Servo Chatter

AMA Club Charter #110

January 2017

Ruby's jet in action:
Carf-models classic Flash
70 inch wingspan - 81 inch length
25 lbs dry
All JR digital servos
Kingtech K-120 Kero start
Futaba radio
Oscar Rico photograph

www.sccmas.org

Official Newsletter of the SCCMAS "Tomcats"
Field Location: 10250 Monterey Road, Morgan Hill, CA 95037

President's Corner

As most of you know, the heavy rains have forced the release of water from Anderson Dam. This, in turn, overwhelmed the culverts at the entrance of our access road and washed out a significant portion of the roadway. Since this is the only entrance to the field, we've had to shut down operations until the road can be repaired. The board has been working hard to negotiate a timely repair.

The County is well aware of the importance to restore access but water is still being released from the reservoir so no work will begin until the rain subsides and they feel confident that the dam is safe. I will continue to send out regular updates as I get the news. If you haven't been receiving any of my emails, make sure our roster has the correct address.

Until then, some of our members have actually loaded up wagons and made the 2+ mile trek into the field from the ranger station South of us. Please keep in mind, no motorized vehicles of any kind are allowed on the trail. Only pedestrians, bicycles or equestrians. You can pull a wagon with your bike but all trail users must follow the rules posted at the trailheads.

The water is still turned off. The well has been determined to be absolutely safe (as it has always been) and all the paperwork has been turned in to the county. Now it's just a waiting game until the appropriate departments get all the correct forms signed off. The bathrooms are locked as well as the garbage bins. Bring out what you bring in.

I have not received any updates from the County on any plans for the repairs on when they may start. It could be months before repairs are completed. Even if all the engineering was done, plans drawn up, and equipment was being moved out there, it would still take several weeks to complete the repairs. I'll keep sending out regular updates as I get them.

Here is some great video Walter Colby took of our field and the damage to the road.

https://youtu.be/eYjU0liRd18

Don

From the Editor

The new year started with some great flying weather. However the long drought also ended and we got deluge after deluge, which unfortunately resulted in losing access to the field. As Don noted, there is one option that requires a long track and you will have to carry everything you require with you in and out. If you need to find out exactly how to do this, reach out to Mike or Steve for additional information as they have made the trip at least once.

There are other options for flying while we wait to see when the road will get repaired. The simplest is to fly small park electrics in your local neighborhood either in a park or local school field. You need to make sure that you have permission to do so depending on the location. The field at Rancho San Antonio park is electric prop plane only and has size limitations. The bottom line is that you can find a place to fly but it is not going to give you the same facilities we enjoy at Tomcats.

If you find a location that can help other members temporarily please share that until we can return home to our own field.

In this issue, we have coverage for a number of activities thanks to members such as David Wilbur (Reno Air races), a Jet fly at Crows arranged by Rick Maida and the Pattern day at Tomcats.

It has become an annual tradition for a group of us to make the drive to Ontario, California for the annual AMA convention. Sadly this event has been shrinking every year and this year was no exception. Judging by the small number of vendors and low attendance, I am not sure it will be worth the time and expense to go any longer.

If you have the time, check this video, lots of fun:

https://www.youtube.com/watch?v=VEzj4nIt5IQ

Happy Landings,

Bahman

A reminder to all members: Our next club meeting will be on Saturday, February 4th, 2017 at the Wings of History Museum, 12777 Murphy Av. in San Martin. The meeting will start at 5:00 p.m. Arrive early and take a tour of the museum to see the early days of aviation.

Governing Board Members and other Volunteers of the S.C.C.M.A.S.

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SCCMAS Business Office		408-292-1212	
SCCMAS WWW address		www.sccmas.org	
* Governing board members.			

** AMA Intro Pilots. These pilots can fly non AMA members once, certain restrictions apply.

*** Email is preferred to voice mail.

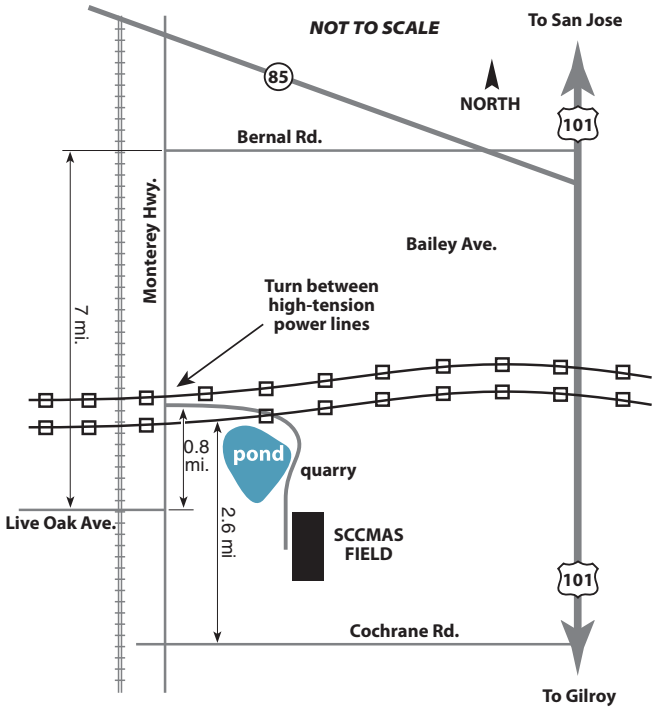
April 8	Spring Swap Meet
May 19 - 21	Heli Jamboree
May 20	South County Airport Open House
June 10	SCCMAS Work Party
June 24	Jet Fly-In
July 15-16	Annual Airshow
August 19	Pattern Day
September 9	Summer Swap Meet
October 7	T-34 / Unlimited Warbird Race Finals
October 13	Coyote Classic Bike Ride
December 3	Toys-For-Tots

Treasurer's Report

Jim Patrick

SCCMAS Profit & Loss August through September 2016

Ordinary Income/Expense		
Income		
Contest entries		410.00
Donations		350.54
Food sales		71.00
Membership dues		465.00
Vending machine		513.00
Total Income		1,809.54
Expense		
Bay Alarm		135.00
Food		121.03
Garbage service		531.50
Licenses and Permits		740.00
Postage and Delivery		100.47
Printing and Reproduction		434.14
Rents paid		519.00
Sanitation service		1,009.16
Supplies		28.00
Telephone		
Internet	719.84	
Telephone - Other	400.31	
Total Telephone		1,120.15
Trophies		64.08
Utilities		
Gas and Electric	372.51	
Water	106.69	
Total Utilities		479.20
Total Expense		5,281.73
Net Ordinary Income		-3,472.19



SCCMAS (Tomcats) field is located in the county park and can be reached via Monterey highway

Please help support these companies and organizations as they help to support us

November Tomcats meeting

We had the last club meeting in 2016 at the Wings of History Museum in San Martin. The doors opened at five and there were a dozen anxious members in their seats when I arrived at 5:05. Nobody went hungry as Steve had lots of pizzas there from the get go. The meeting was planned to start at 7 so there was plenty of time to eat, talk and let the room fill to a total of 39 before it started.

