



AMA Chapter #3798

**Chino Valley  
Model Aviators, Inc.**

# Official News Letter



IMAA Chapter 705

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www.chinovalleymodelaviators.com

*"To create an interest in,  
further the image of, and  
promote the hobby/sport of radio  
controlled aircraft"*

### Inside this issue...

- Check Out EDF's 2
- Member Project 2
- Name That Plane 2
- Field Photographs 3 & 4
- 75th Piper Cub Birthday 5
- Club Christmas Banquet 6
- Member Fix Up Project 7
- Safety is Always an Issue 7
- Twin Beech Mania 8

## MERRY CHRISTMAS CVMA MEMBERS



CHRISTMAS BANQUET WELL ATTENDED: A TOTAL OF 46 CAME TO GABBY'S IN CHINO VALLEY

**"Success flourishes only in perseverance — ceaseless, restless perseverance."**  
  
*Baron Manfred von Richthofen*

Support Our Local Hobby Shop



The Safeway Center  
Prescott Valley, AZ  
MAX & CINNAMON BANDY  
THEY SUPPORT OUR CLUB





## Checkout Electric Ducted Fans Part II

With the ever increasing popularity of Electric Ducted Fans a lot of questions get asked. EDFs have their own unique set of challenges but at the end of the day they fly on the same principles of any other aircraft. Some people are afraid of getting into EDFs because they seem complicated in nature.

While there is a bit of added complexity in assembling EDF models, the assembly of a ducted fan unit can be accomplished by most any modeler. Here's some basic EDF jargon to start developing an understanding of EDFs.

### Rotor

Simply put the rotor is the part that spins inside the shroud/housing. Much like a propeller, varying amounts of blades and pitch pat-

terns are utilized to produce different power curves. Some need more RPM and higher amperage to kick out the power needed to keep them in their optimal efficiency range, while others work best at lower RPMs and amperages.

### Fan unit

The fan unit is often called the completed fan assembly with the motor mounted in the shroud/housing, and the rotor attached.

### Shroud

The shroud is the thin outer layer made of many different materials. Some are plastics where as other more high end models can be made of fancier carbon fiber materials. Most shrouds contain a plastic 'housing' in which the motor mounts inside, but some others are made of metal which

helps assist with the cooling of the motor better. Ultimately the shroud is responsible for housing each of the individual components which make up the electric ducted fan unit.

### Efflux Velocity

This is the speed at which the air is exiting the rear of your jet. This helps give a good indication of how fast your jet can potentially move. Most average people won't be able to measure this figure, but there are ways to fabricate your own testing equipment.

### Thrust

Thrust is the amount of 'push' your fan produces.

### Intake's

This is the area where air enters the model for it to be accelerated by the fan.

## MARK YOUR CALENDARS

### Check AMA Journal

Jan 18-20 Phoenix, AZ  
Winter War Birds  
Sun Valley Flyers

Jan 24-27 Electric Festival  
Superstition Air Park

## CVMA MEETINGS



Third Wed. of every month at 7pm.

Prescott Airport

## MEMBER PROJECT



A Ray Stone biplane design with a Saito 4Stroke for power.

## CVMA MEMBERS Kick In Your Afterburner...



BUILD SOMETHING, BRING IT TO OUR NEXT MEETING!

## CAN YOU NAME THIS PLANE?



Photo by Randy Meathrell

Answer on page 8

## CVMA NEWSLETTER

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President — Jay Riddle

Vice President — Bob Noulin

Sec't./Treas. — Rick Nichols

Flight Instructor — John Stewart

Safety Officer — John Stewart

Board Member — Allan Collins

Board Member — Dennis O'Connor

Newsletter Editor — Bob Shanks

Jay Riddle's Big Yak



# CLUB PILOTS AND THEIR AIRCRAFT

Don Ferguson readies his Foam Fokker D-7



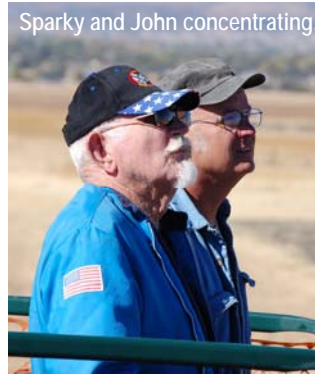
Rudy Arp's EDF



Glenn Heithold's red G-20 gas powered design.



Sparky and John concentrating.



Dennis O'Connor and his Yak



Al Collin's big electric aerobat



Don Ferguson's foam DR-1





Dennis O'Connor's Skyraider

# CLUB PILOTS AND THEIR AIRCRAFT

What are those strange flying machines down there?



