RANS S-6ES COYOTE II

The S-6ES went into production in April 1990. It is the second generation of the original S-6 design. Increased wing span through a fuselage re-design resulted in improved performance and appearance. (ES denotes "extended span") The Coyote II design goals represented a significant advance in terms of low build times and a surprising number of airframe configurations. With the high level of finished parts, build times average between 200 and 350 hours. A Coyote II can be built in the confines of an average double car garage. Normal shop tools and skills are all that are required to turn out an attractive, well made flying machine.

A proven outstanding performer, Coyote II's have won the World Micro-light Championships five times. This demonstration of air superiority and ease of construction has led to the Coyote II's quick rise in numbers (over 1,000 worldwide as of 1996). The wide range of choices between engines, wings and landing gear allow the Coyote II to be tailor fit to your type of flying.

CONSTRUCTION: Our commitment to quality shows from the moment you start unpacking your kit. Each RANS kit is precision manufactured using the latest in computer guided machines and skilled crafts persons. Many of our staff have been with RANS a number of years. Their experience shows in our product.

The fuselage is a clever combination of welded steel and aluminum tubes. The pilot and passenger are surrounded by an integral welded chromoly cage. This forms the superstructure where all major loads terminate, and becomes the building fixture. This self-jigging aspect of the Coyote II's construction reduces build time and increases accuracy. Within hours of opening the crate, final assembly can start. The tail cone is comprised of lightweight, anodized aluminum tubes. The tubes are joined with a unique gusset that allows the formation of a cluster, similar to that of a welded joint. This system allows for a corrosion resistant tail cone and ease of repair in the event of damage.

The cockpit cage is expertly MIG welded in precision fixtures. The cage and a multitude of other components are powder coated and ready for assembly right out of the box! The wings feature double tubular spars and pre-formed rib tubes that insert into pockets sewn into the wing skins. Anti-drag and compression tubes attach to the spars using special brackets. Flap and aileron frames come pre-fabricated with ready to install hinges and skins.

Ailerons are cable and push-pull tube operated, and feature differential displacement to minimize adverse yaw. The three position flaps are manually operated by a lever between the seats. The lift struts feature custom extruded aluminum airfoil struts and CNC machined fittings. A folding jury strut and a universal hinge on the rear spar allow the wing to fold. The tail folds to reduce trailer width, thus making it trailer ready in twenty minutes with two people.

Smooth, tight skins are possible through our famous root rib tensioning system. At the root of the wing the skin is attached to a rib that moves on two, all threaded bolts. Tension the wing skins with the crank of a bolt!

Spring steel landing gear legs are tapered for weight reduction and optimum energy absorption. The full swivel steerable tail wheel rides on a

A versatile airframe: three wing sizes, two landing gear choices, and three engines!

heavy duty leaf spring. The direct-steer nose gear features a telescoping column with compression springs.

9 gallon fuel tanks install at the root of each wing. Sight gauges are provided for fuel quantity monitoring.

FLIGHT CHARACTERISTICS: The Coyote II is available in three different wing sizes. The standard wing is constant chord and 34.5 feet in span with constant chord ailerons and flaps. Area Two wings use the standard wing with larger tapered ailerons and flaps. Area 1 and 2 wings fly nearly the same with slightly lighter roll feel on the standard. The area 2 wing is targeted toward countries with wing loading requirements (not required in the USA). The standard wing is great for S.T.O.L., high elevations and floats. The tapered 116 wing imparts sporty handling and higher cruise speeds for a small price in takeoff roll distance and increased stall speed. Stalls with any wing choice are preceded by a pre-stall buffet. Recovery from stalls is conventional with minimal altitude loss. Yaw and roll control remain effective at and below stall speeds. Spins require a full stall and standard recovery. Spin rotation stabilizes after two turns. Rotation speed is slightly faster on the 116 wing. Demonstrated crosswind capacity is 20 MPH at 90 degrees. Differential ailerons hold adverse yaw to the minimum on all wing sizes.

Solid, slow flight properties make for an excellent photo or observer platform. Doors can be opened in flight. On floats, the S-6ES is quick off the water and retains good cruise speeds and light control feel. Predictable, responsive, forgiving, with performance to spare, that is the Coyote II.