Don talked about the success of air show in that we did not lose as much as other years but stressed that we need even more volunteers next year. The task groups worked well and should be repeated next year. Costs for the air show are going up with more permits required and we may need to start paying $400 per test to test the water four times a year. We may need to install a chlorinator before we can use the well water again. We may need to raise the dues but nothing has been decided yet.

The northern flight boundary has been tightened up such that no flight over the pond will be allowed at ANY altitude.

Dan is going to get us in touch with a new group of Boy Scouts. The Bayside guys have found a new site for their field. Check out "modified 46 crash" on YouTube for the demise of a couple of planes at our last contest. Steve is looking for someone to take over as Contest Director. Don showed some great pictures of the building of our field back in the 80's and many of those members were at the meeting.

We almost gave the Dumb Thumb to Don on general principals but it went to Shahram for his $11K turbine loss, I guess for him flying with a weak spar.

Five and a half year old Jack got signed off a few weeks ago and is our youngest pilot ever.

Matt went to the nationals and came back with a 2nd place trophy. Mike showed the 8000 watt power system in a 33% extra and progress on his 1/6 scale B26 scratch built. Rick told a great story of how Miriam surprised him with a razor back P47 for his birthday so he could fly with the pack at the next Castle fly in. Carl showed his #39 racer and talked about the Travel Air he is building from plans.

There were plenty of items for the raffle and lots of tickets were purchased. Nate won a helicopter and a flash light, Kyle won a building pad, Monocot, and an Xacto knife set (and lot of other items he passed on.. as usual he bought lots of tickets).

Steve won some yellow covering, Bervin won an Air Hog helicopter, Terry won fuel, a car transmitter and wheels and Eric a Magnet. Our youngest member Jack won some wheels and Mike won a tail wheel and a magnet.

Thanks to Dan for having us at the WOH museum.
Keep 'em Flying,

Mike

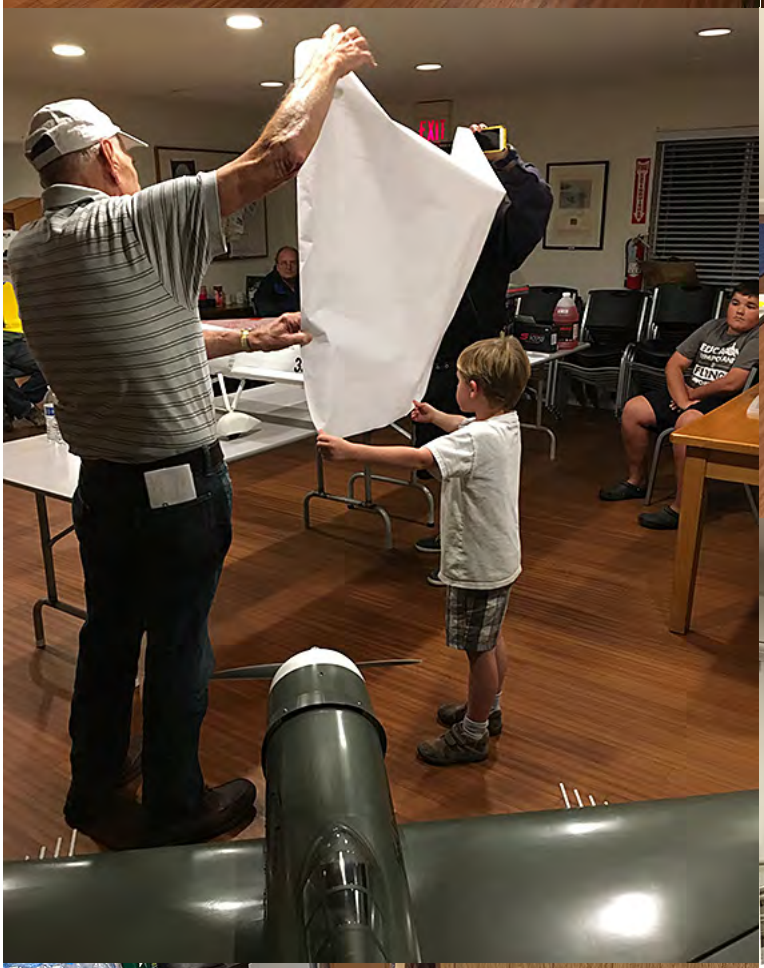

DA-100
112
AEROSHELL
EXTRA 330L
AERO WORKS
CHEVROLET
39
NR56Y

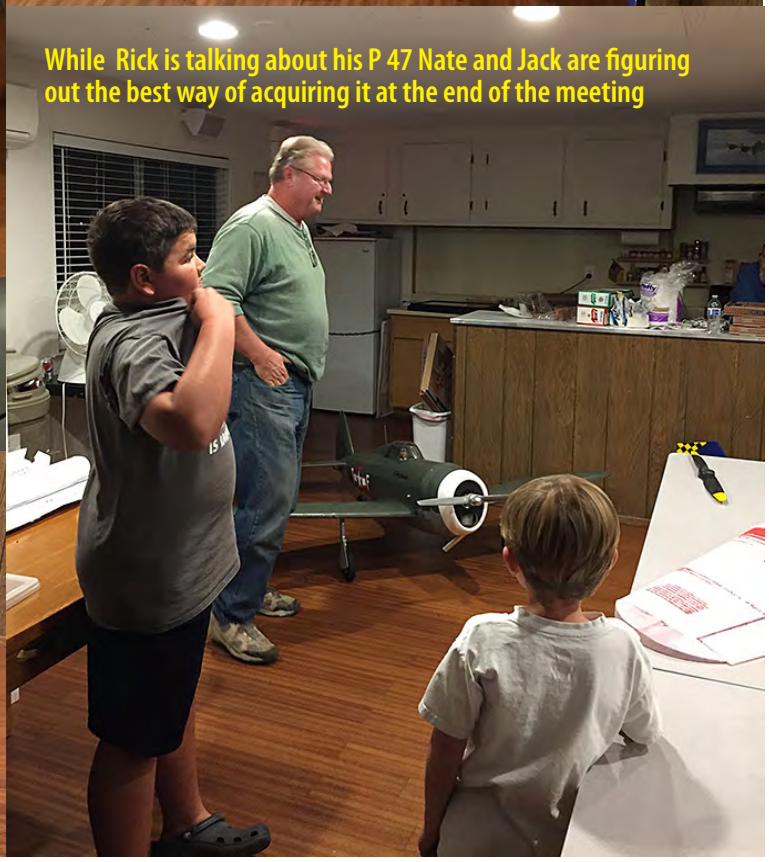

112


EXIT


39


CHEVROLET
39
NR56Y





While Rick is talking about his P 47 Nate and Jack are figuring out the best way of acquiring it at the end of the meeting

