



AMA Chapter #3798

Chino Valley Model Aviators

Official News Letter



December 20, 2014

Volume 17 Issue 12

www.chinovalleymodelaviators.org

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

Inside this issue...

- President's Message 2
- Name This Plane 2
- Club Pilots' Planes 3
- ERAU's Black Widow 4
- Christmas Party 5
- Safety Column 6
- Torque at Take Off 7
- CVMA Chili Feed 8



Support Our Local Hobby Shop



The Safeway Center
Prescott Valley, AZ
MAX & CINNIMON BANDY
THEY SUPPORT OUR CLUB
Please support them as well.

Rick Nichols Gets AMA Vital People Award



Rick received this most prestigious award at our Christmas Banquet, only 5 were awarded nationally. Our club has garnered three over the past 5 years. Congratulations Rick. See page 5 for more.

Merry Christmas Members



Prescott Courthouse.



Field Chatter from CVMA President, Michael Kidd: No Kidding!

This past year has been a lot of fun being a part of CVMA, this club is in one word, "Awesome". Our flying field has been improved with the help of a lot of our members and I hope if you have not seen it in person, that you make an effort to do so.

Next year will be an exciting year for the club. We will have our 'normal' work parties to clean up the field. There'll be one work party to lay conduit from the new building to the cabana area so we can keep the generator noise away from the caba-

na. Other than that, the plan is to do some "Flying" and more "Flying".

If you missed the Christmas Banquet, you missed an awesome party, it was a lot of fun.

I wish everyone a great Christmas and Happy New Year.

And yes I do own a pair of long pants!



TAKE YOUR TRASH HOME

If you bring it you take it home!

We have one of the best RC fields in the western U.S. let's keep it that way.

CVMA MEMBERS Kick In Your Afterburner...



BUILD SOMETHING, BRING IT TO OUR NEXT MEETING!

CAN YOU NAME THIS PLANE?



Answer on page 9

CVMA NEWSLETTER

Published Monthly

AMA Chapter # 3798



- President — *Mike Kidd*
- Vice President — *Steve Shephard*
- Sect. /Treas. — *Don Crowe*
- Flight Instructors — *Mike Kidd & John Stewart*
- Safety Officer — *Charlie Gates*
- At Large Members — — *Bob Noulin, Randy Meathrell, Bob Steffensen, Walt Findley, Ken Shephard*
- Newsletter Editor — *Bob Shanks*
- Activities Director—*Don Ferguson*

CLUB PILOTS FLYING THEIR AIRCRAFT

Roger Calvert's Big Gas Corsair



Joe Bauer's nice foam Cub trainer.



Don Crowe's Aero Sky.

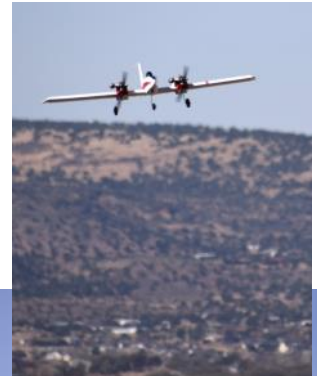
Al Collins electric Extra 300 EXP.



Dan Avilla and his cool Navy turbine powered Bandit.



John Stewart's immaculate "Fly Baby".



Greg Deballien's Twin glow powered creation.





EMBRY-RIDDLE'S BLACK WIDOW TESTED AT OUR FIELD

Professor *Dr. Angela Beck* and Professor *Jim Helbling* of Embry-Riddle Aeronautical University (ERAU) here in Prescott, AZ team-teach the Advanced Aeronautical Design Class. The class produced two planes the "Black Widow" and the "Hawkeye".

The twin boom tailed Black Widow is the Hyperion HD-11 designed using a [fictional](#) US Navy high endurance ISR mission requirement. The Hawkeye, was designed for a [fictional](#) Yavapai County search and rescue mission requirement.

The students completed the preliminary design last semester, and spent this semester doing wind tunnel testing, materials testing, structural testing and flight testing of the physical design. Dr. Beck and Professor

Helbling have team taught the class for the 22nd time!

One of our club's key community outreach and support activities is supporting ERAU students in this important aeronautical design education. Our club has supported this class and its efforts for the past six years.

The class cannot use balsa but must use full size aircraft materials so this is not like our RC hobby planes in many important respects. Whether they fly well or not so well, the academic gains and understandings of aeronautical design is so valuable to these future pilots and aeronautical engineers in their aviation careers.

Your editor was unable to photograph the Hawkeye's test flight but it also flew.