PILOT ENVIRONMENT: The pilot and passenger are surrounded by a welded steel cage for maximum protection. Lap and shoulder belts are standard equipment. The cockpit can accommodate two full sized adults. Maximum cockpit width is 45 1/2" (41" with standard non-bubble doors) at the shoulders with headroom for the 6'6" tall. Plush, upholstered seats with lumbar support are standard. Deluxe and super deluxe upholstery options are available. Seats tilt forward to aid in accessing the baggage area. Pull two pins to remove or to adjust the seat position.

A generous skylight provides over-the-top visibility. In a 35 degree bank, the pilot can see over the wing. Windshield and door glass are sized to optimize the field of vision and minimize blind spots.

POWERPLANTS: With the standard wing the stock engine is the ROTAX 503. This engine has proven popular throughout Europe for its long life and low fuel

Attention to the details, even the aileron and flaps feature tensioning root ribs, like the wing.

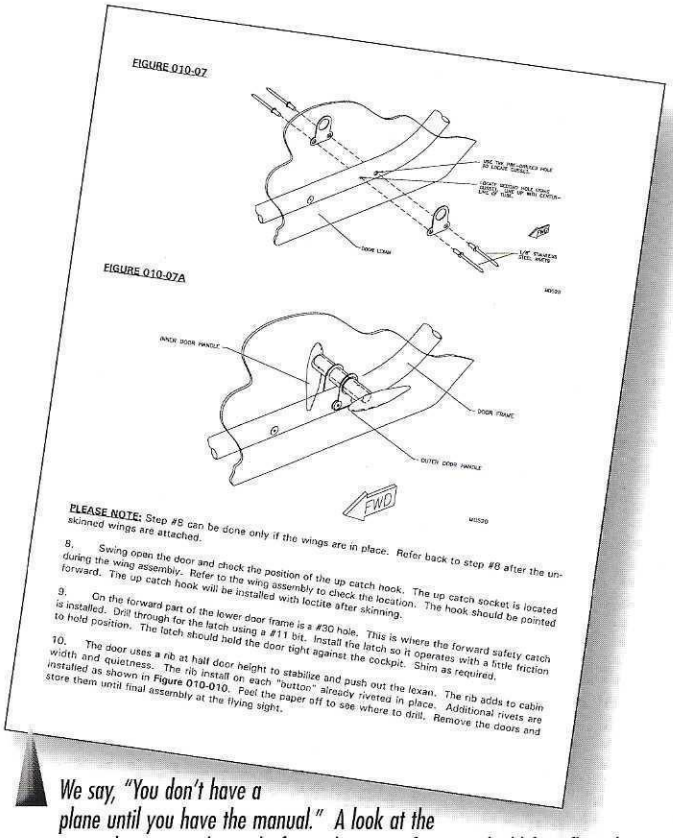


FIGURE 010-07

FIGURE 010-07A

FWD

PLEASE NOTE: Step #8 can be done only if the wings are in place. Refer back to step #8 after the unskinned wings are attached.

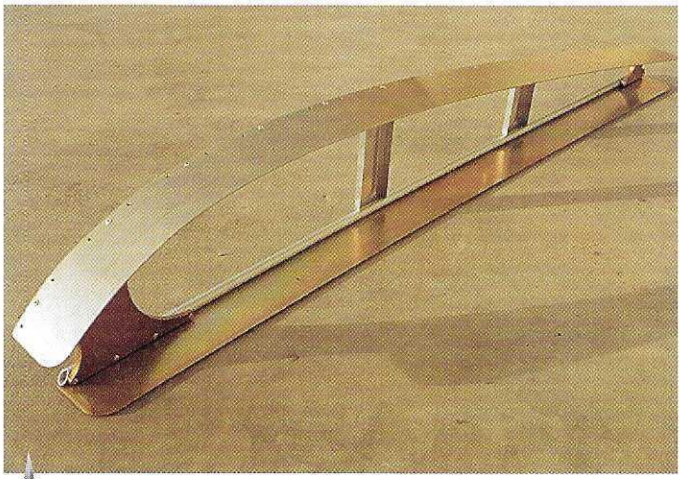
8. Swing open the door and check the position of the up catch hook. The up catch socket is located during the wing assembly. Refer to the wing assembly to check the location. The hook should be pointed forward. The up catch hook will be installed with loctite after skinning.

