

# RANS



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## COYOTE II S-6S

The design goal of the S-6S was to create a fast build kit plane with traditional aircraft fabric covering. The basic airframe is based off the successful S-6ES. In the tradition of the ES series most parts are preformed and prefinished. Typically on fabric planes, the inside is painted or covered with fabric. Many hours of tedious labor are saved with the use of a molded interior kit. Final assembly can begin once inventory and inspection are complete. Only the outside of the plane and the instrument panel require painting. Even the panel can be ordered custom cut and powdercoated. Aerodynamic clean-up abounds on the Super Six. Add 10 MPH in cruise (over the ES) with no increase in stall speed. A Super Six can be built in the confines of an average garage using normal shop tools and skills. The Super Six is an excellent project for the first-time builder wanting the challenge of traditional aircraft fabric. Because of the high level of "out of the box" finish and preparation, more time can be spent on the details resulting in a highly professional finish with performance to match results.

**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 craftsmen. Many of our staff have been at RANS a number of years. Their experience shows in our product.

The fuselage is a combination of welded steel and aluminum tube. The pilot and passenger are surrounded by an integral welded chromoly cage. This forms the superstructure where all major loads terminate. The tail cone is comprised of lightweight anodized aluminum tubes. The tubes are joined with a unique stamping that allows efficient formation of clusters, similar to that of a welded joint. This system allows a corrosion resistant tail cone with ease of repair. Actual load tests have proven it to exceed the strength-to-weight of steel tail cones. The cockpit cage is expertly MIG welded in precision fixtures. The welded assembly receives

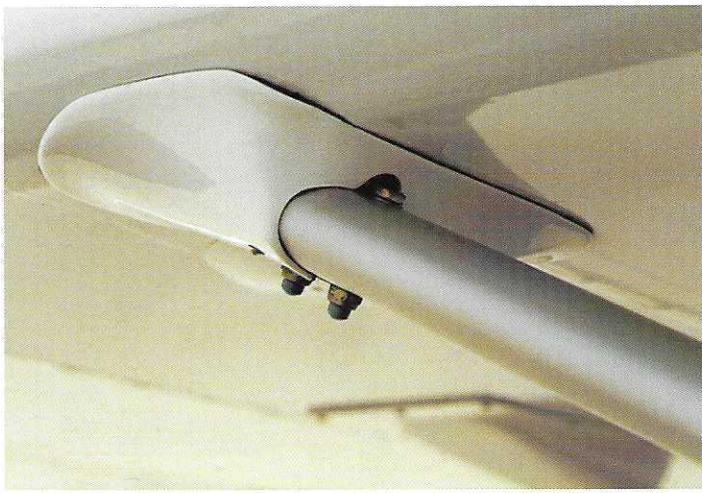
multiple inspections before powder coating. All other welded components, such as rudder pedals, control sticks, etc. come powder coated or painted and ready to install.

The wings feature tubular spars, 3"x .065" and 2"x.058" 6061-T6 anodized aluminum. Preformed aluminum tube ribs attach to the spars via a special "rib clip". The leading edge of the wing is aluminum sheet cut or formed to fit. 1" anti-drag and compression tubes attach to the spars through special brackets to form the wings' planform. Flap and aileron actuation mechanisms attach to these tubes. Fuel cells are installed at the root of each wing. The aileron and flap frames are constructed of aluminum tubes and come pre-assembled and ready for hardware and fabric. Ailerons are cable operated to the control tee. Aluminum push pull tubes are used from the tee to the 2:1 bell crank at the aileron. Flaps are manually actuated through a lever placed between the seats. Extruded aluminum airfoil lift struts are custom designed and



▲ A beauty on the ramp or in the air, the Super Six reveals its classic lines.

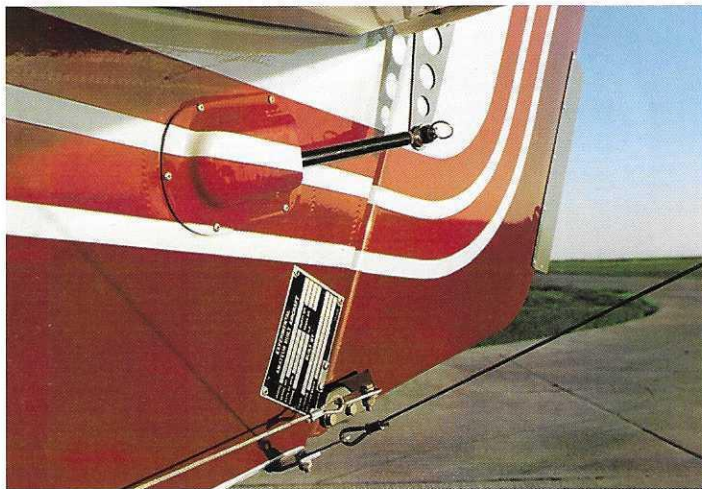




▲ A full compliment of fairings and close outs comes standard.