A chat with my buddy Jack (through mom Helen)

When did you start getting involved with plane/helicopter flying?

Jack was always fascinated by ceiling fans, clouds and helicopters in his stroller as a baby.

His Uncle Simon bought him his first of several 107S helicopter for his 3rd Birthday. It took him a while to perfect gentle landings, and bouncing off walls, but he managed to fly this helicopter on his own by the time he was 3.5 years old.

When we discovered the SCCMAS last year, it fueled his obsession and expanded his aviation horizons. He always loved flying his Quadcopters and Helis at the club on Sunday afternoons. At the beginning of the Summer he earned his first fix wing by doing well at his reading lessons and in Kindergarten.

The youth aviators at SCCMAS took him under their wing, and spent many hours building his confidence and coaching him on how to do take offs, landing, and approaches. Last month Jack got signed off on his Apprentice at age 5.75 years old, making him the youngest solo pilot in the club. No more buddy box, and a big shoutout to Keyon, Nat and Max for all their patient mentoring of such a young pilot. You guys are way cool!!

What is your favorite Plane/helicopter?
Helicopters were his first love, but his favorite planes are his Apprentice, and his Radian Glider. His favorite helicopter is his Blade Nano.

What do you want to do when you are an adult?
Fly RC Helicopters. Jack..... "I want to be what Jim (Miller) is".... his helicopter hero!

Who is your aviation hero?
Jim Miller, and Bahman (that was a surprise!)

Who is the person you most received help from at the field?
Keyon (he has the patience of a saint!).

Jacks wish list:

A small jet (not gas), that can fit in a tiny box
A four bladed Goblin 3D

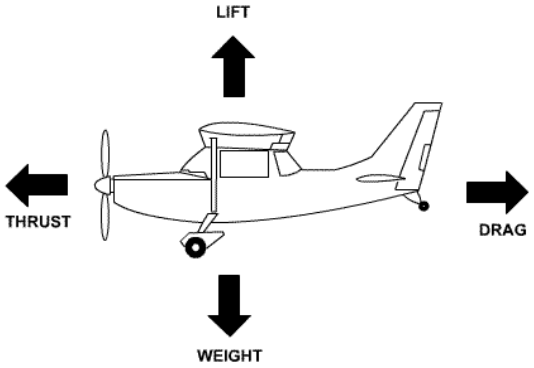
Favorite Youtube Hobbyist:
Ali Shan Mao
Favorite RC dog:
Lucy
How many days a week do you wish you could fly:
10
Favorite Summer camp:
Hiller's Drone Ranger Camp
What's better, Ice cream or flying:
Flying
Favorite Tshirt:
"You can never have enough RC Copters"

Aircraft Design – Starting From Scratch

By Lou Rodriguez

Designing your own airplane from scratch is both challenging and rewarding. The process begins by determining what you want to build and fly. Airplanes are designed for a purpose. Scale, racing, aerobatics, trainers or sport flying are some of the objectives that will influence your design. The size, engine or motor, and building materials must also be determined. Draw some sketches to convert your concepts into the basis for drawing your construction plans.

A review here of the principles of flight may be helpful. There are four forces acting on your airplane in flight: Lift, weight (gravity), thrust, and drag.



These forces are in equilibrium during steady state flight. This is the case in straight and level flight or a straight-ahead climb or descent. When these forces become unbalanced, a change in flight path or acceleration/ deceleration will occur. Adding power will accelerate the airplane until drag increases to balance thrust. Velocity (speed) will then stabilize. Moving the elevator control affects a change in the angle of attack of the wing, causing a change in pitch attitude. The airplane is unbalanced during a loop or turn. In this case, the airplane is accelerating toward the center of the loop or turn.

Acceleration causes the effect of "G force". A catapult launch on an aircraft carrier can create a linear acceleration of 4 Gs. Flying a loop will typically create a 3 to 4 G radial acceleration. A 60° bank turn creates a 2 G force.

The structure of the airframe must be designed to withstand these flight loads. There are also twisting forces applied to the wing from aileron displacement. Vibration from a piston engine creates additional stress to the entire airframe (not just the firewall and engine mount).

Aircraft structures will be discussed in detail in a future article. It is safe to say that most of our models are subjected to greater stress loads than most full size aircraft.

Function, aerodynamics, and aesthetic elements are all part of the design process. The wing is, obviously, a major component of the airframe. A constant chord wing is perfectly adequate for most trainers and sport flyers. A tapered wing may be appropriate for scale, aerobatics, racing, or just because it looks good.

Airfoil selection is influenced by the flight characteristics you are trying to achieve.
The camber of the airfoil describes the curvature from the leading edge to the trailing edge, measured equal distance from the upper and lower surface of the airfoil. A symmetrical airfoil has 0% camber. A semi-symmetrical section may typically have 1% to 2% camber. A high lift section can have a camber value of 3.5% or greater. Camber is measured as a percentage of the wing chord length.

A symmetrical airfoil is appropriate for aerobatics where outside maneuvers (negative G), inverted flight, and knife-edge flight are part of a normal routine.

A semi-symmetrical airfoil is appropriate for the majority of airplanes we fly. This type of airfoil allows for a wide performance envelope. Stable slow-flight performance and a range of inside and outside maneuvers are possible.

A flat-bottom or under-cambered airfoil is appropriate only for slow-flight floaters. Think old-timer free flight designs here.

