

The Alameda Aero Club Newsletter

February 2005

President's Corner

Brutal Economic Realities

An old saw goes: How do you make a small fortune in general aviation? The answer: start with a large fortune. BA-BA-Boom!

I've been reminded of this a lot lately. ODC is gone from the club. The reasons were many: three place family in a two place airplane, huge insurance expenses, expensive repairs happening suddenly, etc. So the owner has to withdraw the airplane from the club to lose less money while he puts the airplane up for sale.

The costs of owning an airplane, or airplanes, can be enormous. Everybody tries to plan for the cost of an annual, the necessary insurance, tie-down or hangar fees, county use taxes—the predictable items.

This, of course, overlooks the unforeseen and sometimes perverse items that suck up money. 12R has been beset by a bedeviling series of engine problems. A recent rebuild from a previously reliable vendor is something of a lemon. #4 cylinder has been replaced twice; vacuum leaks, plug fouling, rough running, and carburetion problems have cost the Club a fortune in repairs; this, in a trusty airplane that has been a club favorite for nearly 20 years. (I passed my IFR practical in the airplane.) It's like we've re-purchased a rebuilt engine in repairs. If the California automobile "Lemon Law" applied to airplanes, we'd have a case.

Then, we've had flap problems in recent months on two of our airplanes. For your information, flaps nearly never go wrong and flap tracks—the problem—rarely wear out and will usually last the life of an airplane. Perverse.

So we've been hit with a lot of out-of-the-ordinary maintenance expenses. Ordinarily this is not a problem. The way the Club works is that our dues pay for fixed expenses: clubhouse rental, tie-downs, telephones, the reservations website, the bookkeeper, taxes, and a host of minor items. The airplanes pay for themselves in the hourly charges. This works well when there's decent weather and airplanes are flying. However, December and most of January have been lousy fly-

ing months. Thus the Club has been bleeding money for maintenance expenses during a prolonged period of bad weather when the airplanes have not been flying much.

The point of all my grouching is that our Club treasury is in a diminished state when we have to plan for replacing another engine in an airplane and saving enough to pay next year's insurance bill.

Airplanes are financial black holes, general aviation is nearly impossible to justify economically; but we love flying so we press on regardless. This is a crazy world we're in, but it's our world.

Steve Bevitt, President

First Solo!

First Solo, Kevin "Mr twentyseven left" Hanrahan, 1/23, N739UL.

I'll have pictures up on the web soon.

Christian Goetze CFI

Club member Jeff Grandy slipped the surly bonds all by himself on Monday, January 24th in 9UL. After two touch-and-goes and one full-stop landing, the ceremonial cutting of the T-shirt was completed, making it official. Congratulations Jeff!

John Ewing, CFII

New Private Pilot

Yih-Chun Hu impressed Richard Batchelder with his skills and received his PPL on Jan. 12 2005.

CFI Adam Johnson

Dark Ages Party and Meeting

A smashing time was had by all who attended our Dark Ages Party on January 22nd. 44 members and friends pretended to have a membership meeting, consumed a mountain of food, won a ton of door prizes, and heard two great lectures. John

King explained the attractions of, and how to get started in, aerobatics, taildraggers, and formation flying - all of which can be had right in our club, as John has developed a syllabus for teaching formation in a few hours, and could easily be persuaded to offer it to interested parties. Our second guest was Dave Watson from the KOAK tower, a personable and outspoken guy who loves his job, and wants to spread the perspective that the controllers are there to serve us and to keep us safe. He answered all sorts of questions until there were no more, and then hung around - on his extended lunch hour - long enough to speak to many individually and to win a door prize. Dave said that folks often ask if being a controller isn't terribly stressful. He answered that he has eight kids, and he goes to work to relax. He says it's the perfect job for him--when he was in school the teachers said, "Don't look out the window, and stop talking." He urged us to support the controllers in their effort to maintain their government employee status and reject privatization of ATC services.

Our prez Steve won the prize for a Pitts ride with Ben Freelove. Gabriel Schlumberger, who is this close to his PPL checkride, and will no doubt have passed it by the time you read this, has a ride in the Aerobat with Dave Penney in his future. Nearly everyone got a prize. Thanks to Judy Barron for rounding up donations from Sporty's, King Schools, and ASA, and for the AOPA watch she donated herself, thanks to Rob Honeycutt for the functional Zuluboard, to Gabriel for his dad's wine, to Ginny for Kent Rosenblum's fine products, and to our two plane owners who offered rides.

The Western Air Museum makes a great venue, and the efforts of Mike Klinke and Chad Scott in handling logistics made everything go smoothly. It was really nice to see so many of us in one spot, and to meet family and friends. We might try this again some time.

Ginny Wilken, Secretary

Exploring the KLN 94: GPS and Autopilot

Using the "Direct To" function, one can use the KLN 94 to find the direction to any waypoint in its database. A handheld GPS will show you the way home too. (You can find a used Lawrance Airmap 100 on eBay for less than \$200.) Where the KLN

*The Alameda Aero Club Newsletter
numbers*

94 puts the handhelds to shame is in combining forces with the airplane's autopilot to fly the plane home.

N612SP has a KAP 140 single axis autopilot. Compared with the KLN 94, the KAP 140 autopilot is an exceedingly simple device to operate, but its capabilities are amazing.

