

The Cieco

Official Publication of the Experimental Aircraft Association
EAA Chapter #393 POBox 272725 Concord, CA 94527-2725

MARCH 1996

**NEXT CHAPTER MEETING IS
WEDNESDAY EVENING, MARCH 27TH
IN THE TERMINAL BUILDING (AT THE
END OF JOHN GLENN DRIVE)**

PROGRAM THIS MONTH: "TOP SECRET"
(You'll have to come to the meeting to find out.
Bring chairs and wear your stinken' badges!)

**THANK YOU MARK AND NANCY
MACHADO FOR LAST MONTH'S
"VELOCITY" PRESENTATION**

It was hard to believe Mark and Nancy persevere and managed to fly their beautiful Velocity down to our Chapter meeting last month. The weather was pretty crappy, but they were highly motivated to show us the plane up close and personal, as well as to speak to our chapter members.

It was a great way to start the year for #393 - an excellent presentation for those who attended.

I was able to fly the Eze up to their "open-house" the following Saturday and Mark took me for a ride in his Velocity. 200hp and retractable gear makes for a very fast and clean airplane. The extra two seats were just a bonus. All in all, I loved it and would gladly sell the two place Long-Eze in favor of building a Velocity!

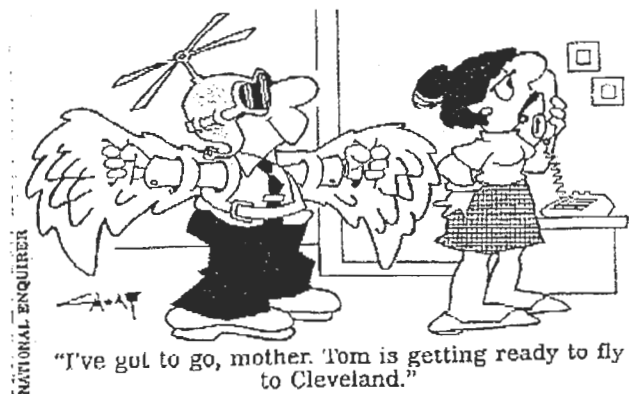
HEY LOOK - NEW MEMBERS IN CHAPTER #393

Six new people have recently joined our band of wild and crazy aviators (little did they know). When you see them wandering around, looking for a project to start or what ever, please welcome them into our group and tell them about your project and building a kitplane.

Welcome to EAA's Concord Chapter #393:

Douglas Cardoza
John Cicero
Dave Cunningham
Rob Hanberg
Richard Marlow
Dave Mansker

(I wonder if any of these guys can write?)



GOOD NEWS: LOUIS GOODELL STILL HAS ALL OUR MONEY!

For what it's worth, Louis reports that Chapter #393 has \$1093.45 in the Checking Account and \$2675.68 in the Savings Account.

Lets spend it!

"The other day, my wife asked me, 'have you noticed that as we get older, your back goes out more often than we do'? As profound an observation as that was, I thought it best not to respond"

FLYERS

I received a lot of flyers in the mail this month. Those "in-the-know" realize that you must advertise early and get the flyers to the assorted newsletter editors out there. Unfortunately, they don't always send "ready to copy, white slicks", so I apologize for the reprint quality of some. In any case, please find them elsewhere through out this newsletter and make note on your calendar accordingly. (there is also a large FOR SALE of a GY-20, which might be a good start for someone looking for a kitplane project - cheap)



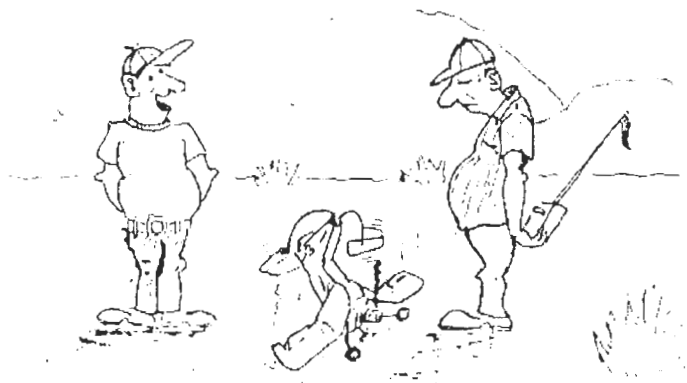
provided by Zimpressions calendars

HELP WANTED: NEWSLETTER EDITOR FOR WONDERFUL EAA CLUB IN CONCORD AREA

Yeah folks, this is likely the last newsletter 'yours truly' will be producing. Vickie and Larry Laughlin are up-rooting and moving to Colorado Springs, Colorado, as soon as our house is sold (I would expect move day to be around June, give or take a month).

Vickie has accepted an offer to work for one of the largest computer software companies in the nation, "Oracle". With Vickie's help, their new Colorado Springs office should blossom into a great operation and we're excited about what the future holds. And I promised Vickie years ago that I would follow her anywhere! I am fortunate in that I was able to sell my business three years ago and prepare for such an event, but it still doesn't come easy.

After 44 years here in the Bay Area, 17 years in my house in Pinole, I'm finding many roots to be miles deep and very tough to pull up! A lot of emotions surface when you make a major change in your life, like the one Vickie and I are about to make. Certainly, one of my closest held heartbreaks is leaving my friends at Chapter #393. I like everyone involved with this club and I'm proud to have been associated with it for so many years. I'm proud to have helped facilitate some of the inner workings of the club, too. And who knows, maybe we'll come back someday.



"THE AIR MIGHT BE THINNER UP HERE IN THE HIGH DESERT, BUT THE GROUND IS JUST AS THICK, ISN'T IT?"

provided by Zimpressions calendars

"What will I do in Colorado Springs", you ask? Hell if I know! I was just starting to roll up my sleeves and get my fingers sticky on the "owner assist" Lancair 360 project. In fact, my hope now is to get it painted and flipped back over and on its gear before leaving the project for another to finish, but time is running out. Given the demands of the house sale, packing and preparing, I don't have a lot of spare time for anything.

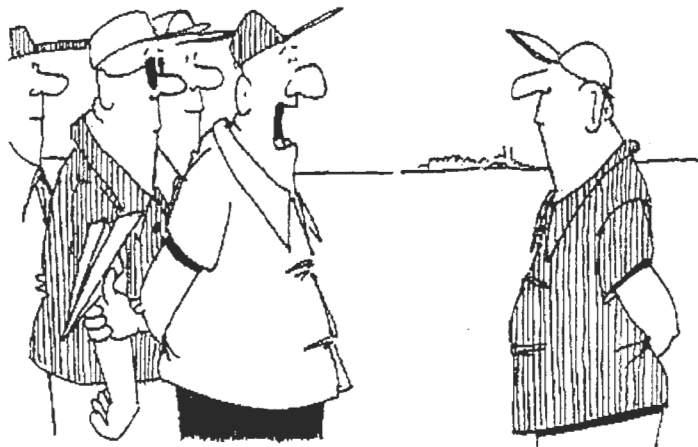
I suppose I'll hook up with other Composite Builder that would like an experienced hand somewhere there in the Colorado Springs area. And I suppose I'll hook up with another Radio Control Club eventually too, since that's one of my passions (like Ice Cream).

One thing I'm not looking forward to is the sorry-ass performance I can expect out of my 150 hp Long-Eze. The field elevation is 6800 ft, MSL and the runway I'll be flying out of is only 5,000 ft. long. At Sea Level, that's twice what I need. At 6800 ft. and 80 degrees air temperature, I'll be sucking seat cushion just trying to rotate (maybe)? I guess I'll have to get a dam job since the Long-Eze is going to need "more horsepower", right?

So that's the low down folks. Change is good and we're well past the "ready for a change" mark in our lives. I hope the EAA, Chapter #393 Club remains strong and healthy for many years to come. I have no doubt that it will, especially with the fine leadership in office today! I plan on keeping in touch - so why don't you?

OPPERMAN'S FORWARDING ADDRESS

Speaking of people on the move:
Chapter #393 member, Chris Opperman, has settled in Phoenix, Arizona. For those in need, his new address there is: 3127 West Anderson Dr, Phoenix, AZ 85023. He may be phoned at (602) 789-8885. Last known, he has taken the position of Chief Maintenance Officer for Glendale Aviation @ Glendale Airport.



"WE, OF THE SAFETY COMMITTEE, HAVE FOUND THE PERFECT AIRPLANE TO MATCH YOUR FLYING ABILITY"

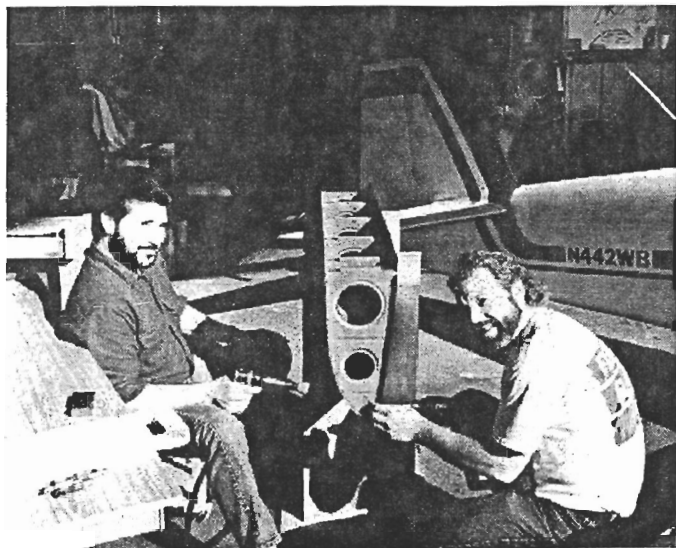
OH COME ON - NOBODY NEEDS ANOTHER 96 CALENDAR?