Using an airfoil from an existing kit or plans is an option. A symmetrical airfoil can be copied from the RCM Trainer or Super Sportster series. The semi-symmetrical airfoil from the Goldberg Falcon 56 and Sr. Falcon is an excellent choice for general use. The Piper Cub and similar aircraft use a "Clark Y" airfoil. It is nearly a flat-bottom airfoil. Some model plans show it modified with a flat bottom.

An extensive airfoil library is accessible online at airfoiltools.com. You can select an airfoil and have the outline printed at your specified length. Detailed information
for each airfoil is also available on the website.

I use Compufoil3D for my wing designs. It contains a large airfoil library and allows modifications to those airfoils. It will also plot a set of rib templates for a tapered wing. Structural components such as spars, leading edge, and trailing edge can be specified. A wing plan showing rib locations and structural components can be produced with this software.
The camber of the airfoil has a direct correlation to the coefficient of lift and coefficient of drag. A high lift airfoil also has a high coefficient of drag. There is a good reason why the "Clark Y" airfoil is not used for racing airplanes. It is, however, capable of generating enough lift at low speed for a Piper Cub and other putt-putt airplanes.

The thickness of the airfoil also plays a significant role in performance. RC racing airplanes and high-speed gliders may use 9% to 12% thickness. Aerobatic airplanes typically use a thickness of 13% to 15%. A sport or scale airplane will fly fine with a 13% to 17% airfoil thickness. Thinner or thicker airfoil sections can be used based on performance goals.

A thicker wing typically has milder stall characteristics versus a thin wing. It is important to maintain a round and smooth leading edge. A rough or inaccurately shaped leading edge has an adverse effect on airflow over the wing; thus impacting lift to drag performance.

I have built and flown a variety of airplanes; including small schoolyard flyers, 48" to 84" wingspan sport and scale planes, and 190 mph pylon racers. These are some of the airfoils I have used on my wings:

Clark Y
Eppler: E207, E209, E226, E374
NACA0014, NACA0015 (symmetrical)
Selig: S6060, S6061, S8035, S8036

I have modified some of these airfoils to meet specific needs. Pylon racing criteria has justified a slight change to the wing thickness. This did not create any detrimental flight issues.

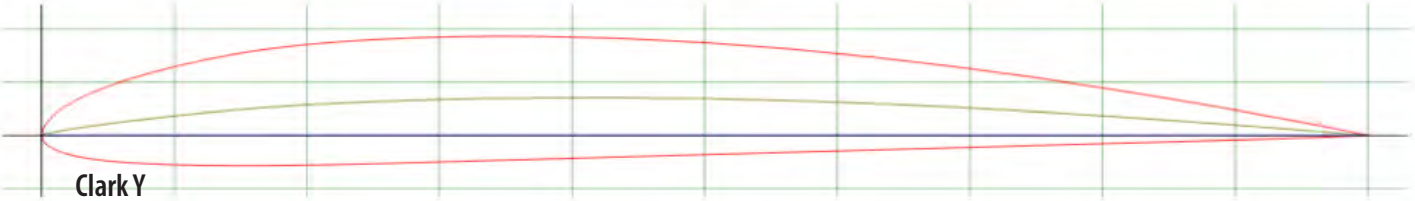
The planform is determined by the root chord, tip chord and sweep. Aspect ratio is the relationship between the span and average (mean) chord of the wing. A 60" span wing with 10" constant chord has an aspect ratio of 6:1. A 12" root chord and 8" tip chord would have the same aspect ratio with a 60" span. The result is a wing area of 600 square inches. Stretching the span with the same chord dimensions increases the aspect ratio. An RC glider might have an aspect ratio of 12:1 or greater. A high aspect ratio improves efficiency but reduces roll rate. A 6:1 aspect ratio for powered airplanes is a good starting point when designing the wing. There is no performance advantage with a swept wing at the speeds we fly RC.
The horizontal and vertical stabilizers may use a flat cross section. A symmetrical airfoil is appropriate for scale and larger airplanes. The NACA four digit series work fine. Thickness can, typically, be 8% to 12% i.e. NACA0012.

I have included some sample airfoil outlines. Compare the S8036 and S8038 to the full-scale P-51 airfoils. These Selig airfoils are suitable for many of the warbird type airplanes we fly. Choose one of these or select an airfoil that you think will better suit your objectives.

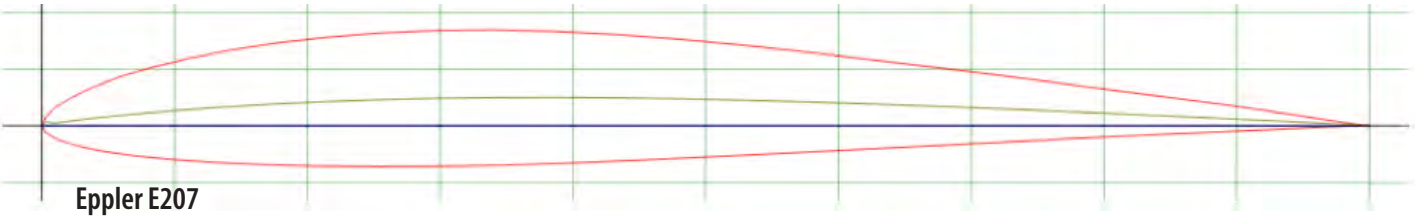
Be as accurate as possible when building your wing. There is ample information available to draw an airfoil that will perform better than a random French Curve TLAR or a Florsheim 10 airfoil.

