

Pilots & Planes

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PILOTS AND PLANES **TEX RANKIN and his RYAN STA**

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THE PILOT: 'TEX' RANKIN

Few airplanes can match the beautiful lines and performance of Tubal Claude Ryan's stock 125 HP Ryan STA that (John G.) 'Tex' Rankin flew to a 1936 International Aerobatic Championship in St. Louis. Rankin flew an STA on a nation wide barnstorming tour and on one aerobatic flight the rudder actually came off the aircraft. Tex telephoned Ryan that even without the rudder the aircraft was stable enough, using ailerons and elevators, for him to safely land the aircraft. He then suggested having the rudder fall off on purpose during every flight as part of his airshow act! Ryan reinforced the rudder hinges.

Tex Rankin made aviation his life and inspired many others throughout the U. S. to join him. For many years his record of 131 *outside* loops flying a Great Lakes Special bi-plane stood unbeaten. Growing up between WWI and WWII he searched for adventure and joined the Army Air Corps where he developed a real appreciation for aircraft but didn't learn to fly until after he was discharged.

He did learn to fly and with one Army surplus Jennie he had taught 250 students by the time he was 19. More than 60 other flight schools adopted Rankin's System of Flying Instruction. It wasn't all work and no play because Tex barnstormed at cities and towns across the Midwest flying a bi-plane with a big 'lucky' number 13 on the fuselage side and a live black cat in the cockpit. He also did some racing with the black cat as co-pilot.

As it became obvious the U. S. would soon enter the impending WWII, Rankin set up a civilian air academy at Tulare, CA, to teach basic piloting skills for the Army Air Corp recruits. His Academy went on to graduate some 10,450 cadets. Among them was the cadet destined to become Major Richard Bong who wound up with 40 'kills' and a Congressional Medal of Honor. Eleven other of his students also became 'Aces'. After the war Tex joined with Republic Aviation and died in the crash of a Republic Seabee in Klamath Falls during a routine business trip in 1947. Perhaps his luck had just run out.

THE AIRPLANE: A RYAN MODEL STA



Ryan began design work on the proverbial shoestring for the prototype ST (Sport Trainer) in 1934 and first flight came in 1935. The plane combined the latest construction design with a semi-monocoque fuselage made of 24ST Alclad aluminum sheet and more traditional fabric covered wings and control surfaces. Streamlined flying and landing wires supported the wing and hydraulic fixed landing gear. Some restorations leave the aluminum fuselage surfaces unpainted and polished to gleam in the sun like a diamond.

On a personal note, I saw a pair of restored STA (Sport Trainer Advanced) at the 1996 EAA Convention in Oshkosh WI and took a series of detail photos from which I modeled a 1/5 scale model from Sig Mfg kit plans. A photo of the full-scale aircraft I modeled is shown with this article.

The ST developed into several models, mainly using different power plants. The first ATs had a 50 HP Menasco in-line engine, but most ATs had 125 HP Menasco engines. The design was also engineered and powered with Kinner 132 HP radial engines or 160 HP Kinner radials.

The STA started with a 95 HP Menasco and was upgraded to a 125 HP Menasco, which was further upgraded to a 150 HP supercharged Menasco. The inline engines allowed a streamlined fully cowled engine. Most STAs were fitted with fixed pitch wood or metal propellers, but some had two speed props with composite wooden blades.

Ryan received a large order for 1050 ST-Ms /PT-16 from the Army Air Corp for trainers and these were the 132/160 HP radial engine versions with an external longitudinal fuselage stiffener and a larger cockpit opening to accommodate larger pilots and their parachutes. All the ST versions incorporated flaps, and a few were modified with shorter flaps and longer ailerons to increase the roll rate for aerobatic work.

Top speed is 145 MPH with a 128 MPH cruise speed. Speeds were not affected too much by different powerplants, but climb was improved with the higher HP. This was due to the fixed pitch props used by most of the aircraft.

Span was 29 feet 11 inches and length 21 feet 5 inches. Max gross weight was 1600 pounds. Range was about 450 miles.

MODEL SPECIFICATIONS

While I built my model from Sig Mfg plans and was able to obtain a few plastic parts from the factory, the kit is no longer being produced. Today, at least one manufacturer offers a nice

ARF. I like to build from plans in larger sizes. Larger models are easier for my older eyes to fly and they carry higher wing loadings without complaint. So.

1/4 scale - about a 90 inch span, 15 inch chord, with approx area of 1350 square inches or 9.4 sq ft.

at 35 oz/sq ft the weight could go to about 20 pounds without any problems.

1/5 scale – about 72 inch span, 12 inch chord, with 865 sq inches (6 sq ft)

A pretty normal load of 25 oz/sq ft give a 15 pound model to fly well.

Model Airplane News offers two sets of plans for Ryan STAs

FSP11991 plan is a 1/5.5 scale ST design by Henry Hafke for .40 to .60 size 2C engines.

FSP 05861 plan is a 1/4 scale STA design, 91 in span .

On my model I added Robart sprung shock struts for the landing gear. I added a scale muffler with four scale outlets and an on-board ignition to keep a scale exterior.

Either of the above models could be built for electric power today. The STA is an easy to fly design that combines scale looks with some aerobatic capability. It is easy and fun to fly. End

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