Chino Valley Flyers

Official Club Newsletter

March 30, 2023 | Volume 26 Issue 3 | www. chinovalleyflyers.org

"To create an interest in, further the image of, and promote the hobby/sport of model aviation"

Inside This Issue

Quote For this Month:

"A smile is a curve that can set a lot of things straight."

Unknown

Bob Vaught's Indoor Slow Flyer at Tim's Toyota Center

Bob's slow flyer is a bit blurred due to the low intensity lighting in the Toyota Center. The center is a great indoor flying venue during the winter *(see page 10)*. Bob's flying a Twisted Hobbies Crack: https://twistedhobbys.com/th-32-epp-crack-laser-pro-usa/

Dale Roberts Electric Big Horn

Bill Gilbert: CVMA President's Message

As we all still hope for this wintry weather to pass, hopefully you are still engaged in modeling activities. Building, repairing, or even simulator flying can keep our hobby interesting!

If you still have the flying itch and the weather is not letting you get enough flying time, we have Indoor Flying available at two venues: The Findlay Toyota Center which is a large, very spacious facility.

And, the Prescott High School Gym, a smaller, but very nice facility (available through membership with CdA). At ither of the facilities you can enjoy the small foam indoor flyer airplanes, or the small helicopters. Flying indoors out of the weather has been a saving grace for some this winter, and is a lot fun on its own.

The AMA has provided an update regarding altitude limits; the AMA were anticipating a blanket waiver for higher altitudes in FRIAs located outside of controlled airspace. This did not come to pass. Instead, the FAA is allowing *Sanctioned Events* to receive 700' to 1200' altitudes in coordination with the AMA.

What this means for us, is that we are back to a 400' altitude limit for everyday flying. For our events which require higher altitudes we will file as a Sanctioned Event with the AMA and request a 1200' ceiling, since we have class E5 airspace above us.

This will be the case for our Glider Endurance Event, and the two IMAC Events that are scheduled for this summer. These will be *Sanctioned Events*. We have CD's (Contest Directors) within the club that can file these Sanctioned Events.

We will soon be performing some "Spring Cleaning" and Maintenance. We need your help to keep our facility looking great, for our own enjoyment. I do hope many of you can volunteer for the upcoming club upgrades and Work Days. It takes participation by all of us to keep our club in the great shape it is in!
See you at the field!

Bill

Flight Instructors

Introductory Pilot Mentors

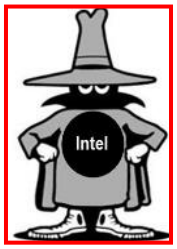
> Al Marello Chief: Flight Instructor

> Randy Meathrell: Control Line Flying

> Marc Nelissen: Basics

> Jack Potter : Gliders

> Bill Gilbert: Helicopters



WHAT HISTORIC WWII COCKPIT IS THIS?

See Page 8.

