



# THE GRAPEVINE



EAA CHAPTER 663 Livermore, California

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There is a very fine line between "hobby" and "mental illness."

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## MEETING AND PROGRAM

**Our June meeting** will take place at 7:00 P.M. on the 7th of June in the Terminal Building at the Livermore Airport. Marc Goroff will be displaying (and possibly flying) his SparrowHawk gyro-plane!

**MINUTES: GENERAL MEETING EAA CHAPTER 663, 05-03-07, 7:30 PM LVK TERMINAL BUILDING.**

**Guest:** Alexis Connelly

**Treasurer's report:** None, Barry was out of town.

**Business:** Bob Farnam introduced Alexis Connelly of Boy Scouts of America. Alexis asked the chapter if we would organize an Aviation Explorer's chapter for the Boy Scouts. Bob Farnam suggested that at the next Board meeting we would discuss whether the chapter would be able to support

starting an Explorer's chapter.

**Bob Farnam** suggested in order to promote members to wear their name badges at chapter meetings to institute a fine for not wearing your name tag.

**Ralph Cloud** made a motion that members who fail to wear their name tags shall be fined 50 cents and the fine will go towards the chapter barbecue. The motion passed.

**Bob** announced that on Thursday, May 24th, the LVK staff will host a barbecue at the terminal from 11:30-1:00.

**Brad Olson** spoke about a tandem wing & alternative engine fly-in in Jean, Nevada, that he, Bob Farnam and Jim Patillo flew to together in their Q-200s.

**Break** at 8:30

**Program:** We drove over to Bruce Cruikshank's hanger to see his RV-9 with a Subaru engine conversion. It appears Bruce is close to a first flight?

## BOARD MEETING: 05-17-07 AT BOB FARNAM'S PLACE

**Present:** Bob Farnam, Brad Olson, Barry Weber, Scott Alair and John Meyer.

**Treasurer's report:** Barry WEBER reported \$4,629.38 in chapter funds.

**Business:** The board decided the chapter is not set up as a service organization and we would not be able to support a Boy Scout Aviation Explorer's chapter.

It was decided in order to make sure everyone has a **name badge** that at the June chapter meeting members without a badge should see Harry

Crosby of the new membership committee to get a name badge.

**Brad Olson** confirmed he has reserved a room at the Robert Livermore center for our annual dinner.

**Bob Farnam** is listing the old chapter trailer for sale on the Internet.

**The board** decided when the label making tool is loaned out the user shall provide his own labels.

**The board** decided to select a place to have a chapter fly out to the next month at each months board meeting. We have decided to limit the distance of the fly out to about 150 nautical miles or about one hour RV time. If you have suggestions for future fly out locations please come to the board meetings and let us know.

**The next chapter meeting** is on June 7th and the next board meeting is on June 21st.

Adjourned for **pie** at 9:20

## CHAPTER FLY-OUT

The EAA chapter 663 fly out for June will be to Lee Vining (O24) on the edge of Mono lake at the base of Tioga pass. Lee Vining is 130 nautical miles on a TC of 082 deg. from LVK. The field elevation is at 6800 ft. the runway is 4,000 ft. x 50 ft. The tie downs are on the south end of the field, there are no services available. The average high temperature in June is 75 deg. We plan on arriving at 10:00 am after a scenic flight over Yosemite. After everyone arrives, we will walk about one mile to the world famous Whoa Nelli deli and have an early lunch in order to be able to depart before the afternoon thermals heat up. Any questions call Scott Alair at 925-321-1723.

Life's short, Fly fast.  
Scott Alair.

## WHY USE CORE MATERIALS WHEN MAKING COMPOSITE SANDWICHES?

The use of core materials can be very advantageous. When core material is used to double the thickness of a structure, the relative stiffness increases 7 times. The strength increases 3.5 times

while the weight only increases 1.03 times. When core material quadruples the thickness, the relative stiffness increases an incredible 37 times, the strength increases 9.2 times, but the weight only increases a mere 1.06 times.

## THE WELL-BALANCED PROP

by Paul Werner

At the end of my yearly maintenance and condition inspection last week, I got my EZ engine prop and crank dynamically balanced.