9. On the forward part of the lower door frame is a #30 hole. This is where the forward safety catch is installed. Drill through for the latch using a #11 bit. Install the latch so it operates with a little friction to hold position. The latch should hold the door tight against the cockpit. Shim as required.

10. The door uses a rib at half door height to stabilize and push out the lexan. The rib adds to cabin width and quietness. The rib install on each "button" already riveted in place. Additional rivets are installed as shown in **Figure 010-010**. Peel the paper off to see where to drill. Remove the doors and store them until final assembly at the flying sight.

We say, "You don't have a plane until you have the manual." A look at the many drawings and straight forward text, confirms our build fast, fly right approach.

Streamline struts and CNC machined fittings are standard.



Our famous root rib tensioning system relies on this rib that floats on two bolts, anchored to the spars. With the simple crank of a wrench, your wings tighten to perfection.

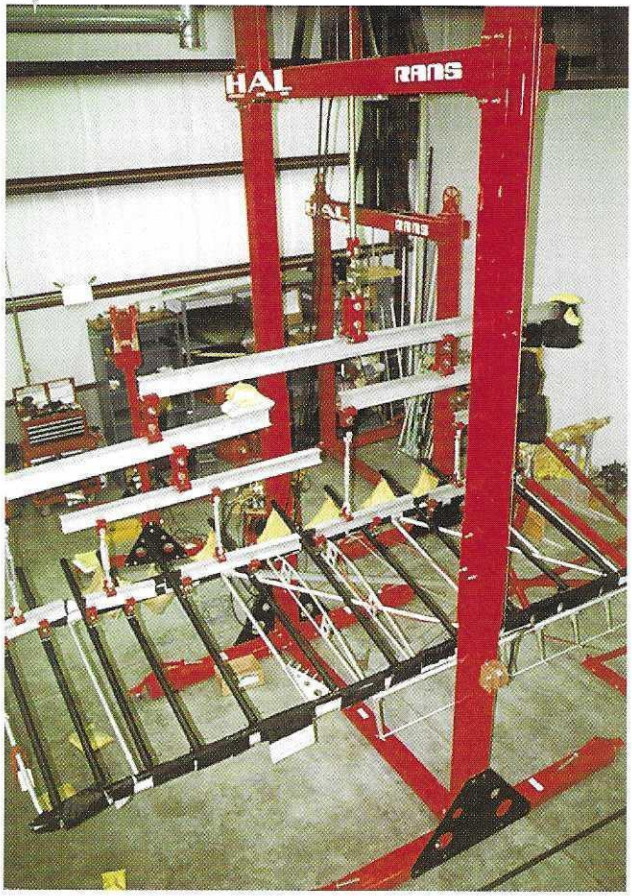
The stock wing Coyote II has spirited performance on a variety of floats. Order our special videos on RANS float planes.

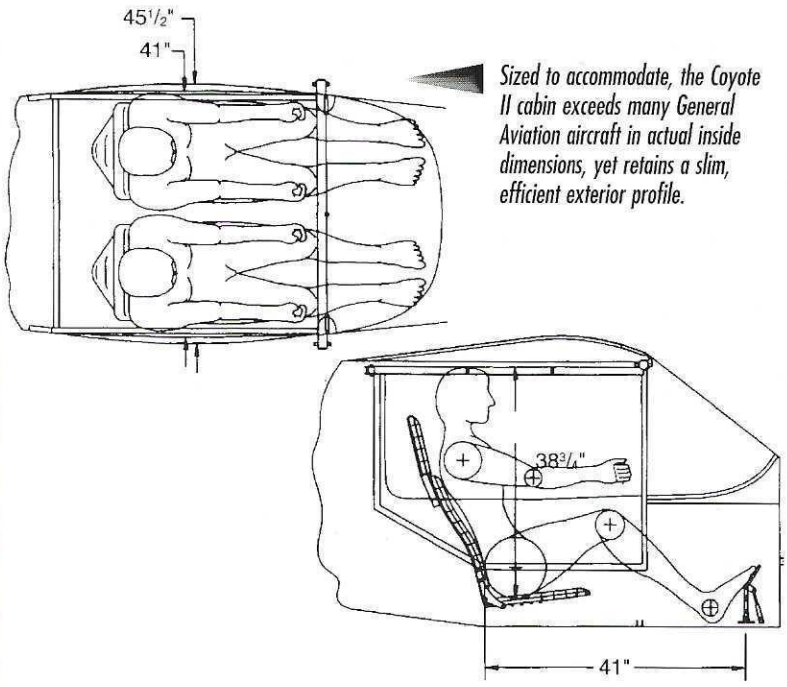
consumption. For more power, the ROTAX 582 offers the best in power-to-weight ratio. For even more exciting performance, economy and reliability, option for the ROTAX 912 four stroke engine. The 912 offers the best in overall performance and fuel economy. Time between overhauls can be as high as 1,200 hours. TBO on the 503 can be as high as 600 hours and 300 for the 582. Other powerplants are always under study or testing at RANS. If you have questions concerning alternate powerplants, feel free to contact the factory.

