



THE LEADING EDGE

NEWSLETTER OF MUROC EAA CHAPTER 1000

Voted to Top Ten Newsletters, 1997, 1998 McKillop Award Competition

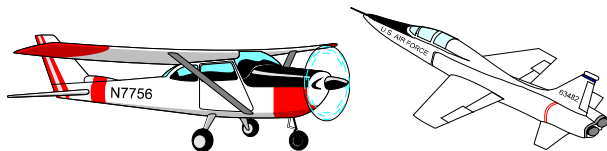
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November 2007

Chapter 1000 meets monthly on the third Tuesday of the month in the USAF Test Pilot School Scobee Auditorium, Edwards AFB, CA at 1700 or 5:00 PM, whichever you prefer. Any changes of meeting venue will be announced in the newsletter. Offer void where prohibited. Your mileage may vary. Open to military and civilian alike.

This Month's Meeting:



Dining With The Future of Flight Test

Friday, 16 November 2007

1830 hrs (6:30 PM Civilian Time)

Jim & Jackie Payne's
Rosamond, CA

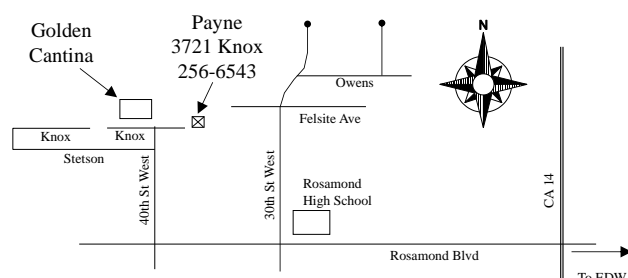
Yes, it's that time of the semester again, when the *Project Police* of EAA Chapter 1000 host the visiting cadets of the USAF Academy Flight Test Techniques course. As you probably remember, twice a year cadets in this course come to Test Pilot School to fly the T-38, collect flight test data, and write a report as the capstone event of the course. Of course, the highlight of their trip is getting to eat and hang out with the *Project Police*.

Due to logistics issues (Houdy's out of town) we have changed the venue to the other end of Rosamond Skypark to the home of **JP** and **Jackie Payne**. As long as we're making changes, we changed the date and time as well. Read carefully what it says above.

While not required, an RSVP to the **Presiding Grillmeister Kent "Cobra" Troxel** would be appreciated. Do it soon—wait too long and you'll be looking for the train that already left the station. Send your guest list to kenttroxel@sbcglobal.net or kent.troxel@ngc.com or call 661-947-2647 or 661-886-3740.

This is our official gathering of the month. You're on your own on 20 November.

This map is provided for your navigational convenience - **Erbman**



Last Month's Meeting

EAA Chapter 1000

Vintage V-12s

Tehachapi CA

16 October 2007

Gary Aldrich, Presiding

Last month, numerous *Project Police Officers* braved the unusually high winds and blowing dirt to make their way to Vintage V-12s, aka "Allison Wonderland", in Tehachapi. While lesser mortals were drawn into mass conflagrations on Highways 14 and 58, there were no reports of *PPOs* unable to make it through. In keeping with the highest ideals of the *Project Police*, **Vice Kommandant George "Knife" Gennuso** gave up his chance to see naked engines with their cylinders off to become the On-Scene Commander (OSC) in Mojave to sort out the Great Traffic Snarl of 2007. The **Minister of Propaganda Kent "Cobra" Troxel** was also on a classified mission. To fill their spots, we had some visitors from the Santa Maria EAA Chapter.



Here our host for the night (Mike Nixon's partner in the operation, name withheld for security reasons (and because I don't remember what it was)) starts by showing us a Merlin or Allison (they're actually very similar, and I don't remember what this was) undergoing rebuild.



Kommandant Paco and Treasurer Houdu compare the relative merits of the Allison (left) and Merlin (right)



Dave Vanhoy, John Ready of Santa Maria (and PPO in training), and an undercover guest join in the evaluation



One difference shown here is in the splines of the propeller shaft. The Merlin in the foreground uses a finer spline than the Allison in the rear. Note also that the Allison has a propeller governor pad that looks amazingly similar to that on a Lycoming O-540



To keep the cylinders of both banks lined up, on both the Allison and Merlin (shown here) corresponding cylinders shared a common crankpin. To accommodate this, the connecting rod big ends were of the fork and blade type. It was also mentioned that the Packard Merlin engines were typically easier to work on because the Americans insisted on tight standards and interchangeable parts. British Merlins tended to be hand-built with parts filed to fit.



