

Towlines

The Newsletter of the Albuquerque Soaring Club

August 2008

President's Notes *By Bob Hudson*

Where has the summer gone? It is quickly slipping away! But remember there is some great flying still to be had. Two neat things have happened since my last column, one the Club held an outing to an Albuquerque Isotopes baseball game and the other is that we presented one of the recent Science Fair winner's a ride in the Spirit of Santilli.

On the baseball front, a group of us took a Saturday evening off and watched the Isotopes put on a home run display against rival (and first place team) Oklahoma City. The weather couldn't have been better and a good time was had by all. I even got a thank you note from Howard on how much he enjoyed "his game of Rounders."

On the weekend before our trip to the ball game, we were treated to an afternoon with budding scientist and future aviator Lynne Tucker. This is the young lady (she is only twelve) who last spring won an Albuquerque Soaring Club glider ride for her outstanding Science Fair entry, *the Inverse Bernoulli Principle*. Stan Roeske took Lynne up in the Club 2-33 and demonstrated soaring flight. Lynne really enjoyed her glider ride and we enjoyed having Lynne and her mother with us for the day. Just when you figure our youth are going to hell in a hand basket, you meet someone as bright and focused as Lynne. Maybe we can get her into the Club.

As I write this, Jim Cumiford has been down in Uvalde, Texas, competing in the 15 meter National Championships. After 7 days of racing, Jim came 17th out of 35, but that doesn't show how close the competition was – Jim, with 6140 points, was just 600 points behind the winner. The event was slightly marred by a mid-air

collision between a Ventus and a Genesis. They evidentially "met" in a thermal with the Ventus' wing slicing into the Genesis. The Ventus was able to limp home (and was soon mended by Fidel); however the Genesis was lost with the pilot managing to bail out. This is just reminder to be alert always and to keep your scan moving.

Our golf cart has turned out to be a real hit with the Ops people, but it has come with a couple of difficulties. We have experienced a couple of instances where the motor has just quit. The remedy, assuming that the batteries are charged, is to check the connections under the seat. This has happened to me and readjusting the connections has brought the cart back on line. Also, make sure that the battery charger comes on when you plug in the cart. It will make n audible noise when it is attached properly.

Speaking of the golf cart (I guess it's an Ops cart now), Mark Mocho did a great job fixing it so that we have a way to coil up the tow ropes by using hose reels attached to the back of the cart. A neat idea and a real work saver.

Also, for those of you who pull OPS, you will notice that Mark Mocho has marked all our towing gear (ropes, weak links, etc.) with red tape. That means if it doesn't have red tape, then it isn't ours and so we should leave it alone. Please try to keep our equipment ours, and Sundance's equipment Sundance's.

Well, that's about it for August, as always, fly safely! Bob

Jet Salto Phase I Tests *By Mark Mocho*

Bob Carlton and I traveled to Conway, Arkansas last week for the final steps in bringing the latest jet-powered sailplane into operation. Briefly, the project is based on Bob's Salto sailplane, which has been highly modified by installing a Czech turbojet engine above and behind the cockpit. The engine (from PBS Velka Bites, CZ) weighs 40 lbs. and produces 225 lbs. thrust at full throttle. This is a huge increase in power from the twin AMT-450 engines Bob has been using on the Alisport "Silent J" glider he has been flying for the last four years. Those engines weighed five lbs. each and produced a total of 90 lbs. thrust. The Salto has a much higher Vne (155 kts.) and can take higher G loads than the Silent, so the new combination promises a far more exciting airshow performance.

We arrived at Cantrell Field on July 31 to meet with Kenny Blalock, the Designated Airworthiness Representative (DAR) for an extensive inspection of the engine installation and a review of the engineering design and data we have collected in ground testing. After Kenny approved the physical components, it was time to deal with the paperwork. The Salto's existing Airworthiness Certificate was officially surrendered and after slaughtering a medium-sized forest, enough paper was produced to give birth to the new aircraft and satisfy the Federal Aviation Administration.

Flight testing began on August 1, in heat and humidity that had both of us desert rats gasping by 9:30 am. Temperatures reached 105 F with about 80 to 90 % humidity. Needless to say, we were both wringing wet by 10:00 and it just never let up. The FBO lobby was nicely air conditioned, but it wasn't large enough to assemble the glider, so we were stuck outside. Fortunately, we had shade.

The first test flight began by towing the Salto to the end of Runway 26. Bob strapped in, I installed the canopy and connected the external power supply. By this time, Bob was sweating profusely in the greenhouse cockpit. Fortunately, the PBS-VB engine has a very short startup sequence and the aircraft was ready to roll in under a minute. With me running the wing, power was applied and the takeoff roll started.

The engine is mounted pretty high above the aircraft, so when Bob increased power, the tail came up and the nose of the glider scraped the runway for a few feet. (An underinflated main wheel also contributed to the pitchover.) Bob reduced power slightly, the tail dropped gently and the aircraft continued to accelerate. After a ground run of about 800-1000 feet, the glider lifted off. Bob kept it in ground effect while slowly increasing power and then pulled into a shallow climb that was still very impressive.