Don Ferguson's electric P-38. The Japanese in WWII called it the "forked devil".



## Boeing 787 Composite Wing

### 787 Wing Flex



**A** On ground    **B** 1-g Flight (~12 ft.)    **C** Ultimate load (~26 ft.)    *Source: Boeing*

## CURVING COMPOSITES

Guy Norris

Composite materials account for 50% of the 787 structure by weight, versus 12% on the 777. For aluminum the numbers are almost reversed, with the material making up 50% of the 777 by weight, against only 12% for the 787. The use of a carbon-composite laminate for the primary fuselage, wing and empennage structure has enabled designers to take advantage of the material properties in several ways. These range from lighter, but stronger structures which, in turn, permit the use of more aerodynamically efficient, higher-aspect ratio (10:1) wings for long-range cruise, to higher cabin pressures and larger window cutouts without the need or weight penalty of a structural reinforcing window belt. The upward bending or dihedral of the narrower chord wing gives the 787 one of its most distinctive features, and raises the tips by 12 ft. in normal 1g flight, and up to 26 ft. at ultimate load. ☺

Tiger 60 pilot looks wide eyed and ready to go, he is ready for Dennis!



Dennis O'Connor and his Tiger 60



...AFTER SEVEN HOURS OF WADING THROUGH HEIGHTENED AIRPORT SECURITY, LARRY FACED ONE FINAL CHALLENGE...



## JIS Dimple Frustrations

by Gerry Roedel,

from the Tri-County R.C. Club, New Jersey

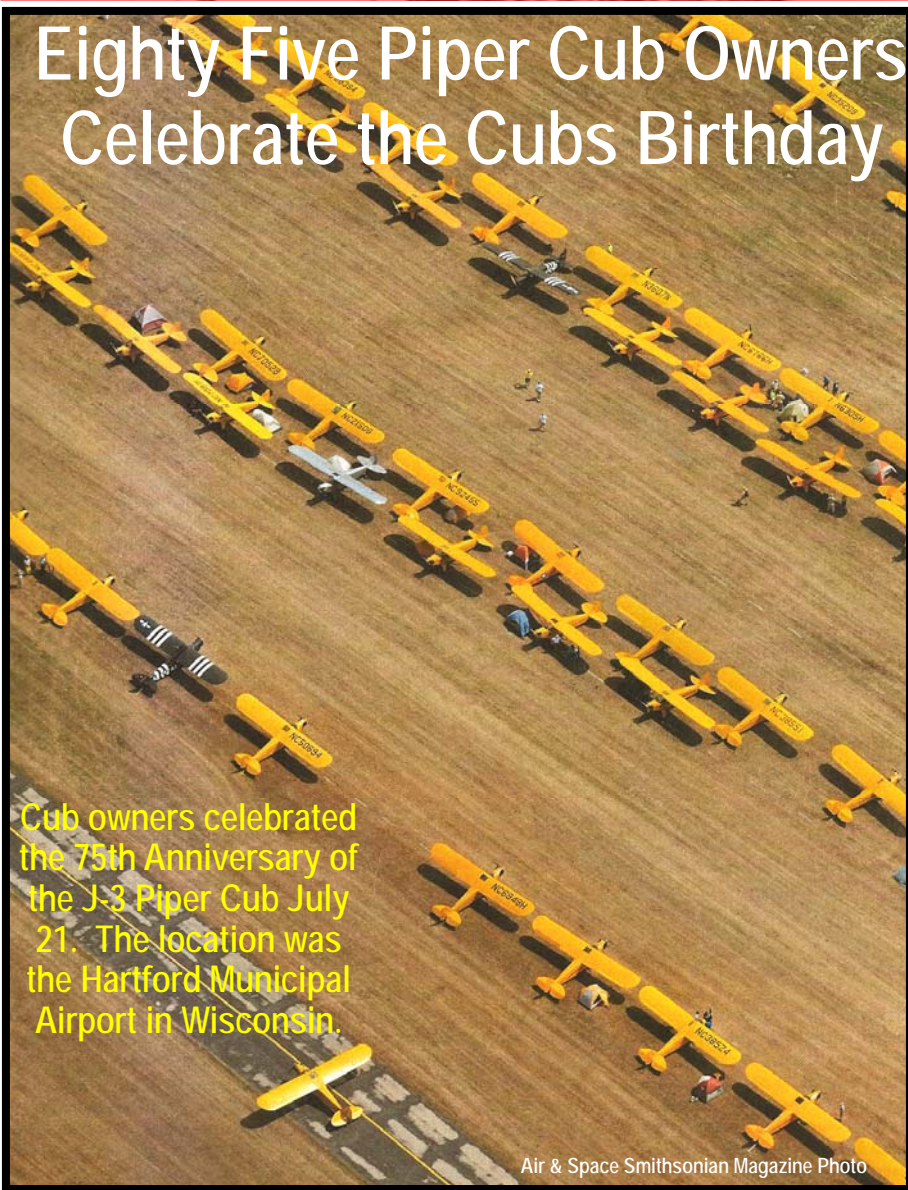


Since most ARFs, helicopters, and even engines are built in the Far East, many manufacturers use what are called "JIS" crosshead screws; JIS meaning Japanese Industrial Standard.