Well that idea went over like an all stainless steel sailplane! I guess nobody, and I mean NOBODY wants another calendar! I didn't get one call; so, sorry Bob Zimmerman - I gave it a good pitch. We still love your cartoons and greatly appreciate your blessing to reprint them here in our newsletter.



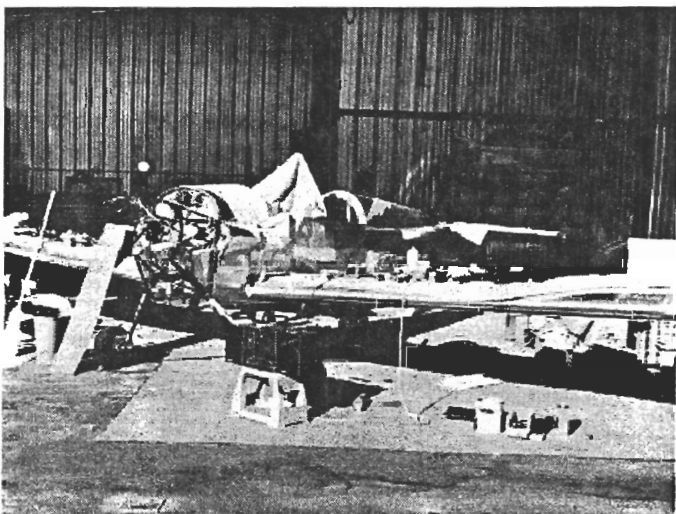
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WHAT IS OUR MEMBERSHIP DOING?



"The metal heads" (as we plastic types refer to them). Mike Diaz and Bill Black really work well together building another RV4 and Bill's "top secret" Harmon rocket. Most of the time though, they like to sit around in the sun with air tools in their hands, trying to look busy.

One of the many requirements to be a good "metal head" is HAIR. You've got to have a lot of HAIR - on your face and on your head! Both these guys are highly qualified in the HAIR area.



Now see, here's another "metal head's" project. He doesn't have as much HAIR, and it shows as he attempts to make minor modifications to his RV4 this Winter. Guys (and Gals, I guess) with lots of HAIR, tend to put tools and stuff up and away, neatly in cabinets

and shelves, where as this builder (with less HAIR) prefers to spread everything out all over the airplane itself and the floor around it while he is working. "Anything you need is right there, where you can grab it easily", he'll tell you.

Just shows to go ya, everyone does it a little differently. Oh well, what ever it takes to go fast, and all these guys do that!

I'm not going to mention any names here, cause I don't want to embarrass my friend Mike Parker, but his method (the second photo) obviously works well for HIM.

EAA CHAPTER 393 MEMBERSHIP MEETING MINUTES FOR FEB.28, 96

respectfully submitted by Linda McKenzie

The meeting was called to order at 7:30pm by President, Bruce Seguine. Several visitors introduced themselves. It was moved and seconded to accept the January minutes as submitted in the Cleco. [I don't think that a vote was taken.]

Treasurers Report: Savings Account balance is \$2,675 and the Checking Account balance is \$440.

Announcements:

Gerry Greth is putting together a trip to Club Med in San Carlos, Mexico over the weekend of May 4 & 5. Plan on flying to Imperial on Fri. (5/3) and going through customs at Mexicali first thing Sat morning and the flying on to Guayamas. Cost at Club Med is \$100 per person, everything is included. **Note:** You will need big numbers to come back over the border, along with a \$25 customs fee. Space is limited, so contact Gerry as soon as possible so that you can make this wonderful trip. A sign-up sheet was circulated at the meeting.

Pete Wiebens is coordinating a photo shoot of our planes from the top of Mt. Diablo. The date is still not determined. Watch for further information. The plan is to form up on the East Ramp and depart at 10 minute intervals beginning at 8am on the chosen date. Additional instructions will be given out as the

event gets under way. A sign-up sheet was circulated at the meeting.

Linda McKenzie and **Lisle Knight** updated us on the progress of the Golden West Fly-In planning. The Fly-In is scheduled for October 4 - 6 at Tracy Airport. As in the past, Chapter 393 is responsible for selling beverages (no beer) and directing auto parking. Please put this **must attend** event on your calendar and also plan to volunteer 2 hours of your time while you are there. Linda is coordinating a techniques forum -- the idea is to display techniques that you found to solve problems not fully addressed in the kit builders manuals.

Louis Goodell announced that he is trying to get a complete list of past chapter presidents for a 25th anniversary meeting in April. If you remember any names from the Seventies and Eighties, please call Louis.

Introductions:

Dick Rihn mounted the first aileron on his One Design today.

Lyle Powell said that the Powells, Wiebens and Seguines flew to Catalina for a weekend recently. It is a very nice place during the off-season - buses run every two hours. To return home Lyle had to use the "California Tunnel," which is I-5 at 500 ft on the right side of the road.

Fred Egli has the vertical fin finished on his Lancair IV.

Harry Heckman has been wiring up the instrument panel on his Lancair 290. **The big announcement** is Harry is now looking for hangar space. He expects to be ready to move the plane in the next couple of months.

Scott Achelis has 9 fuel filters for sale at \$70 a piece. These filters have a 35 gal per hour capacity and also remove water from the fuel.

Mike Diaz had his RV-4 fuselage on the gear.

Rick Young has 90 hours on his RV-6, but you guessed it, he is already working on his next project - a Harmon Rocket.

Tim Glenn has wired up his Kitfox - Model V and the wiring works.

Will Price is now "unretired," which means he doesn't have enough time to spend modifying his Lancair 360. His latest project is to upgrade the 35 amp alternator, because it

does not provide sufficient electricity for night flying.

Don Baldwin is looking for people to share the driving to and from Oshkosh this year.

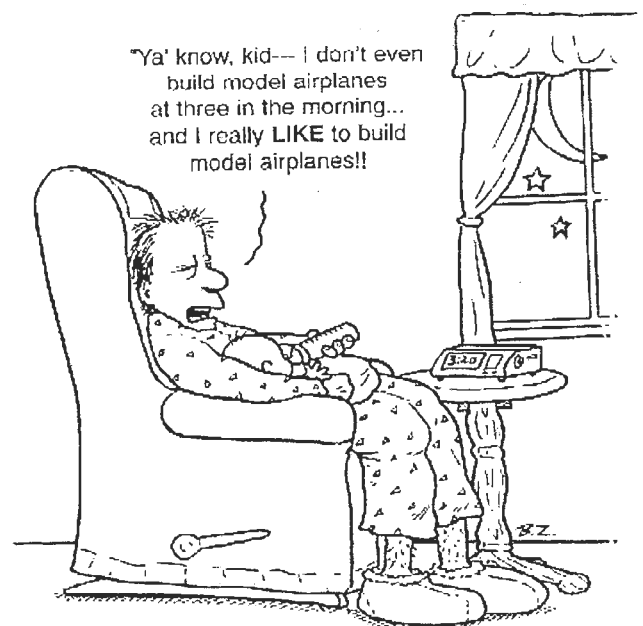
Bob Belshe has the carb of his Lancair 235 rebuilt and hopes to be flying as soon as the sun comes out.

Mike Parker has rebuilt the engine for his RV-4.

Ed Lester's the Glasair I now has 1300 hours on it.

I must apologize, I cannot take notes as fast as everyone introduces themselves.

After the break Larry Laughlin put on the raffle.



provided by Zimpressions calendars

OUR PROGRAM LAST MONTH

respectfully submitted by Linda McKenzie

Mark and Nancy Machado, of Velocity, Inc.'s West Coast Office. Mark started off with a little of the plane's history. Back in 1985 Dan Mahre, a designer of off-shoring racing boats, sold his business and started to learn to fly. He owned two Long-ezes, but found that they were too small. So, he decided to take his boat design knowledge and apply it to designing a fixed-gear, four place canard. Duane and Scott Swing started out selling RG retrofits for the Velocity. Later they bought the operation from Dan. Under Duane and Scott's

management, the company has gone from selling one kit per month to seven kits per month. There are now 8 variations on the Velocity. Mark and Nancy bought their kit in 1990 and completed the plane in 2 years. They are now employees of Velocity, Inc., running the West Coast Office in Lincoln. Nancy showed slides of the Lincoln facility. And then we moved on to the Question and Answer phase. "Can you slip a Velocity?" It is probably not advisable, because you could stall the winglet. "What is the max pilot height the plane can accommodate?" About 6'4". "Could you tell us about the deep stall issues?" The deep stall is an aft CG situation where the canard remains flying while the strakes and wing have stalled. It causes a parachute effect so that the plane losses altitude without gaining any forward distance. This problem was solved after Kit #49 with a "well-defined" CG envelope. "Are there any alternate power plants available?" A Formula Power 4-cyl Subaru is being installed in one kit. A lot more engineering has been required due to cooling problems. "What sort of runway length is required?" The Velocity was not designed with short take-offs and landings in mind. "What other engine options are available?" There is a Franklin which runs at higher rpm's than the standard Lycoming. A 540 Lycoming is NOT recommended because it will reduce the useful load due the extra 150 lbs hanging off the back, which will require extra weight in the nose.

NEWSLETTER DEADLINE

All contributions and/or articles for the newsletter are welcome! If you have something to say or share with the rest of the club members, do it here! Please submit any and all photographs you think others will enjoy and learn from. The Deadline for submissions to the editor is the 14th of every month (newsletter is produced and mailed by the 17th).

Submissions should be done in writing and mailed directly to the newsletter editor. Submissions may be hand written or typed, or provided on any 3 ½ IBM diskette (in ASCII or MS Word).

(Once again, my special thanks to Bob Belshe for folding and mailing the newsletters.)

AHOY, BIG FELLA!

The following is an actual transcript of a radio exchange released Feb. 10th by the Chief of Naval Operations:

Station #1: "Please divert your course 15 degrees to the North to avoid a collision."

