THE SLOW ROLL

CHARTERED #921
Since DEC. 1974

Happy ThaNksgiViNG

NOVEMBER 2023

The Slow Roll is published by the Sun Valley Fliers by and for its membership to all others interested in the building and flying of radio control aircraft.

Durning Oct 11 to 15
The USSM was held in Mesa, AZ
In this Slow Roll we borrow photos to
Let you see what was going on. There are
more photos on other web sites.
Thank you USSM for a great event.

Inside this issue: **Cover Photo by Bob Purdy**
SVF CLUB with 48 years as a charter club

President Report
Board Minutes YES
Minutes YES
Birthdays
US Scalemasters Photos+
VIDEOS
BITW Photos
Happenings YES
SVF Meeting photos YES
Thumbs Up guys
19?? NATS Winners
Toys 4 Tots
DO-X & John Wisniewski
Jet Rally Flyer

President—Frank Moskowitz
Vice President—John Geyer
Treasurer—Oliver Henien
Secretary—Mike Peck
Editor—Bob Purdy

MEETING AT FIELD NOVEMBER 4 at 8 AM

NOVEMBER 2023 SLOW ROLL PRESIDENTS LETTER

Welcome to the November 2023 Slow Roll.

Hello everyone. Happy Thanksgiving Month!

As mentioned in last months letter, you all should have received your membership renewal reminder via email. Our renewal runs from October 1st through December 31st, 2023. After that you will be delinquent, and you don't want that to happen. I urge not to wait until the last minute to renew. Your membership fees allow us to continually upgrade the field and keep it clean while also offering a safe place to fly. PayPal is the easiest way to pay your dues. You **do not** have to have an account with PayPal to use this service. Just go to the Join/Renew link on our website. It will walk you through the process. If you don't want to use PayPal, then we have an option to pay with cash, or check. Send Tony Quist our membership director, an email at quist23@cox.net and he will help you through the process.

We are getting closer to our Ramada permitting issues. Floodplain Management has made an initial review of our project plans. They told us we may proceed to the next step in the plan review/permit process with Planning & Development. Next step is final approval from the city. I will keep you posted as that progresses.

Mark your calendar for our **Toys for Tots** Electric Flying Event. It will be Saturday December 9th, 2023, from 8am to 3pm. Hosted by Sun Valley Fliers and the One Eight Air Force. All proceeds go to the Marine Corps Reserve Toys for Tots organization. All electric aircraft welcome. There will be sub sandwiches available to purchase. Fun Events, Raffles, and Prizes. Entry fee is one new unwrapped toy. See the flyer in this edition of the Slow Roll. For More Information: contact CD Robert Bayless – 623-694-3379 sumobob@cox.net

For those of you that haven't attended a club meeting in a while, November is the time to start. Please join us on **Saturday November 4th, 8am at the field**. We will have many raffle prizes and the "50/50" could make you very happy $$$. You never know what might happen, and you don't want to miss it. We have water, coffee and donuts for your enjoyment. **Remember, the meeting is at the SVF Field and starts at 8am.**

Have fun out there!
Frank Moskowitz
President

Sun Valley Fliers Club Meeting Minutes
Oct 7, 2023

Officers Present: President Frank Moskowitz, Vice-President John Geyer, Treasurer Oliver Heinen, Secretary Mike Peck

Board Members Present: Charlie Beverson, Dan Bott, Jim Sprecker, Val Roqueni, Brian Rhoads, Craig Guest

Meeting Open: President Moskowitz called the meeting to order at 8:03 AM at the SVF field.

Guests: None

New Members: None

New Solo Pilots: None

Secretary's Report: The Board of Directors, by plurality vote, has decided it is not a good idea to publish the balance of funds available to the Club in the minutes or on the web in the Newsletter. Accordingly, President Frank has scrubbed that amount from the September 2, 2023 SVF meeting minutes, and the minutes were approved as modified and published.

Treasurer's Report: Oliver Heinen reported the club treasury has adequate funds. The report was approved as presented.

Membership Director's Report: The notices to club members to renew their membership went out on September 5th by email. All members are encouraged to renew their membership as soon as possible, but before the end of the year, in any case.

Safety Officer's Report: Kenny Rhoads had no reports of any unsafe conditions at the field.

IT Update: Bobby Santoro was planning an update to the SVF website, however, it is not complete yet.