Houdu inspects a built up Allison while Dave Vanhoy makes one last comparison in the rear



Stormy Weathers and "Mr 310" Irvine compare the top end differences of the Merlin and Allison. For instance, both engines use four valves per cylinder. The Merlin shown here has the camshaft over the plain cam followers.



The Allison uses a camshaft under roller cam followers. Only one cam lobe is used per rocker arm. Each rocker arm actuates two valves.



Stormy practices his *Project Police Picture Pointer* skills by identifying the crankshaft on the first try



Not all V-12s have 12 cylinders or even arrange them in a "V" configuration. This is the core of a Bristol Centaurus engine. This was a British radial that used sleeve valves instead of poppet valves. Because of its complexity and limited production, many fliers of Centaurus-powered aircraft have replaced their Centaurus engines with American Pratt&Whitney or Wright radials.



Another Centaurus engine with the cylinders on



Stormy Weathers and Randy "Raven" Kelly identify the vintage Bristol shipping crate still in use



Part of the engine ground test rig mounted on the bed of a large truck. Using a truck allows the engine to be built up out of the weather, then moved outside when conditions are right for testing.

After a declaration of Victory! by the Kommandant, many of the assembled *PPOs* disbanded and reformed at the Village Grille on Tehachapi Boulevard for feasting and

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libations. The staff placed us all in the back room so that the general public would not be disgusted by the gross carnage that ensued. The **PPOs** successfully found the solution to Global Warming, but were suppressed by the liberal left who were concerned about their revenue stream.

- **Erbman**

Emergency Substitute Minister of Propaganda

Kommandant's Korner

The **Fightin' Skywagon** and crew participated in a covert raid on the **Copperstate Regional EAA Fly-in** last



Saturday, held at Casa Grande Municipal Airport (KCGZ) in...well...Casa Grande, Arizona. **PPO/NLE Erbman** relinquished his normal seat to perform critical "clock to map to ground" skills from row two of the **VC-180**. In his debut performance as an upgrading Skywagon co-pilot, **PPO Scott "Stormy" Weathers** bravely fought off the

Kommandant's urge to engage the autopilot and {gasp!} hand-flew the aircraft for virtually the entire trip...a feat many thought impossible.

The crew enjoyed a brief respite from the horrendous Santa Ana windstorms that had ravaged the Southland and fanned the damaging wildfires. Winds were fairly light, though "on the beak" for the eastbound trip. The departure was slightly delayed while the crew consumed sufficient calories for the trip at **Foxy's Landing**, but we managed to get airborne while the sun was still low enough on the horizon to make us appreciate the Rosen sun visors. While cloudless skies prevailed, the lingering smoke (exacerbated by the light winds) kept the in-flight visibility uncharacteristically low.

Erbman's target study had revealed the secret to a low-threat arrival. Further, he took credit for efficiently plotting our course, though **Stormy's** bracketing of the magenta line on the GNS530 may have contributed to our successful shack of the IP. If it weren't for the attempted mid-air by an "RV-something" on downwind, arrival at the single-runway would have been darn near boring. The 3-ish hour hop put us in the target area about 1100. Many of you would recognize that time as the normal chapter executive lunchtime, so you can imagine what attraction we sought out after the obligatory arrival picture and porta-potty stop.

After a slight detour to check in at the **Bearhawk** display tent (a mandatory stop when **Erbman's** on the crew) we secured rations. Local **Bearhawk**-buddy and **PPO** Hotelier **Rob "Zippydogg" Gaddy** was there and, when asked about the rate of progress on his MP-14-powered **Bearhawk**, replied, "**Glacial**". **Chris Haley**, onscene



Project Police rep since the previous day, turned over the reins of command the **Kommandant**.

After lunch we began the arduous task of "trooping the line" of assembled (and some partially assembled) aircraft. As the **Bearhawk** display was strategically located at one end of the rows of display aircraft, we were able to stop in and visit/consume shade space a couple of more times before casually wandering into the large-ish (swampcooled) vender tent.