Station #2: "Recommend YOU divert YOUR course 15 degrees to South to avoid a collision!"

Station #1: "This is the captain of a U.S. Navy Ship! I say again, divert your course!"

Station #2: "No, I say again, divert YOUR course!"

Station #1: "This is the Aircraft Carrier USS Enterprise. We are a large warship of the U.S. Navy. DIVERT YOUR COURSE NOW!"

Station #2: "This is a LIGHTHOUSE. It's YOUR call big fella!"

Thanks Wil Price

REMINDER: YOUR 1996 EAA Chapter #393 DUES SHOULD HAVE BEEN PAID BY NOW

If you haven't paid your dues by now, you probably won't be reading this newsletter next month! This may very well be your last reminder. It's your call big fella! Really!

The bargain of the century - your EAA Chapter #393 membership dues are due by February 28th, 96. Your address label tells whether or not you've paid your 96' dues.

So give Louis Goodell a check for \$20, made payable to: **EAA Chapter 393** (cash is still accepted too) or send it to:

EAA Chapter #393

P.O. Box 272725

Concord, CA 94527-2725

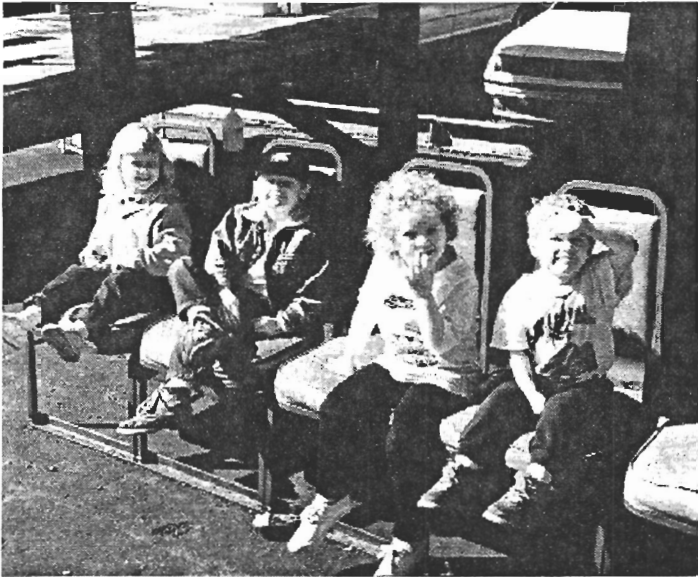
And if you are not a member of NATIONAL EAA, PLEASE RE-UP THERE AS WELL.

Think of your annual club dues as being \$55.00 (\$20 goes to local, \$35 goes to National).

NO ROOM THIS MONTH

for Ken McKenzie's "Best of the internet".

Hopefully, we'll get some or all of his hard work published in the Cleco next month (there is enough material for an entire newsletter).



FUTURE PILOTS OF THE WORLD "THE PEANUT GALLERY"

Just another day watching Dad fly his model stuff, but that's where it all starts! Actually, each was waiting for his or her turn to sneak off and go "stomping mud puddles" in the parking lot. And yes, you guessed it: the one picking her nose is Heather, my daughter - just like daddy in so many ways.

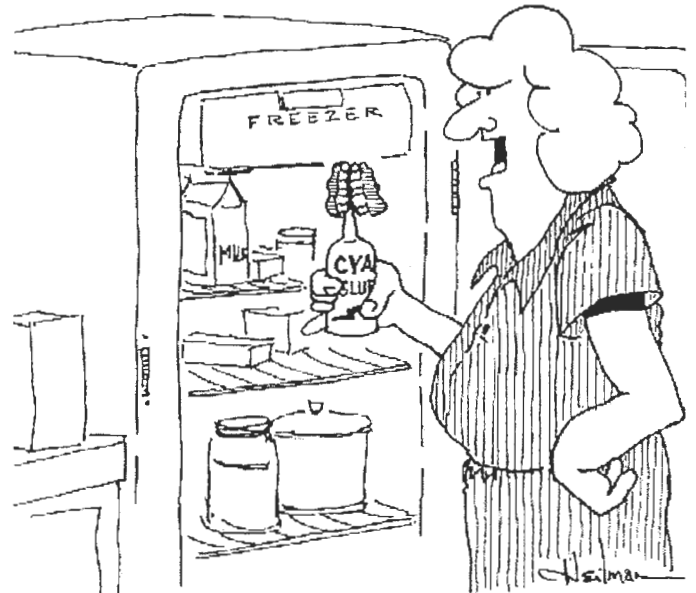
SCALE STUFF

Speaking of modelling: Jay Price, an excellent Scale R/C Modeller, has provided a couple of winter month projects for your review (located elsewhere in this newsletter). I don't know for sure, but I think Jay has been hitt'en the model glue a little).

In any case, his fine art work shines through with these interesting topics called "SCALE STUFF".

YOUR SECRET, TREASURED TIPS PLEASE

Not to many submissions this month. Well actually, none! Elsewhere in this newsletter however, is a copy of the VERY GOOD Winter 1996 addition of EAA "Too! Tips". I don't know how many members get this stuff, but I thought it all worthy of reprint.



"WHEN WILL THAT MAN EVER LEARN!"

provided by Zimpressions calendars

"MICRO FASTENERS"

I broke down and called this company, after seeing the ad many times in R/C Report and Model Aviation. I needed a weird, case hardened 3 inch long x #4 muffler bolt, which he didn't have, but he did have an 8 page catalog, which he sent to me promptly. No doubt about it, Micro Fasteners has a good selection of hard-to-find items and reasonably priced, apparently (and accordingly to them). It was worth the call: 1800 892-6917.

17 WAYS TO FALL OUT OF THE SKY

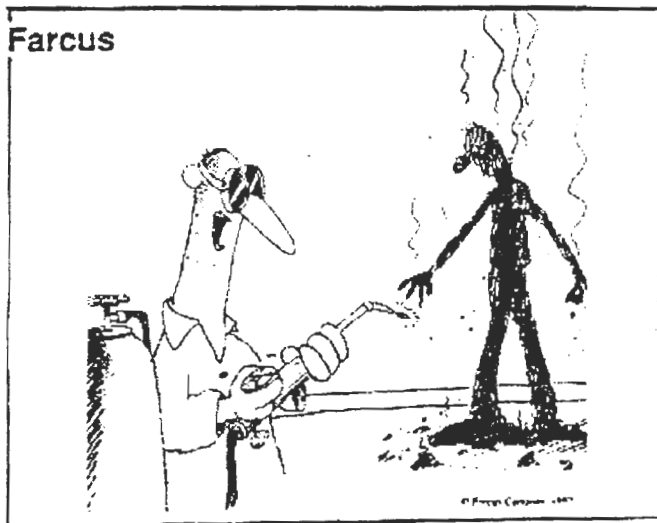
The "Mt. Diablo Chapter of the 99's is at it again. They are hosting another great pilot safety seminar **TUESDAY NIGHT, APRIL 2, 1996 AT 6:30PM.** The seminar will be held at the East ramp trailer building at the end of John Glenn Drive and will include door prizes & refreshments.

Included in the program is a video, claimed to be "one of the best and most popular video's ever produced on accident prevention. A story of pilots who find themselves in dangerous situations. Situations that never should have happened".

Please come / no RSVP required.

CLASSIFIED ADVERTISING

Items for sale by club members may be placed in this newsletter for **FREE!** Yeah - *it will cost you nothing!* All I ask is that you submit your FOR SALE item to me in writing and no later than "deadline for submissions" (that would be the 14th of every month). Please advise me as to how many issues you would like the ad run, otherwise I'll purge it after two or three runs, OK?



Never mind. Now it's working.

PROJECT FOR SALE: As an experienced EAA composite builder (a Vari-Eze 1980 and a Cozy 3 1988), I'm looking forward to the next project. The cozy is nearing completion, all major structure is finished except for strakes. On gear and canopy on fuselage. It is close to wiring, instruments, paint, and upholstery. Kevlar engine covers and wheel pants are included, as well as the heavy duty Cleveland wheels and brakes and pre-formed strake leading edges. Controls installed and all plans and newsletters included.

For the Airframe only (chap. 1-20) only \$16,800

For the Engine only (1252 TT 160hp O-320) \$6700

Completed Cozy 3s sell for \$35-60K, so this is an opportunity to save many years and dollars. For pictures, more information, please call Alan

McPherson, 707-785-2947 or write: P.O. Box 195, Stewarts Point, CA 95480. West Coast P/U or Delivery can be arranged too.

FOR SALE: "new in box", Cleveland Wheels & Brakes (p/n 050-07600). Ideal for small aircraft (Vari-Eze, Kitfox, etc.) \$450. (over \$600 anywhere else).

