

**June 2023**

**LSA TRANSITION COURSE for Experienced Pilots (200TT) who have a current BFR, 20 hours of Rotax experience, 10 hours of Garmin G3X Touch experience, and 20 hours of previous LSA logged hours**

**PRE-ARRIVAL**

**Take the Bristell/Rotax Quiz and discuss the results with one of our Landing Doctor trained CFI’s**

**All our CFI are trained in “The Landing Doctor” techniques that result in a pilot who will become “The Master and Commander” of his craft and an expert in landings. Your instructor will teach you about the cornerstone of our training program, “The Personal Limitations Check List.” The complete booklet is available for free on our web site, www.sportflyingusa.com. Our founder, Louis Mancuso, wrote the book in 1992 and the complete title is “The Personal Limitations Check List, Expert Decision Making, Think Like a Pro, for the newly Certificated Pilot”. You can read about our Ground Proximity Awareness techniques on our web site** [**www.thelandingdoctor.com**](http://www.thelandingdoctor.com)

**Read the Aircraft Operation Instruction (AOI) for the aircraft you will be learning in. The AOI or POH, Pilot Operating Handbook, can be found for free on www.sportflyingusa.com**

**Read the free FAA books on flying. You can see a list of these publication on** [**www.sportflyingusa.com**](http://www.sportflyingusa.com)

**PRE-FLIGHT**

1. **Face the plane into the wind prior to opening the canopy or doors and starting the engine.**
2. **If the plane does not fly for a few days, the engine needs to be BURPED!**
3. **BURPING THE ENGINE: While facing the plane, turn the propeller counterclockwise about 20 times. This will bring the oil back into the oil canister for a proper oil reading. Turning the prop clockwise can damage the gear box.**
4. **Oil must be on flat part of stick. Never add a full quart since the Rotax only holds three quarts total.**
5. **COOLANT: The coolant bottle should be about one half full. Occasionally, remove the top cowl and add coolant by removing the coolant cap. Place a drop of engine oil on the brass center ring to prevent damage to the oil cap gasket. Inspect and replace the oil cap gasket every few years. Coolant is 50/50 distilled water and GM Dexcool. More distilled water can be added when additional cooling is desired.**
6. **TIRE PRESSURE: Main tires-26 lbs., Nose tire-18 lbs. (Brake Linings-1/16th inch or more.)**
7. **Too much air in the nose can cause a wobbling nose gear.**
8. **Drain the sumps. Activating the electric fuel pump will allow more fuel flow and better draining of the engine sump. Examine fuel for contamination such as dirt or water. If you find water in the sump, it will be clear, on the bottom of the strainer, and separate from the fuel above.**
9. **Follow the pre-flight instructions in the AOI.**