President — *Bill Gilbert*

Vice President — *Mark Lipp*

Treasurer — Don Crowe

Secretary — *Bob Steffensen*

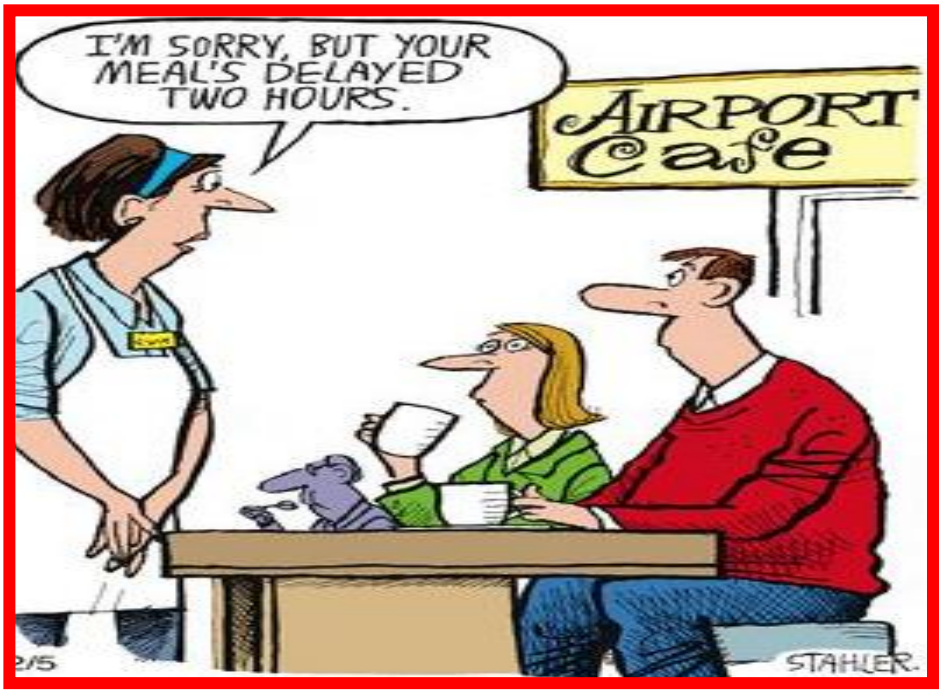
Safety Officer — Rick Nichols

Chief Flight Instructor — Al Marello

At Large Member — *Dan Avilla*

At Large Member— Gary Cosentino

Newsletter Editor — *Bob* Shanks



Our Club is growing: Please wear your name tag members so we can all get to know all the newer members and who is who when flying.

CLOSE & LOCK THE GATE if you are the last one flying.

MARK YOUR CALENDARS

Events for 2023:

- ***May 20, 2023*** — Spring Fling Fun Fly & Swap Meet
- ***June 17, 2023*** — E-Warbird Races
- ***July 4, 2023*** — Pot Luck & Town of Chino Valley Fire works (watch from the field)
- ***July 22, 2023*** — Glider Endurance Contest
- ***Aug 12, 2023*** — STOL Races
- ***August 18~20, 2023*** — IMAC SW Region Shootout at Chino Valley
- ***September 16, 2023*** — Annual Steve Crowe Memorial Fun Fly
- ***October 21, 2023*** — Seventh Annual Build and Fly Contest
- ***November 11, 2023*** — Fall Swap Meet and Fun Fly
- ***December 5, 2023*** (TBD) — Christmas Banquet

SAFETY ALWAYS COMES FIRST

By Rick Nichols Chino Valley Flyers Safety Officer

OK, let's all think back a few years, well maybe even more than a few years. (or less). Be honest now. How many times have we all thought back and discovered that "I wish I had listened to what someone had advised me to do".

Yup, at some time or another we all have not listened to some bit of advice in our lifetime from our teachers, parents' relatives or friends and learned later that we should have taken that little bit advice!

Safety is probably the most important and critical aspect of our sport at our flying field. We stand next each other's shoulder to flying machines that travel anywhere from 30 to 150 MPH.

We trust each other with our capabilities controlling these various machines in a way that will keep us safe and our fellow pilots and our spectators safe.

We are expected to have due diligence in regard to watch only our actions and also our fellow pilots actions. We all know the rules, we all know the courtesies that are expected of us.

We all know that there will be no feelings hurt if a pilot takes the time to make a fellow pilot aware If he or she can make a correction in their piloting skills.

The last couple of years have been very safe years for our club. We should all recognize the work that our Officers have dedicated to make our facility a Central and Northern Arizona Premier flying field.

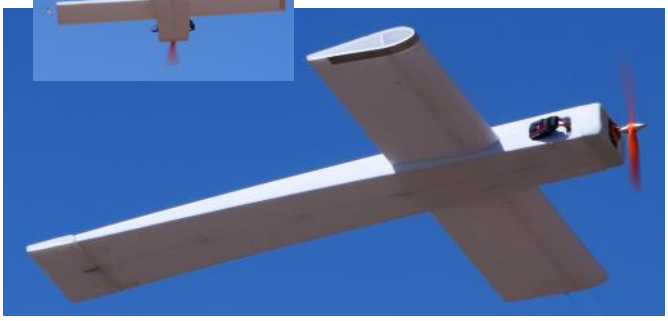
This would never be possible without the support of all our 150+ members.