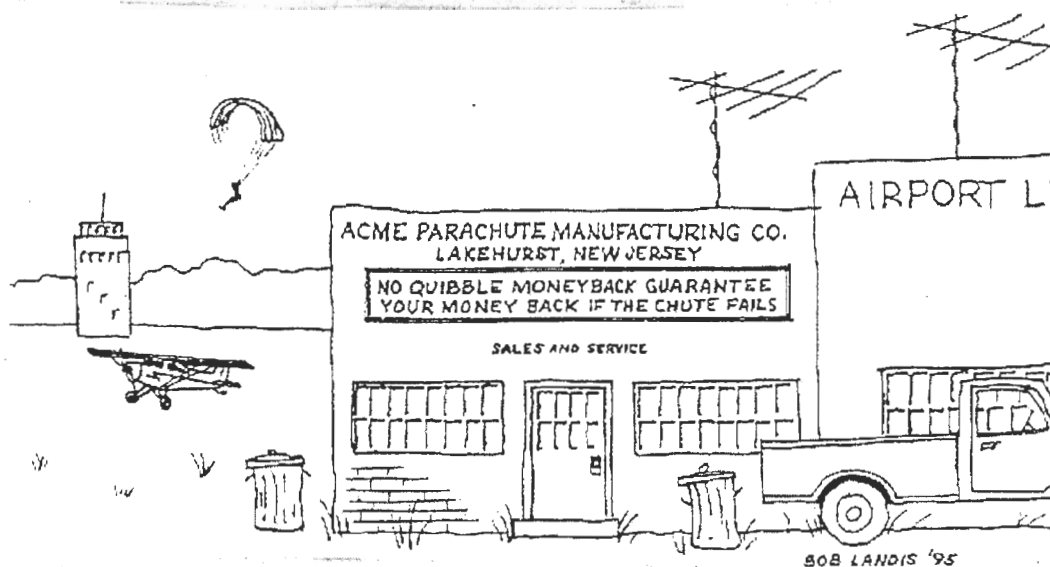
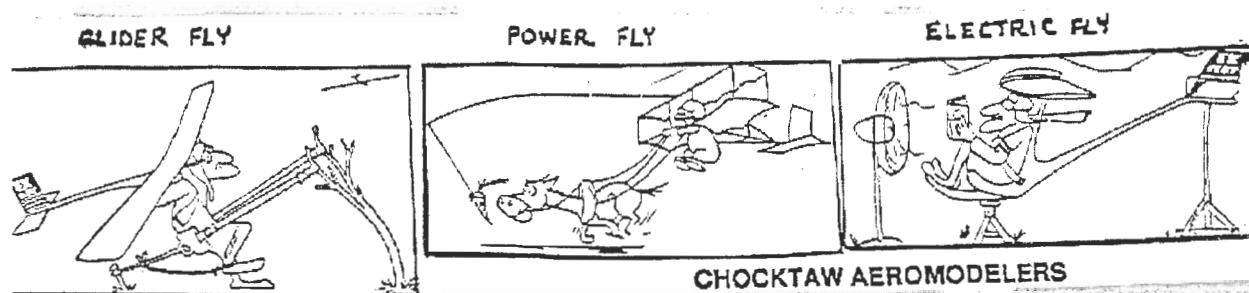
Prestolite Starter for Lyc. 320/360 - \$200.00 microfiche Reader that prints - \$50.00, smaller table top reader - \$20. Call Larry @ 510 758-3533

FOR SALE: IO360 Continental Engine 210 HP, 1700hrs, no engine log, timed out, all cyls still measure above 60lbs, includes all accessories, prop. governor, starter (24v), etc. \$4,500 (core value should exceed \$6,500) Also, MAULE WING, std from M-4, \$2,500 (909)684-2258 or (502)879-6126

FOR SALE: RV-4, 250 hrs, O-320 eng. \$38,000 or best offer. Jack Hogman (707) 253-0164 Lost Medical, must sell ASAP

FOR SALE: Custom Vari-eze, almost completed, including 125 hp Lyc O-235 f2b, Catto 3 bladed prop, Hunter wheel pants, electric nose gear & speed brake, Prop. Extension, Cleveland brakes, Stainless Exhaust, and much more. All the good stuff! Call Ron Richmond (510) 672-3210 for a great deal. No reasonable offer refused!

FOR SALE: Q235 project. Nearly finished. Lost medical and enthusiasm. Lyc. O-235, 327 SMOH, Carbon fiber spar, reflexors, speed brakes, new mags. Call for more specs. and photos. Asking Only \$10K. Call (510) 254-7843 Quent Durham, Orinda, CA



TOOL TIPS

AIR HAMMER, VACUUM CLEANER, AND DOPE ADHESION

By Dave Slaybaugh, EAA #12703, Technical Counselor #629

I would like to make a couple of comments about items in past newsletters. One, about the use of an "air hammer" versus a Rivet Gun. There are more differences than just cost. A true rivet gun hits harder and much slower than an air hammer. What happens with an air hammer when trying to drive any rivet much larger than a short #4, is that an air hammer will work harden the rivet before it is properly driven, which will result in a weak, unairworthy fastener. The air hammer will work on #3 rivets and short #4 rivets, but for any other structural application, I would highly recommend a true rivet gun.

Secondly, concerning Engine oil leaks, a vacuum cleaner can be used quite well if the leak is in the backbone area of the engine. Apply some vacuum to the crankcase, then loosen up the backbone bolts, clean the leak area well with a

good degreaser or MEK (be careful using MEK), with the vacuum still applied, run 2 to 4 applications of "Super Glue" into the seam, then retorque the bolts to the engine manufacturer's specifications. Then disconnect the vacuum source. Let this set for several hours before operating the engine. If worried about flammable fumes, there are several air powered vacuum systems available that work real well and are quite inexpensive.

Concerning Dope adhesion, we have seen Dacron fabric with some form of oil from the manufacture, which can lead to poor adhesion also. This can be helped if the fabric is washed with MEK. Alexander Airplane Supply also noted this problem to us. The best bet is to be sure the fabric is clean and work the first coat of dope into the fabric well with a brush, do not spray the first coat.

GLUE GUN

From KR Newsletter, Issue # 213, February 1995

I discovered the wonderful GLUE GUN method for gluing foam last fall. I had run out of 5 minute epoxy, and decided to borrow my wife's glue gun. It worked GREAT! I ran out and bought a full size one at a local discount store, and some glue sticks, and I've never been happier. One and 1/2 wings

completed so far with it and as long as I can keep myself in glue sticks, I'm happy. Five minute epoxy is pricey and is MUCH messier than the glue gun method. However, I've BURNT my hand, thumb, and fingers with HOT glue, and it smarts...As Homer Simpson says "DOH!!"

MORE ON CUT OFF WHEELS

From Puget Sound RVators, July 1995
By Curt Reimer

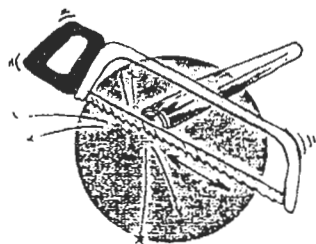
On Wednesday April 26, 1995, Richard Chandler wrote:

I now have a fragment of a Dremel cut off wheel embedded in the ceiling of my kitchen which I am going to leave there until move-out day as a reminder to be careful. Naturally, I know about what those things do and I was wearing my safety glasses at the time, but still...

There are two kinds of Dremel cut off wheels I have seen. One type has a fiberglass reinforcing mesh embedded in it, and stays together pretty well. The other (older?) type has no reinforcement and tends to disintegrate with no warning, sending fragments flying everywhere. I no longer use this type and don't recommend them under any circumstances.

PIPE CUTTING MADE EASY

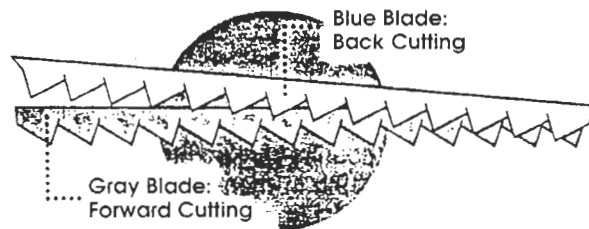
From Zenair News #91, November/December 1995



Problem: Making it easier to cut pipe of thin wall tubing with a hacksaw.

Solution: Try putting two blades in the hacksaw, one with the teeth facing the correct way, and the other blade beside it with its teeth facing the other direction (the wrong way). The result is that cutting is accomplished on every

push and pull, making the job go faster and easier.



BLEEDING BRAKES

From Lancair News

One recent discussion with a customer indicated a need to discuss the art of bleeding your brake lines. This is one of those things that we may be guilty of by taking it for granted that everyone knows the little tricks. So if you don't—read on.

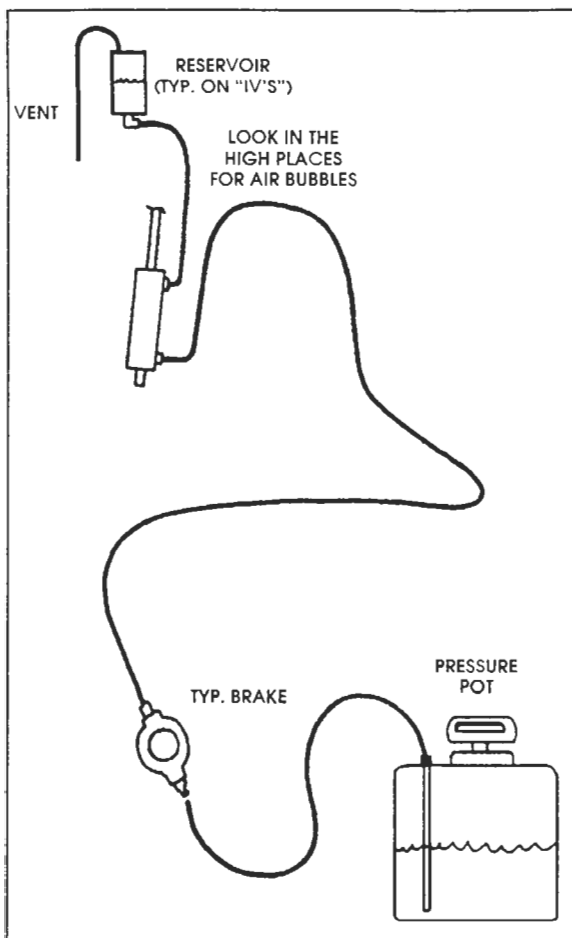
The "automotive" technique, as we all know from the car tinkering days (seems those days ended with the computerized cars beginning around the mid to late seventies) is to pump the pedal a bunch of times and while holding pressure, have someone crack the bleed valve open at the wheel. As the pedal dropped, one had to be careful to not let off the pedal until the bleed valve at the brake was closed again. And after a repeated

number of cycles, your brakes were declared free of air bubbles - hopefully!

