



## COSTANZO AIR FLIGHT SCHOOL

**N1356U**

<b>Engine</b>	Lycoming O320
<b>Horsepower</b>	160hp at 2,700 RPM
<b>Usable fuel quantity</b>	38 gal (2x 19 gal)
<b>Total fuel quantity</b>	42 gal (2x 21 gal)
<b>Oil quantity</b>	6 qts minimum
<b>Tire pressure</b>	31 psi (nose), 29 psi (main)

**WEIGHT & BALANCE**

<b>Max Takeoff Weight</b>	2,300 lbs
<b>Max Landing Weight</b>	2,300 lbs
<b>Empty Weight</b>	1,453.34 lbs
<b>CG Arm</b>	39.518 in

**V-SPEEDS**

V <sub>SO</sub>	41 KIAS	V <sub>FE</sub> 20/30/40°	85 KIAS
V <sub>S</sub>	47 KIAS	V <sub>FE</sub> 10°	110 KIAS
V <sub>R</sub>	55 KIAS	V <sub>A</sub> @2,300 lbs	97 KIAS
V <sub>X</sub>	64 KIAS	V <sub>A</sub> @1,950 lbs	89 KIAS
V <sub>Y</sub>	78 KIAS	V <sub>A</sub> @1,600 lbs	80 KIAS
V <sub>NO</sub>	128 KIAS	V <sub>NE</sub>	160 KIAS

**EMERGENCY AIRSPEEDS**

Engine failure after takeoff	V <sub>G</sub>	65 KIAS
------------------------------	----------------	---------

**INITIAL WALKAROUND**

Covers	REMOVED
Fuel Tanks	SUMP x3
Fuel Quantity	CHECK
Oil Quantity (min 5 qts)	CHECK

**INTERIOR INSPECTION**

Hobbs & Tach	WRITE DOWN
AROW + AFM Supplements	ABOARD
VOR Check (if IFR)	30 DAYS
Parking Brake	SET
Control Wheel Lock	REMOVE
Ignition Switch	OFF + KEYS OUT
Elevator Trim	NEUTRAL
Mixture	OFF
Throttle	OFF
Alternate Static	TEST & OFF
Electrical Switches	OFF
Avionics Switch	OFF
Master Switch	ON
Fuel Quantity	CHECK
Flaps	EXTEND
Exterior Lights & Pitot Heat	CHECK
All Switches	OFF
Master Switch	OFF
Fire Extinguisher (Latch, Green, Pin)	CHECK
Seat Position	SET
Windshield	CLEAN

**EXTERIOR INSPECTION****LEFT FUSELAGE**

Surface Condition	INSPECT
Baggage Door	LOCKED
ELT Antenna	INSPECT

**EMPENNAGE**

Surface Condition	INSPECT
Elevator Control Surface	FREE
Elevator Hinges	INSPECT
Elevator Cable Attachments	INSPECT
Elevator Trim Tab	INSPECT
Rudder Hinges	INSPECT

Flaps Up	65 KIAS	Rudder Cable Attachments	INSPECT
Flaps Down	60 KIAS	Tail Tie Down	REMOVE

# AIRCRAFT INSPECTION

# DEPARTURE

RIGHT FUSELAGE		BEFORE ENGINE START	
Surface Condition	INSPECT	Preflight Inspection	COMPLETE
Airplane Antennas	INSPECT	Passenger Briefing	PSAFETY
		Seats & Belts	ADJUST & LOCK
RIGHT WING		Brakes & Parking Brake	HOLD & SET
Flap and Aileron	INSPECT	Fuel Selector Valve	BOTH
Wing tip	INSPECT	Mixture	FULL RICH
Tie Down	REMOVE	Throttle	OPEN 1/8 IN
Leading Edge	INSPECT	Carb Heat	OFF
Main Wheel Tire and Brake	INSPECT	Avionics & Electrical Switches	OFF
Fuel Tank Sump	DRAIN/CHECK	Circuit Breakers	IN
Fuel Quantity & Fuel Caps	CHECK		
		ENGINE START	
NOSE		Beacon	ON
Oil Quantity (min 5 qt)	CHECK	Prime (if required)	2-6 STROKES & LOCK
Fuel Strainer	DRAIN/CHECK	Prop Area	CLEAR
Exhaust Stack	SECURE	Master Switch	ON
Engine Cowling	CHECK CLEAR	Ignition	START
Alternator Belt	INSPECT	Throttle	1,000 RPM
Propeller & Spinner	INSPECT	Oil Pressure	GREEN
Landing Lights	INSPECT	Alternator	VERIFY ON
Air Filter	INSPECT		
Nose Wheel Tire & Strut	INSPECT	AFTER START	
Static Port	INSPECT	Avionics	ON
		Flaps	RETRACT
LEFT WING		Mixture	LEAN FOR TAXI
Main Wheel Tire and Brake	INSPECT	Electrical Switches	AS DESIRED
Fuel Tank Sump	DRAIN/CHECK	Nav Lights	AS REQUIRED
Fuel Quantity & Fuel Caps	INSPECT	Ammeter	CHARGING
Leading Edge	INSPECT		
Pitot Tube	INSPECT	BEFORE TAXI	
Stall Warning	INSPECT	ATIS	LISTEN
Fuel Tank Vent	INSPECT	Altimeter	SET
Tie Down	REMOVE	Radios & Transponder	SET
Wing tip	INSPECT	Parking Brake	RELEASE
Flap and Aileron	INSPECT	Brakes	TEST
		Taxi Light	ON
FINAL WALKAROUND		Taxi (Route, Hotspots, Runways)	BRIEF
Airplane Condition	CHECK	Taxi Clearance	OBTAIN
All Covers, Tie-downs	REMOVED		