I am happy to answer any questions.
Lou@sccmas.org

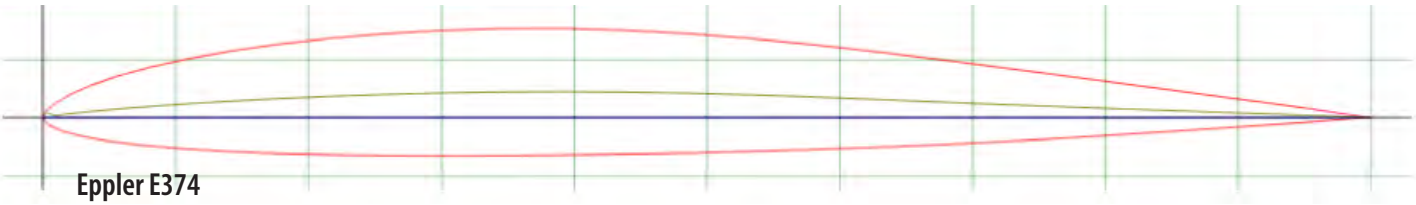
NACA0015



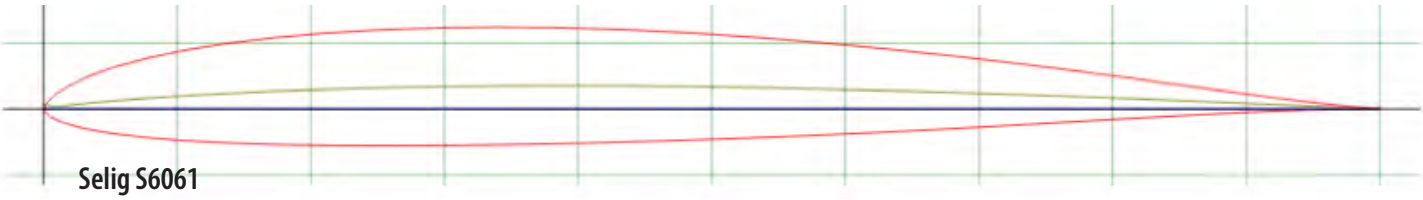
Clark Y



Eppler E207

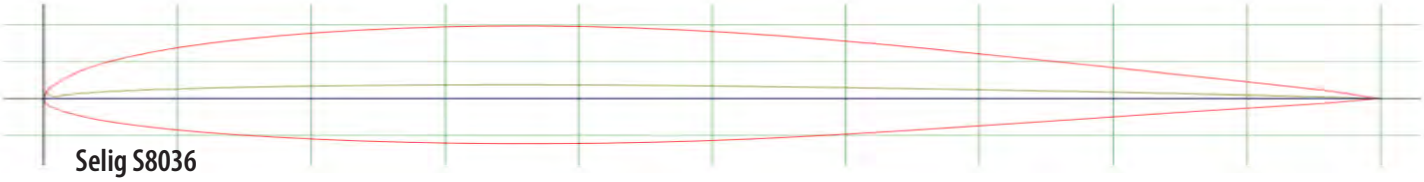


Eppler E374

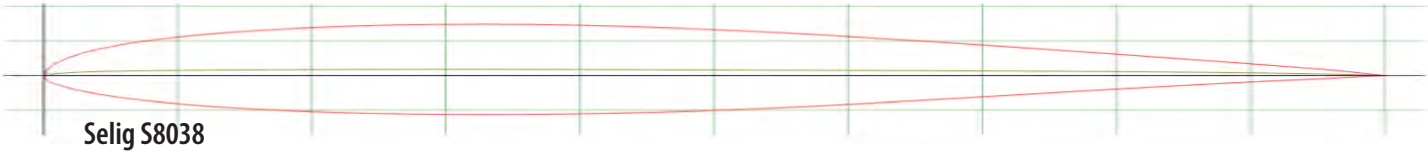


Selig S6061

Selig 8035 (14% thick, good for aerobatics)



Selig S8036



Selig S8038

How about that guy Nate?

When did you start flying: About 4 years ago I flew my first RC airplane. My mom took me to the flying field after seeing the Airshow. I told her I wanted to learn how to fly.

What is your favorite Plane/helicotper: My favorite RC plane right now is the e-flight Sukoi SU-29. I like the flight characteristics and the size. My favorite full scale plane is California Warbirds P-51, Straw Boss II

what do you want to do when you are an adult: Be a pilot because I love flying.

Who is your aviation hero: Bob Hoover because of how crazy he was. He's the one that stole the Fokke Wulf during WWII.

Who is the person you most received help from at the field: Bahman helped me the most. He helped me get started in the hobby. Every time I needed help he would help me. Our field is the best in the Bay Area. We have a paved runway and electricity. We have a snack shack where you can make food.

Mike's Nuggets

Mike's 1/6 scale scratch built B26 is near to mechanical completion and made its first taxi test and engine run-up to about 3/4 throttle. Lots more work to do before its first flight in the spring. The hybrid engines are G38s coupled to 3000 watt electric motors. Wing span is 142 inches and the finished weight is expected to be 48 pounds. The paint will be that of the " Shark Tooth" shown here. You can check out the test run on Youtube:

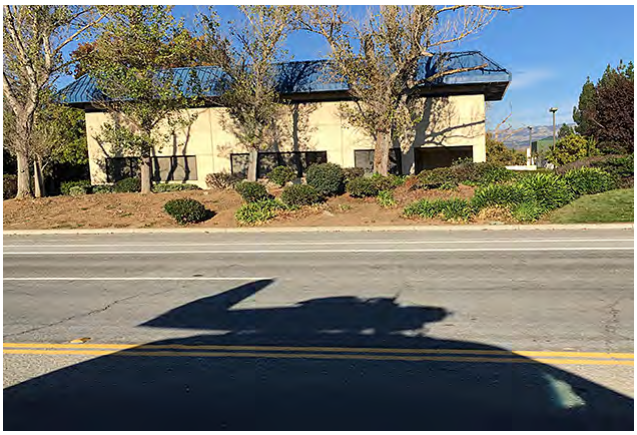
https://www.youtube.com/watch?v=ssBg9m9L6wk

Bad Things can Follow Bad Decisions

Bad things can happen well after a bad decision is made. In this case I did not have my buddy box setup and made the decision that with plenty of mistake altitude I could get by with out it. There are many factors that make this hobby reasonably safe. My reminder here is not to consciously bypass any of them. My thinking I could get by with out a buddy box is no different than thinking I could fly with a weak receiver battery or some other known problem.

Fortunately, this time as a result, no one was hurt. When an unanticipated turn put the plane above and behind us and the handoff of the transmitter was fumbled to compound the problem, things became out of control, but the error was in making the decision to fly without the buddy box in the first place.