Well, this technique will still work with aircraft brake systems, but there is a far better way. Yes, it takes a little piece of equipment, but it's worth the investment, or if you're a real stingy type, there is a "cheap" way as well.

Since air really prefers to go up, not down, you'll eventually find the air bubbles somewhere up, behind the instrument panel where the lines are wiggling all around and at the maximum physical height of their journey from brake to pedal. So why try to push that air all the way back down the lines? Yes, there is a better way indeed.

With a "pressure pot" you can simply fill the lines from the bottom up! How simple. In a perfect world, you'd never have a single air bubble, since the fluid would push all the air forward and up as you injected that fluid from the bottom of the brake assembly.



Well, it's not a perfect world, but this system really does work well.

At Lancair, we have a relatively inexpensive plastic pressure pot (holds about two gallons and has a simple little hand pump on the top as part of the cap). Put about two quarts of MIL 5606 in it and pump it up. Then connect it to the bottom bleeder line ftg. on the brake assembly. If you have the custom little ftg. made by Cleveland, life will be easier; but you can do it with anything suitable that makes a seal at the bleeder fitting.

With the lines all empty, simply con-

nect this contraption to the bottom (lower) bleeder ftg. on the brake assembly and begin forcing that red goop up the lines. It will slowly and steadily track its way up. Have an "observer" stationed under the instrument panel, so he or she can advise when fluid is moving into the cylinders at the pedal master cylinder locations. The red will move into the cylinders and then, miraculously emerge out the top and begin traveling toward the brake fluid reservoir (Lancair IV types) or with equal amazement, begin to dribble out the top of the master cylinders (on 320's) and start immediately ruining your carpet! Be ready with rags!

This process will effectively remove the air from the lines. Okay, so you want to know about the low cost method (sans plastic pressure pot)? Well, we at Neco used a simple plastic squeeze bottle for years to do this. A typical bottle might be something similar to a tall French's Mustard bottle. We'd simply snip the end until its resultant opening diameter fit tightly over the standard bleed valve ftg. on the brakes. Keep the bottle filled nearly full, press it on and squeeze. Once you're squeezing, crack open the ftg. and allow the fluid to enter. Doing this all by yourself will qualify you for the Magician's Union, so you may want to get a helper to work the wrench and watch what's happening up under the instrument panel. When you're about all "squeezed out" on the first "charge", use your wrench and snug the bleed ftg. closed before you stopped squeezing. Remember, whenever that bleed ftg. is open, you must be exerting pressure from the fluid source, otherwise, air could infiltrate. Recharge the bottle and repeat as necessary. It really does work, but that plastic pressure pot is a worthwhile and cheap investment!

TECHNICAL TIPS

RIVETS AND COUNTERSINKING

Often questions arise about fasteners used in sheet metal work, such as details about dimpling, countersinking, and rivets. While these details may seem insignificant, they may effect the structural performance of the fastened joint. Since most designers use the structural strengths (allowable) from the FAA publications which ultimately come from the Mil Handbook 5, it is important to know just how the fasteners were intended to be installed.

Resorting to the military standards we find that Mil-STD-403 provides lots of goodies that apply to our everyday sheet metal work. Things like the rivet hole diameter tolerances, minimum sheet thickness for machine countersinking and the like allow us to work in a manner that will have the fasteners produce their rated strengths. The information already published in FAA publication AC43-13.1A is not included herein.

RIVET HOLES AND COUNTERSINKING

The dimensions listed below are for rivet hole preparation for AN470 and AN426 type rivets. You will notice that the -3 dimpled rivet hole size calls for a #41 drill. The pilot on most commercially produced dimple dies may not fit this hole and you may have to get it ground. After the hole is dim-

pled, it is to be reamed to final size with the appropriate drill. Dimpling is the preferred method if the sheet thickness isn't too thick, as a dimpled joint is much stronger than one which is machine countersunk. For universal head rivets (AN470) the final hole size applies.

Rivet Size		0938 (-3)	.125 (-4)	.156 (-5)	.188 (-6)
Hole size before dimpling	Min.	.096 (#41)	.128 (#30)	.159 (#21)	.191 (#11)
Final Hole size	Min.	.098 (#40)	.129 (#30)	.161 (#20)	.191 (#11)
	Max.	.106 (#36)	.139 (#29)	.172 (11/64)	.204 (#6)
Sheet thickness for dimpling	Min.	.016	.016	.016	.016
	Max.	.051	.064	.072	.091
Sheet thickness for machine countersinking	Min.	.04	.051	.064	.072
Machine Countersink diameter	Min.	.160	.206	.267	.334
	Max.	.170	.216	.277	.344
Countersink diameter 1	Min.	.167	.215	.285	.349
	Max.	.177	.255	.293	.359

Notes:

1. Use this dimension when dimpling the top sheet and machine countersinking the bottom sheet.
2. Dimple and countersink dimensions provide for the head to be flush to .004" above the surface. Shaving may be used to remove a maximum of .006" of the head. Countersunk heads below the surface are not acceptable.
3. Dimensions are in inches. The numbers in brackets are the nearest drill size.
4. Maximum gap between dimpled, dimpled/countersunk sheets is .010.

SCREW HOLES AND COUNTERSINKING

Like rivet holes, screw holes are stronger if dimple countersunk.

Screw Size		#4	#6	#8	#10
Hole size before dimpling	Min.	.098 (#40)	.098 (#40)	.106 (#36)	.128 (#30)
Final Hole size	Min.	.112 (#34)	.138 (#29)	.166 (#19)	.191 (#11)
	Max.	.116 (#32)	.142 (#28)	.170 (#18)	.194 (#10)
Sheet thickness for dimpling	Min.	.016	.016	.016	.016
	Max.	.051	.064	.081	.091
Sheet thickness for machine countersinking	Min.	.064	.072	.081	.091
Machine Countersink diameter	Min.	.220	.284	.332	.385
	Max.	.230	.294	.342	.395
Countersink diameter 1	Min.	.215	.283	.333	.386
	Max.	.225	.293	.343	.396

Notes:

1. Use this dimension when dimpling the top sheet and machine countersinking the bottom sheet.
2. Dimple and countersink dimensions provide for the head to be flush to low.
3. Dimensions are in inches. The numbers in brackets are the nearest drill size.

SOLID RIVET SHOP HEAD SIZE

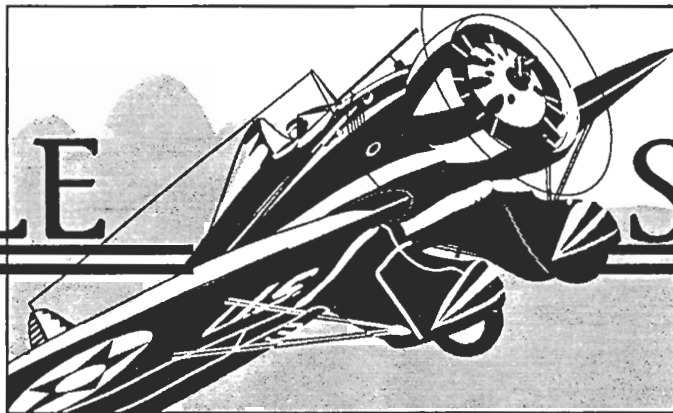
The following table provides the min./max. dimensions for rivet shop head size.

Notes:

1. Min. dia= 1.25D, Max. dia= 1.5D
2. Min. height=.5D, Max. height=.66D
3. Applicable to 2017-T rivets only ("AD" rivets)

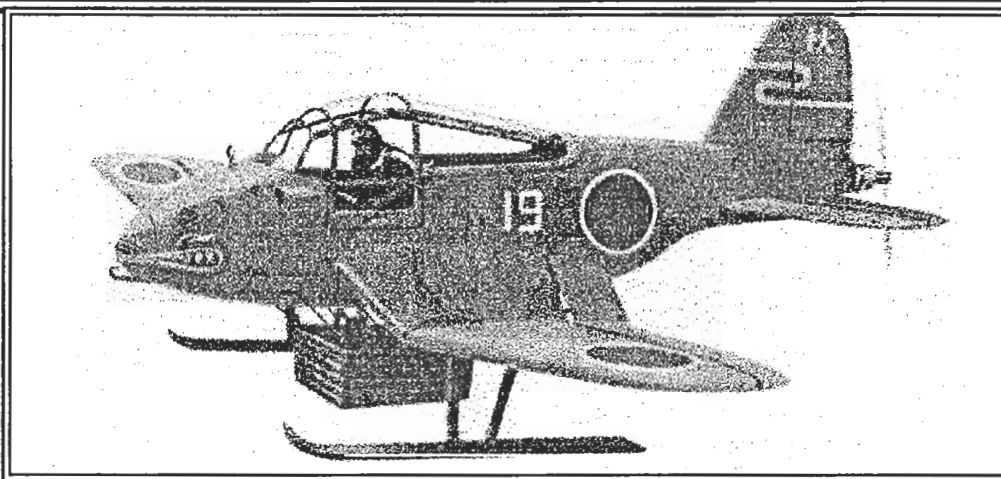
Rivet Size		Diameter	Height
.0938 (-3)	Min.	.125	.047
	Max.	.140	.062
.125 (-4)	Min.	.156	.062
	Max.	.187	.078
.156 (-5)	Min.	.203	.078
	Max.	.234	.109
.188 (-6)	Min.	.234	.093
	Max.	.281	.125

SCALE STUFF



By JGrant Price

Something to do between 3 & 5 a.m.



