

EAA Chapter 81
Project Meeting Minutes
April 17, 2010

Project Meeting was called to order at 1005 by President Duane Boyd at the hangar/palace of Bob Sutherland. This hangar has to be seen to be believed, with walls lined with pristine workbenches, mega-lighting, countless power outlets, and an astounding assortment of tools. As though this were not enough, witness the 2nd-story lounge overlooking the rest of the hangar, complete with spiral staircase and full bathroom. In addition, there is also a stand-up mini-john on the ground floor for those men in a hurry (ladies need not apply).

Treasurer's Report: There was \$11,399.03 in the bank as of March 1. Interest being what it is these days, I would bet that the total is still under \$11,400.

Secretary's Report: President Boyd told Secretary Bob Miller to "keep it short" (what, me long-winded?) so he did, telling everyone to look at the Minutes of the March 13 Chapter Meeting on the Website or in Skywriter.

Old business: about a dozen of us had attended the Pima Air and Space Museum outing and a good time was had by all who attended, on a not-too-warm day. The SR-71 Blackbird is now indoors, and one can climb up and take a peek inside. Where else in the West can one closely examine the entire Century series of US fighter jets, a B-17 Flying Fortress, and a GM, not Grumman, TBM torpedo bomber!

Erik Fjerstad, Newsletter Editor, is still requesting input from members on their projects. A few words and a couple of photos on your progress would make great copy for SkyWriter.

New Business: We still are seeking volunteers for Project Meetings, although, due to the summer temperatures, we are anticipating making the June meeting an indoor meeting at the Ryan Field meeting room, in lieu of the usual even-month Project Meeting. We still need members to show off their projects, at any state of assembly, for the project meetings to continue when it cools off a bit.

All of the above was rapidly accomplished, and, within 15 minutes, Bob Sutherland was able to begin his Project Presentation. Bob started by informing us that his dad had been a Marine pilot in WW II, flying the Corsair. Bob himself has been flying a North American Navion for 18 years, and is a partner in a Super Decathlon. His project aircraft is a Titan T-51 Mustang, a $\frac{3}{4}$ -scale Experimental replica warbird designed and produced by John Williams. Bob met John at the Copperstate Fly-In in 2006 and was impressed by the factory demonstrator. He bought his kit then, but did not start it until January of this year. Bob notes that many Mustang replicas have come, and most have gone as well, whereas Titan has sold 225 kits since 2003, and many are flying. Unlike most other Mustang replicas, the T-51 was designed to have benign low-speed flying characteristics, much like its factory-mate, the Titan Tornado. With a gentle stall in the mid 40 MPH range, it is much more pilot-friendly and accessible to a greater number of pilots, not all of whom are equipped to fly hot V8 (or V12, or even turbine!) powered taildraggers. Of course, the battle cry of "More Power" rings loudly in the US, and, while the design was originally intended to be powered by a Rotax 912, Jabiru 2200 or 3300, and Cam 100 engines, builders are opting for the Suzuki 2.5-2.7L V6, dubbed the "Mini-Merlin" after the Rolls-Royce Merlin V-12 engine that powered the Hawker Hurricane, Supermarine Spitfire, DeHavilland Mosquito light bomber, and, of course, the later North American P-51 fighters. Dan Hawkins developed this firewall-forward package. Bob's electronic fuel-injected 180HP 70-degree V6 was initially set up to exhaust into log manifolds and then out into stacks to look like the original Mustang, but he has done it one better with doubled pipes exiting each port, making 6 distinct pipes per side. Prop will be a Whirlwind 84" 4-blade with electric variable-pitch. A Dynon EFIS is planned. Cooling is via a belly-radiator, just like the real thing. The T-51 kit provides a two-part welded steel frame,

designed so that no holes need to be drilled into the frame. Instead, rivets go into a “hat section,” or parts are bonded. Bob had the frame powder-coated locally, and has already incorporated some upgrades into his aircraft, including switching to aviation fittings firewall-forward and converting the main fuel tanks to direct-fill instead of using the suggested elbows. Extra range comes in the form of 9 ½ gallon drop tanks, and the originally fabric-covered elevator and rudder are metallized. No composites are employed. Skins are pre-formed, but not drilled, and are designed to overlap, and, where strength is needed, some of the 0.040” skins are doubled. All bulkheads must be cut and shaped, and the manual is really a set of blueprints, supplemented by a builders’ forum and “great factory help.” Rivets are dome-headed and are pulled, not driven. Wings are built with solid Styrofoam leading edges and ribs are added later. Ground handling is fairly docile with an 8’ track and 10’ wheelbase, and steerable tailwheel. The retractable landing gear (including tailwheel) is hydraulic. Kit price when Bob bought his was \$37,500, and is now up to \$54,900. It will typically cost about \$125K to complete one with a Rotax engine. It can be built as an ELSA with fixed gear and fixed-pitch prop, or, at the other end of the spectrum, with a 244HP Honda V6! Factory specs are: empty weight 850#, gross 1450#, length 23.6’, height 9’2”, wing span 24’, fuel capacity without drop tanks 25 gallons of 100LL. Performance varies with engine, prop, etc. but generally is as follows: With any engine, Vne is 197 MPH. Cruise can be 150 (Rotax) or 170 (V6), stall in the 40s, range 600 miles, climb 1200 ft/min (Rotax) to 2100 ft/min (V6). Takeoff and landing runs are under 350’, and ceiling 16-18K feet. The aircraft is aerobatic, at +6 and -4G rating, but Bob just wants to fly for fun and show it off! Of course, the occasional loop or roll is not out of the question. This is an amazing project, and we all wish Bob, who admits that he is not a mechanical kind of guy, a great education and building experience.

The next meeting will be at the Ryan Field meeting room on Saturday, May 15 at 1000.

Respectfully Submitted by
Secretary Bob Miller