manufactured exclusively for RANS. The standard folding wing features a universal hinge connection at the rear spar. Pins retain the main spar and folding jury struts. The tail can be folded to reduce trailer width. The entire process takes 20 minutes with two people. All airframes are fitted with swing wing attach points. This optional "swing wing kit" allows for quick, one person folding. The wings are removable for trailer transport or storage.

The main landing gear are tubular springs made of heat treated 6150



▲ Elevator operation is through dual yoke to independent horns. All control cables are stainless steel.

Spring Steel. Trike versions use a heavy duty compression spring within the telescoping nose gear fork. The steerable, full swivel tail wheel rides on a leaf spring.

FLIGHT CHARACTERISTICS: The Super Six is available in three different wing sizes. Each wing has its own "feel", but all fly with proper manners and no surprises. The standard wing is constant chord and 34.5 ft. in span with constant chord ailerons and flaps. Area Two wings use the standard wing with larger tapered ailerons and flaps. Consider the stock wing for extra STOL performance required by float or heavy load, high altitude operations. Consider Area Two if compliance with wing loading is crucial. For more agile handling and 10 to 15 MPH higher cruise, consider the 116 wing. Stall is increased by 10 MPH and take off roll by 60 to 100 feet. Stalls with either wing are preceded by a buffet, with a slightly more

pronounced buffet on the 116 wing. 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 matures after two turns. Rotation speed is slightly faster on the 116 wing. Crosswind capacity is 20 MPH at 90 degrees. 2:1 differential ailerons hold adverse yaw to a minimum.

Practical cruise speeds and STOL performance add to the cross-country, "go anywhere" ability. The tundra tire option allows greater access with a 5 MPH loss in cruise on tailwheel models and 10 MPH on trikes. Solid slow flight properties make for an excellent photo or observation platform. Doors can be removed or opened in flight.

PILOT ENVIRONMENT: A steel cage surrounds the pilots for maximum protection. Lap and shoulder belts are standard equipment. Cockpit seats two full-sized adults comfortably. Plush upholstered seats with lumbar support come as standard equipment. Seat construction uses high



▲ Our testing equipment uses hydraulics, transducers, and strain gauges to optimize structural performance.



▲ Beauty follows function in the generous tail volumes, all stabilizer surfaces feature stamped aluminum ribs and pre-drilled components.



In trike form the Super Six is at home on pavement or grass strips. Nose gear features shock absorbing spring and direct link steering.



density foam and a flip-up bottom for inspection and access. Seats adjust fore and aft; forward tilt allows baggage access. Optional Deluxe and Super Deluxe interiors are available.

A generous skylight provides over-the-wing visibility in a 35-degree bank. 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 47 HP Rotax 503. This is suitable for lightweight crews based at lower altitudes. A popular option that offers performance to spare is the Rotax 582, 65 HP engine. The top of the line choice is the Rotax 912 or 912S four stroke engine. The 912 offers the best in overall performance and fuel economy. Time between overhauls can be as high as 1800 hours. The 503 and 582

two stroke powerplants deliver approximately 250 to 350 hours TBO. Other powerplants are always under study or testing at RANS. If you have questions concerning alternate powerplants, feel free to contact the factory.

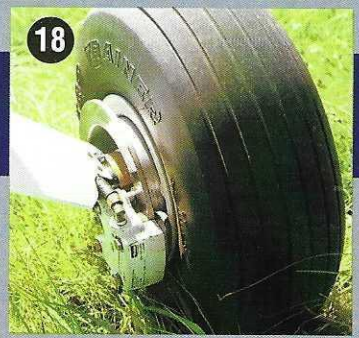
**TESTING:** Designed for the long run, all RANS designs go through the rigors of static and dynamic testing. Prototypes of each model are still in service. Records of service and operations are carefully recorded. Refinements, service bulletins, airworthiness directives and operational alerts are issued as required. To further the state-of-the-art, aircraft kits are constantly being assembled by factory crews. This experience shows in the many hundreds of RANS kits in the air today. Consider the Super Six for a kit plane that delivers quality air time.