**STARTING**

**1. Follow the instructions on the checklist.**

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| A close up of a logo  Description automatically generated with low confidence   |  | | --- | |  | |  | **CHECKLIST ROTAX 912iS Sport and Bristell 915 Trubo 2022** |
| **PREFLIGHT** | | **FACE BRISTELL INTO THE WIND BEFORE OPENING CANOPY** |
| **BEFORE STARTING ENGINE** | | **UPDATE AND REVIEW YOUR PLC (COOLANT EXPANSION TANK to top monthly)** |
| **1** | **Rudder pedals, harness, cushions** | **ADJUST so pilot's eyes are 3 inches above the glareshield** |
| **2** | **BACK UP BATTERY-EFIS** | **ON-LOAD FLIGHT PLAN AND WAYPOINTS IN RECENTS** |
|  |  | **FUEL RESET TO ZERO, set fuel quantity to agree with actual fuel on board** |
| **3** | **SMART TAXI** | **Load smart taxi into G3X and review best route to active runway** |
| **4** | **PARKING BRAKE** | **SET (DO NOT RIDE BRAKES DURING TAXI)** |
| **3** | **CIRCUIT BREAKERS** | **CHECK ALL IN** |
| **5** | **Back up battery** | **OFF** |
| **STARTING ENGINE** | |  |
| **1** | **MASTER SWITCH** | **ON** |
| **2** | **EFIS 1** | **ON AND SELECTOR ENGINE PAGE WITH FUEL PRESSURE** |
| **3** | **FUEL SELECTOR** | **LEFT TANK (or fullest tank)** |
| **4** | **START POWER GUARD** | **OPEN AND ON** |
| **5** | **IGNITION SWITCHES** | **LANE A ON/LIGHT ON & EGT AND WATER TEMP ON/YELLOW** |
| **6** | **IGNITION SWITCHES** | **LANE B ON/LIGHT ON OIL TEMP ON/YELLOW** |
| **7** | **AUX FUEL PUMP** | **ON 40.5 - 46.5 PSI AND THEN OFF** |
| **8** | **MAIN FUEL PUMP** | **ON 40.5 - 46.4 PSI leave on for remainder of the flight** |
| **9** | **THROTTLE** | **ADVANCE ABOUT 3/4” FORWARD YELL CLEAR** |
| **10** | **STROBE** | **ON** |
| **11** | **START BUTTON** | **ENGAGE - RELEASE AFTER 1500 ENGINE RPM for smooth start** |
| **12** | **THROTTLE** | **Reduce to 2200 RPM for 2 minutes, then 2500 RPM UNTIL 120 F** |
| **13** | **START POWER GUARD** | **CLOSE** |
| **14** | **AUX FUEL PUMP** | **ON UNTIL REACHING CRUISE ALTITUDE** |
| **15** | **EFIS 2 and AVIONICS** | **ON** |
| **16** | **AUTO PILOT** | **ON-over ride, then OFF** |
| **BEFORE TAXI** | | **Idle 1750RPM ISP ATIS 120.725 CD 121.85 GRND 135.3 TWR 119.3 DEP 120.05** |
| **1** | **ALTIMETER / BARO** | **SET FIELD ELEVATION OR BARO** |
| **2** | **GPS / NAV EQUIPMENT** | **ON & SET (FLIGHT PLAN) insert com frequencies.** |
| **3** | **Transponder** | **Touch TXP to bring up screen for easy loading of code.** |
| **4** | **CONTROL SURFACES** | **CORRECT-BRIEF PASSENGER TO KEEP THIGHS WIDE, ETC.** |
| **5** | **Brakes** | **Make small turns while taxiing to control speed and minimize brake use** |
| **BEFORE TAKEOFF-RUN UP** | |  |
| **1** | **PARK BRAKE** | **SET** |
| **2** | **FLAPS** | **10 DEGREES IF LESS THAN 3000 FT RUNWAY** |
| **3** | **THROTTLE** | **2500 RPM UNTIL 120 F, then 4000 RPM and check both lane A and B** |
| **4** | **TRIM AND AUX PUMP** | **NEUTRAL TRIM AND BOTH FUEL PUMPS ON** |
| **5** | **OIL TEMP** | **120 F Minimum-DO NOT EXCEED MAX OF 266 F Normal 190-230 F** |
| **TAKEOFF** | | **YOU MUST SEE OVER THE NOSE AT ALL TIMES** |
| **1** | **Brake** | **SET: FULL POWER, VERIFY 5000 RPM-release brake, add right rudder** |
| **2** | **ROTATE** | **unstuck nosewheel at 40 knots and lift off at 50 knots** |
| **3** | **CLIMB** | **Vy 72 KIAS (Above 80 degrees use 90 KIAS for cooling)** |
| **4** | **FLAPS** | **REMOVE FLAPS AT 500', Turn crosswind 300' less than downwind leg altitude** |
| **5** | **Manuevering Climb Speed** | **Vy 72 + 10 Safe Maneuvering Climb Speed is 82 KIAS Vmcs** |
| **CRUISE** | | **AUX PUMP OFF 4800-5300 RPM** |
| **1** | **EGT** | **MAX 1742 F 1500 EGT will extend exhaust system life COOLANT MAX 248 F** |
| **2** | **CHT** | **MAX 275 F** |
| **DESCENT** | | **AUX PUMP ON and some power to avoid shock cooling** |
| **BEFORE LANDING CHECKLIST** | | **BEST GLIDE SPEED IS 67 KIAS 10 FLAPS** |
| **1** | **GAS** | **FUEL ON FULLEST TANK AUX PUMP ON** |
| **2** | **DOWNWIND 75** | **3900 RPM-SLOW TO Vfe 75 KIAS (close throttle momentarily if necessary)** |
| **3** | **BASE LEG 70** | **3700 RPM Am I too high, too low, just right-DO SOMETHING** |
| **4** | **FINAL APPROACH 65** | **3600 RPM AIRSPEED 65 KIAS +10/-5** |
| **6** | **DFGAP 60** | **3500 RPM AT 200' AGL-ON CENTERLINE, 60 KIAS +10 -5 OR GO AROUND** |
| **5** | **SHORT FINAL 55** | **3300 RPM Fly level at 5', the height of a car** |
| **6** | **Over the runway 55** | **Wait-4',3',2',1' ad smooth continuing back pressure-land in a slight high nose attitude** |
| **7** | **Eye Transition Point 55** | **As the plane settles, focus your eyes down the runway to the end.** |
| **7** | **AFTER TOUCHDOWN** | **close the throttle, HOLD NOSE WHEEL OFF TO DISAPATE ENERGY** |
| **SHUTDOWN** | | **COOL FOR SEVERAL MINUTES PRIOR TO SHUT DOWN** |
| **1** | **THROTTLE** | **HOLD THROTTLE closed TO ASSURE IDLE 1700-1800 RPM** |
| **2** | **IGINITION AND FUEL PUMPS** | **OFF one lane at a time** |
| **3** | **MASTER** | **OFF-STROBE ON-FLAPS 20 DEGREES PARK BRAKE-OFF** |
|  |  |  |
|  | **VA Maneuvering Speed 96 KIAS** | **VNE Never Exceed Speed 157 KIAS Vso Full Flap Stall 40 KIAS** |