The results where much more than I had hoped for. The guy flew up to Petaluma from Watsonville, CA, in a Mustang II with his equipment and tools to do this at my hangar. Jeremy, the guy who does this, told me that he uses two sensing pick ups; one near the front of the engine and one near the back of the engine. He says he is one of the few in the country who uses two pick ups. He set it all up with a photo sensor which counts the rotations of the prop for RPM data.

Once he was all ready, I warmed up my engine and he had me run up to 2000 RPM and then 2100 RPM and hold it there for a few seconds until he got his readings.

Then we stopped, checked out the data and put one small bolt in one of those holes that run all around the outside edge of the flywheel on the 0320. I think they are every 60 degrees around the wheel. He told me the bad news was that my vibration was not too bad, maybe in the 30% range of maximum allowable so I might not realize much difference.

Next he had me run it up again then stop and check out the data. This time the computer tells him how much weight and where to place it. He moves the weight and changes size with his gram scale to get the weight the instrument was calling for. We did the test once more and we eliminated about two thirds of the vibration that I had started out with. I could tell it was running smoother. The amazing stuff happened next, though. We had lunch and he showed me a chart on a piece of paper that looks like the little blips on a heart monitor or something like that.

He shows me one pulse and says that's your prop. Then he shows my a big spike that happens three

times for every revolution of the crank shaft. He tells me "We have to look at your engine and this is at the prop end of your engine and we have to look for anything that may be rotating three times per revolution. He has graph paper from the sensor on the back and a graph paper for the one on the front, too.

So we checked out the engine after lunch and the only thing there on the prop end to look at was the alternator. We counted the times the pulley on the alternator turned as we rotated the prop around exactly one time. Bingo. Three times.

We were pretty excited. I had that belt off in a few seconds and spun the alternator pulley around by hand and we could hear it grinding away. Wow, it was like the airplane doctor. Then he says, "I didn't like this other low frequency blip that is up on the other end of your engine." He says this looks like a typical engine mount problem. So three of us checked out all four engine mount rubbers and we could clearly see that the upper front one had sagged enough to probably be going metal to metal occasionally.

So I went to the auto parts store and it took the guy a while but he came out with a match for my alternator. Then a couple of A&P's told me that when a motor mount sags you can turn it around 180 degrees and it will work for a while longer. I did that and it looks like the other three mounts now. No sag at all.

So, on to my test flight. I was amazed at how much smoother it felt in the cockpit. It's a much, much, smoother airplane now.

Paul Werner, Long EZ N160RG Petaluma

**For info go to:** <http://www.norcalaero.com/>

### **U-2 OPS ABOARD CARRIERS: WHEN THE U-2 WENT TO SEA**

By Norman Polmar

During 44 years of service with the Central Intelligence Agency and Air Force, the U-2 spy plane has been flown from bases in the United States, Britain, Cyprus, France, India, Pakistan, South Korea, Taiwan, Thailand, Turkey, South Vietnam, and a few other places.

And it has been operated from aircraft carriers.

Even with an operational *radius* of some 3,000 miles, U-2s flying out of "safe" land bases could not reach every single area of interest to the United States intelligence community. Some places were just too far away. Thus, in the late 1950s, the CIA came up with the idea of operating U-2s from carriers at sea.

Richard M. Bissell, head of the CIA's U-2 program, recalled, "Navy officials seemed interested when I approached them, but the Air Force refused to participate."

In mid-1963 the CIA initiated Project Whale Tale, the goal of which was to adapt U-2s for carrier operation. The glider-like configuration of the U-2 made it capable of taking off unassisted from a carrier when there was a high wind-over-deck factor. Its slow approach speed made arrested landings relatively easy, with the carrier's arresting cables kept at their lowest setting. The carrier could provide 30 knots of wind over deck into the face of the aircraft, resulting in a closing speed of just 50 knots. The airplane had plenty of power for a wave-off during landing.

Carrier flight tests commenced in August 1963. In the dead of night, a Navy crane lifted a U-2 onto the deck of the carrier Kitty Hawk, which was based at North Island naval air station in San Diego. On the next morning (Aug. 5), as the ship steamed off the California coast, Lockheed test pilot Bob Schumacher took off with a full fuel load and with a deck run of 321 feet.

#### Hard Landing

Next, Schumacher made a number of practice approaches, and he then commenced landing. A CIA report said, "Although the takeoff was very successful, the attempted landing was not. The aircraft bounced, hit hard on one wing tip, and then just barely managed to become airborne again before reaching the end of the deck."