Turn the autopilot on by pushing the "AP" button. It starts in the Wing Leveler Mode. The autopilot will display the letters "ROL," roll stabilization. In this mode, the autopilot acts as a wing leveler. Pushing the "AP" button again turns the device off.



Press the "HDG" button and the autopilot will enter the Heading Select Mode and fly a selected heading. Move the heading bug on the heading indicator to the desired heading and push the "HDG" button. The autopilot will turn the plane to intercept and fly the heading. Move the heading bug while the heading select mode is engaged and the autopilot will turn the plane in the direction of the newly selected heading. Pressing the "HDG" button again will return the autopilot to the Wing Leveler Mode.

Press the "NAV" button while the autopilot is in Heading Select Mode and the autopilot will enter the Navigation Mode, intercepting the course dialed in on the course deviation indicator (CDI) for the first navigation radio (NAV1). Select the frequency for whichever VOR you want to navigate towards (or away from). Set the desired course in the CDI using the OBS knob. Press the "NAV" button. The autopilot will flash "HDG" for five seconds to remind you to reset the heading bug to match the OBS course. If the CDI needle shows more than a two to three dot deviation, the autopilot will display "NAV ARM" and turn the plane to intercept the desired course at a 45 degree angle. When the plane intercepts the desired course, the autopilot will display "NAV" and turn the plane to stay on the desired course. If the CDI shows less than a two to three dot deviation when you press the "NAV" button, the autopilot will display "NAV" and immediately start tracking the desired course.

To intercept the desired course at some angle other than 45 degrees, maneuver the plane to the

Page

desired intercept angle and select the Wing Leveler Mode. Select the frequency for whichever VOR you want to navigate towards (or away from). Set the desired course in the CDI using the OBS knob. Press the "NAV" button. The autopilot will behave as described above when entering the Navigation Mode from the Heading Select Mode, except that the autopilot will not turn the plane to intercept the desired course at a 45 degree angle. Instead, the autopilot assumes that you are smart enough to have pointed the plane to intercept the desired course. So, if you press the "NAV" button when the plane is flying away from the desired course, the autopilot waits patiently for a course interception that will not occur for another 25,000 miles.

The "APR" button activates the autopilot's Approach Mode. This mode functions exactly the same as the Navigation Mode, including the different intercept behaviors depending on whether one enters from the Heading Select Mode or the Wing Leveler Mode. The only difference is that the Approach Mode hugs the desired course more tightly than when the autopilot is in Navigation Mode. The ability of the autopilot to track a course in Approach Mode never ceases to amaze me. When I lock onto the Oakland ILS localizer in Approach Mode, the autopilot delivers the plane right to the 27 Right threshold. Why, you may wonder, bother using the Navigation Mode at all, considering that the Approach Mode is more precise? The answer is that if you are some distance from the VOR and the CDI is wavering, the autopilot will chase the needle in Approach mode, which makes for an uncomfortable flight.

So what does the GPS have to do with the autopilot? The answer is the NAV/GPS switch, which is located at the top of the panel on the pilot's side. This switch controls the top CDI. When the yellow "NAV" legend is illuminated, the switch is directing the top CDI to receive its input from the NAV1 navigation radio. When the green "GPS" legend is illuminated, the switch is directing the top CDI to receive its input from the GPS. Here is the important point: the autopilot does not know whether the signal to the top CDI is coming from the NAV1 radio or the GPS. All that it knows is that its job is to keep the CDI centered. When you enter Navigation Mode or Approach Mode on the autopilot when the CDI is receiving its input from the GPS, the autopilot flies the plane to the next GPS waypoint as if it were flying the plane to a VOR tuned in on the NAV1 navigation radio.

I like to take student pilots to the old Hamilton field to learn pattern entries, approaches, simulated engine failures, and go-arounds at an unused runway. The GPS database contains an entry for the Hamilton field --- VPHHH. If I wanted to, I could set up the GPS to navigate direct to Hamilton field, push the NAV/GPS switch to select the GPS, turn on the autopilot and press the "NAV" or "APR" button, and the autopilot would fly the plane directly to Hamilton field. There is also a database entry for the Mormon Temple -- VPMOR. So, coming back to Oakland, I could set up the GPS and autopilot to fly the plane directly to the Mormon Temple using the same procedure.

That the KLN 94 GPS and the KAP 140 autopilot can fly N612SP to any waypoint in the GPS database is way cool. What's even cooler is when you have programmed a sequence of waypoints into a GPS flight plan and have activated that flight plan. In this configuration, the autopilot is able to fly the plane from waypoint to waypoint. In the next issue I'll describe the KLN 94 flight plan function.

Stephen S. Ashley, CFII

Events, Airshows

Soaring Society of America National Convention, Ontario, CA, February 10, 2005 - February 12, 2005. Contact: Gaynell Temple, 505-392-1177

Paso Robles Antique and Classic Display Day, Paso Robles Airport (PRB), Paso Robles, CA, February 12, 2005. Contact: 805-237-3877
<http://www.pasoairport.com>

St. Patrick's Day Poker Run, William J. Fox Airport (WJF) - Lancaster, CA, March 13, 2005. Contact: Jennifer Solee, 661-949-8872

Hayward Proficiency Air Race, Hayward Municipal Airport (HWD), Hayward, CA, May 19, 2005 - May 21, 2005. Contact: Eric Helms, (925) 784-7128, 1engineer@comcast.net
<http://www.hwdairrace.org>

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