Old Business:

1. Ramada permitting is still in progress. Our Civil Engineer, Steve Bargeloh, has completed the site plan and has is finished working with the ramada canopy supplier to obtain full size plans in a format the City will accept. He cannot submit the permit application until floodplain clearance is obtained, and we are still waiting on that. The City of Phoenix Floodplain Permitting Department has 46 weeks from August 29th to release approval. We are making progress, although it seems to take forever.

2. We are also still waiting on the FAA to approve our field for FRIA status. They have pushed up the deadline for remote ID enforcement to March of 2024. Model airplanes flying within a FRIA site will not require remote ID, if our understanding is correct.

New Business:

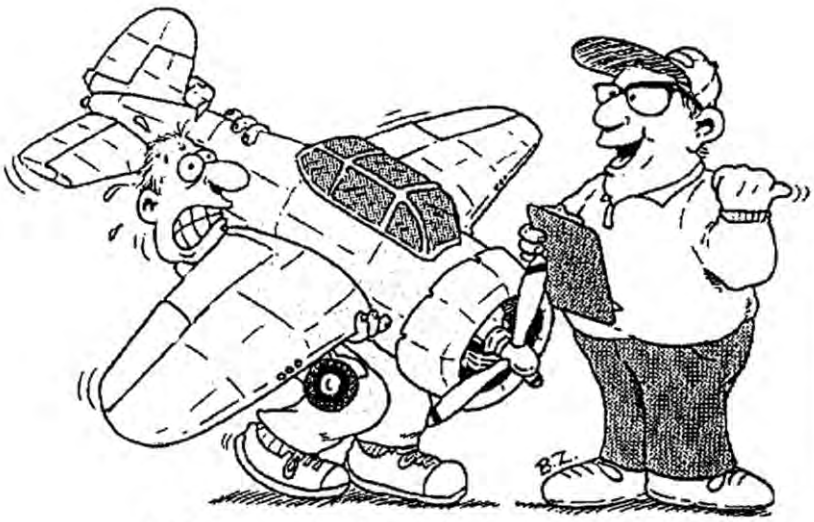
1. Bob Bayless has the flyer for the December 9, 2023 Fly 4 Tots event at the SVF Field. Please support the club by attending and contributing an unwrapped toy, even if you do not fplan to fly in the event.

50/50 Raffle: The raffle was won by Ron Deppert

Show & Tell: None

Meeting close: Motioned, seconded, and approved to close the meeting at 8:26 AM

Respectfully submitted,
Michael Peck
SVF Secretary



"Oh, the Giant Scale check-in? ... It's that way 'bout half a mile, ... Top of the hill."

"Tell you what, son... just to be fair about this, I'll help you move your stuff out to the garage."

"PERSONALLY, I DON'T-BELIEVE ALL THOSE STORIES YOU HEAR ABOUT FANATICISM IN THIS HOBBY!"

Sun Valley Fliers BOD Meeting Minutes – October 16, 2023

Club Officers Present:

- President Frank Moskowitz, Vice-President John Geyer, Secretary Mike Peck

Board Members Present:

- Charlie Beverson, Craig Guest, Jim Sprecker, Brian Rhoads, Val Roqueni

Open: President Frank Moskowitz

1. The Zoom internet meeting was opened at 6:02 PM; there was a quorum present.

Secretary's Report: Mike Peck

1. The August 14, 2023 Board of Directors meeting minutes were motioned to approve, seconded, and approved unanimously. The Board also previously decided by plurality vote to no longer publish the actual amount in the treasury in either the Club or BoD meeting minutes.

Treasurer's Report: Oliver Heinen

1. The club treasury balance was reported by Oliver, and it is adequate for the club's needs.
2. Expenses for September include the usual trash and j john expenses, plus our post office box renewal costs and the cost of a new windsock.
3. Oliver is also developing a consolidated review of SVF expenses and receipts by category, probably annualized so the Board understands where their money comes from and where it is spent. This will be a great asset for the Board.
4. There was a motion, a second, and the report was approved unanimously.

Membership Director's Report: Tony Quist

1. There were 25 membership renewals since our last report.
2. Red stickers for 2024 are ordered and will be received in approximately one week.
3. There was a motion, a second, and the report was approved unanimously.

Safety Officer's Report: Ken Rhoads

1. There are no safety problems to report at this time.

Information Technology Report: Bobby Santoro

1. Bobby is developing a new website front page using the Kadence theme that the Board had the opportunity to review, comment on, and select from other presented options. Implementation will be delayed as Bobby does not want to risk breaking the links for membership renewal purposes.
2. The conversion was approved by acclamation.

