

Part #63

Certified Rotax Service Training

By Mike Stratman



Rotax Training is designed around small class sizes and hands-on aircraft experience.

You're the owner of a new LSA and are confused about who is qualified and where you can find the right mechanic to maintain your Special Light Sport. You know some local A&P's, but are they Rotax trained to properly maintain your Powerplant and sign your log book?

The Light Sport Category has brought many changes to our industry, not the least of which is Certified Training for both Airframe and Powerplant. While most regular service can be performed by the owner on Experimental Light Sport Aircraft (E-LSA), the Special Light Sport Class (S-LSA) requires special training and credentials for Airframe & Powerplant maintenance. The airframe maintenance is controlled by the aircraft's manufacturer while engine maintenance is exclusively dictated by the engine supplier. Having an A&P rating or LSA Repairman's Certificate (120 hours) gives you the airframe qualification but not the Powerplant shingle. Rotax offers a full range of Service schools and some interesting business opportunities that you may want to get into on the ground floor. As the LSA market grows, local repair shops will be seeing more and more aircraft equipped with Rotax 912-914 series engines needing the various levels of service we will be discussing.

This month we'll look at what's required to comply with S-LSA requirements for Rotax engines, where to go to locate a qualified technician, and what questions the owner needs ask when finding a mechanic. If you're a mechanic we'll discuss where to get training, and which level you may want to take your training based on how much business you can expect to be found in your particular area. Rotax also offers protected service areas for qualified Repair Centres in the US. A great business opportunity we will talk more about before the end of this article. Even if your aircraft falls into the E-LSA Category, there is likely certain types of maintenance procedures you may want training for or may prefer to have handled by a certified Rotax Maintenance Technician.

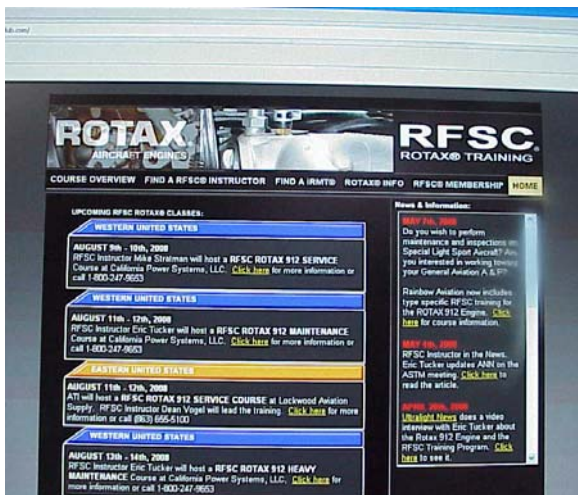


Figure #1 – All certified training is conducted by the Rotax Flying & Safety Club. Go to www.rotaxflyingclub.com to find the next available course, a Rotax Maintenance Technician, or Certified Instructor.

What you need to know about proper training: Even If you're just the owner it is your responsibility to be sure the mechanic is properly rated. The FAA or your insurance carrier will likely bring this to your attention in the unfortunate event of an accident or incident. Improper logbook entries are ultimately the responsibility of the owner. In short, both the owner and the wrench are likely to get fried if unqualified mechanics have been doing the maintenance.

In August 2007 the first factory approved program was established. While seminars have been given for many years by a number of sources, these were considered informational programs that carried no SLSA rating. In order to receive a rating you must attend one these new approved classes. The combination of either an FAA A&P or LSA Repairman's (120 hour course) Certificate plus the training classes we are about to discuss will give you the credentials needed to be compliant with the new regs for SLSA aircraft. At the conclusion of the class you will be presented an official membership number that you can enter in any logbook that signifies the repair has been made in accordance with SLSA regulations. Along with being properly rated you will also qualify for Rotax Repair Centre status which includes a substantial discount on parts, as well as a protected service area. More about this business opportunity a little later.

Service Levels: All Rotax Training is conducted under the supervision of **The Rotax Flying & Safety Club** found on the web at www.rotaxflyingclub.com. All RFSC classes are factory approved and meet all LSA requirements, regardless of which location you choose to attend at. See website for the most current dates and locations. RFSC offers certified training for the 912-914 series engines in modules that allow a rated A&P or LSA Repairman to progress to the level of expertise that best suits the potential for the mechanic's particular situation. The levels are Basic Service #1, Maintenance #2, Heavy Maintenance #3, and Engine Overhaul #4. Let's look at each level individually so you can fully understand what you will be learning and what the profit potential is for anyone looking to wrench for hire.

Basic Service School #1: This level training will basically cover most everything listed in the scheduled maintenance chart for all 912-914 engines. The actual schedule is listed in the Line Maintenance Manual (Currently Part #899-373). This covers service intervals required at 25, 50, 100, 200, and 600 hours of operation. This includes oil & filter change, coolant flush, spark plugs, compression tests, Carb synchronization, and condition inspect check list. This is all "hands-on" stuff in small groups of 10 or less, closely supervised, on an actual aircraft. PowerPoint presentations explain Rotax history and product development discussions will give you a better idea how to spot older versions of these engines and what advancements can be found on the newer models. This is by far the most popular class and has the best profit potential for mechanics wanting to reach into this new market. Class is 16 hours over 2 days and size is limited. Course includes all printed materials, current manuals, Official Certificate of Completion (on condition of test score), and Picture ID badge stating your rating and membership number (for official logbook recording). There is no prerequisite requirements for this course.