Keep 'em Flying,
Mike



A day at the field

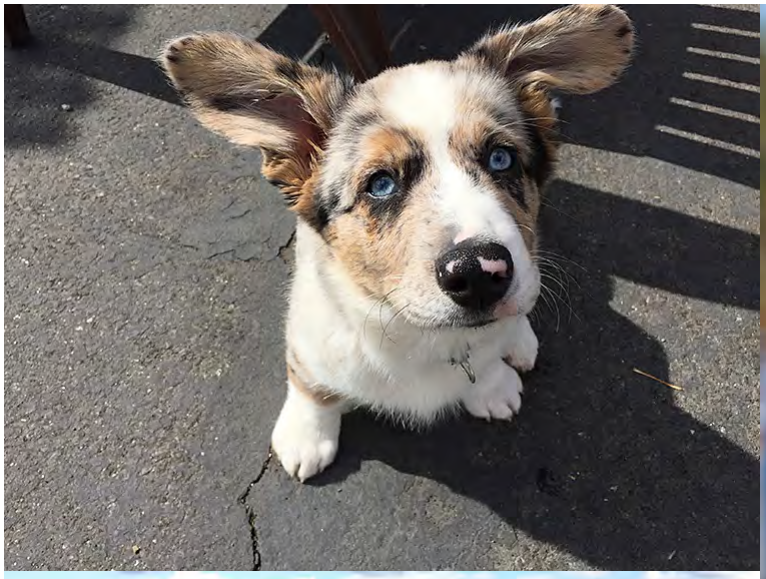
Here is a collection of photos from the field thanks to multiple contributors. (Ed.)

In case you plan to go flying at the field in the near future

Equipment Failure: Ben's plane was committed to the great beyond after these photos

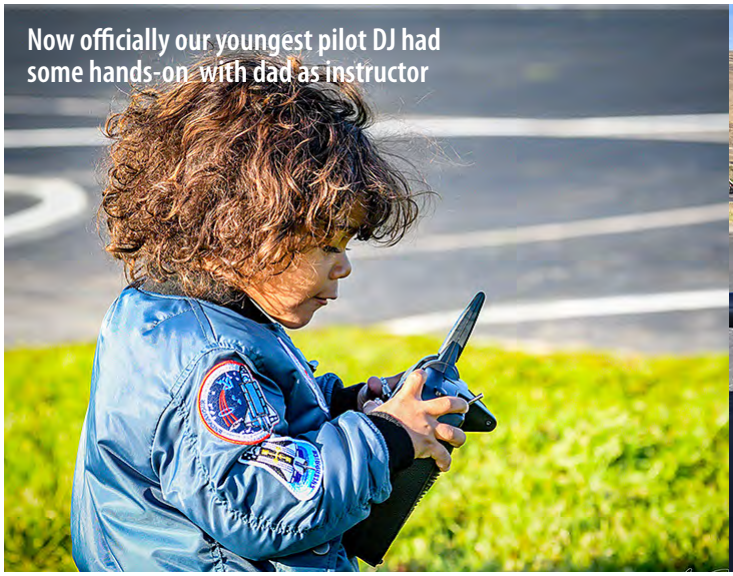
Equipment Failure: Sia lost his Spitfire, believes it was an RX failure

Never a shortage of wild life



Mike needs a lesson on how to Moon

What happens when you fly a really big Quad through the cloud



Now officially our youngest pilot DJ had some hands-on with dad as instructor

Keyon really wants Jets

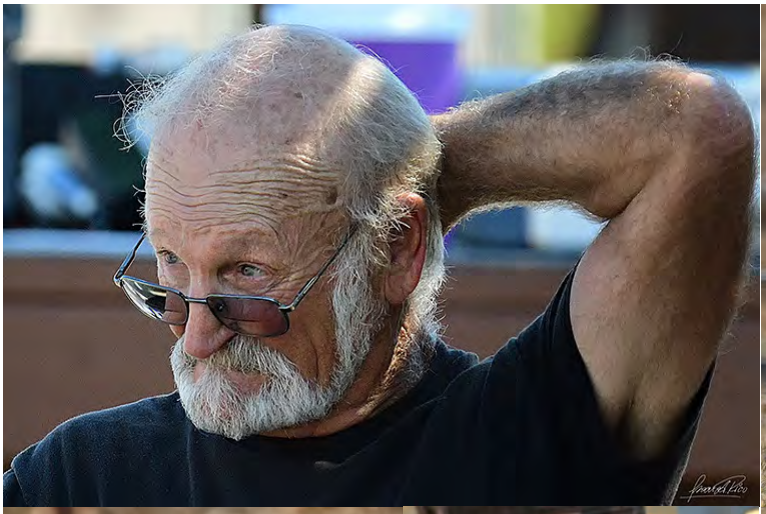
Yes We Can

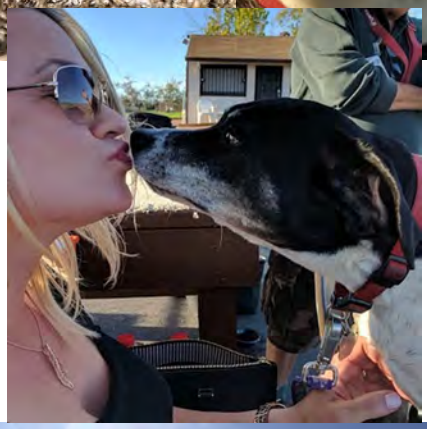
Manny really likes Jets

You Know who you are

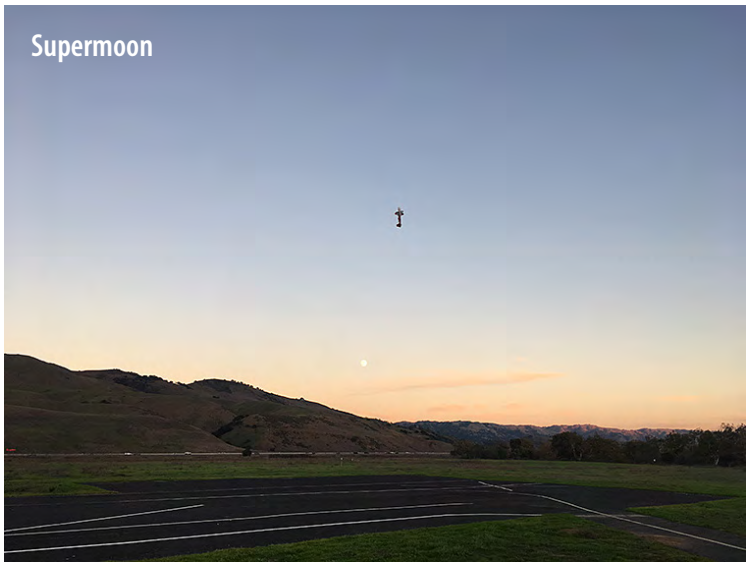
Keyon and crew after successful first test