Chino Valley Flyers Models

Dennis O'Connor's iconic World War II Bearcat

Rick Nichols caught your editor just as he got dizzy using 25 foot control lines and flying 4 second laps with his control line Nobler. He will be adding longer lines needless to say.

Al Weikart took pictures of *Bob Shanks'* Goldberg Electra glider at right.



In keeping with Easter, *Dave Domzalski* designed his control line Crucifix plane, it flies fairly well too. *Rick Nichols*, lower left launched it for him.

Gary Cosentino's Taurus a golden oldie plane from 70's and 80's.

Member's Flying Machines Sighted at the Flying Field

Field fog taken *Al Weikart*

Al says it was a clear blue sky day and low wind predicted so he headed for the field, ha. It was socked in with fog but he was able to fly his UMX Twin Otter keeping it really in close. He says landing was sloppy because he couldn't line it up for a stable approach and see the descent rate without momentarily losing sight of it.

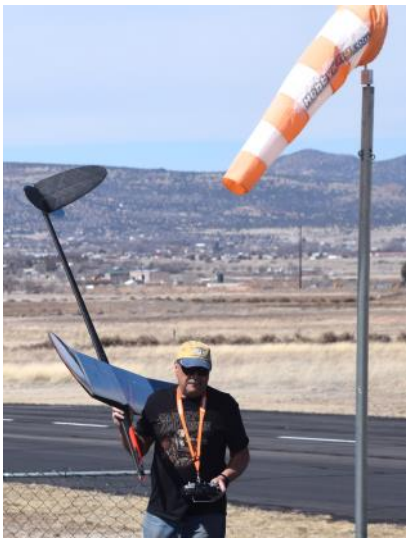
Shel Liebach's twin Alekto TT62.

There were 3 full size Alekto planes built to compete in the small business aircraft class.

Shel says it was almost 1/2 the operating cost of the same size jet, but just didn't catch on, it was too slow. Shel says he flies his model on two 25 size motors using two 4 cell 5000 Mah batteries with 12x6 counter rotating props.

Tyler Johnson's Electric Flex Innovation.

At left, *Dennis O'Connor's* Douglas SBD Dive Bomber. He took the rear pilot out for better balance. The rear pilot makes the plane tail heavy, sounds like the pilot needs to diet!



John Dora and his black glider.

Dane O'Brian's two big gassers.

Dave Bates very nice P-39, it has scale rivet lines and electric retracts.

A Mysterious Orange Receiver

A Strange Short Story by Bob Shanks

A lot of the RC flyers use the inexpensive orange receiver, while it got some bad press initially, many still use it with no problems. However, an unnamed member found one in the hanger at the field that looked all beat up and well used. It had a strange purple spot on it and in small print was the old Chinese proverb, *"A crisis is an opportunity riding the dangerous wind."* That phrase seemed to fit this member's abilities or lack of abilities. It could only be read with a magnifying class. Where did that spot come from? It looked like it had been there since it's manufacture. No one had seen an orange receiver with a purple spot on it like that before. So, he thought he would use it in one of his "beater" electric powered foam planes just to see if it would work with his Futaba radio.

His current "beater" plane was difficult to fly and had survived many crashes, he swore it was not pilot error, but many watched and scratched their heads in amazement that he was such a poor flyer overall with that particular outstanding plane. He was one of those individuals that took a very long time to even learn to fly at all. This flyer was a typical just fly in large circles type RC modeler, he didn't like to do aerobatics (probably couldn't do many anyway) and even had difficulty doing simple loops for some reason. Many members had the plane and swore by it as one of the best RC planes one could buy.

After installing the purple spotted receiver, the plane flew almost as if by itself, he was able to do a host of aerobatics no one had ever seen him do or even attempt to do. The plane indeed seemed to be possessed and flown by someone else.