Maintenance Director's Report: Brian Rhoads

1. We are waiting for cooler weather to remove the tires and exchange the brine in the tanks for discarded batteries.
2. There was considerable discussion regarding how to dispose of old Lithium batteries that have been rendered electrically inert by the salt water brine soak methodology. The question was whether those batteries were OK to put in the dumpster for removal to the landfill, or whether the elements within the batteries are not appropriate for landfill disposal. President Frank will contact Republic, our dumpster contractor to determine if the spent lithium batteries can be disposed of in the landfill.
3. There was also discussion as to whether the club should continue to have a dumpster at the field, given the problems we have had in the past with dumpster fires and unauthorized items brought to our dumpster from home. This was tabled pending resolution of the battery disposal issue.

Old Business:

1. Ramada permitting – Steve Bargeloh of Earthline Civil Engineering now has a completed site drawing and also appropriate size construction drawings of the ramada to allow submission of the permit application to City Planning. He cannot make the permit application submission until City Floodplain Department completes their approval process.
2. The Sun Valley Fliers and the One Eighth Air Force will co-sponsor the December 9th Fly 4 Tots event. Plan to bring an unwrapped toy to Bob to support the Club in the efforts for this event, even if you do not plan to fly in the electric event.
3. John Gerhardt will be the Contest Director for the next Winter Warbirds event. The event dates are to be Jan 26, 27, & 28, 2024. Winter Warbirds trophies will be Yeti cups with the Winter Warbird info on them. There was also discussion on whether to repair and move the spectator bleacher section closer to the runway for Winter Warbirds and the One Eighth Air Force Classics Scale Jets, and Warbirds events. Board Members were reminded of the potential risk level that the Club may be exposed to if a model aircraft strikes the chain link fencing around the bleachers. The bleacher issue was tabled until the next Board meeting. Board members were reminded that extra J-Johns and dumpster need to be ordered for the event.
4. Brian and Bonnie O'Meara will hold hold the One Eighth Air Force Classics Scale Jets, and Warbirds event at the SVF field in March of 2024. The AMA has sanction the event.

New Business:

1. John Geyer has been working on updating the SVF Maneuvers and Procedures required for the Solo Pilot's Exam to make it more current in the wake of increased electric flight models and new radio equipment technology. John's markup of the previous pilot's exam, and the full text for the proposed new exam for 2023 will be attached to these minutes for Board review, with comments to be presented, and a vote for approval at the next Board meeting. The vote is carried forward to the next meeting as it was not discussed.
2. The SVF FRIA application has been submitted by President Frank to the AMA and we have acknowledgement of its receipt. Because of delays within the FAA the deadline is extended to March of 2024.

Adjournment: The meeting adjourned at 6:44 PM.

Respectfully submitted,
Michael Peck, Secretary

SVF Meeting Oct.7, 2023

Photos by Bob Purdy

Sun Valley Fliers

SVF Meeting Oct.7, 2023

Photos by Bob Poe

Sun Valley Fliers

SVF Meeting Oct.7, 2023

Sun Valley Fliers

What's Happening

Ben and Liam Gallow visiting the SVF'ers

SVF Tom Perkins saying "I got it"