Windshield	CLEAN	DURING TAXI	
Oil, Fuel, Sump	CHECK	Flight instruments	CHECKED

## DEPARTURE

## IN-FLIGHT

RUN-UP		AFTER TAKE-OFF (500 AGL)	
Parking Brake	SET	Flaps (when clear of obstacles)	UP
Radios	SWITCH TO TWR	Throttle	FULL
Flight Controls	FREE & CORRECT	Mixture	SET
Flight Instruments	CHECK & SET	Engine Gauges	GREEN
Fuel Quantity	CHECK		
Fuel Selector	BOTH	CLIMB	
Trim	SET FOR TAKEOFF	Airspeed	75-85 KIAS
Mixture	RICH (below 3,000)	Throttle	FULL
Throttle	1,700 RPM	Mixture (Lean above 3,000ft)	SET
Mixture (lean >3,000 MSL)	SET FOR TAKEOFF		
Magnetos (Max 125 / Diff 50)	CHECK	CRUISE	
Carburetor Heat	RPM DROP	Fuel	BOTH
Suction Gauge	CHECK 4.5-5.5	Power	SET
Engine Gauges	CHECK	Mixture	SET
Ammeter	CHECK	Engine Gauges	CHECK
Throttle	IDLE then 1,000	Ammeter	CHECK
COM/NAV/GPS	SET	Instruments & Switches	CHECK
Transponder	ALT & CODE	Avionics	SET
Flaps	AS REQUIRED		
Seats, Belts, Harnesses	SECURE	BEFORE MANEUVER	
Doors & Windows	CLOSED	Clearing Turns	COMPLETE
Parking Brake	RELEASE	Heading	ESTABLISHED
Departure Brief	COMPLETE	Altitude	ESTABLISHED
SHOWTIME, LIGHTS, CAMERA, ACTION		Position (emergency landing)	SUITABLE
		Set power & configuration	SET
TAKE-OFF			
POWER 2300 / GAUGES GREEN / AIRSPEED ALIVE		IN RANGE	
NORMAL TAKEOFF (0° FLAPS)		ATIS / AWOS	LISTEN
Throttle	FULL	Altimeter	SET
Rotate	55 KIAS	Approach	BRIEF
Climb	70-80 KIAS	Avionics	SET
SHORT FIELD TAKE-OFF (0° FLAPS)		Airplane	CHECK
Brakes	APPLY		
Throttle	FULL ON BRAKES	DESCENT	
Brakes	RELEASE	Fuel Selector Valve	BOTH
Elevator Control	SLIGHT TAIL LOW	Carb Heat	FULL AS REQD
Climb past obstacle	59 KIAS	Power & Mixture (Full rich for idle)	AS DESIRED
SOFT FIELD TAKE-OFF (10° FLAPS)		Brake Pressure	CHECK
Elevator	FULL AFT	Seats	UPRIGHT

Rotate & Accelerate	IN GND EFFECT	Seatbelts	SECURED
Climb	Vx or Vy	Landing Light	ON

## IN-FLIGHT

## EMERGENCIES

## NORMAL LANDING

Airspeed (Flaps Up)	60-70 KIAS	Throttle	IDLE
Flaps	AS DESIRED	Brakes	APPLY
Final Airspeed (Flaps Down)	55-65 KIAS	Flaps	RETRACT
Touchdown	MAIN WHEELS	Mixture	IDLE CUT-OFF
Braking	AS REQUIRED	Ignition Switch	OFF
<b>SHORT FIELD LANDING</b>		Master Switch	OFF

Airspeed (Flaps Up)	60-70 KIAS	<b>ENGINE FAILURE IMMEDIATELY AFTER TO</b>	
Flaps	FULL DOWN		
Final Airspeed	60 KIAS	Airspeed	65 IAS (Flaps Up) / 60 IAS (Flaps Down)
Power once clear of Obstacles	IDLE	Land	STRAIGHT AHEAD
Touchdown	MAIN WHEELS	Mixture	IDLE CUT-OFF
Braking (Simulate)	APPLY HEAVILY	Fuel Selector Valve	OFF
Flaps	RETRACT	Ignition Switch	OFF
		Flaps	AS REQUIRED
<b>BALKED LANDING / GO-AROUND</b>		Master Switch	OFF