It appeared that about a third of the tables in the tent were empty...reflecting the low attendance at the event. While it was nice not to fight a large crowd, it was also sad to see such a turnout for what has been a major fly-in. Various theories were presented for this, from the price of avgas to the lack of any airshow acts. One vendor that garnered our attention was "Vertical Power" (<http://www.verticalpower.com/>), a small company (aren't they all?) that has developed, arguably, the most complex replacement for a toggle switch yet devised. Their multifunction, software-controlled, LCD-displayed unit is intended to be a complete control system for everything electrical in your homebuilt. It is, perhaps, the embodiment of *gadgetosis-nervosa*. I could see **Stormy's** brain scheduling panel space in the RV-8, though **Erbman**, with his paucity of remaining dash real estate, was less than enthused about the system.

Around 1500 we decided that the event had been well-and-thoroughly inspected and, after checking in at the **Bearhawk** booth...again...we were moving toward the parking area when we were accosted by **PPO Tim Brien** who told us he was a regular attendee of the Copperstate event. More pictures...then back in the **Skywagon** for the departure.

It was interesting to note that the pilot of the Beech Sierra behind us allowed as how he would "delay his takeoff roll so as not to run over the tail-dragger". He needn't have worried as the mighty **VC-180** left him in the dust as we climbed out on course. The return trip, with its attendant tailwind, was also uneventful...unless you count the decreasing visibilities due to the smoke, increasing cloud cover and scattered rain showers. We managed to touchdown (and bounce) just before sunset. Victory was declared and the PPTAF was disbanded to melt back into the mortal populace.



On an un-related note, the annual **Festivus** celebration will occur on the normal Tuesday meeting night in December at the **Kommandant's Kwarters**. It's time to start procuring your "gift".

Fly safe and check 6,

- **Gary Aldrich**
Kommanding

**PPTAF Covertly Infiltrate and Inspect
Copperstate Fly-In**



In keeping with *PPO* tradition of storming the field and then taking pictures of ourselves, the Row 1 crew of the *Fightin' Skywagon* confidently predict a successful raid



NLE Erbman, keeper of the unpublished *Project Police* Bylaws, forces the Kommandant to acknowledge that the *Project Police Aerial Assault Vehicle* placard is appropriately placed in accordance with guidance



Two examples of "Puff The Magic Dragon" AC-47s were present on the field. This is one of the 20mm Gatling Guns. The gun itself is rather short—the rest seems to be ammunition storage



Ever observant, the Kommandant identifies a non-OEM engine installation in this Bell Model 47. We never saw any turbine powered helicopters on M*A*S*H.



Just for reference, here is the standard Lycoming VO-435 engine installation



Copperstate 2007 was a historical first, with 6 flying *Bearhawks* in attendance. This is the largest recorded gathering of *Bearhawks* anywhere to date.



The **Bearhawk** booth was strategically placed back-to-back with the Van's booth and the RV-10. An excellent chance for prospective buyers to compare two different approaches to building a four-place airplane.

Project Police Make Unannounced Raid on EAA Chapter 1000 Det 51

The evening of 23 August 2007. All was quiet in the small town of Tipton Indiana about 20 miles North of Indianapolis, and **Nathan Davis**, Commander of EAA Chapter 1000 Detachment 51 and his family were preparing a delectable meal of salad and peanut butter and jelly sandwiches. Unbeknownst to **Nathan** (Nate) and family, a member of Chapter 1000's undercover project team was in the area. **Randy Kelly**, certified (STS) Chapter 1000 **PPO** had been conducting electronic warfare training for the US Navy's Crane Surface Warfare Center approximately 50 miles South of Indianapolis. **PPO** information specialist **Leigh Kelly** had somehow discovered **Nate** had an uncompleted aircraft in his garage and sent a coded eyes-only message to **Randy's** BlackBerry while on his way back to Indianapolis. Orders were passed, coordinates were transferred to **Randy's** **Garmin V**, and the courtesy 30 minutes out phone call was made. "**Nathan Davis**, the Chapter 1000 **Project Police** are inbound. Prepare to be boarded (STS) – I will need final approach instructions". (Sounds cloak and daggerish enough, huh? ;-)) **Randy** followed the directions on the approach plate to find a house with two young children and a dog rushing him as he went through the gate.