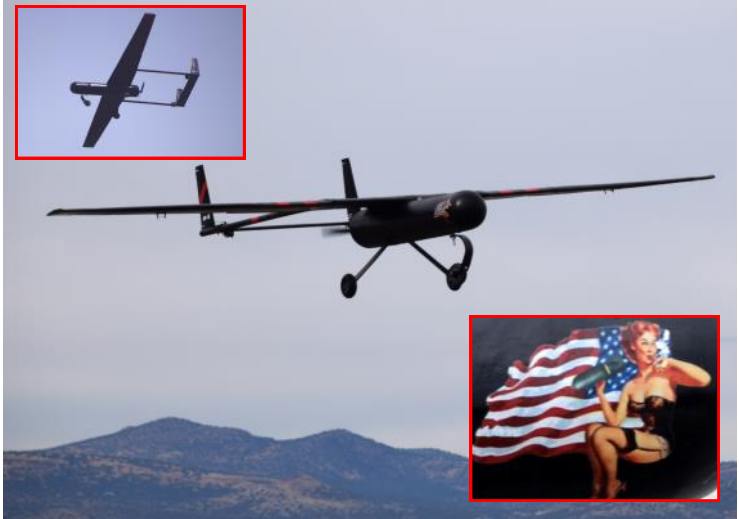


Photo by Randy Meathrell.

Hawkeye assembled and ready to fly.

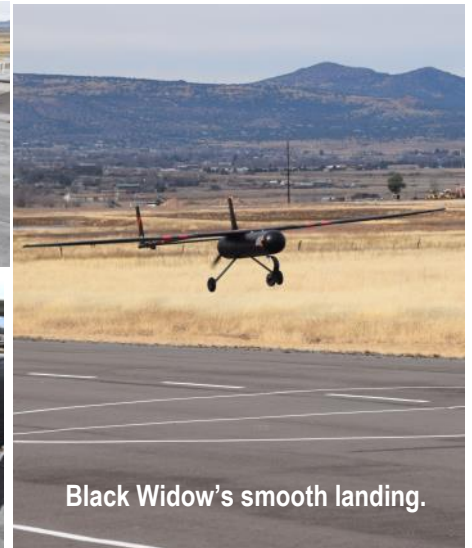


Dr. Angela Beck, far left, and Professor Jim Helbling far right with the Black Widow student design team. Pilot Steven Rayteigh is to Professor Helbling's right.

A stable UAV platform design.



Team assembly.



Black Widow's smooth landing.



Stephen Rayleigh taxis out for take off.





December Christmas Party at Gabby's

The Christmas party was a success again this year thanks to Rick Nichols hard work. We had 60 in attendance, a record. Our MC Rick, had us all laughing. There were lots of awards handed out for some interesting flying and happenings at the field.

President Mike Kidd got the Big Boy Pants Award; Bob Noulin, Marathon Man Award for his 40 minute maiden flight; Vic Block, Mileage Award since he is moving to OK; Randy Meathrell, the Meatball Award (he didn't pull out his 72mhz antenna); Barb Riddle, Airport Widow Award since Jay was at the field so much; Tom Wells, Technician Award; Don Ferguson the Ed Sullivan Award (good shew); Larry Parker, Runway Dirt Award for always landing in the dirt; Charlie Gates, the Johnny Bench Award; Jerry English got two the Most Unsuccessful Virgin Flights and two the Most Successful Virgin Flights; Max and Cinnamon Bandy, Valley Hobby Thank You; John Walker, the Expert Search and Rescue Worker; Don Crowe, got two awards as well the Octopus Award (charger all over the bench) and the Thank You Award for taking the Sec./Treas. job from Rick.

There was a lot of laughter and comradery, thanks Rick for an outstanding party. See page 6 for more!



We had 60 hungry folks.



Digging into the outstanding food!

A Few of CVMA's Most Valuable Assets

Left to right, Joyce Jones, Carol Brown, Coleen Avila, Lynne Crowe, Therese Shephard, Connie Stewart, Carol Meathrell, Cindi LaSalle-Shanks, Connie Gates, Jolyne Nichols and Barbara Riddle. Kneeling, Pam Kidd and Cinnamon Bandy.



We can't forget Pam Ferguson standing in between Carol Meathrell and Barbara Riddle.





December Christmas Party Awards



President Mike Kidd, the Big Boy Pants Award



Bob Noulin, Marathon Man Award



Vic Block, Mileage Award, he is moving to Oklahoma



Randy Meathrell, the Meatball Award



Barb Riddle, Airport Widow Award



Tom Wells, Technician Award



Don Ferguson the Ed Sullivan Award



Larry Parker, Runway Dirt Award



Charlie Gates, the Johnny Bench Award



Jerry English Flight testing Award



Max and Cinnamon Bandy, Valley Hobby Thank You Award



John Walker, Search & Rescue Award



Don Crowe (L) the Octopus Award and Thank You Award



Charlie Gates and Jay Riddle with their humorous gifts.