Throttle	FULL	<b>ENGINE FAILURE DURING FLIGHT</b>	
Carb Heat	COLD		
Flaps	20°	Airspeed	65 IAS
Airspeed	55 KIAS	Carburetor Heat	ON
Flaps (until clear of Obstacles)	10°	Fuel Selector Valve	BOTH
Flaps (at safe altitude and 60 KIAS)	RETRACT	Mixture	RICH
		Ignition Switch (START if prop stopped)	BOTH or START
<b>AFTER LANDING</b>		Primer	IN AND LOCKED

Flaps	UP	<b>FORCED LANDING</b>	
Mixture	LEAN FOR TAXI		
Carb Heat	COLD	Airspeed	65 IAS (Flaps Up) / 60 IAS (Flaps Down)
Lights	AS REQUIRED	Mixture	IDLE CUT-OFF
Trim	RESET	Fuel Selector Valve	OFF
Taxi Brief & Clearance	OBTAIN	Ignition Switch	OFF
		Emergency (with ATC or 121.5)	DECLARE

## SHUTDOWN

Parking Brake	AS REQUIRED	Transponder	7700
Avionics and Electrical	OFF	Flaps (40° recommended)	AS REQUIRED
Throttle	1,000 RPM	Master Switch	OFF
Mixture	IDLE CUTOFF	Doors	UNLATCH BEFORE LANDING
Ignition Switch	OFF & KEYS OUT	Touchdown	SLIGHTLY TAIL LOW
Master Switch	OFF	Brakes	APPLY HEAVILY
Fuel Selector	LEFT / RIGHT	<b>LANDING WITH FLAT MAIN TIRE</b>	
Control Wheel Lock	INSTALL		
		Approach	NORMAL

Tach, Hobbs, Post-flight	RECORD	Touchdown	GOOD TIRE FIRST
Tie-Downs, Chocks, Covers	INSTALL	Hold airplane off flat tire as long as possible	



**EMERGENCIES****EMERGENCIES**

<b>ENGINE FIRE DURING START</b>		<b>OVER-VOLTAGE LIGHT ILLUMINATES</b>	
Cranking	CONTINUE	Master Switch (both sides)	OFF
If Engine Starts	1,700 RPM (2 MINS) THEN OFF	Master Switch (both sides)	ON
If Engine Fails to Start		Over-Voltage Light	OFF
Throttle	FULL OPEN	If light illuminates again, terminate as soon as practical	
Mixture	IDLE CUT-OFF		
Cranking	CONTINUE	<b>AMMETER SHOWS DISCHARGE</b>	
Fire Extinguisher	OBTAIN	Alternator	OFF
Master Switch	OFF	Nonessential Electrical Equipment	OFF
Ignition Switch	OFF	Flight	TERMINATE as soon as practical
Fuel Selector	OFF		
Parking Brake	RELEASE	<b>INADVERTENT ICING ENCOUNTER</b>	
Fire	EXTINGUISH	Pitot Heat, Cabin Heat, Defroster	ON
		Cabin Heat and Defroster	ON
<b>ENGINE FIRE IN FLIGHT</b>		Turn back or change altitude to exit icing conditions	
Mixture	IDLE CUTOFF	Throttle (to minimize prop ice buildup)	INCREASE
Fuel Selector Valve	OFF	Carb Heat	AS REQUIRED
Master Switch	OFF	Land at nearest airport, or off airport if rapid ice buildup.	
Cabin Air & Heat (except overhead)	OFF	Be prepared for higher stall speed	
Airspeed / Emergency Descent	100 KIAS or more	Flaps	DON'T EXTEND
Forced Landing	EXECUTE	Approach speed	65-75 IAS
		Scrape windshield through left window, forward slip if req'd.	
<b>ELECTRICAL FIRE IN FLIGHT</b>			
Master Switch	OFF	<b>RADIO FAILURE</b>	
Avionics	OFF	Volume and Squelch	CHECK
All Electrical Switches	OFF	Audio Panel	CHECK
Overhead Vents/Cabin Air/Heat	CLOSED	Headset Plugs	CHECK
Fire	EXTINGUISH	Circuit Breakers	VERIFY
When Fire Extinguished	OPEN VENTS	Frequency	RETURN TO LAST OR 121.5
If Fire extinguished and Electricals Required			
Master Switch	ON	<b>STATIC SOURCE BLOCKAGE</b>	
Circuit Breakers (DO NOT RESET)	CHECK	Alternate Static Valve	PULL ON
Avionics and Electrical switches	ON ONE BY ONE	Instruments	CALIBRATE
<b>CABIN FIRE IN FLIGHT</b>		<b>LANDING WITHOUT ELEVATOR CONTROL</b>	
Master Switch	OFF	Horizontal flight, 60 KIAS, flaps 20°	SET
Overhead Vents/Cabin Air/Heat	CLOSED	Pitch	CONTROL WITH TRIM & POWER
Extinguish Fire and Land as soon as possible		Flare	TRIM TO FULL NOSE UP
<b>WING FIRE</b>			

All Lights and Pitot Heat OFF

Perform sideslip to keep flames away from cabin & fuel tank