However, the purple spot was slowly disappearing as the plane was flown. After a few months the spot was gone, and the receiver looked like the other similar orange receivers. Now, the plane that was so desirable by other pilots, was again almost uncontrollable by this flyer, same problems he always faced. He appeared to lack good RC flying reaction times.

So, the mysterious spot was indeed a Chino Valley Flyers RC mystery fraught with many questions, where did the spot come from? Was it the strange purple spot indeed the reason the plane flew so well? Most likely the psychological root seems to be this flyer had misplaced confidence on something with no rational reason. This flyer may have more inherent skills than he realizes, seems he just lacked simple confidence in his flying skills. <u>The lesson or moral of this story to be learned here is there are possibly many club members who don't practice enough and often don't fully realize and appreciate the flying skills they really do possess.</u>

Newsletter Make Up & Layout Rationale Briefly Examined

By Bob Shanks

The last issue of the newsletter had eight pages covering control line activity at he field. Your editor usually goes out to the field twice a week and realizes not all types of models and what members are building can be covered each month. I do try though.

I don't cover just what I'm interested in building and try very hard to make sure we have a good cross section of activities our members are building and flying.

This has been an extraordinarily long and very cold winter season. While we have had some nice flying days sprinkled in here and there not much activity has been seen at the field for the most part.

Hopefully, members have been in their heated workshops repairing planes and working on new projects. We have our annual "Build and Fly" contest coming up in the fall so while there seems to be a lot of time to build the contest can suddenly sneak up on us and be on the horizon.

Your editor has noticed on many days, when at the field, there has been a lot of activity at the two control line circles (C/L) and not much if anyone flying off the main runway. On some days there were as many as a dozen flyers at the control line area with a host of different C/L planes ready to fly and virtually no one flying off the main runway. As they say, "Go figure."

We have been slowly adding members to a small group of flyers who fly both RC and control line. At this writing there's approximately a dozen members who are building and flying control line models. The lower photo at right taken by Jeff Moser shows the two control line circles. A small equipment shed has also been added to the area.

When preparing the newsletter your editor, when at the field, always checks the main runway activity first taking photos of those flying there and then also checking out what activity is going on with the C/L flyers. There's two circles and a nice parking area and newly graveled areas. The smaller circle is for half A smaller sized C/L planes.

Dave Domzalski at the circle.

Sodium-based Batteries: A Possible Future Less Expensive Battery? *

These batteries could become a viable, cheaper alternative to Lithium Batteries

What a time it is to be a battery chemist—on paper, some are even multimillionaires," says Jerry Barker, chief scientist and founder of the battery firm Faradion and a chemist who has been discovering battery materials for decades.

Breakthroughs in lithium-ion battery technology are being registered almost daily. "I can't keep up with it all," Barker says. Gigafactories for making lithium-ion batteries are appearing with increasing frequency. It would take something extraordinary to knock Li-ion battery technology off its perch.

And yet lithium has a fundamental problem. Demand for the element is so great for applications including electric vehicles, portable electronic devices, and stationary energy units that lithium mining companies are struggling to keep up. "The price of lithium will stay high," says Michael Sanders, senior adviser at the consulting firm Avicenne Energy, speaking at the International Battery Seminar & Exhibit in March. In addition, about 90% of the world's supply of lithium is controlled by Chinese companies.

As a result, batteries based on sodium are gaining attention, especially from Western companies seeking a secure supply chain for battery materials. The Achilles' heel of sodium-ion batteries is that they can store only about two-thirds of the energy of Li-ion batteries of equivalent size. Developers of Na-ion batteries say they are steadily increasing the energy density of their prototypes. None are commercial yet, but serious competition for lithium could soon be on the way.

"Tesla might actually have to get into the mining & refining directly at scale unless costs improve. There is no shortage of the element itself, as lithium is almost everywhere on Earth, but pace of extraction/refinement is slow." Musk pointed to data from the information service World of Statistics showing that the price of lithium hydroxide had risen to $78,032 per metric ton from $6,800 in 2019.