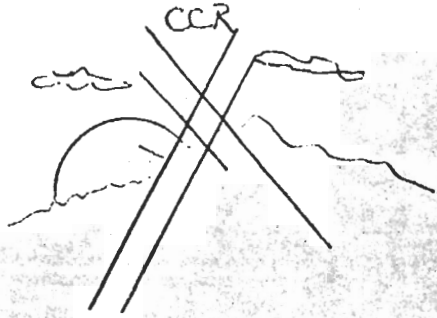
KAKAKA "SHIRLEY" AMPHIBIOUS PEDAL-BOMBER

The originality of Japanese aircraft design was never in question after the Shirley wobbled onto the scene, albeit briefly, in the closing months of the Pacific war. This light (75 lbs.), cheap (\$1.49), last-ditch gesture of a desperate Japanese High Command was in fact little more than a bicycle of the air, its propeller turned by pedal power from the pilot. Towed behind a torpedo boat, the Shirley would sooner or later rise and fumble skyward, staying aloft exactly as long as its pilot's stamina held out and his sprocket chain

stayed intact. Hopefully, a U.S. ship would soon be sighted; then, braving massive ack-ack fire as well as large birds, the fanatic suicide candidate at the controls, or handle bars, aimed toward his quarry and pumped furiously until directly overhead. Then, at the flick of a lever, the underslung wicker basket fell away and hit the deck below—and one rabid dog was disgorged to run amuck and wreak its mad havoc. The ravaging animal, it was assumed, would take a few Yanks with it by the time the end came. Ingenious—but

not ingenious enough; the dogs proved susceptible to seasickness en route to the target and every known Shirley mission ended in anticlimax with a dazed mutt vomiting among the gobs while a paper airplane slowly sank off the starboard bow.

reprinted from a 1980 Playboy



southwest
section

Mt. Diablo Chapter
of the 99's

Presents
on

April 2, 1996

Tuesday night
6:30pm

Buchanan Field Airport

East ramp trailer building
end of John Glenn Drive

17 Ways to Fall out of the Sky

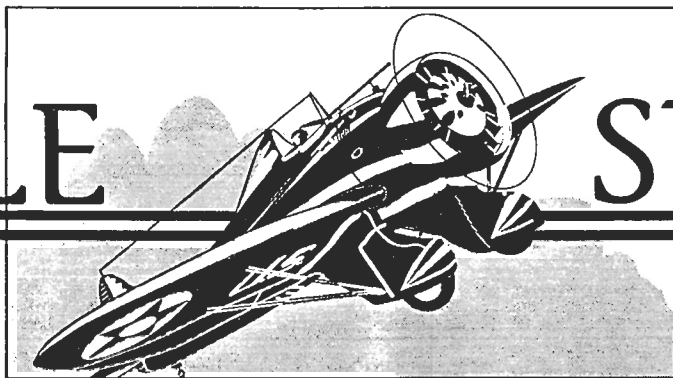
door prizes at intermission
refreshments
seats to a great show

please come and bring a friend
no need to r.s.v.p.

One of the best and most popular video's ever produced on accident prevention. A story of pilots who find themselves in dangerous situations. Situations that never should have happened.

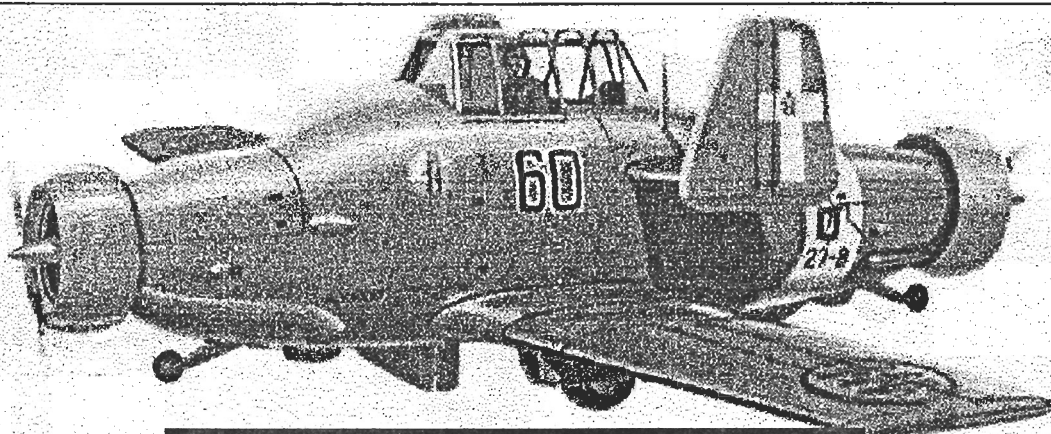
LKK -
Can you
mention
this in
the EAA
newsletter

SCALE STUFF



By JGrant Price

New scale projects for the winter months!



CAPRONI-MORONI C2 "SCUD" EXPERIMENTAL FIGHTER

When the tide of war turned against it, Fascist Italy turned with the tide. The C2, or "SCUD", was one direct result. The engineers of Aeronotico Piccolino Abagano Elari Quattori in Turin were charged with designing an aircraft of modern fighter type that could, should word come in mid-air of another change in Italian allegiance, instantly reverse course and become part of the now friendly force. Thus the unique two-engine configuration, central cockpit with swivel seat and dual controls facing fore and aft. Time for the SCUD to switch directions and sides was set at less than two minutes from a top speed of 265 mph by air-force consultants. This performance criterion was never tested, much

less met, since pilots refused to attempt it, except on the ground with an ambulance close by. One pilot did take the sole SCUD prototype aloft, but

once airborne decided to visit his mother in Salerno and wrecked the craft crash-landing on a nearby beach. The SCUD was painted gold by artisans formerly employed in upkeep of the Sistine Chapel. A remarkable feature of the plane, considering its fighter designation, was the total lack of armament. The designers successfully resisted all attempts to ruin its unbroken lines with ugly guns.