The Navy then performed modifications to three U-2A variants. It gave them stronger landing gear, an arresting hook, and wing "spoilers" capable of canceling aerodynamic lift when the aircraft came over the deck. These aircraft were designated as U-2Gs and painted with N-series civilian serial numbers and Office of Naval Research

markings.

In preparation for further carrier operations, Schumacher and several other CIA pilots were checked out in the Navy's T-2A Buckeye jet trainer and made practice landings on the training carrier Lexington.

The first successful carrier landing of a U-2G occurred March 2, 1964. Schumacher made a series of touch-and-go landings aboard the carrier Ranger steaming off the California coast. He then made the first full landing of a U-2 aboard a ship. In that first landing, the hook engaged, but the rear of the U-2 tipped up and the nose dug into the deck, breaking the pitot tube. After hasty repairs the U-2 was flown off.

A few days later, Schumacher and CIA pilots made several successful takeoffs from and landings on Ranger. The upshot of these successful trials was that the Navy considered five CIA pilots to be carrier-qualified.

The carrier-based U-2 evidently wasn't in high demand. In fact, it is known to have flown only one operational mission, as part of Operation Seeker. It occurred in May 1964. Ranger launched a U-2G spy plane to monitor nuclear tests carried out by France at Mururoa atoll, a Pacific test site in French Polynesia. U-2G photographs indicated that France would be ready for full-scale production of nuclear weapons within a year.

The Navy gave several U-2As stronger landing gear, an arresting hook, and spoilers. Designated U-2Gs, they were prepared for carrier operations in an effort to extend the range of US intelligence gathering.

### Bigger Aircraft

Several more CIA pilots became carrier-qualified over the next few years, but the only significant event concerned a change in aircraft when the program went to the U-2R.

The U-2R variant, which entered service in 1967, was 40 percent larger than the earlier U-2. It had twice the range and could carry a payload four times as large. The Navy aircraft had an arresting hook. The outer six feet of each wing folded back to facilitate handling aboard ship. The aircraft bore

the fictitious Navy markings N812X.

The trials of the U-2R, using the deck of the carrier America, took place during the period Nov. 21-23, 1969, off the Virginia Capes. One of the pilots was Bill Park, a former Air Force fighter pilot and senior Lockheed test pilot. He was joined by four CIA pilots. The five of them underwent an abbreviated carrier training course and then flew the America trials.

Testers aborted the first landing attempt when they discovered that the ground crew had left the locking pin in the tailhook assembly. The rest were successful. In a report on the subsequent trials, Park said: "The airplane demonstrated good wave-off characteristics, and I felt at the time that landing could be made without a hook. We required very little special handling and even took the airplane down to the hangar deck. The outer 70 inches of the wings fold and by careful placement on the elevator we could get it in [the hangar deck] with no problem."

For all that, the idea of the seagoing U-2 just never generated much enthusiasm. The official CIA history contends that the agency conducted no further U-2 missions from an aircraft carrier. It said: "Aircraft carriers are enormously expensive to operate and require an entire flotilla of vessels to protect and service them. The movement of large numbers of big ships is difficult to conceal and cannot be hastily accomplished, while the deployment of a solitary U-2 to a remote airfield can take place overnight."

The Navy wasn't finished with the U-2, however. In a separate program in 1973-74, two U-2R aircraft were modified to the U-2EPX configuration for evaluation by the US Navy for the ocean surveillance role. During the evaluation the airplanes were fitted with a derivative of the AN/ALQ-110 Big Look surveillance system, a modified AN/APS-116 forward-looking radar (useful for detecting surface ships and periscopes or snorkels of submerged submarines), and an infrared detection unit. The radar, fitted in the U-2's sensor or "Q" bay, had an antenna protruding below the fuselage in an inflatable radome.

The U-2EPX was to link its radar to surface ships under a program known as Outlaw Hawk. Other sensors, including space- and land-based, were to

be linked to a command center ashore and, subsequently, fitted in the carrier Kitty Hawk. During the Outlaw Hawk exercise involving Kitty Hawk, the carrier steamed from San Diego to Pearl Harbor, with the U-2s flying from California. (The participation of U-2s in another Outlaw Hawk exercise in the Mediterranean was canceled.) The U-2EPX concept died because of high costs and the promised effectiveness of satellites for ocean surveillance.