"Price of lithium has gone to insane levels!" ***Elon Musk, CEO, Tesla***

Meanwhile, the price of sodium hydroxide, a common sodium-ion battery precursor, is below $800 per metric ton. While lithium must be extracted from rocks or brine, battery-grade sodium hydroxide is readily produced during the electrolytic conversion of salt into chlorine.

Cost is indeed a key differentiator between lithium and sodium ion, according to Chris Wright, executive chairman of Faradion, a company developing sodium-ion batteries.

SODIUM OR LITHIUM?

Sodium-ion batteries trump lithium-ion in many ways, but not on the key characteristic of energy density.

CHARACTERISTIC	Na-ion	Li-ion
Energy density	70–160 W h/kg, with potential to go to 200 W h/kg	Ranging from about 150 W h/kg for lithium-iron-phosphate cathodes to 275 W h/kg for nickel-manganese-cobalt cathodes
Manufacturing	Yet to be manufactured at commercial scale	Proven at scale and in high-performance cars
Raw material cost	Sodium hydroxide is $300–$800 per metric ton	Lithium hydroxide is $78,000 per metric ton
Safety	No risk of thermal runaway	Can overheat and catch fire
Cycle life	Some developers have struggled to overcome performance fade	Steady performance over a high number of cycles
Performance at low temperature	Maintains >90% performance at -20 ºC	Drops considerably in cooler temperatures
Recyclability	Simple recovery process	Complex separation of metals may be required

* https://cen.acs.org/business/inorganic-chemicals/Sodium-comes-battery-world/100/i19

P-51 Mustang: Most Effective Air-to-Air Combat Aircraft of World War II *


Early P-51 Mustang

At the beginning of WWII early in 1940, before the U.S. became involved, the British were buying planes from the U.S. and as the war progressed asked specifically for the P-40 Warhawk. Curtiss-Wright at that time was backlogged with orders for the P-40 so the British asked North American Aviation to build the P-40 for them under license from Curtiss-Wright. James "Dutch" Kindelberger then president of North American Aviation told the British they could design and build a better aircraft than the Warhawk and have a prototype ready in 120 days. In fact, North American beat the 120-day deadline with the NA-73X as it was designated then.

After flight testing the new plane was delivered to the RAF under the Lend-Lease Act of 1941. The American-based North American Aviation actually owned the planes but could lease them to any country or nation deemed "vital" to the defense of the U.S. The P-51 designation stood for pursuit, the British actually named the plane as Mustang. It became operational with the RAF in May of 1942 but not as a fighter. The original Allison V-1710 engine used in the original design had poor high-altitude performance, so it was used initially in a ground-attack role, hence the pursuit designation. The U.S, Army Air Forces eventually named the early version of the British Mustang the A36 Apache or "ground-attack" aircraft after taking a second look at the design.

Because of the work done by British engineer Stanly Hooker who worked in the engine performance section of Rolls-Royce, it's quite possible nothing more would have come of the British Mustang or as the Americans called it the A-36 Apache. Rolls-Royce, a luxurious car designer and manufacturer also produced aircraft engines. Hooker suggested that the Royal Air Force use the Rolls-Royce Merlin engine also used in the Supermarine Spitfire . Once this was done, the resulting change in the Mustang's performance was simply remarkable. The Mustang weas already faster that the Spitfire and has the range to be the first single-engine fighter to fly all the way into German airspace and back and now had high-altitude capabilities performing well at up to twenty-two thousand feet due to the superior Rolls-Royce Merlin engine.

The U.S. then decided to field its own version of the Merlin-powered engine that would be built in Detroit by Packard Motor Company under license from Rolls-Royce. North American Aviation designers made several other modifications to the Mustang further enhancing its performance envelope. That plane was then designated the P-51B, It was even faster and could fly even higher that the British Merlin-powered Mustang from which it was derived.

The P-51B entered service in 1943 and was the right plane at the aright time, and it went into combat not a moment too soon escorting bombers based in England in the daylight bombing missions against German-occupied Europe.