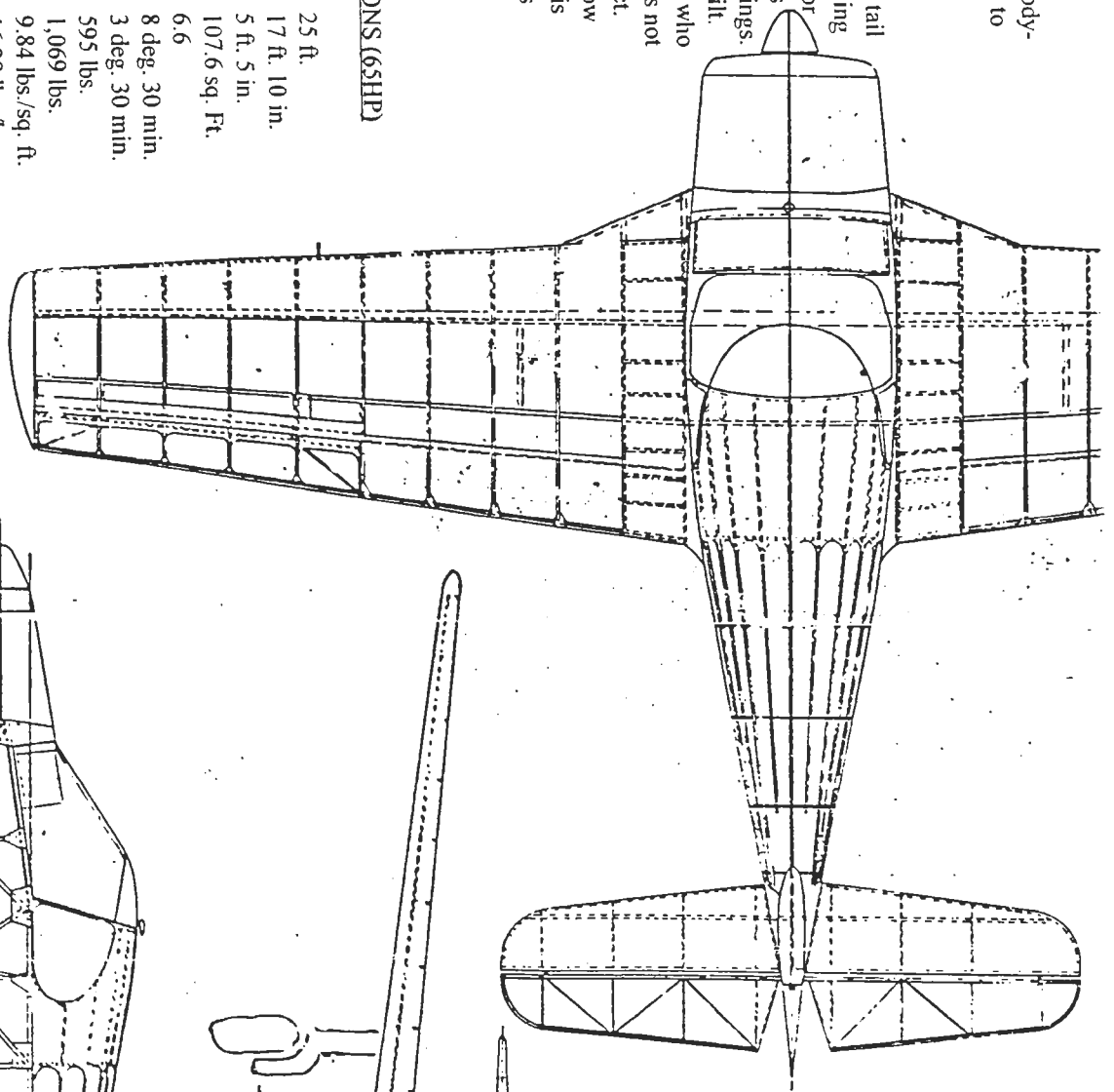
reprinted from a 1980 playboy

FOR SALE

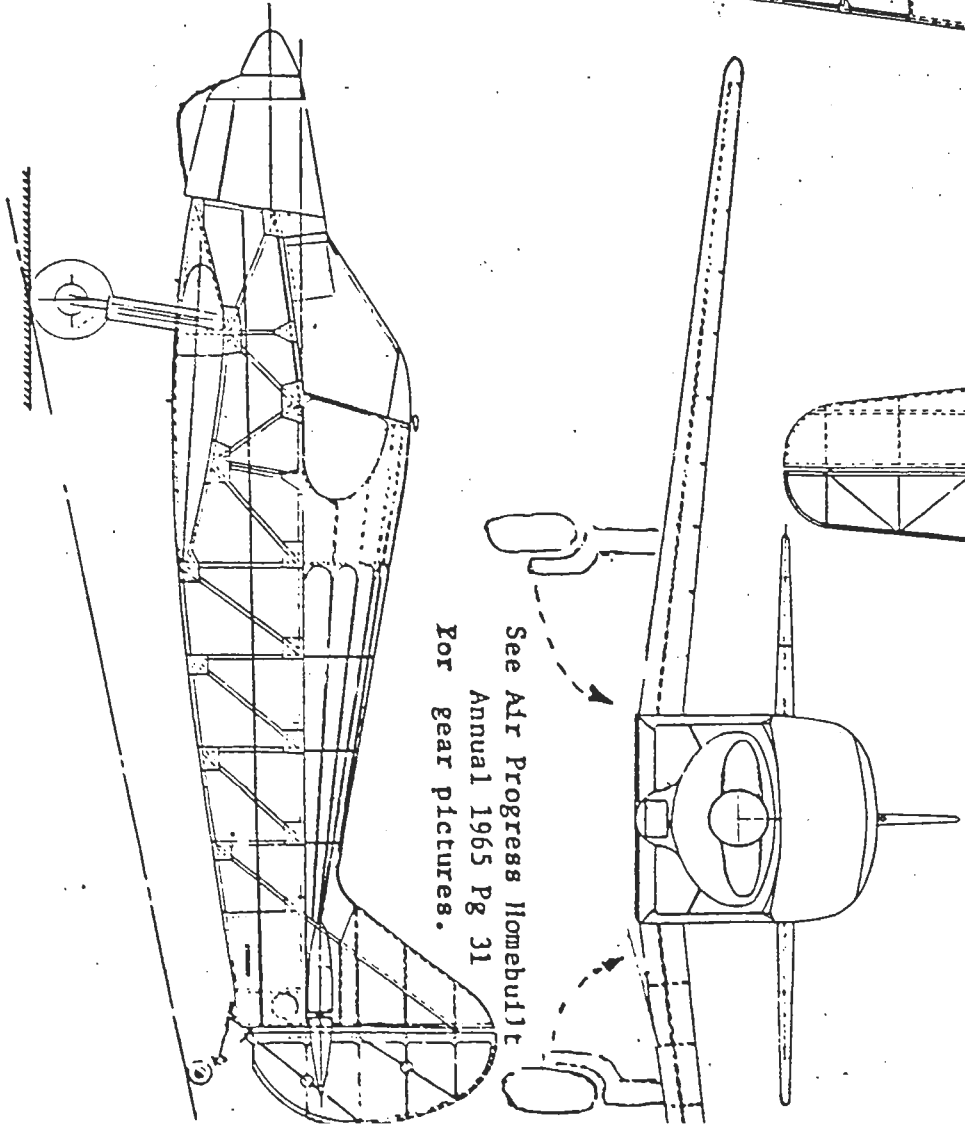
GY 20 MINICAB also called "Woody-Swift" (because of the resemblance to the Swift) must be sold. This is a beautiful piece of craftsmanship which, as the saying goes, must be seen to be appreciated! Wings and tail surfaces are ready for covering. Wing modified for retractable gear and for 90-100 HP engine. All hardware is included. Full set of detailed drawings. Only the fuselage remains to be built. This is a good project for someone who wants to build a homebuilt but does not want the hassle of the whole project. Note: the specifications given below are for 65 HP. With 90-100 HP this ship really performs. This ship has received considerable attention in back issues of Sport Aviation. It really is beautiful!

GY-20 MINICAB SPECIFICATIONS (65HP)

Span	25 ft.
Length	17 ft. 10 in.
Height	5 ft. 5 in.
Wing Area	107.6 sq. Ft.
Aspect Ratio	6.6
Dihedral	8 deg. 30 min.
Incidence	3 deg. 30 min.
Empty Weight	595 lbs.
Loaded Weight	1,069 lbs.
Wing Loading	9.84 lbs./sq. ft.
Power Loading	16.28 lbs./hp.
Maximum Speed	124 mph
Cruising Speed (fixed gear)	112 mph
Stalling Speed (flaps up)	47 mph
Initial Rate of Climb	680 ft./min.
Service Ceiling	13,100 ft.
Range (normal tank)	466 mi.



GY-20 MINICAB



See Air Progress Homebuilt
Annual 1965 Pg 31
For gear pictures.

**FOR MORE INFORMATION CALL:
RAY OR NANCY NIELSEN**

(805) 595-7194 (San Luis Obispo, Ca.)

FAA CHAPTER 170

\$999.00 OR BEST OFFER

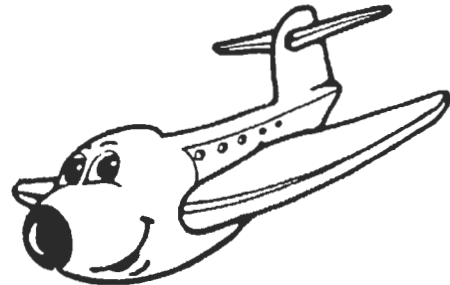
**EAA
CHAPTER 52
YOLO COUNTY AIRPORT HANGAR**

**MAINTENANCE
SEMINAR**

SATURDAY

APRIL 13, 1996

9:00AM - 2:00PM



**COME AND JOIN US FOR A COMPLETE SEMINAR
ON OWNER MAINTENANCE. SEMINAR WILL INCLUDE
SPARK PLUGS, WHEEL BEARINGS, TIRE ALIGNMENT,
BRAKE MAINTENANCE, WEIGHT & BALANCE**

**AND OF COURSE ENJOY SOME GOOD OLD HANGAR FLYING.
FLY OR DRIVE INTO CHAPTER 52'S YOLO COUNTRY HANGAR.
SEMINAR IS FREE OF CHARGE AND OPEN TO THE PUBLIC
SMALL FEE FOR LUNCH.**

**FOR MORE INFORMATION AND RSVP
CALL:
GAR ROOT 916-922-5070
PHILLIP KEY 916-974-9300**

**DIRECTIONS
HWY 13 NORTH OUT OF DAVIS OR SOUTH
OUT OF WOODLAND TO ROAD 29. ROAD 29
WEST TO YOLO COUNTY AIRPORT.**

HANGAR IS MID-FIELD ON THE EAST SIDE

County of Ventura Department of Airports

Presents the

EAA Chapter 723

(Experimental Aircraft Association)

16th Annual Fly-In

Featuring

The Confederate Air Force

Camarillo Airport

June 15th and 16th, 1996

In recognition of the 51st anniversary of the end of World War II, the Confederate Air Force has scheduled the appearance of:

B-17 Bomber, Blitz Bomber

Japanese Zero • Bearcat • P47 • B25 • F8F • P51 • TBM • SNJ • AT6's

Hot Air Balloons • Super Connie Experimental Aircraft Displays

Homebuilts • Antiques • Classics • Warbirds

Ultralights • Seminars • Aircraft Judging

Workshops • Aviation Flea Market • Vendors • Car Clubs

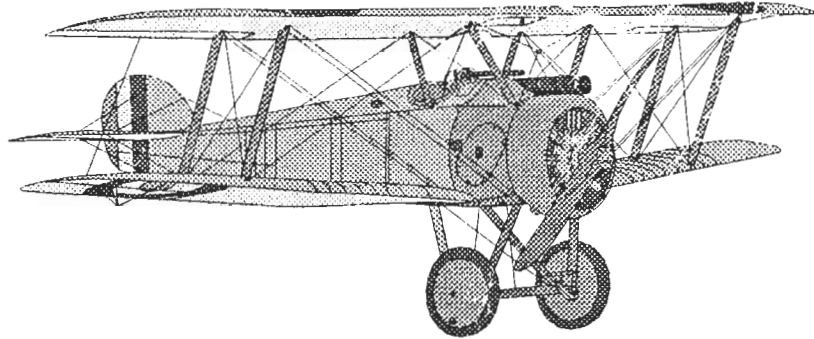
Boppo the Clown • Barney • Kiddy Tours • Fly-in Food

For More Information Call EAA Gary Stucker (805) 985-4058

CAF Russ Drosendahl (818) 888-1679 • Camarillo Airport Jeff Rountree (805) 388-4240

PLEASE - NO ICE CHESTS

Take Ventura Freeway to Las Posas Road, turn south and follow the signs.



YOU ARE INVITED TO THE
22nd ANNIVERSARY OF EAA "HANGTOWN" CHAPTER 512
at
PLACERVILLE AIRPORT

SATURDAY, APRIL 6, 1996
PANCAKE BREAKFAST 08:00 A.M. TO 11:00A.M.

Placerville Airport is located in the foothills of the Sierras at a field elevation of 2583 with a paved 4200' runway. Unicom is 122.8. Runways 23 and 05 (05 right traffic). Enjoy our pancake breakfast of pancakes, sausage, fruit, juice, coffee, tea for \$4.00 (Children \$2.00) in our EAA hangar located on the northwest side of the field with a beautifully landscaped picnic area adjacent. When approaching and landing at PVF take in our magnificent view of the Sierras. No rain date -- our hangar is large and heated. We'll be signing up youngsters for a Young Eagle rally at a future date. We'll also have static displays of antique and homebuilt aircraft. Come join us for breakfast and the anniversary celebration. For additional information call:

Bill George 642-8063, Al & Gail Herron 626-4165

EAA Warbirds of America Squadron No. 11, Inc.