And this is how you start a jet





One of the summer fires

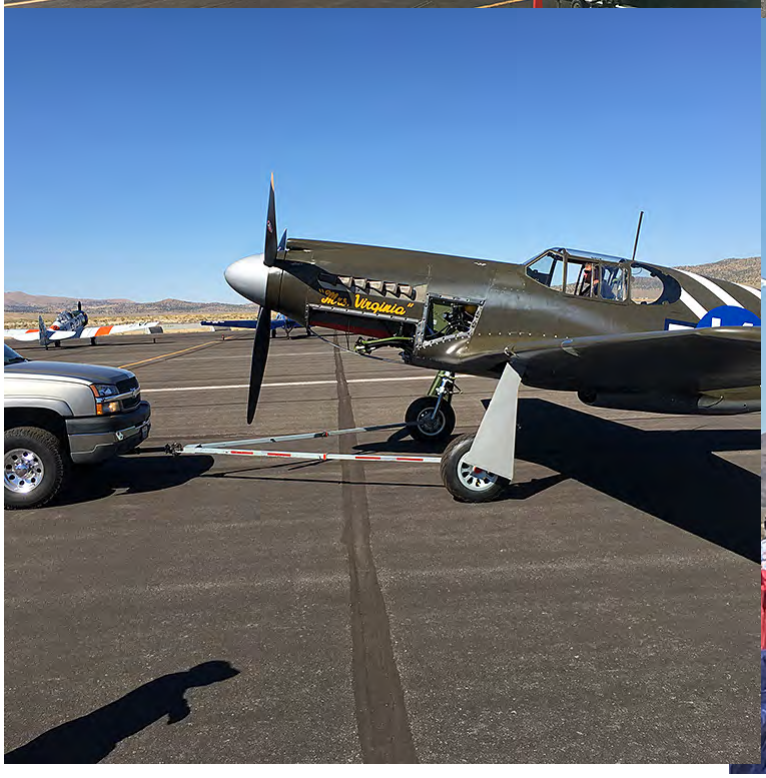

Supermoon


The divide

Reno Races 2016

by David Wilbur


OREGON




55150


TD
82 ATRS
HH
55150


14


Dreadnought
Sun Air Paul


S
201


201


43

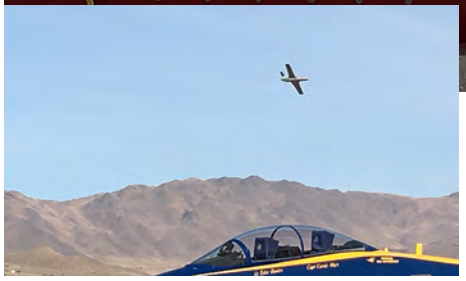

5
American Spirit


LF


Spirit of Freedom


CZECH 6


U.S. NAVY
7



AMA 2017 - Ontario, CA

Cyndi Cougoule Photos


185 SKYWAGON II
HQ - CQB


Super Dimona


ALL I NEED IS
THIS RC PLANE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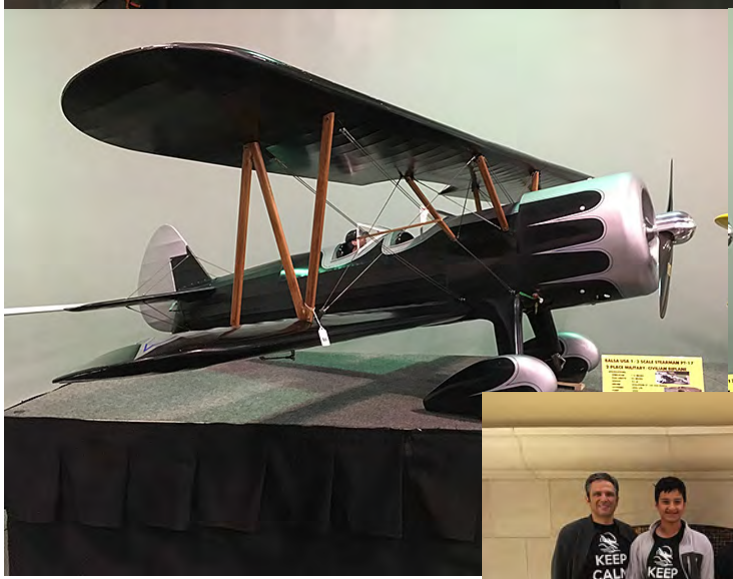
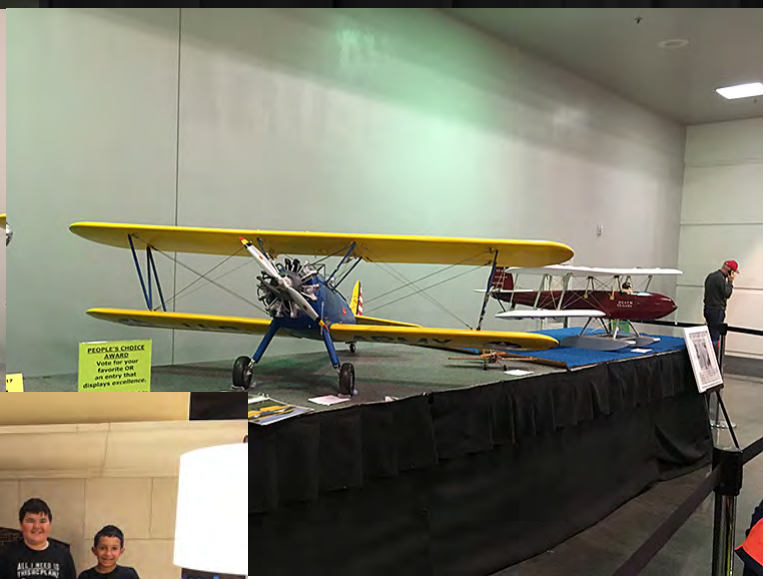



PEOPLE'S CHOICE
AWARD


KEEP
CALM
AND
FLY RC

Pattern at Tomcats

8/27/16
CD: Luke Peng
Co-CD: Peter Vogel

Beautiful weather with light wind along the runway, temperature was around mid 70s. We had 16 pilots in 5 classes. The contest ran smoothly. Peter Vogel's fantastic scoring system did a great job again. Thanks Tim Stahlke and club members who help the shack for lunch. We all had a wonderful day.