The U.S. Army Air Force required more and more P-51s so North American Aviation opened a plant in Dallas, Texas where the P-51D was introduced. That model had an even more powerful engine and was instantly recognizable by it streamlined bubble canopy and auxiliary fuel tanks increasing the operational range to 1300 miles. North American Aviation built over 8,200 Mustang P-51Ds.

By the end of WWII Mustang pilots had scored a total of nearly five thousand aerial victories against the Luftwaffe about half of all U.S. Army Air Force victories against the German Nazi Air Force. Following WWII the U.S. Army Air Forces became a separate branch of the U.S. armed forces renamed the U.S. Air Force.

The "P" was replaced with a "F" indicating it was truly a fighter aircraft. The Mustang fighter was on the front lines during the Korean War but the rise of the jet fighter relocated it back to a close air support ground attack aircraft.


Editor with Steve Hinson at right who flies the P-51D to air shows and for movies.

The P-51 remained in service with the American Air National Guard units until 1957. Today, there are still more than 250 Mustangs left in the world, most of them owned by private citizens with about 150 of these in airworthy condition, 130 Mustangs are located in the U.S. Many of these make regular appearances at air shows around the country exciting fans who want to catch a glimpse of the legendary aircraft that frighted the Luftwaffe and to hear that powerful Merlin Engine.

While your editor is not a pilot, his flight in a P-51D was a highlight at an air show.

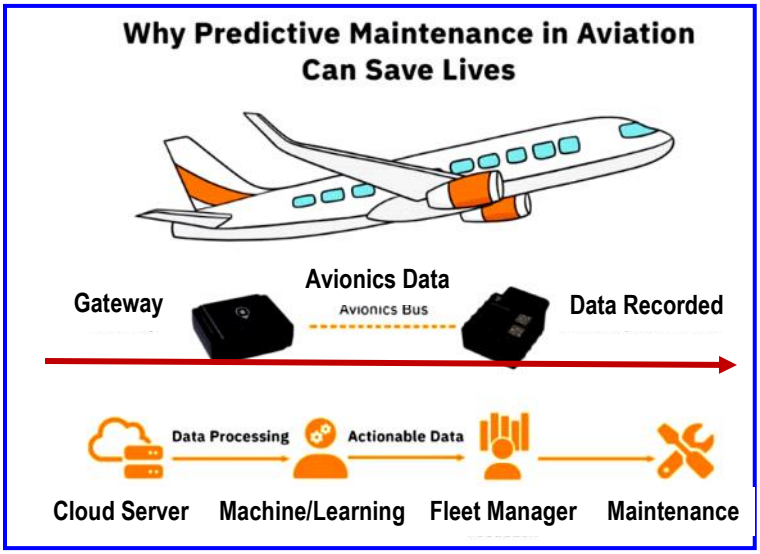
*Source: *Elks Magazine — February 2023* *(Article edited and modified by the editor to fit the newsletter. Elks Magazine came from Rick Nichols.)*

What's Predictive Analytics — Is it Used in Aviation? *

What is meant by predictive analytics?

Predictive analytics is a branch of advanced analytics that makes predictions about future outcomes using historical data combined with statistical modeling, data mining techniques and machine learning. Companies that employ predictive analytics to find patterns in this data helps identify risks and opportunities.

Predictive analytics uses historical data to predict possible future events. Typically, historical data is used to build a mathematical model that captures important trends. That predictive model is then used on current data to predict what could possibly happen next, or to suggest actions to take for optimal outcomes when in research, development and for future maintenance issues.



Artificial Intelligence (AI) is completely autonomous while predictive analytics relies on human interaction to query historical data, identify trends, and test assumptions. Due to this, AI possesses a significantly broader scope as well as inherently more risk and error than applications that depend solely on predictive analytics using historical data.

Some aircraft manufacturers use historical data to perform predictive maintenance or to inspect and repair aircraft before break downs can occur: this can be based in part on predictive analytics.