TESTING: Designed for the long run, all RANS designs go through the rigors of static and dynamic testing. Prototypes of each model are still in service. Records of service and operations are carefully recorded. Refinements, Service Bulletins, Airworthiness Directives and Operational Alerts are issued as required. To further the state-of- the-art, aircraft kits are constantly being assembled by factory crews. This experience shows in the several thousand RANS kits in the air today. RANS kits are typically completed within 9 months, with a completion success of over 95%. Consider the Coyote II for a kit plane that delivers the promise of performance beyond tradition.

Tail surfaces are supported by a double system of cables. The tail folds for transport or storage. Airfoil shaped surfaces enhance response and control.

Our testing equipment uses hydraulics, transducers and strain gages to assure exacting standards of structural performance.





Sized to accommodate, the Coyote II cabin exceeds many General Aviation aircraft in actual inside dimensions, yet retains a slim, efficient exterior profile.

STANDAR

1. and 2. The many forms of the Coyote II, trike, taildragger, small wing or standard. Tailor one for your flying needs.

3. The standard seats boast comfort with functional fabrics. Seats adjust fore and aft.

4. The stock "T" panel will accommodate all the basic instruments. The "T" design opens up the cockpit for a sweeping view.

5. Our custom tail wheel is steerable and full swivel at the tap of the brakes, or full deflection of the rudder pedal.

6. Dressed up with the 9" spinner and wheel pants, the Coyote II stock cowling looks smart and functional.

7. Airfoil struts are anodized for protection and require no painting.

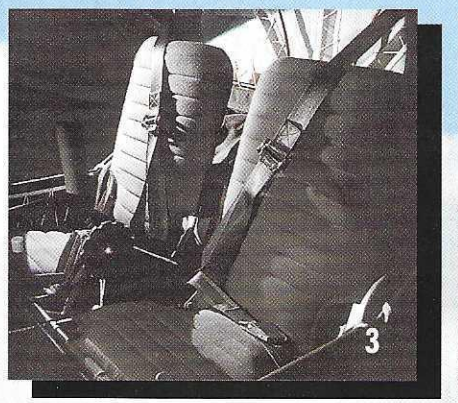
8. Whether it's the optional fiberglass or the stock sheet metal cowling, the engine is mounted in the same heavy duty welded steel mount.

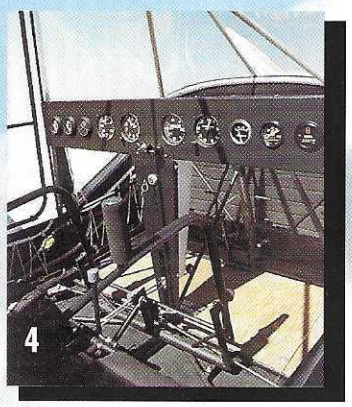
9. Stock drum brakes can be optioned for the heavy duty hydraulic units.