**TAXIING**

**Rotax recommends setting the idle at 1800 RPM to protect the gearbox. This high idle will result in fast taxi speeds. Apply brakes to bring the plane almost to a stop, then resume normal taxi. This technique will cause the brake pads to last longer. You will taxi all over the airport and get comfortable with steering, braking to slow down and braking to come to a stop. (The idle may be as low as 1400 RPM for one minute. This low idle is only used for seaplanes so they will not hit the dock.)**

**TAKEOFF**

**Set Park brake or hold the brakes. Apply full throttle and verify minimum of 5000 RPM**

**Release brakes, apply slight back pressure. Let plane accelerate until it is ready to fly.**

**After liftoff, release some back pressure and accelerate to Vy 72 KIAS.**

**CLIMB**

**YOU MUST SEE OVER THE NOSE…YOU MUST SEE OVER THE NOSE**

**USE 75-90 knots. Use higher speeds on hot days for better cooling.**

**Remove flaps at 500 AGL, Turn onto crosswind at 700’ AGL or 300’ below pattern altitude.**

**Fuel pump remains on until reaching cruise altitude.**

**CRUISE**

**SET THROTTLE TO 4800-5300 RPM**

**PERFORM 4 BASICS OF FLIGHT-STRAIGHT AND LEVEL, TURNS, CLIMBS AND GLIDES.**

**SLOW FLIGHT**

**PERFORM SLOW FLIGHT USING TRAFFIC PATTERN POWER SETTINGS.**

**FLY WITH 30 DEGREES, FULL FLAPS, AT 55 KIAS MAKING TURNS UNTIL RELAXED.**

**STALLS**

**POWER OFF STALL-RECOVER AT FIRST SIGN OF A STALL**

**POWER ON STALL- Only practiced with CFI onboard.**

**CLIMB TO 4000 FEET AGL**

**SET THROTTLE TO 4000 RPM OR LESS**

**Slow to lift off speed of 45 KIAS-**

**SET TRIM TO NEUTRAL**

**SET FLAPS TO 10 DEGREES**

**KEEP BALL CENTERED**

**SET THROTTLE TO 4000 RPM**

**ADD BACK PRESSURE-KEEP BALL CENTERED- RECOVER AT FIRST SIGN OF A STALL.**

**RETURN TO AIRPORT AND OBSERVE CFI FLY THE PATTERN AND MAKE A LANDING.**