ASRS Aviation Safety Reporting System

https://asrs.arc.nasa.gov/index.html

The ASRS was established in April 1976 under an agreement between the Federal Aviation Administration (FAA) and National Aeronautics and Space Administration as an independent scheme for voluntary aviation occurrence reporting in the USA which would confer conditional immunity from FAA Enforcement Action as a means of encouraging reports of lapses which might otherwise not be known about.

The ASRS in run by NASA and largely funded by the FAA. It receives, processes and analyses voluntarily submitted incident reports from pilots, air traffic controllers and others. Reports submitted to ASRS describe, from the subjective perspective of the reporter, both unsafe occurrences and hazardous situations. The particular focus of ASRS is the effect of human performance in the aviation system. Individuals involved in aviation operations (pilots, crew members, ground personnel, etc.) can submit reports to the ASRS when they are involved in or observe a situation that they believe compromised safety and provided that these reports are the only ones received about an occurrence, immunity from FAA Enforcement Action is thereby obtained - see the relevant FAA Circular under Further Reading below.

Each Report is assessed by at least two appropriately qualified persons who are able to identify any aviation hazards. The NASA publication CALLBACK is a widely distributed monthly bulletin which contains selected dis-identified excerpts from ASRS incident reports with supporting commentary and may also include summaries of ASRS-based research studies and related aviation safety information. The ASRS database may also be searched online.

Whilst ASRS data has proved very useful in identifying both potential and actual issues, it has commonly also been ascribed the status of a statistically valid dataset when this is demonstrably not the case. Statistical claims based solely upon the prevalence of ASRS Reports should be treated with caution.

The relatively recent adoption of Flight Data Monitoring in the USA can be expected to have some effect on the use of ASRS by flight crew, since many FDM programs are associated with incentives to make supporting text reports to the Operator where an FDM Alert may have been triggered.

The status of significant FDM occurrence findings in relation to ASRS immunity has not yet been explicitly addressed, and might have an effect the type of report made to ASRS by flight crew.

* https://www.proponent.com/predictive-analytics-vs-machine-learning-in-aviation/#:~:text=With%20predictive%

Indoor Flying at the Toyota Center

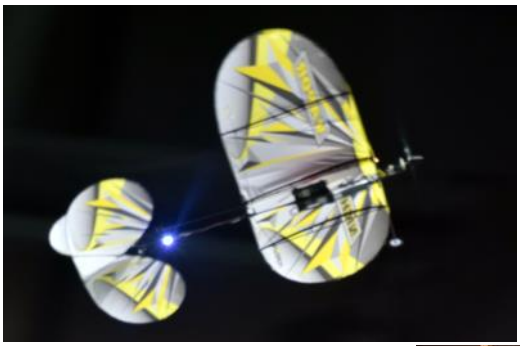
Over 20 club members flew a variety of small electric RC models at the Toyota Center in Prescott Valley. The area was set up for football so the concrete floor was covered by a soft type foam material. There's lots of room for some fun flying activities with no rain, snow or gusty winds.

If you have a small electric model consider coming to one of the indoor flying days in the future. The lighting posed problems for taking some of the photos but your editor captured a few. *I didn't list all the pilots names and their planes, a very active flying fun two hours*.

The remaining two planned days for indoor flying this month at the Toyota Center are March 21 and 28 both on Tuesdays. Bill keeps us all well informed with reminders so check out the flying inside the Toyota Center if you have small electric plane or helicopter.

Lee Boekhout, left, and *Larry Roberts* check out a possible plane to fly with a neighbor at right.

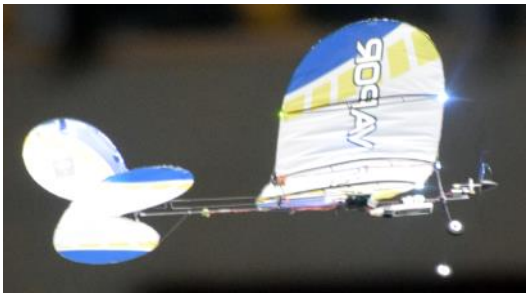
Bill Gilbert hovers his electric foamy.

