First Flight of Tom Kerns creation Pterodactyl Rex

By Loren Smith

Friday, September 18, 2004 was one of those beautiful Minnesota Autumn days with plenty of bright sunshine and that deep blue clear sky—a great day for a first flight of a new aircraft—and it is the day Tom Kerns picked to fly his KS-2B, affectionately known by the nickname—Pterodactyl Rex—you know the great winged flying creature from the dinosaur era. Tom picked this unusual nickname for his plane because it is truly a fire breathing monster with a Lycon built 540 Lycoming engine up front boasting some 370 horsepower!. Tom actually never planned to have this powerful of an engine when he worked up the original design. He planned to use a pretty much stock Lycoming 540 as used in the Pitts S-2B with about 260 HP. But in 2001, a wreck in Texas bought on-line by Tom resulted in his plane getting this pumped up Lycon built 540 and Mike Wiskus bought the airframe of the wreck and turned it into the Telex Pitts that he flew this year at the World Advanced contest in Sweden—but that's another story.

Anyway—I digress—back to September 18. Tom apparently had so much confidence in this first flight that he invited his entire family to witness this epic moment including his wife, Mary, his kids—Bill and Betsy, parents from Michigan, some of his colleagues from work showed uyp, his father in law, and friends including Mike Wiskus and yours truly. The hangar was full of people, lawn chairs were everywhere. After meeting everyone we got down to the serious business of discussing the flight. Bill Kerns (Tom's pilot son and aspiring akro pilot) and I were to fly chase in Tom's Thorp T-18 (he also built that plane from scratch). Tom's plan was to orbit Flying Cloud airport at about 2500 feet. We would fly formation and look for any problems like smoke and oil leaks. The tower was briefed about the plan and we set about getting suited up for the flight. Bill checked out Tom to ensure that he was ready and had everything completed on his checklist.

When Tom fired up Pterodactyl Rex —a loud growling sound emerged from the pumped up Lycoming feeding into a megaphone like six-into-one exhaust system. The big MT prop went into fine pitch and combined with the engine sound – it was like music to our ears and we all gave a big thumbs up! We taxied out to runway 18 for the run-up and take-off. The winds were around 12-15 knots out of the south and the north-south runway at FCM is narrower than the parallels. We discussed during preflight that maybe Tom might want to make the first landing on a longer runway and work the crosswind instead of landing on the narrow and short (2691') runway 18. Tom decided he would make that call in the air. Bill and I launched in the Thorp and climbed up to 2500 and began to orbit. We looked down on the runway and saw Tom taxi into position and hold. A second later, Tom slowly fed in the throttle to the big Lycoming and Pterodactyl Rex seemed to spring into the air! From our viewpoint it looked like he was climbing at about a 45 degree angle! Obviously this bird has plenty of power. Tom caught up with us in a flash—literally—he went by us like we were standing still. We chased the bi-plane around the field but had a heck of a time tying to stay up with him. I finally got Tom to throttle back to about 15" so we could get a look close up. Everything was fine—no leaks - no smoke—and Tom radioed to us that Rex was a delight to fly! Next—the landing… Tom decided to take on the tricky 15 knot crosswind for the first landing and take advantage of the 3900 foot runway 10R. Bill and I landed the Thorp landed on runway 18 and were just switching over to ground when Tom touched down on 10R. Believe it or not, Tom did a wheelie on his first landing—it was a non-event! He planted the mains and rolled out down the runway like he was already completely familiar with handling this new airplane.

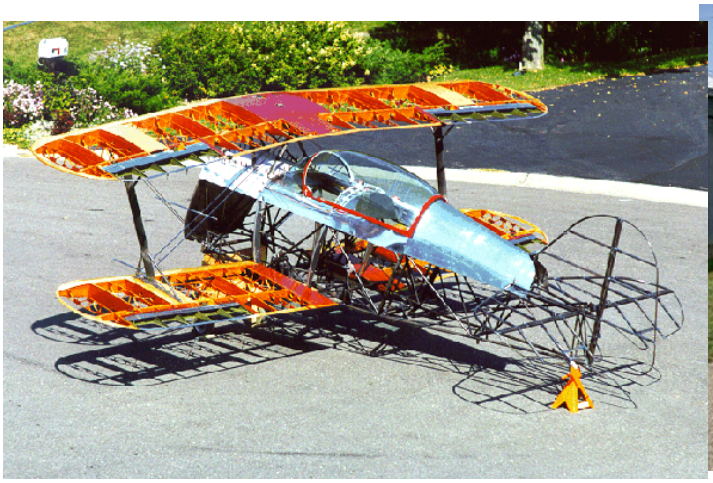
When we got back to the hangar and shut down, we rushed over to see Tom—he was wearing the biggest grin I've ever seen! By the time he got himself extricated from the cockpit, Mary was the first one to give him a big hug and kiss! This was followed by lots of congratulations by everyone who attended. We put the planes away for the day and retired to Tom's new house for the mandatory toast of champagne to cap off an incredible day.

Tom gets a big hug from Mary after the first flight!

Tom started this project back in the mid-90's—I can't remember the exact year—but I know it's at least 8 years ago. In case you don't already know, Tom is a highly educated and experienced aeronautical engineer as well as a meticulous craftsman. He set out to take the great flying qualities of the Pitts S-2B and blend it with the cockpit visibility and better design features of the Christen Eagle. When you see Tom –make certain you don't ask if he built it from plans or from a kit—he did every last detail himself! I can remember him out at our hangar measuring up little details of my Pitts S-2B. Tom and I used to talk about ideas to improve on the Pitts design; for example: Cockpit visibility and the notorious Pitts landing characteristics. Here's what Tom said about some of the structural items modified: "I produced my own drawings for the KS-2B after reverse engineering the Pitts S-2B. Weak points of the S-2B are beefed up, secondary structures are lightened to compensate, and sub-systems are updated for performance, durability, and esthetics. The wings look like a standard Pitts, but the ailerons are enlarged, spars are strengthened, and rough edges are smoothed out. Roll rate will fall half way between the S-2B and the S-2C. The leading and trailing edges are wood to yield a stiffer, tougher wing with reduced weight. Full fuel range with 30 minutes reserve is 435 miles, up from 260 miles in a factory S-2B. A small header tank provides reliable aerobatic fuel flow down to the last gallon, permitting carriage of a reduced fuel load during aerobatic competition. The fuselage is quite different, with increased strength, smoother lines, and much improved pilot visibility. The cockpit and canopy are similar to an Eagle with the forward fuselage deck lowered an additional 1.5" for better visibility. Longerons are enlarged from 3/4" to 7/8", and the truss geometry is modified to smooth the fuselage profile. The bottom of the tail-post is 3" lower to eliminate the Pitts banana shape profile, and the engine top cowl is lowered 1.5" to further straighten the profile and improve engine cooling & drag characteristics. The rudder is enlarged and tail surfaces are squared off similar to an S-11. Spring gear will be used for low maintenance and reduced cockpit air leaks, essential in a Pitts built to fly in Minnesota winters! The cockpit will be well sealed, and a heater, a canopy defrost blower, and engine winterization will be used to allow aerobatics during frostbite season."

Here's an addendum from Tom dated 11-17-04:

P-Rex has 34 of 40 flight test hours on it as of mid November. The airplane has been trouble free and delightful to fly, and with a sealed cockpit and heat I have no intention of putting it away for the "off-season"! I will have to ground it long enough to install wheel pants and paint the airplane, but I am looking forward to joining IAC 78 in the air next spring



Construction shot from year 2000

Pterodactyl Rex today