... Or opt for the tailwheel gear at no extra cost! The long tail moment, wide track gear and hydraulic brakes combine for well-mannered handling to delight the veteran and encourage the beginner.

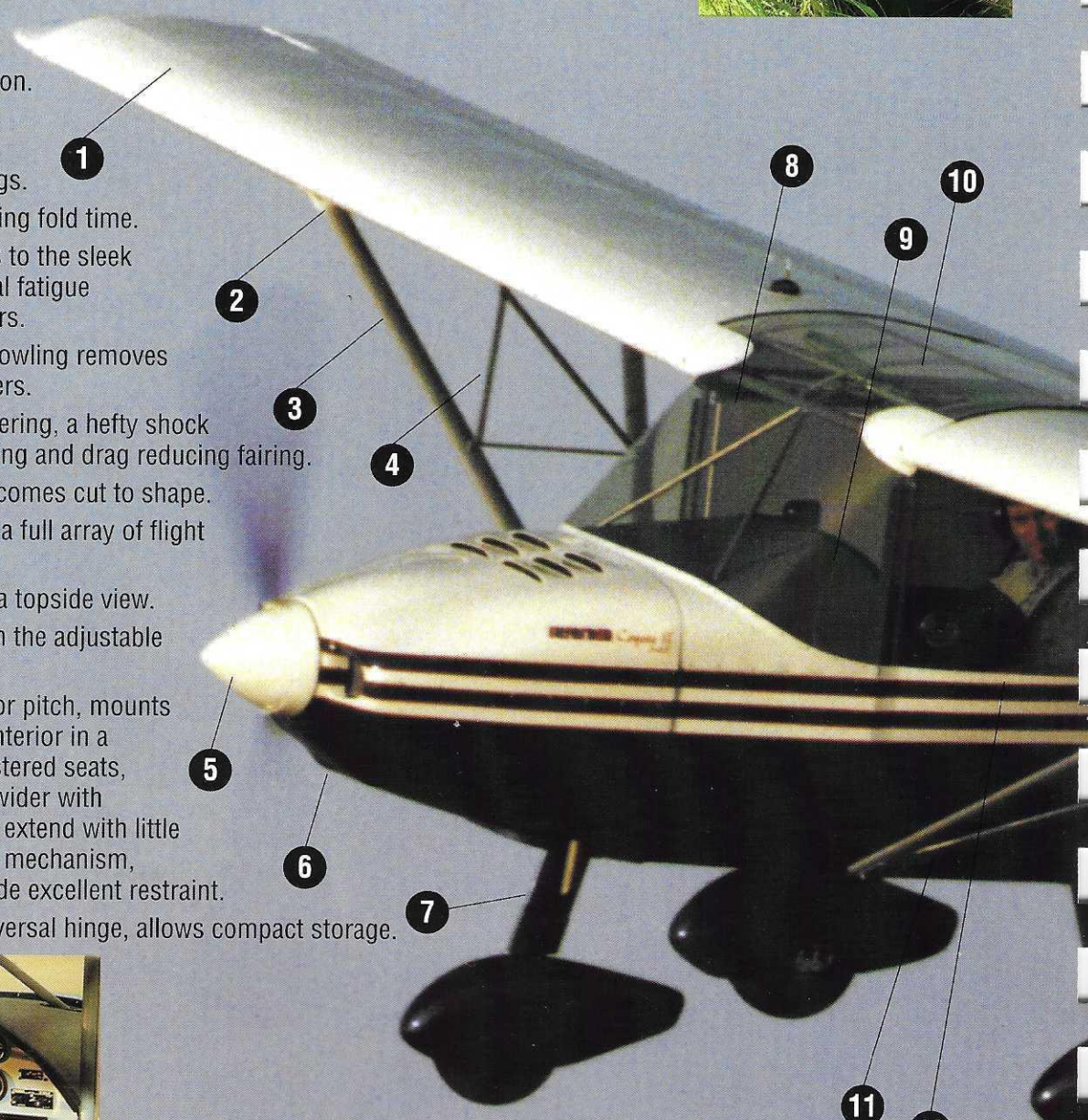




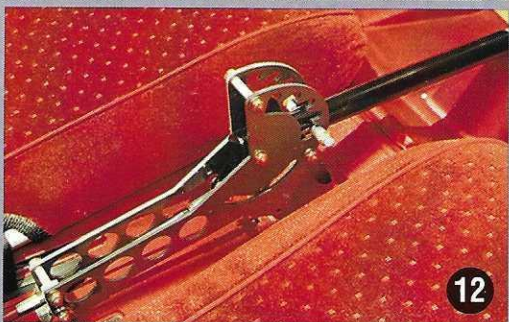
# STANDARD FEATURES



1. Leading edge sheet metal skins come profiled or formed to shape, to allow accurate airfoil shape. Wing tanks hold 9 gallons per side, come with sight gauge for accurate fuel monitoring.
2. Fairings and control exits add that touch of refinement and drag reduction.
3. Custom aluminum extruded airfoil struts attach with special CNC machined fittings.
4. Jury struts fold to reduce wing fold time.
5. Composite 12" spinner adds to the sleek profile without the traditional fatigue problems with metal spinners.
6. Custom shaped fiberglass cowling removes quickly with 1/4 turn fasteners.
7. Nose features direct link steering, a hefty shock absorbing compression spring and drag reducing fairing.