The screws look almost identical to Phillips, but they are just different enough to make you a little crazy. Of course just like metric screws and bolts, the manufacturers may include both JIS and Phillips screws in your kit.

The JIS can be identified by a tiny dimple on the head, or by the fact that you can only get them out by using vise grips! You won't find JIS screwdrivers for a dollar at Harbor Freight, but they are available online in a wide range of prices. Just do a Google search for JIS screwdrivers.

## Eighty Five Piper Cub Owners Celebrate the Cubs Birthday



Cub owners celebrated the 75th Anniversary of the J-3 Piper Cub July 21. The location was the Hartford Municipal Airport in Wisconsin.

Air & Space Smithsonian Magazine Photo



"Now hear this, Now hear this, your dinner is getting cold."



Randy Meathrell's scratch built Pronto:  
Featured in September 2012 Issue of Model  
Airplane News.

# Christmas Banquet Highlights

We all owe a big thanks to *Rick Nichols* our secretary/treasurer for setting up and following through on our annual Christmas Banquet at Gabby's in Chino Valley.

The food was great as it always is and the buffet type serving line insures everyone will get plenty and only the food they like that's being

served. The chicken and beef dishes with all the trimmings were all yummy.

The gift exchange was hilarious with all sorts of wild gifts from sausage rolls, elf hats to rubber chickens. There was lots of laughter and club interaction with spouses we don't often see at the field.

There were a number of planes on display. *Rick Nichols* brought

three of his Fun Bats, his Clouds Fly glider and his combat little electric stick. *Bob Shanks* hung up his EDF U-2, his scale German Arado 76 used as a trainer by the Germans. He will be converting it to electric power as a future project. Bob also brought his small EP Edge 504. *Don Ferguson* brought his foam WWI Ger-

man Fokker D-7.

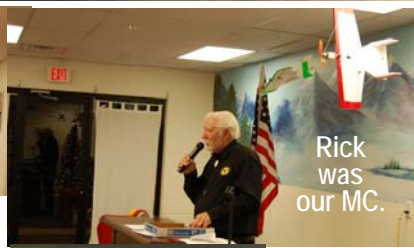
Having the Fun Bats hung in front of the mountain mural added a nice touch.

We have a great club, let's keep moving forward in 2013.

Get out into your workshop between Christmas festivities and build something. Bring your project to our meeting in January. Merry Christmas CVMA members.



Walt Findley got an elf hat.



Rick was our MC.



Group hug, Cindi, cinnamon, Barbara and Max.



Rick got a sausage roll.



Don Ferguson got a rubber chicken.



Ken Shephard takes Randy Meathrell's gift (L). One steal of a past gift was allowed. Randy is shedding some fake tears!



All but one of the planes on display are regular flyers at our field.