I retreated to the cool FBO, expecting the flight to continue for at least twenty minutes. Surprisingly, Bob came on the radio announcing "left downwind for Runway 26, landing dead stick." I rushed out, wondering what had happened. Bob made his approach high, deploying the tail parachute for extra drag but jettisoned it over the end of the runway. He was still too high, so he whipped a quick 360 and landed normally, pulling off at the taxiway turnoff where I was waiting. After getting Bob out of the glider, we returned to the ramp.

While flying, Bob looked at the engine data display and was shocked to see that the Exhaust Gas Temperature (EGT) was off the scale at over 900 degrees C. This would indicate a possible fire, so the engine was quickly shut down and the flight terminated. On the ground, we inspected the engine and were relieved to see no evidence of fire. (Like melted engine parts or a missing rear fuselage.

Fiberglass doesn't handle 900 C (1650 degrees F) very well.)

After lunch, Bob was feeling poorly- a condition brought on by the heat and humidity, not enough water, adrenaline and a fair dose of anxiety. Aspirin, a nap in the FBO air conditioning and lots of Gatorade and water brought him back to some semblance of normality. (For Bob, "normal" is a relative term.)

When it had cooled off somewhat (another relative term) we ground started the engine to check whether any damage might have occurred on the first flight. Everything seemed fine, so we added a "test engine display" item to the checklist and went flying. The second flight was flawless. With a properly inflated main wheel and less exuberance on the thrust lever, takeoff was quicker, the climbout was more dramatic and the flight time went to thirty minutes. Bob made his approach with the tail chute again, but jettisoned it before touchdown. It bounced around in the slipstream enough to cause pitch changes over the runway- not a good thing while trying to land gracefully.

The only anomaly on the flight was a severe rumble or rattle that made Bob think that the tailplanes might not be secured tightly enough. We tightened them completely instead of just to the safety notch in the bolt and taped down the rear of the turtledeck that we thought might be loose and called it a day. With a second, more satisfying test flight accomplished, the day ended on a high note.



Saturday was another hot, humid affair, but we countered with lots of liquids, frequent breaks

in the FBO and slower movements. A bit of relaxation and lowered adrenaline levels kept us functioning, if not comfortable. Our shirts still looked like we had been swimming. But they smelled like we had been swimming in a swamp. And unlike in New Mexico, they never dried out.

Three more flights were accomplished on Saturday, each one more routine than the previous foray. Refueling was taking longer than expected, but even that gave us an opportunity to debrief and relax. The alarming rattle/rumble had disappeared and Bob was growing more comfortable with the performance. Mild aerobatics were added to the flight program, along with climb and cruise experimentation. On one flight, Bob reported a 115 kt. cruise at minimum power setting! Several low passes for the amateur videographer (me) resulted in some marginally useful video that will be appearing on Bob's new website (www.vertigoairshows.com) in the near future.

The tail parachute was not deployed on these flights, as Bob grew comfortable enough with the descent rate on final and the ability to slow down on rollout even with the engine running. (It produces 40 lbs of thrust even at minimum power settings.) All in all, the testing was going well. More flights on Sunday completed the Phase 1 testing before we disassembled and headed back home. We stopped in Oklahoma City and spent the night at Mitch Hudson's house, an experience that made flight testing a new aircraft seem boring by comparison.

So, what's next? Well, you can expect to see the Jet Salto repeatedly at Moriarty, as Bob continues to learn how to fly it and adapt its capabilities to the airshow circuit. Just keep your eyes open, and watch as kerosene is turned into noise!

2008 ASC Operations Schedule

Date	OPS 1	OPS 2	Instructor	Tow Pilot
Aug 23 Saturday	CUMIFORD Jr. J	BOYCE J	DAFFER J	TICHY T/
Aug 24 Sunday	ROZZONI R	STEWART W		WADSWORTH H/
Aug 30 Saturday	CUMIFORD Jr. J	NEWMAN P	ROESKE S	STOGNER M/
Aug 31 Sunday	ABEYTA B	STOLL F		WRIGHT R/
Sep 6 Saturday	HAWKINS My	BROTHERS L		HAWKINS T/
Sep 7 Sunday	HARE J	PALA A	TAYLOR K	STOGNER M/
Sep 13 Saturday		HEERMANN A	WIER J	HILL W/
Sep 14 Sunday	EKDAHL C	BANKS H		TICHY T/
Sep 20 Saturday	OKANDAN M	PHILLIPS C	COLLINS A	WADSWORTH H/
Sep 21 Sunday	McKNIGHT P	ANDREOTTI R		WRIGHT R/
Sep 27 Saturday	HUDSON R		DAFFER J	HAWKINS T/
Sep 28 Sunday	BUENAFE C	WILSON B		HILL W/
Oct 4 Saturday	RESOR B	HUDSON R	MORRISON B	TICHY T/
Oct 5 Sunday	BLOCH J	BRIGGS P		WADSWORTH H/
Oct 11 Saturday	CATES J	HUSS J	ROESKE S	WRIGHT R/
Oct 12 Sunday	MARTINEZ J	MORRISON L		HAWKINS T/
Oct 18 Saturday	HARMONY D	BIELEK K		HILL W/
Oct 19 Sunday	BOYCE J	GOLDMAN N	TAYLOR K	TICHY T/
Oct 25 Saturday				WRIGHT R/
Oct 25 Saturday				WADSWORTH H/