Apparently, despite some traffic delays, Randy arrived before any **Chocolate Chip Cookies** could be found, so the **PPO** was offered a Bud Lite and PBJ sandwich instead. "Fair enough" Randy exclaimed. After the tasty satisfying meal, **Nate** showed off his latest project in the garage, a still under construction **Glasair III**. The Glasair is Nate's 4th homebuilt, not including the 2 others he helped his father build.

Nate pointed out several interesting design features such as an integral fuselage fuel tank (about 30 minutes reserve), a custom built multi-faceted instrument panel to keep all the gauges pointed toward the pilot (**Nate** built this before glass cockpits became the rage) and big honkin' engine (IO-540?). (How's he going to get that big engine in that little cowl?? Bet this sucker will really scream!)



Wow – more plumbing in this fuel management system than in my bathroom!



The bird up on jacks. I believe Nate tried custom wing fairings then decided to go back to an earlier design.



Aileron pushrods with trim motor and damper. Tanks are integrated into the leading edges.



Notice the horizontally tiered panel. Very nice. Nate says he wouldn't do it this way again. (Wish I had this in the PPO Attack Skylane!)



Nate next to one wing. What's in the bucket??



Better picture of Nate next to the bird.



Right side view.

(PPO Randy apologizes for the quality/quantity of the photos. He didn't have a camera so he had to use the camera in his phone.)

After the "raid", Nate took Randy up to the neighborhood airport where Nate keeps the rest of his Air Force, to include his P-51, a Beech Baron (which Houdou just finished his ME rating in), and a Piper Cheyenne. Yow – 10 people to Rosamond in 5 hours! Nate told me the airport people like him and his brother – they buy more fuel than the entire rest of the airport population.

- Randy "Raven" Kelly

Project Police Aircraft Spotters Quiz



Here's another one for you to identify. Send your guesses to rbman@pobox.com or the return address on this newsletter.

Even if you don't know what it is, you can just make something up—the funnier, the better.



Web Site Update

As of 10 Nov 2007, the hit counter stood at **118243**, for a hit rate of about 15 hits/day for the last month.



Just a reminder that the EAA Chapter 1000 Web Site is hosted courtesy of Quantum Networking Solutions, Inc. You can find out more about Qnet at <http://www.qnet.com> or at 661-538-2028.

Chapter 1000 Calendar

Nov 16: EAA Chapter 1000 Monthly Meeting, 6:30 p.m., 3721 Knox, Rosamond. (661) 609-0942

Nov 20: No Meeting

Dec 4: EAA Chapter 49 Monthly Meeting, 7:00 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

Dec 11: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

Dec 18: EAA Chapter 1000 Festivus Etc Celebration, 6:00 p.m., Kommandant's Kwarters. Quartz Hill CA. (661) 609-0942

Jan 1(?): EAA Chapter 49 Monthly Meeting, 7:00 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

Jan 8: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

Jan 15: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Feb 5: EAA Chapter 49 Monthly Meeting, 7:00 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

Feb 12: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

Feb 19: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Mar 4: EAA Chapter 49 Monthly Meeting, 7:00 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

Mar 11: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

Mar 18: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Apr 15: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

To join Chapter 1000, send your name, address, EAA number, and \$20 dues to: EAA Chapter 1000, Doug Dodson, 4431 Knox Ave, Rosamond CA 93560-6428. Membership in National EAA (\$40, 1-800-843-3612) is required.

Contact our officers by e-mail:

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Inputs for the newsletter or any comments can be sent to Russ

Erb, 661-256-3806, by e-mail to erbman@pobox.com

From the Project Police legal section: As you probably suspected, contents of The Leading Edge are the viewpoints of the authors. No claim is made and no liability is assumed, expressed or implied as to the technical accuracy or safety of the material presented. The viewpoints expressed are not necessarily those of Chapter 1000 or the Experimental Aircraft Association. Project Police reports are printed as they are received, with no attempt made to determine if they contain the minimum daily allowance of truth. So there!

THE LEADING EDGE**MUROC EAA CHAPTER 1000 NEWSLETTER****C/O Russ Erb****3435 Desert Cloud Ave****Rosamond CA 93560-7692****<http://www.eaa1000.av.org>****ADDRESS SERVICE REQUESTED****THIS MONTH'S HIGHLIGHTS:****MEETING **FRIDAY** 16 NOV 2007 @ JP's****VINTAGE V-12 REPORT****KOPPERSTATE WITH THE KOMMANDANT****DET 51 RAID REPORT****The Leader In Recreational Aviation**