down)	65 KTS
Maneuvering Speed 2550 Lbs	105 KTS
Maneuvering Speed 2200 Lbs	98 KTS
Maneuvering Speed 1900 Lbs	90 KTS
Maximum Glide	68 KTS
Landing Without Engine Power (Flaps Up)	70 KTS
Landing Without Engine Power (Flaps Down)	65 KTS

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

1. Fuel Selector ..... BOTH
2. Mixture ..... RICH

IF ENGINE FAILS TO RESTART

3. Airspeed ..... 68 KTS
4. Mixture ..... CUTOFF
5. Fuel Shutoff Valve ..... OFF (PULL OUT)
6. Ignition Switch ..... OFF
7. Master Switch ..... OFF

ENGINE FAILURE DURING FLIGHT

1. Airspeed ..... 68 KTS

FLY THE AIRPLANE

2. Fuel Shutoff Valve ..... ON (IN)
3. Fuel Selector ..... BOTH
4. Aux. Fuel Pump ..... ON
5. Mixture ..... RICH
6. Ignition Switch ..... BOTH

EMERGENCY LANDING WITHOUT POWER

1. Airspeed ..... 65 KTS
2. Mixture ..... CUTOFF
3. Fuel Shutoff Valve ..... OFF (PULL OUT)
4. Ignition Switch ..... OFF
5. Wing Flaps ..... AS REQUIRED
6. Master Switch ..... OFF
7. Seatbelts ..... TIGHT
8. Door ..... UNLATCH
9. Touchdown ..... SLIGHTLY TAIL LOW
10. Brakes ..... APPLY HEAVILY

ALTERNATOR FAILURE

1. Avionics Power Switch ..... OFF
2. Alternator Circuit Breaker ..... CHECK IN
3. Master Switch ..... OFF
4. Master Switch ..... ON
5. Low Voltage Light ..... CHECK OFF
6. Avionics Power Switch ..... ON

LOW VOLTAGE LIGHT ON AGAIN

7. Alternator ..... OFF
8. Nonessential Electrical Equip ..... OFF

Land As Soon As Practical

FIRE DURING START OR GROUND

1. Cranking ..... CONTINUE FOR START

IF ENGINE FAILS TO RESTART

2. Throttle ..... FULL OPEN
3. Mixture ..... CUTOFF
4. Master Switch ..... OFF
5. Ignition Switch ..... OFF
6. Fuel Shutoff Valve ..... OFF (PULL OUT)
7. Aux. Fuel Pump ..... OFF

ENGINE FIRE IN FLIGHT

1. Mixture ..... CUTOFF
2. Fuel Shutoff Valve ..... OFF (PULL OUT)
3. Aux. Fuel Pump ..... OFF
4. Master Switch ..... OFF
5. Cabin Heat & Air ..... OFF
6. Increase Airspeed ..... BLOW OUT FIRE
7. Forced Landing ..... EXECUTE

ELECTRICAL FIRE IN FLIGHT

1. Master Switch ..... OFF
2. Avionics ..... OFF
3. All Other Switches ..... OFF
4. Cabin Heat & Air ..... OFF/CLOSE

COMMUNICATION LOSS

1. Frequency ..... CHECK
2. Volume/Squelch ..... CHECK
3. Speaker/Phones Switch ..... CHECK SELECTION
4. Headset Jacks ..... RESET
5. O/H Speaker-Handmike ..... TRY BOTH
6. Circuit Breakers ..... CHECK
7. Other Radio ..... IF AVAILABLE
8. VOR Frequency ..... MONITOR
9. Squawk 7600
10. Tower Lights Signals ..... OBSERVE

TAKEOFF PERFORMANCE - 2550 POUNDS

Flaps 10º, Full Throttle Prior to Brake Release, Paved, Level, Dry runway.

NOTES

1. Lift off at 51 KIAS. 50ft at 56 KIAS.

2. Short field takeoff technique applied.

3. Decrease distances by 10% for each 9 knots of head wind. For operations to up to 10 knots tailwind, increase distance by 10% for each 2 knots.