10. Surround yourself in a welded steel cockpit cage.

11. Hidden under the optional streamline fairing is the tapered spring steel landing gear.

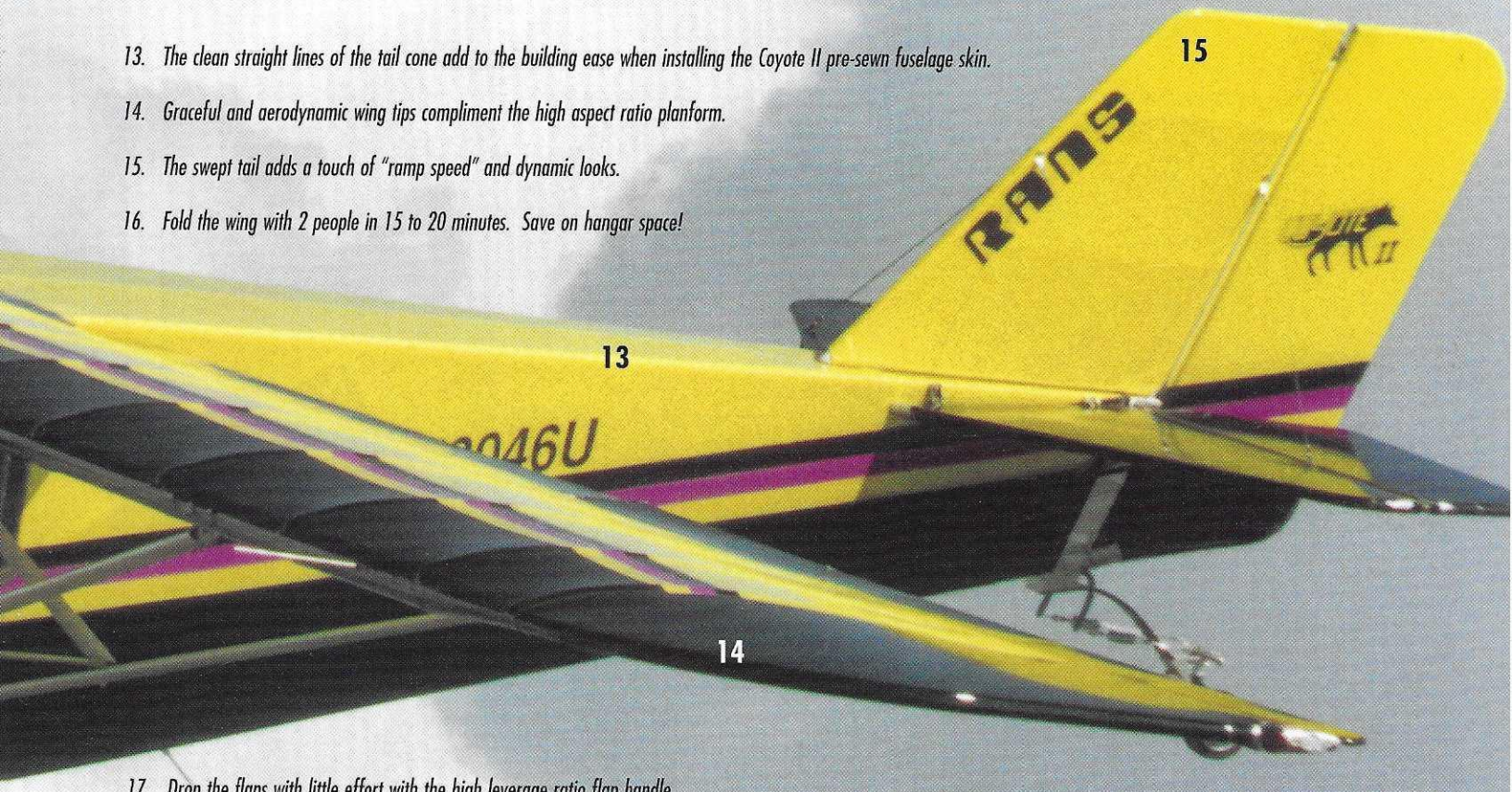
12. Even without these optional bubble doors, the Coyote II cockpit boasts a full 41" of elbow room.





D FEATURES

13. *The clean straight lines of the tail cone add to the building ease when installing the Coyote II pre-sewn fuselage skin.*
14. *Graceful and aerodynamic wing tips compliment the high aspect ratio planform.*
15. *The swept tail adds a touch of "ramp speed" and dynamic looks.*
16. *Fold the wing with 2 people in 15 to 20 minutes. Save on hangar space!*



17. *Drop the flaps with little effort with the high leverage ratio flap handle.*
18. *The high-strength, lightweight tail cone is possible due to these special cluster gussets. Most all the tail cone tubes have pre-drilled holes to aid in quick and accurate assembly of the fuselage.*