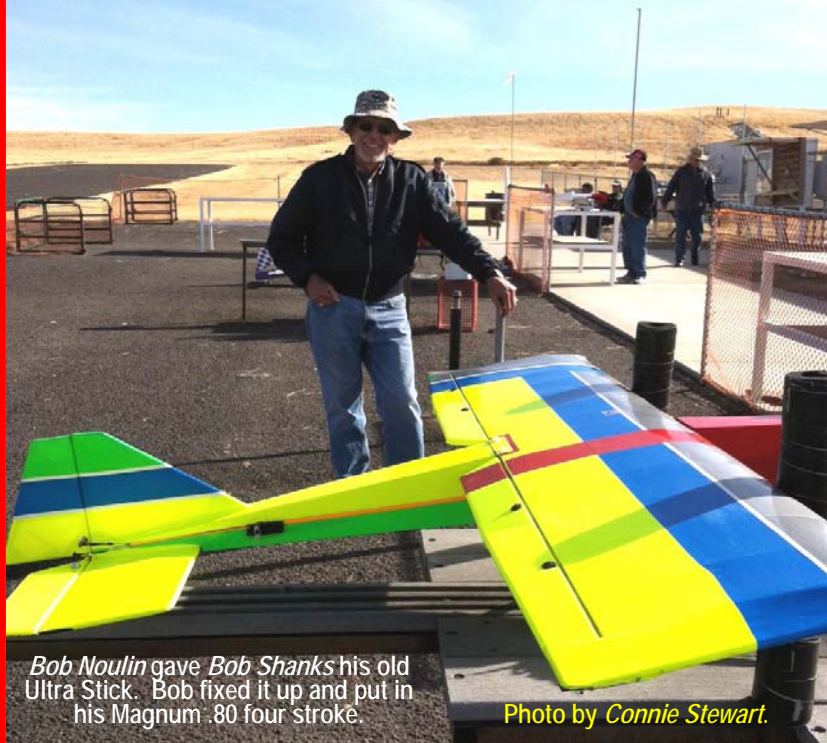


SHOP VALLEY HOBBY



Owners:  
Cinnamon and  
Max Bandy.

## MEMBER FIX UP PROJECT



Bob Noulin gave Bob Shanks his old Ultra Stick. Bob fixed it up and put in his Magnum .80 four stroke.

Photo by Connie Stewart.

## Is Epoxy Resin or Polyester Better for Glassing?

Both produce sufficiently hard surfaces, but polyester is softer. This makes polyester sandable. Epoxy is harder; therefore, it is more difficult to sand. Wet sanding works best for both types. There is no difference in weight. Polyester can be spread a little thinner, however, and it is sandable, so less of it tends to remain on the model. But polyester stinks. It takes weeks for the smell to go away. Epoxy is nearly odor-free. Epoxy resin must be mixed exactly.

Polyester is not fussy about proper proportions like epoxy resin. A variance in the amount of catalyst affects only the setting time. The catalyst of polyester resin has a short shelf life. Don't use old stuff—it won't cure.

Polyester catalyst is more toxic because it is more concentrated. Always wear latex gloves when working with any kind of resin. For large jobs, wear a respirator and use a window fan. Don't thin the catalyst either. A thinned resin is soft, flexible, and it has an oily surface. Thinner resin prevents complete curing. Epoxy resin seems to adhere to balsa slightly better, but that might vary with conditions.

## SAFETY IS ALWAYS AN ISSUE

This is the last issue for 2012 and what a great year of flying it has been. The warmer than usual weather with hardly any wind made for lots of flying activity.

We had a very safe year with everyone keeping a close eye on safety issues.

We did have one incident that could have been serious. A newly built airplane veered off into the pits on the left side as you face the field. There were no planes in the pit area being worked on at that time but had one of our members' big gas planes been parked there it would have been damaged.

When testing a new plane make sure you are in the far left flight box so the plane can veer off into the helicopter area and of course make sure no one is set up there flying a chopper. The "P factor" always kicks in with the engine torque pulling the plane to the left and usually at unpredictable times

in the take off run.

We also must insure all pilots are in the flight box when flying. We have had a couple of planes landing up hill and with little or no rudder control they have veered right into the pit area striking the flight box barriers. Could be due to a cross wind or just no control at slow speeds. One plane earlier this year hit the long set up table and the edge of the flight box near by. These are rare incidents but had the pilot not been in the flight box he or she would have been struck. So let folks know when you are landing and taking off and stay in the flight box.

If you do test an airplane while standing on the center of the runway have a helper move you slowly to the pit area and an open flight box or share a flight box. We often have two pilots in each box on some days.

Also as a reminder it is always a good idea to have a spotter when the

field is busy. Your editor has counted as many as 6 airplanes in the air at once. All you have to do is just holler at one of the members sitting in the "peanut gallery" to help you spot. This helps you keep your eyes on your plane at all times.

Some clubs require a spotter at all times, not a bad idea but not necessary to make it a rule as it is just plain common sense if the field is busy.

Your editor has seen more folks asking for assistance too with setting up and testing various models. This is great. Having been a member of 5 clubs your editor can attest to flying with grumpy pilots who don't feel they need any help or want anyone near them. Our group doesn't have that problem, lots of camaraderie and sharing has been evident in 2012. Your editor has seen this positive interaction getting better each year he has been a member. [See you in 2013.](#)



Members of the Army's 4th Brigade Combat Team (Airborne) jump from a C-17 Globemaster III during parachute assault training at JB (Joint Base) Elmendorf-Richardson, Alaska, Nov. 13, 2012.