937 BLUEWATER DR. VACAVILLE, CA 95688-8546
(707) 447-1148

LOCAL CALIFORNIA Warbird Squadron Hosts WW II Bombers

EAA Warbird Squadron No. 11 will host the two greatest bombers of World War II. On Monday, May 20th, the B-17G Flying Fortress "Nine-o-Nine" and B-24J Liberator "All American" will arrive at the Nut Tree airport. This is the first time that these two great warriors will be at the Nut Tree. They will be on display at Blue Ridge Aeronautics (707) 451-4400, Monday 2:00PM until dusk, Tuesday from 9:00AM till dusk and departing Wednesday afternoon.

During World War II, B-24 Liberators dropped more bombs and flew more combat missions than any other aircraft. B-24's served the USAAC in every theatre of the war and were the most produced American Aircraft of all time. The "All American" is one of only two flying B-24's in the world. It was named after a 461st Bomb Group, 15th Air Force plane which on July 25th, 1944, shot down 14 enemy aircraft fighters. On October 4th, the original All American was lost over Yugoslavia. All of the crew survived.

The B-17G Flying Fortress "Nine-o-Nine" flew 140 missions without an abort or loss of crewmen. Assigned to combat duty on February 25th, 1944, by April 1945 "Nine-o-Nine" had made eighteen trips to Berlin, dropped 562,000 pounds of bombs, flown 1129 hours, had 21 engine changes, 4 wing panel changes, 15 main gas tanks and 18 Tokyo tanks changed aside from considerable flak damage. The B-17G now restored as "Nine-o-Nine" was built by Douglas Aircraft and accepted on April 7th, 1945. It has been completely restored to full 1944-45 military configuration with Bombs, Guns, Turrets, Radios, etc.....

EAA Warbirds Squadron 11 will kick off this great event the preceeding weekend with a display of members Warbirds.

For more information, please contact Larry Smigla, acting Squadron Commander at (707) 447-1148.

March 2, 1996

Mr. Bruce Seguine
President, EAA Chapter 393
C/O Larry Laughlin
3495 Savage Ave.
Pionole, CA 94564-1231

Dear Mr. Seguine,

In 1992 I completed a book, FLIGHT TESTING HOMEBUILT AIRCRAFT. The book was written because, within a short period of time, a good friend of mine was killed in the crash of a homebuilt and several homebuilts in my chapter were damaged or destroyed in accidents. I have always believed that most of these incidents were avoidable. I had also worked as a professional flight test engineer for Sikorsky Aircraft for nine years so I felt that I had some special qualifications to help homebuilders do a better job of testing their aircraft.

Writing the book turned into a project which took ten years. I wound up modifying modern test methods to use simple techniques and available equipment. I found myself using methods which worked in the thirties and forties which still work well today. I was also fortunate enough to be able to learn from some real experts.

The objective was to provide the average homebuilder with the tools to test his homebuilt more safely, make it more pleasant to fly and learn to fly it better.

Since 1992, FLIGHT TESTING HOMEBUILT AIRCRAFT has been distributed by Iowa State University Press. Unfortunately it has not seen the wide distribution which I had hoped would make it most effective. In order to get more books in the hands of the people that I hope can use them best, I am willing to sell them at a considerable discount; but only through EAA Chapter Presidents. FLIGHT TESTING HOMEBUILT AIRCRAFT currently retails through Iowa State at \$19.95 per copy. I will sell copies to you for members of your chapter at \$15.00 plus \$4.00 for packaging and shipping.

Send a check directly to me, at the address below, and I will send the copies as quickly as possible. If you have any questions please feel free to call me at (203) 426-4684.

Sincerely



Vaughan Askue
EAA 37812
5 Cobblers Mill Rd.
Sandy Hook, 06482



EAA Northern California

The "City of Gold" EAA Chapter 1112
227 Chuck Yeager Way Oroville, CA. 95965

EAA Chapters

Chico 427

Concord 393

Dunsmuir 654

Fresno 97

Fresno 376

Georgetown 1074

Hayfork 824

Livermore 663

Modesto 90

Napa 167

Oroville 1112

Paradise 735

Placerville 512

Redding 157

Redwood City 20

Roseville 526

Sacramento 52

San Andreas 484

Truckee 1073

Watsonville 119

Willets 1027

Antique/Classic Chpts

Sacramento 25

Hayward 29

International Aerobatic Club

Hayward 38

Sonoma 85

Warbird Squadrons

Vacaville 11

To: Officers and Members of
EAA, A/C, IAC, Ultralight
Chapters and Warbird Squadrons
of Northern California

EAA Chapter 1112 will host, and invites you to attend a
Northern California Regional Conference on Saturday,
June 15 in Oroville for the purpose of:

- Coordinating aviation events in the region
- Exchanging information and/or help on chapter events
- Cooperating in an effort to hold a West Coast "Oshkosh" in the region

We would like the Chapter/Squadron President or his/her representative to attend this important conference which can be an ongoing event to substantially benefit aviation in Northern California.

Mr. Bob Mackey, EAA Chapter Executive Director / Corporate Risk Manager, would like to address this Conference regarding a West Coast Regional Oshkosh type fly-in. Please respond at your earliest convenience so that Bob can be assured it will be well attended and definitely mark it on his calendar.

The tentative time is 7:00pm. Transportation will be provided from the Oroville Airport. Motel reservations can be made for you.

Thumbs up,

Dix Mackey, President
(916) 532-0919

MOTEL ACCOMMODATIONS FOR EAA REGIONAL CONFERENCE ON JUNE 15, 1996, HOSTED BY CHAPTER 1112, OROVILLE, CALIFORNIA

TRAVELODGE

580 Oro Dam Blvd.
Oroville, CA 95965
800-578-7878 916-533-7070
FAX 916-532-0402
(70 units)
Continental breakfast included

1 person, 1 bed	\$45
2 persons, 1 bed	45
2 persons, 2 beds	55

Will give 1 complimentary room for
Every 10 rooms or 10% discount
for 10 or more rooms.

We would recommend this motel as it has recently undergone renovation. Please identify yourself as "EAA Group" when making reservations.

VILLA MOTEL

1527 Feather River Blvd.
Oroville, CA 95965
916-533-3930
(20 units)

1 person, 1 bed	\$40
2 persons, 1 bed	42
2 persons, 2 beds	46

This is an older motel but very clean and also a good choice. You must identify yourself as "EAA Group" in order to get these rates.

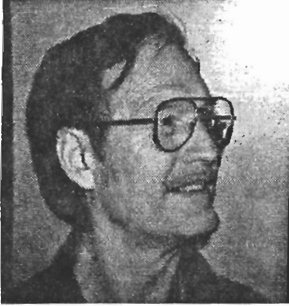
BEST WESTERN GRAND MANOR

1470 Feather River Blvd.
Oroville, CA 95965
800-528-1234 916-533-9673
FAX 916-533-5862
(54 units)
Continental breakfast included

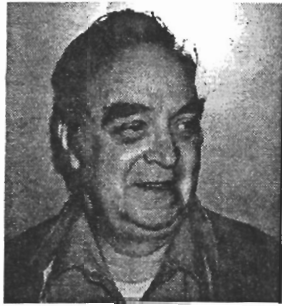
2 queen beds	\$59
1 king bed	59
2 king beds	69

JOIN THE EXPERIMENTAL AIRCRAFT ASSOCIATION

BLAME THESE GUYS FOR EVERYTHING!



PRESIDENT
Bruce Sequine 671-4943



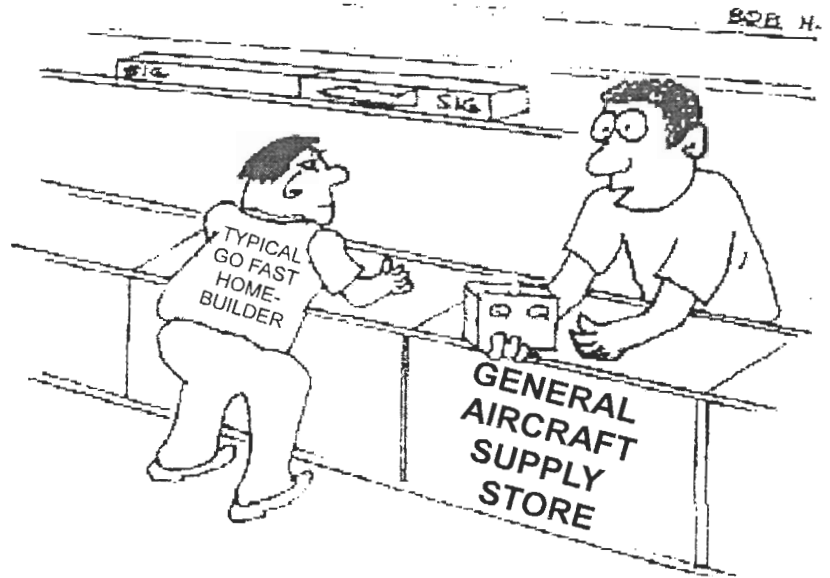
SECRETARY/TREASURER
Louis Goodell 682-4198



VICE PRESIDENT
Bruce Hobbs 757-0618



NEWSLETTER EDITOR
Larry K. Laughlin 758-3533



JUST HOW FAR BEYOND YOUR MEANS TO YOU WANT TO GO?

From: EAA Chapter #393
Newsletter Editor
Larry K. Laughlin
3495 Savage Ave.
Pinole, CA 94564

"Homebuilders do it with BETTER PERFORMANCE"