Sportsman (3)
1. Steve Colen 1978.75
2. Mack Peterson 1926.06
3. Paul Schlager Jr. 1906.73

Intermediate (3)
1. Peter Vogel 2000.00
2. Shawn Berkheimer 1991.83
3. Daniel Lipton 1979.09

Advanced (1)
1. Lawrence Tougas 2000.00

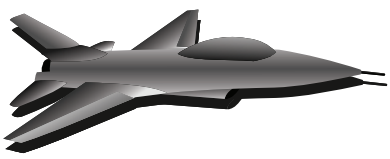
Masters (5)
1. Derek Emmett 2000.00
2. Luke Peng 1842.68
3. Frank Capone 1830.52
4. Jon Carter 1816.51
5. Jon Bruml 1800.34

F3A (4)
1. Matthew Kimbro 2000.00
2. Jim Kimbro 1925.76
3. Don Atwood 1909.82
4. Adrian Wong 1682.07

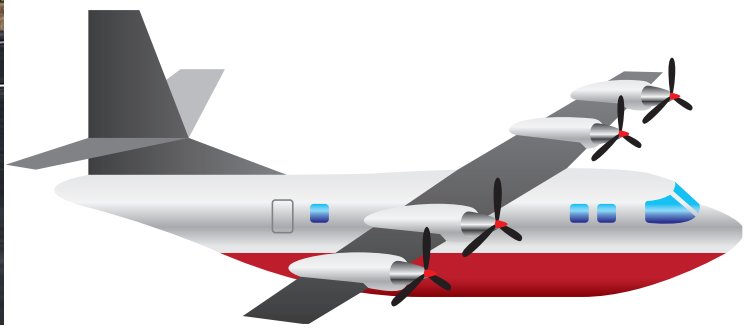
Jon Carter's electric bi-plane; BJ Craft Bi Side.


(L-R) pilots Daniel Lipton, Larry Tougas and Peter Vogel.

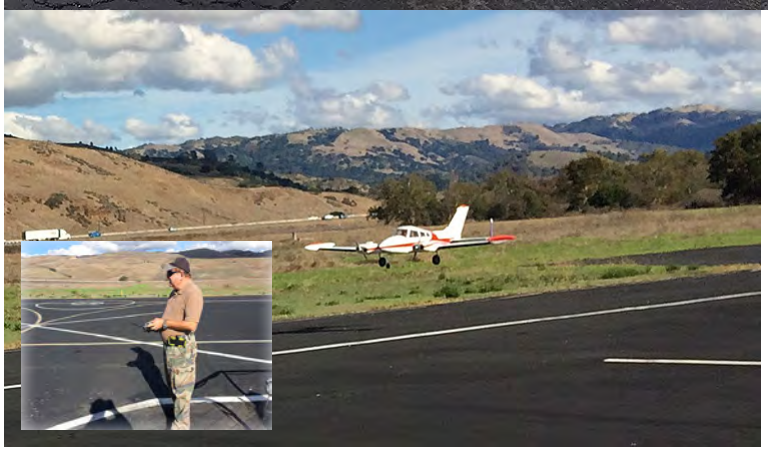
Team Kimbro's patternships: biplane Ascent, powered by YS-185 engine.

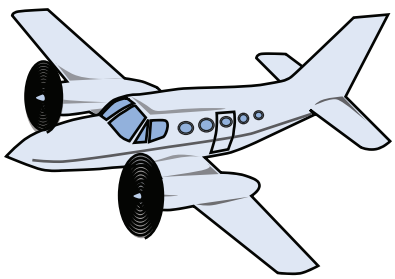


Tomcats member and training coordinator Peter Vogel poses with his competition aircraft and District Championship trophy for Intermediate precision aerobatics. Peter reminds all club members that he's happy to train pilots to fly aerobatics as well as providing basic training.



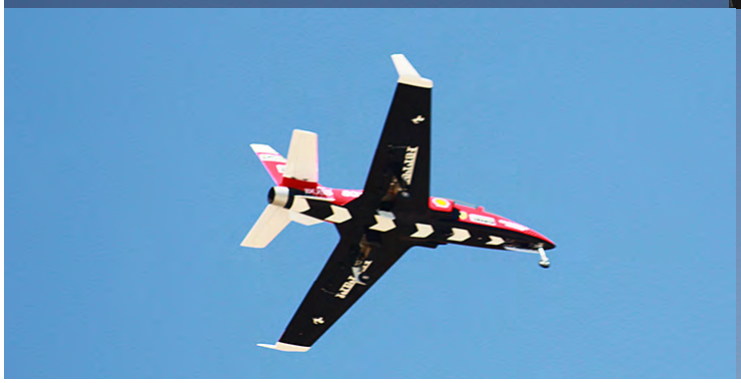
Ralph & Brent Humphrey Rescued a discarded empty hull of an aged and weathered Giant scale BUD-NOSEN-1962-CESSNA-310-TWIN RC-Airplane. Installed electric control and twin 2000W Outrunner propulsion system. Enlisted Test Pilot, Bahman Dara, for the Maiden flights which were successful.





Castle Jet day

Bahman Dara Photos

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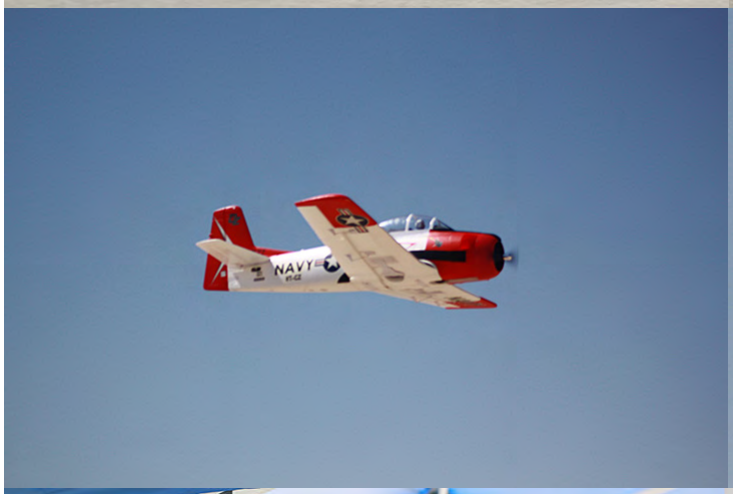
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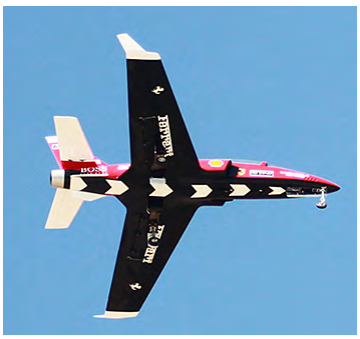


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NAVY
VT-CZ

Shahram's FW 190 Project

Shahram's P 51 on a pass

Oscar Rico Phtograph

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