USAF Photo

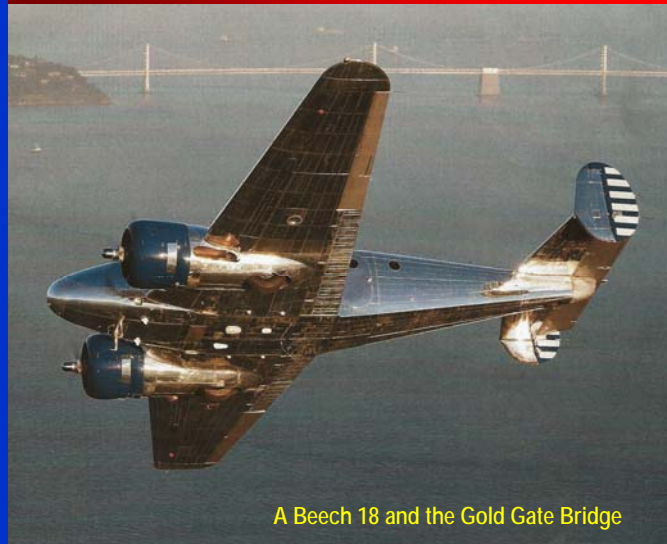
## NAME THAT PLANE:

IT'S A SOVIET LAVOCHKIN LA-7

The Lavochkin LA-7 (Russian: Лавочкин Ла-7) was a piston-engined Soviet fighter developed during WWII by the Lavochkin Design Bureau (OKB). Its first flight was in early 1944 and it entered service with the Soviet Air Forces later in that year. Over 5,753 LA-7's were built.

A small batch of LA-7s was given to the Czechoslovak Air Force the following year, but it was otherwise not exported. Armed with two or three 20 mm cannon, it had a top speed of 411 mph. The LA-7 was considered by its pilots to be at least the equal of any German piston-engined fighter and even shot down a Messerschmitt Me 262 jet fighter. It was phased out in 1947 by the Soviets, but lasted until 1950 with the Czechoslovak Air Force.

## Twin Beech Mania



A Beech 18 and the Gold Gate Bridge

The Beech 18, also known as the Twin Beech was manufactured by the *Beech Aircraft Company* in Wichita, Kansas. From 1937 to 1970, 8,980 model 18s were built. During WWII 5,186 were built as military transports and trainers.

Despite its vast numbers perhaps no more than 50 remain in commercial use worldwide. Estimates are that 300 or so are believed to be held by private collectors, pampered hangar queens for the most part. Some are dusted off and flown only during airshows if at all.

Proof of the airplanes' popularity shows up on the Internet where the community of self-proclaimed "Beechnuts" swap parts and maintenance tips. "There are many Beech twins, but only one Twin Beech", Enrico Bottieri, a Twin Beech owner.

## Flight Formations

by Feith Davis,

Dike Peaks Radio Control Club, Colorado Springs, CO

Has there ever been a time when you looked up in the sky to see a bunch of airplanes flying in formation and wondered what type of formation it is and why that particular formation? Well, believe it or not, there are names for these formations and the airplanes are not just flying in some random pattern that looks cool (in most cases). Hopefully I will be able to explain some of the major types of formations used and some of the advantages and disadvantages of them.

**Straight Trail Formation:** Aircraft fly in a straight line, nose-to-tail. Usually each aircraft flies slightly higher than the one in front of it to avoid turbulence. This is the least desirable formation to fly in because it is difficult for the formation to determine what the lead aircraft is doing. Also in a combat situation, the entire flight may fly directly over ground, anti-aircraft weapons and no one can cover the trail aircraft. In addition, this setup is the leading cause of most formation mid-air collisions.

**Staggered Right or Left Formation:** The first aircraft leads formation. The second aircraft flies 30° to 60° off of the lead's wing. The third aircraft flies behind the first aircraft and 30° to 60° off of the second aircraft. The fourth aircraft flies behind the second aircraft 30° to 60° off of the third aircraft. This formation allows everyone to anticipate what the lead is about to do. This is a common formation for US combat transport helicopters. Many helicopters can fit into a small landing zone at one time and adequate fire cover can be provided for each other.

**Echelon Right or Left Formation:** The first aircraft leads formation. The second aircraft flies 30° to 60° off of the first aircraft. The third aircraft flies 30° to 60° off of the second aircraft. The fourth aircraft flies off of the third aircraft. All aircraft will stay on the same side of each other. This is a common combat formation used by US ground-attack pilots. The lead aircraft would roll onto target and the flight would follow in, one at a time.

That just about covers the major formations used by most military and civilian aircraft. Of course there are many other types of formations out there, such as the "Vee" formation, diamond formation, and the box formation. You can see most of the fancy ones performed at air shows.