8. A thick LEXAN® windshield comes cut to shape.
9. Large panel accommodates a full array of flight and nav instruments.
10. Overhead skylight provides a topside view.
11. Get the exact wing twist with the adjustable lift struts.
12. Cabin features: trim wheel for pitch, mounts to center of panel, molded interior in a variety of colors with upholstered seats, roomy cabin expands even wider with optional bubble doors, flaps extend with little effort with the high leverage mechanism, shoulder and lap belts provide excellent restraint.
13. Stock wing folding via a universal hinge, allows compact storage.

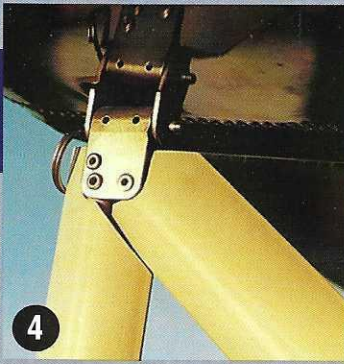


14. The secret to our light but strong airframe is the aluminum tail cone with three way cluster stampings and CNC machined tubes. Fast accurate assembly with corrosion resistant anodized tubes.



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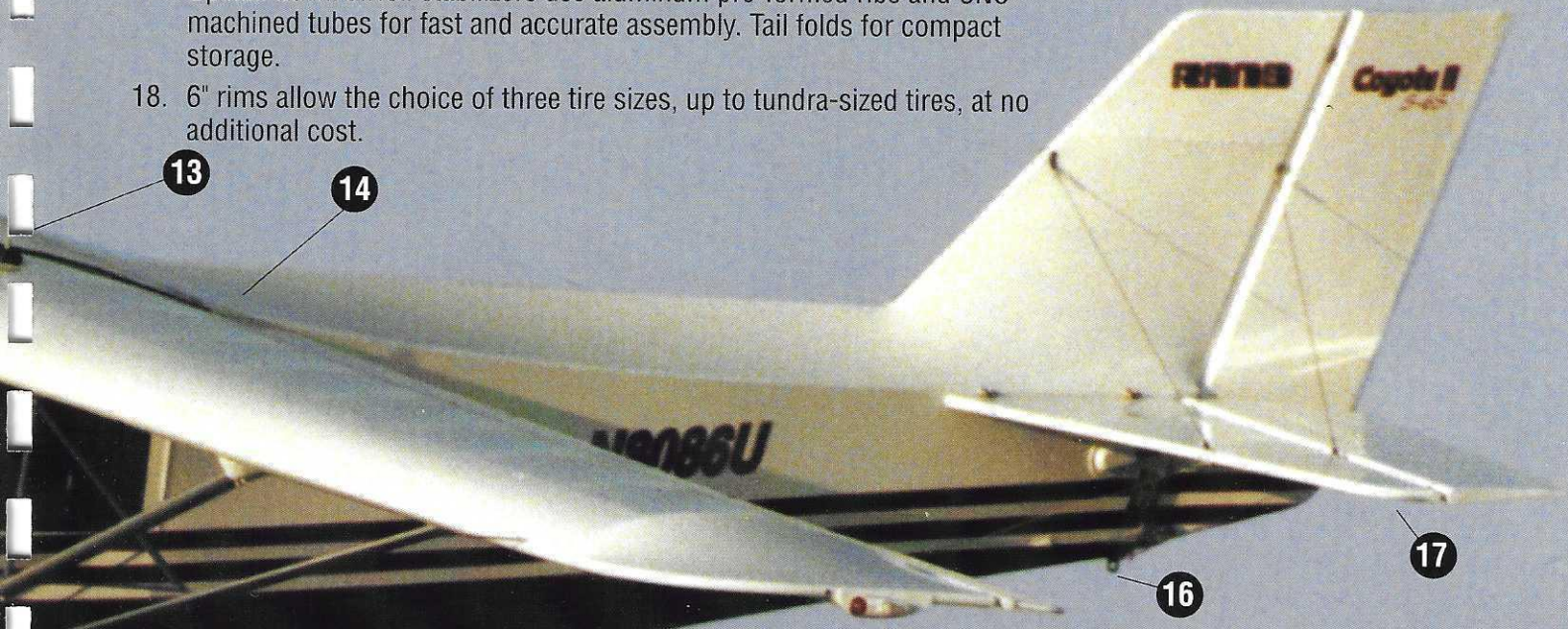