USAF F-22 Raptor

MARK YOUR CALENDARS

CVMA 2015 EVENTS

- April 4: T-28 Pylon Race
- May 9: Gymkhana/Combat/Swap
- June 27: T-28 Pylon Race
- Aug15: War Birds Pylon Race
- Sept 11, 12: Steve Crowe Fun Fly
- Nov 6, 7: Thunder in Chino Valley Jet Rally



Club meetings:
Third Wed. of
each month at
7pm.
Prescott Airport

DON'T FORGET TO LOCK THE GATE

MEMBERS:

LOCK THE GATE WHEN LEAVING, IF YOU ARE THE LAST ONE OUT.

WE ALL MUST REMEMBER TO LOCK THE GATE.

**THIS MEANS SPINNING THE LOCK A FEW TIMES AFTER FASTENING IT
TAKING IT OFF THE COMBINATION NUMBER.**

SAFETY IS ALWAYS A KEY RC ISSUE

Member *Dan Avilla* has a great safety tip if you ever accidentally fly into low clouds and your plane disappears. He said just snap roll it and it will come out just about in the same area that it entered. He is speaking from experience. Most never think about this but many have flown into some clouds in the past and have momentarily panicked. We sometimes have low clouds here in the winter.

Another issue we seem to constantly grapple with at our field is folks persisting to taxi in the pit area. *Steve Shephard*

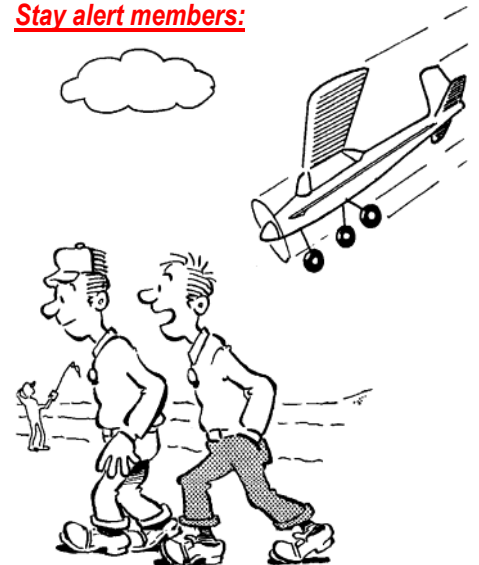
added some nice large white letters "No Taxi" but we still seem to have folks ignoring them. Please members stop your plane parallel to the pits not pointing into the pit area or in the pit. Read the sign folks, "No Taxi".

Many members stop their planes parallel to the fence area on the side of the runway for safety.

Thanks for the sign Steve...



Stay alert members:



Boy, those electrics sure are quiet

Left Turns at Takeoff (Torque)

Article Adapted from *Alan Brown* in the RC Bees Newsletter Watsonville, CA

QUESTION: An RC pilot just completed a Storch, a plane very similar to a Cub in some respects. The maiden flight was strange. Once in the air it flew great, but getting off the ground was very tricky. At take off, it pulls to the left then wants to stall, nose into the ground. What's happening here?

Propellers which spin anti-clockwise when viewed from the front generate forces which frequently cause aircraft to veer leftward while taking off. As there are at least three different phenomena at work during this operation, *Allan Brown* from Watsonville, CA categorized them, and looked at some of the techniques used to counteract them for RC pilots.

The first phenomenon is the torque generated by the engine. Newton's laws about action and reaction tell us that there will be equality between the turning moment generated by the propeller and that in the opposite rotational direction by the rest of the airplane. When the aircraft is sitting stationary on the ground, the torque can only be resisted by the main landing gear, and obviously the wider that is spread, the easier it is for the aircraft to resist the turning moment. This torque does not vary substantially with aircraft speed; it is primarily a function of engine power setting.

The next phenomenon is the rotational effect of the slipstream on the surfaces of the airplane. The predominant effect relates to the fuselage and the vertical surfaces. Slipstream effects on the wing and tail surfaces tend to be opposite to torque effects. However, the effect of slipstream on the vertical tail depends on the latter's vertical position. If it is above the thrust line of the engine, then a side force is generated which will turn the aircraft to the left, and if it is below the thrust line, then it will try to turn the aircraft to the right. The latter is helpful, the former is not. Remember that yawing to the left induces rolling to the left, which is in the same direction as the torque forces.