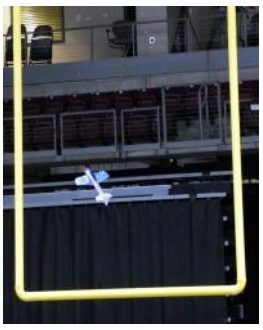


Mark Robbins catches his little foamy.

The end zone at far left was for helicopters.

Jerry Calvert taxis his plane right up to where he is sitting.





That's worth three points for a slow flyer score!

Hey Members, Don't Drive the Cart on the Runway If the Tires are Plugged with Mud from the Field!

This has been one of the coldest and wet winters we have had in our area in several years. We have, at prior meetings, reminded everyone repeatedly to ***NOT*** drive the cart on the runway during inclement weather due to the tires depositing huge clumps of mud on the runway hindering take off and landings. If you make that mistake it is then your responsibility to get a large broom and sweep off the mud from the runway.

All one has to do, if the cart is needed to retrieve a plane, is to quickly check the tires to see if they are plugged up with mud. Just driving the cart over from the shed is not a usually a problem because of our graveled road into the field. However, always check the tires for mud before driving it on the runway as a matter of courtesy to all our flying members.

As you can see from these picture at left, if it is a wet day and the cart is driven out into the flying area of the field the tires, we have larger tires installed, *will pick up tons of mud*. *Harold Ellis* is driving the cart in the photo above. And for you newer members this retrieval cart was donated to the club by member *Dan Avilla*. What a great donation to the club and not an inexpensive item to have either, it is much appreciated by all members, next time you see Dan at the field let him know how important this has become to the club and thank him for his thoughtfulness. There are other safety features here to consider as well, using the cart one does not have to keep such a close eye out for rattlesnakes and yes we have seen them at the field out in the flying area as well as some have been sighted in the parking area.

So members, always check the tires for mud during wet weather and don't drive the cart on the runway, go around the paving.

Rattlesnake Issue at Our Field: Stay Alert Members

Since we are not having a monthly meeting due to this very long, cold and wet winter, this page is for some general safety and field operational guidance. This article on rattlesnakes was written by our safety officer *Rick Nichols* some time ago but we need to revisit it. As spring warms up and the weather improves and yes it will eventually improve, we all must use common sense while driving the cart and for keeping an eye out for our Rattlesnake friends, yes we have seen them at the field.

Snakes tend to avoid humans but bite only as a last resort when they are threatened or surprised. When a venomous snake bites someone 911 must be called and that person must get to an emergency room right away. Snakebites are treatable, however, according to the American Red Cross, of the around 7,000 people bitten by a snake in the United States every year, fewer than five people die.

Symptoms

If any member of our club that may have been bitten please relay to us that if he or she is bitten and they will be able to communicate that with fellow members.

Treatment

If a person has been bitten, it is vital to get medical help immediately. The person must be kept calm and given reassurance that a bite can be treated, and that help is on the way.

What to Do

While waiting for help to arrive, the American Red Cross advises to wash the wound and then apply a bandage to slow the spread of venom. Place the end of the bandage against the skin and wrap, using overlapping turns. Start at the point farthest from the heart and cover a long body section, such as an arm or calf. Check the tightness of the bandage so a finger can still pass easily but not loosely underneath it. Keep the injured area still and make sure it is lower than the heart. The person who has been bitten should only walk if absolutely necessary. Carry them to safety if possible.

What Not to Do

Do not allow the person who has been bitten to become over-exerted. Do not apply a tourniquet. Do not apply a cold compress. Do not cut into the bite with a knife or razor. Do not try to suck out the venom. Do not give any stimulants or pain medication unless told to by a doctor. Do not give anything to eat or drink. Do not raise the site of the bite above the person's heart.

If a bitten person is showing symptoms of shock, lay them down and raise their legs. Use a coat or blanket to keep them warm, call 911.