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- 15. Gear leg fairings reduce drag.
- 16. Tailwheel is steerable and full swivel for tight pivot turns.
- 17. Upside down airfoil stabilizers use aluminum pre-formed ribs and CNC machined tubes for fast and accurate assembly. Tail folds for compact storage.
- 18. 6" rims allow the choice of three tire sizes, up to tundra-sized tires, at no additional cost.



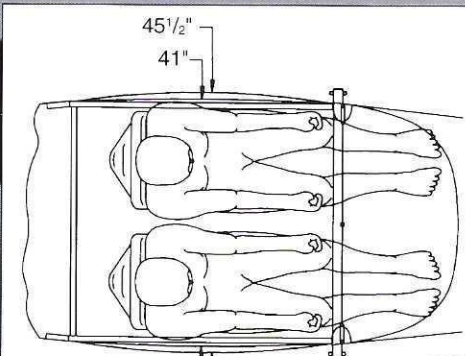
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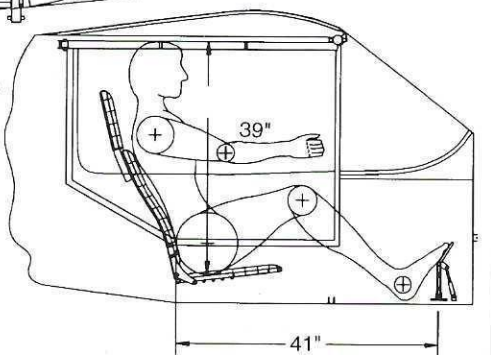
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Standard 41"  
45 1/2" Bubble Doors



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# OPTIONS



➤ One person swing-wing kit deploys in less than 10 minutes.



➤ Deluxe or Super Deluxe seat upholstery adds a touch of refinement. (Super Deluxe shown)



➤ For extra elbowroom add the bubble doors. Increases cockpit width from 41" to 45.5"



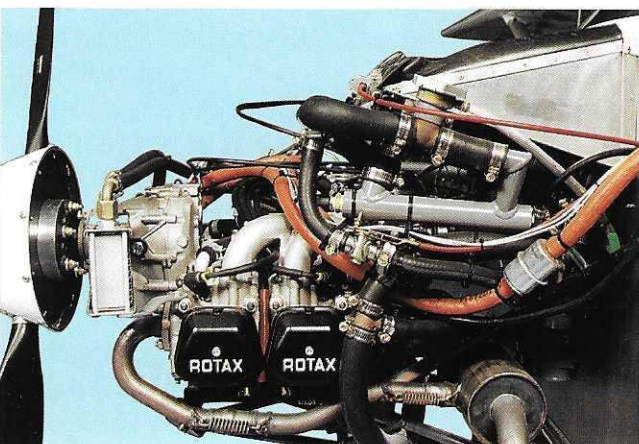
➤ Need more baggage space? Add the aft baggage compartment for 7 cubic ft. and 30 lbs. more.



➤ An excellent float plane, adapter kits available for select brands of floats.



➤ Dress up your wheel and reduce drag with fiberglass wheel pant kit.



➤ Reliable and economical four-cycle power in 80 or 100 HP is available with the Rotax 912 or 912S option.



➤ Increase your visual presence with Whelen strobes; adapts to both styles of wing tips.