We don't usually put the fin below the thrust line because that makes it difficult to rotate the airplane at take-off, so the top mounted fin is usually bad news. Those of you who have built free flight power competition aircraft know that we often mount the wing very close to the engine on a high pylon. This pylon gives a side force pretty much on the C.G. of the airplane, so doesn't induce much yaw, but it does produce a fairly healthy side force (being very close to the propeller) which results in a strong rolling moment opposed to the moment induced by the engine torque. Careful selection of pylon area allows us to trim the airplane to climb in a spiral either with or against the torque.

The third phenomenon is a bit more esoteric, and relates to tail draggers versus tricycle geared aircraft. It also, however, relates to either type of aircraft as it rotates to get lift as it takes off. This probably needs a picture, so I hope I can sketch something that's intelligible. Note here that a Fieseler Storch sits at a higher angle on the ground than a Piper Cub.

This supposedly shows an engine thrust line moving at an angle to the flight path. As shown, this would be typical of a tail-dragger running along the ground, but note that it also applies to an aircraft flying at a high angle of attack, which generally means slowly, or to an airplane which is rotating as it takes off. The nearer blade to us is going upward if we are looking at the left side of the aircraft and the further blade is going downward. If the airplane's flight path and thrust line are at say 10 degrees to each other, then the nearer blade will be at 20 degrees less incidence than the further blade and so will generate a lot less thrust. The thrust then from a RC propeller will appear to come from a point which might be an inch or so to the right of the actual thrust line. The steeper the angle between the thrust line and the flight direction, the greater will be the effect. **This steep angle translated to a typical World War I fighter means the engines rotated relatively slowly so WWI propellers were large, which meant long landing gears and a greater angle between the thrust line and flight path.**

NAME THAT PLANE: NASA M2-F1 Lifting Body

The C-47 took the craft to an altitude of 12,000 feet (3,700 m) where free flights back to Rogers Dry Lake began. Pilot for the first series of flights of the M2-F1 was NASA research pilot *Milt Thompson*. Typical glide flights with the M2-F1 lasted about two minutes and reached speeds of 110 to 120 miles per hour (180 to 190 km/h) .

Tow release was at 12,000 feet (3,700 m) The lifting body descended at an average rate of about 3,600 feet per minute (1,100 m/min). At 1,000 feet (300 m) above the ground, the nose was lowered to increase speed to about 150 miles per hour (240 km/h), flare was at 200 feet (61 m) from a 20 degree dive. The landing was smooth, and the lifting body program was on its way.

The M2-F1 was flown until August 16, 1966. It proved the lifting body concept and led the way for subsequent, metal "heavyweight" designs.

Chuck Yeager, Bruce Peterson and Don Mallick also flew the M2-F1.

More than 400 ground tows and 77 aircraft tow flights were carried out with the M2-F1. The success of Dryden's M2-F1 program led to NASA's development and construction of two heavyweight lifting bodies based on studies at NASA's Ames and Langley research centers—the Northrop M2-F2 and the Northrop HL-10, both built by the Northrop Corporation, and the U.S. Air Force's X-24 program.

The lifting body program also heavily influenced the Space Shuttle program.

The M2-F1 program demonstrated the feasibility of the lifting-body concept for horizontal landings of atmospheric entry vehicles. It also demonstrated a procurement and management concept for prototype flight research vehicles that produced rapid results at very low cost (approximately \$US 50,000, excluding salaries of government employees assigned to the project).



C-47 Towing the M2-F-1 to 12, 000 Feet for launch.

Member Projects



Dan Avilla is one of our club's great turbine pilots, we have several. His yellow bandit is outstanding. He says it is a little slow so he is reducing the size of the fuel tank since it was a bit large and added extra weight. Regardless of that, your editor thought it was quite fast and it's a superb flyer.



Bob Colianni's very nice "Smart" electric. He was busy tuning it up and doing taxi tests on Tuesday December 9 in preparation for the big day in the future to test fly the bird.

First Annual CVMA Chili Feed



Photos by Bob Steffensen

On Saturday Oct 25, our club had a it's first annual chili feed late in the afternoon. Estimates were about 50 folks were in attendance. Wind was up as usual, however, member *Bob Steffensen* flew his Fokker DR-1 Tri-plane kite. And according to Bob member *Roger Calvert* from Williams, AZ put up his acrobatic kite and out flew Bob.

Wind died about sunset as it usually does this time of year. In the calmer late afternoon air member *Dan Avilla* flew his T28 with landing lights and member *Ricky Flores* flew his brightly lit Hobby King night flyer. *Bob Steffensen* also flew his T-28 until he could just about not see it due to the sunset, a great club chili feed.

Some folks arrived late and found the hungry crowd had devoured it all so guess we will have to make sure if we have another chili feed everyone brings plenty of grub for our hungry members.