Figure #2 – At the completion of the course you will receive your official wall certificate as well as an individual photo ID badge for each segment completed. All the latest Service Manuals are also included in the course.

Maintenance School #2: This course is the next building block on the way to being able to do almost anything on a Rotax 912-914. This class covers all aspects for Component Inspection and Removal for both Rotax 912 and 914 Turbo engines. Students will participate in hands-on, condition inspection and component removal of Carbs, Gearboxes, Cylinders, Heads, and all major components directly from an actual engine. These can then be sent to a certified Rotax Service Centre for reconditioning or rebuilding. This class is popular with mechanics wanting to be prepared for almost any job short of splitting the cases without a big investment in tooling. Participates will be supplied with all printed material including all Rotax parts, Maintenance, and

Service Manuals. The seminar is open to anyone meeting the prerequisite requirement listed below. Class size is strictly limited. This two day, 16-hour course includes an official "Certificate of Completion" (on condition of test score) that meets LSA requirements, as well as an official photo ID badge showing the rating achieved and membership number. A recommended tool list is supplied, but no purchase is mandatory.

Prerequisite Requirements: Returning past course students, Rotax Service School, any certified FAA A&P rated mechanic, or individuals completing the LSA 120 hour repairman's course. This material would likely be too advanced for new or casual users of Rotax engines.



Figure #3 – For Heavy Maintenance Rating certain specialty tools will be needed. A complete suggested tool list is provided.

Heavy Maintenance #3: Students will participate in a complete engine rebuild, disassembly and discussion of correct procedures and maintenance for completely rebuilding gearboxes, valve and head lapping, carb rebuilding, ignition system theory and maintenance, basically everything up to, but not including splitting of the crankcases. Condition inspection and precision measuring of all components to .0001" is a large part of this rating. Being able to calculate percent of wear and proper logging of results is covered in depth, as outlined in the Heavy Service Manual #889-603, currently in use. Class size is limited. The seminar is open to anyone meeting the prerequisite requirements listed below, this 16-hour two day course can qualify companies to be eligible for Rotax Repair Centre status.

Prerequisite Requirements: Returning past course students, Service & Maintenance School, two years experience as a certified FAA A&P rated mechanic, or individuals completing the LSA 120 hour repairman's course.

Complete Engine Overhaul: Any procedure that calls for the crankcases to be split is classified as "Overhaul". Anything to do with crankshaft replacement and crankcase torquing is a highly technical procedure that requires a substantial investment in specialty tools and knowledge. At this time, only a Rotax Service Centre (CPS, Lockwood, LEAF, or SMLA) is rated to overhaul a Rotax 912 or 914. As demand dictates, this may or may not change in the future.

Testing: Yes, as with any FAA type instruction, you will be tested. In accordance with the LSA regulations students will be required to participate in hands on work as well as pass a written exam to receive the Certificate of Completion that will allow the mechanic to perform work listed above legally under LSA Regulations. This is an open book test that focuses on being able to locate important information in the reference manuals you have been supplied.

You need not fret over this as to the best of my knowledge nobody that has taken the class and test has been denied a Certificate. The option has to be there in case the instructor is convinced you are a complete rock and would likely pose a danger to yourself or anyone else.



Figure #4 – Finding a qualified local Rotax Maintenance Technician is easy when you go to www.rotaxflyingclub.com. This is designed to supply you with the most current information including the ratings each iRMT is currently holding.

Repair Centre Ratings: Here is where the business side of all this kicks in. It is the object of the RFSC to produce a nationwide service network that enables the owner of a LSA to find localized, professional service that meets his needs. On the RFSC website is a world map that indicates where to find service anywhere on the globe. Click on the USA, and then the state you are interested in, and you will find the Service Centre assigned to cover this state. You will also find all current Repair Centres in that state. As these Repair Centres come “on-line” the ratings achieved will be clearly stated so as to allow the customer to find the properly rated individuals to handle whatever repair is needed.

How do you become a Repair Centre?: Easy, get your ratings as outlined. You can attend class at any Service Centre not just the one your area, (see www.rotaxflyingclub.com for class schedules). Once you have finished your Rotax training you can apply for Repair Centre status by filling out the application. You will be given a 50 mile protected radius by the Service Centre controlling your area.. As long as you remain active no one else will be granted this status inside this area. This prevents excessive competition for the same customer base and gives a reasonable chance for the Repair Centre to succeed. Obviously, being first in your area is key to starting a solid Repair Centre. A confidential parts discount sheet will be supplied allowing the Repair Centre to charge the suggested retail price for parts, make a substantial profit on parts, and not be in competition with the Service Centres they purchase from. It needs to be clear that the Repair Centre program is administered and controlled exclusively by the independent Service Centre assigned to your area. As stated before, check the RFSC website to see which Service Centre controls your state and contact them for further info.

Summary: As you can see LSA has brought a higher level of safety to our sport and Rotax is working hard to provide the customer with a service network that is both local and professionally trained. If you want more info or a complete course overview check out our website at www.800-airwolf.com. We are linked to the RFSC and are ready to assist you in way we can.



Mike Stratman has been a contributing editor for *Light Sport & Ultralight Flying Magazine* since 1983. Mike is a factory trained independent Rotax Maintenance Technician. Mike is also owner of California Power Systems, your West Coast Rotax Service Centre since 1984.