Lockheed, ever hopeful of an enlarged U-2 program, also proposed the 315B design, a two-seat variant that would carry Condor anti-ship missiles under its wings. Development of the Condor missile-which was to have carried a conventional or W73 nuclear warhead-was canceled before becoming operational. Yet another "payload" envisioned for U-2s in this period was a pair of drones that would be released to serve as decoys for missiles fired against the U-2.

Still, no U-2 variant ever entered naval service. At the same time, Boeing proposed a much larger aircraft of this type (i.e., a powered glider with a 200-foot wingspan) for the ocean surveillance role. The Navy did not build it.

The carrier and naval aspects of U-2 development and operations, though interesting, occupy but a few pages in the record of the U-2 spy plane, a most unusual and important aircraft.

Norman Polmar is a Washington-based defense analyst and author. He has written several books on aviation, naval, and intelligence subjects, his latest being *Spy plane: The U-2 History*, on which he based this article. His most recent article for Air Force Magazine, "Longer Reach for Soviet Seapower," appeared in the June 1990 issue.

### **MORE OF THE CHARLIE BROWN STORY**

The Charlie Brown story in the March, 2007, Newsletter was triggered by an e-mail from Bruce Cruikshank. Now Bruce has gotten hold of a URL that takes you to a source of more information on the Marvelous Adventure of Charlie and Franz. Go to:

<[http://www.military.com/Content/MoreContent1/?file=dday\\_0033p3](http://www.military.com/Content/MoreContent1/?file=dday_0033p3)>

and go back to the 1st segment of the article, selection of the three parts is in the upper right corner.

### **AN RV ACCIDENT-- NOT A/C RELATED**

From Wayne Hicks

Here's what the family thinks happened based on what Bill (the pilot) told the rescuers. Bill got his license recently and bought the RV-6A shortly after that. All of his training was in a Cessna 182 (I think). He flew around the pattern once or twice with the seller. He handed over the check and off he went. He flew the plane for about 10 hours before making this flight. We believe it was his first flight with a passenger and the first time he attempted to land on a sod strip. I've never landed on grass, but instructors tell me that depth perception can be an issue when landing on sod, water, desert, etc. - anything with non-contrasting colors. He attempted two or three landings, all too fast. So he went around each time.

On the final attempt, he again came in fast, then yanked back too hard on the flare. The plane went nose-high and stalled. Then, the nose went down pretty hard, breaking off the nose gear. The nose buried into the sod and the plane flipped over at speed. Now, those who know what an RV-6A looks like will appreciate the fact that it has a rollover structure built into the canopy frame. But it offered little protection to the occupants in this case.

Is the pilot OK? Alas, no, he's not. He's in bad shape. He broke his neck and his back, and suffered immense facial trauma (broken bones, broken teeth). He's paralyzed from the waist down, and while he's blessed in that he will retain use of his arms, he will probably not walk again. He goes in for surgery today to fuse a metal rod onto his spine in hopes of helping the spinal cord heal. (His father-in-law (passenger) also broke his neck, but he's okay.)

I haven't spoken to Bill personally, but we talked a lot about the purchase before he bought it. We also talked characteristics and the need/no need for transition training. I'm always in favor of transition training for any aircraft, no matter how rudimentary or complex. I've felt that way ever since my unplanned runway departure in a Davis V-tailed homebuilt. (I was just a little too bold....) I don't think he got any and I don't think the seller insisted on any either.

Is transition training important? I'll leave that up to you. But I add up the factors - new pilot, new to

aircraft, first time with passenger, first landing on sod, too fast on approach. It all adds up, folks.

### **YEAH, BUT WHO NEEDS A CHECKOUT?**

Stu Eberhard's hangar is across from mine. A year or so ago we were talking and he said that he had

ing a P-51-- "It's required by the FAA." Seems that the T-6 is acceptable for qualification in the P-51. I didn't say anything and Stu went on: "Hope he doesn't have any problems, I certainly don't want to be the guy to tell Chuck Yeager he didn't pass the check ride!"

*Nobody* is so good that he can't use a check ride now and then!



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been requested to give a friend a check ride in Stu's T-6. I raised an eyebrow and Stu explained that it was because the friend was planning on fly-