4. For operation on a dry, grass runway, increase distances by 15% of the ground roll figure.

PRESSURE ALTITUDE	0º C GRND ROLL 50 FT	10º C GRND ROLL 50 FT	20º C GRND ROLL 50 FT	30º C GRND ROLL 50 FT	40º C GRND ROLL 50 FT
S.L.	860 1465	925 1575	995 1690	1070 1810	1150 1945
1000	940 1600	1010 1720	1090 1850	1170 1990	1260 2135
2000	1025 1755	1110 1890	1195 2035	1285 2190	1380 2355
3000	1125 1925	1215 2080	1310 2240	1410 2420	1515 2605
4000	1235 2120	1335 2295	1440 2480	1550 2685	1660 2880
5000	1355 2345	1465 2545	1585 2755	1705 2975	1825 3205
6000	1495 2605	1615 2830	1745 3075	1875 3320	2010 3585
7000	1645 2910	1785 3170	1920 3440	2065 3730	2215 4045
8000	1820 3265	1970 3575	2120 3880	2280 4225	2450 4615

TAKEOFF PERFORMANCE - 2200 POUNDS

Flaps 10º, Full Throttle Prior to Brake Release, Paved, Level, Dry runway.

NOTES

1. Lift off at 44 KIAS. 50ft at 50 KIAS.

2. Short field takeoff technique applied.

3. Decrease distances by 10% for each 9 knots of head wind. For operations to up to 10 knots tailwind, increase distance by 10% for each 2 knots.

4. For operation on a dry, grass runway, increase distances by 15% of the ground roll figure.

PRESSURE ALTITUDE	0º C GRND ROLL 50 FT	10º C GRND ROLL 50 FT	20º C GRND ROLL 50 FT	30º C GRND ROLL 50 FT	40º C GRND ROLL 50 FT
S.L.	610 1055	655 1130	705 1205	760 1290	815 1380
1000	665 1145	720 1230	770 1315	830 1410	890 1505
2000	725 1250	785 1340	845 1435	905 1540	975 1650
3000	795 1365	860 1465	925 1570	995 1685	1065 1805
4000	870 1490	940 1605	1010 1725	1090 1855	1165 1975
5000	955 1635	1030 1765	1110 1900	1195 2035	1275 2175
6000	1050 1800	1130 1940	1220 2090	1310 2240	1400 2395
7000	1150 1985	1245 2145	1340 2305	1435 2475	1540 2650
8000	1270 2195	1370 2375	1475 2555	1580 2745	1695 2950

CRUISE PERFORMANCE - 2550 POUNDS

Recommended Lean Mixture At All Altitudes

		ISA - 20º C			ISA + 0º C			ISA + 20º C		
P.A.	RPM	%BHP	KTAS	GPH	%BHP	KTAS	GPH	%BHP	KTAS	GPH
2000	2550	83	117	11.1	77	118	10.5	72	117	9.9
	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
	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
	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

CRUISE PERFORMANCE - 2550 POUNDS

Recommended Lean Mixture At All Altitudes

		ISA - 20º C			ISA + 0º C			ISA + 20º C		
P.A.	RPM	%BHP	KTAS	GPH	%BHP	KTAS	GPH	%BHP	KTAS	GPH
8000	2700	83	125	11.1	77	124	10.4	71	123	9.7
	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
10,000	2700	78	124	10.5	72	123	9.8	67	122	9.3
	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
12,000	2650	69	121	9.5	64	119	8.9	60	117	8.5
	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

LANDING PERFORMANCE - 2550 POUNDS

Flaps 30º, Power Off, Maximum Braking, Paved, Level, Dry runway, Zero Wind.

NOTES

1. Speed at 50ft: 61 KIAS.

2. Short field landing technique applied.

3. Decrease distances by 10% for each 9 knots of head wind. For operations to up to 10 knots tailwind, increase distance by 10% for each 2 knots.

4. For operation on a dry, grass runway, increase distances by 45% of the ground roll figure.

5. If landing with flaps up is necessary, increase the approach speed by 9 KIAS and allow for 35% longer distances.

PRESSURE ALTITUDE	0º C GRND ROLL 50 FT	10º C GRND ROLL 50 FT	20º C GRND ROLL 50 FT	30º C GRND ROLL 50 FT	40º C GRND ROLL 50 FT
S.L.	545 1290	565 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