U.S. Scale Masters

Place in Class	Pilot	Builder	Location	Class	Aircraft	Static	Flight Average	Total Score
1	Curtis Kitteringham		Escondido, CA	Advanced	Stinson SR-9, Scale 1:5	98	94.92	192.92
2	Alex Feist		Marana, AZ	Advanced	Fokker DVII, 1:3 Scale	94.75	95.92	190.67
3	Mike Peck		Phoenix, AZ	Advanced	J-3 Piper Cub, 1:4 Scale	95.25	92.08	187.33
4	John Geyer		Phoenix, AZ	Advanced	Fokker DVII, 1:4 Scale	94.75	85.92	180.67
5	Bruce Landsman		San Benito, TX	Advanced	A6M5 Zero	92.75	85.75	178.5
6	Brian Rhoads		Glendale, AZ	Advanced	Neuport 17	76	89.17	165.17
1	Jeff Lovitt		Davis, CA	Expert	Lockheed T-33, 1:5 Scale	98.25	97.67	195.92
2	Noel Hunt		Mesa, AZ	Expert	Spad 13, Scale 1:4	95.75	95.92	191.67
3	John Cole		Santa Rosa, CA	Expert	DeHaviilland DH-1a, 1:4 Scale	97.5	93.25	190.75
4	Dave Lovit		Willits, CA	Expert	Yak 18 PM, 1:6 Scale	98.25	91.58	189.83
5	Tim Dickey		Chandler, AZ	Expert	Fairchild PT-23	99	30.67	129.67
6	Tim Nobis		Aztec, NM	Expert	Der Jäger, 1: 3 Scale	93.5	20.92	114.42
7	Brad Osborne		San Pedro, CA	Expert	Fairchild PT-19, 22% Scale	97.75	0	97.75
1	Adam Clement		Healdsburg, CA	Pro Am Pro	Top RC A6M5 Zero, 1:5 Scale	5	95.67	100.67
2	Bill Adams		Mesa, AZ	Pro Am Pro	P-47, Scal 1:4	5	95.33	100.33
3	Tim Nobis		Aztec, NM	Pro Am Pro	Piper Pawnee, 1:3 Scale	5	92.58	97.58
4	Jerry Newberger		Queen Creak, AZ	Pro Am Pro	Cessna O-1D, 1:4 Scale	5	91.58	96.58
5	Mike Ingram		Wenatchee, WE	Pro Am Pro	Vans RV-4, 42% Scale	5	91.33	96.33
6	Arthur Gambino		Fountain Hills, AZ	Pro Am Pro	J4E Piper Cub, Scale 1:3	5	89.5	94.5
7	Randy Wegner		Tucson, AZ	Pro Am Pro	Turbo Beaver, Scale 35%	5	28.75	33.75
8	Jeff Lovitt		Davis, CA	Pro Am Pro	Grumman F9F-8 Cougar, 1:5 Scale	5	0	5
1	Allen Sprague		Warrenton, WA	Pro Am Sports	PA 18 Super Cub, Scale 1:4	5	87.83	92.83
2	Ray Hoffman		Rochester, WA	Pro Am Sports	P-47, Scal 1:5	5	85.33	90.33
3	Tom Raiwater		Bould, OR	Pro Am Sports	Spackewalker	5	84.5	89.5
4	Shannon Gallagher		Mesa, AZ	Pro Am Sports	Cessna 170, 1:5 Scale	5	83.25	88.25
1	Mike Lovitt	Jeff Lovitt	Davis, CA	Team Scale	A6M5 Zero, 1:5.5 Scale	96.25	92.92	189.17
2	Tim Dickey	Charlie Nelson	Chandler, AZ	Team Scale	Piper Cub J3	94	94.67	188.67

SVF At The

U.S. Scale Masters

Sun Valley Fliers

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U.S. Scale Masters

U.S. SCALE MASTERS PILOTS and JUDGES

U.S. Scale Masters

October 11-15, 2023 Mesa, AZ

Sun Valley Fliers

Photos from Noel Hunt Facebook page.

Many more photos on Noel FB

Best In The West Event

Hedy Lamarr sitting in a P-38 at Burbank, CA……. Brian Rhodes

Sun Valley Fliers

flight of the great White Dornier

Only three were ever built, but Dornier's huge 12-engine flying boat remains one of the truly great aircraft of the world. And when Bob Curtin decided he wanted to build a big RC model of the DO-X—a *really* big model—he didn't let his lack of modeling experience deter him.

BY BOB MARTIN

■ ABOVE: Pretty shot of the majestic DO-X on a fly-by with the setting sun reflecting off the starboard side. ■ RIGHT: "Mr. Engine Man," Ralph Cunningham, caught in the process of cranking up the six Zenoah G-23 engines. Ralph operates a business called RC Ignition in Phoenix; he replaced the G-23s' magnetos with electronic ignition systems, which make for easier starting and increased reliability—important on a model like this.

The world was first November's Lawson Park Seaplane Classic, where Bob Curtin's huge DO-X made its public debut and maiden flight. General specs on the model are as follows: wingspan, 15 feet 8 inches; wing area, just over 48 square feet; flying weight, 37 pounds; and overall length, 10 feet 1 inch. The model is presently on display in Pulver's Hobby Shop in Phoenix, Arizona, and will ultimately find a home in a museum—most likely either the AMA Museum or the Glenn Curtiss Museum in Hammondsport, New York.

As could be expected, getting the DO-X ready to fly is a real team effort. That's Bob Curtin second from left.

Before I tell you about this incredible model aircraft, let me introduce the man behind it—Bob Curtin. Bob was a developer in the construction business in the Chicago area who retired in the warmer Scottsdale, Arizona area. Forty years ago he built rubber-powered models but only recently returned to the hobby and got involved in RC.

I first met Bob and his lovely wife, Carol, during a Schneider Cup event in Lake Havasu. Bob had called me a few months before the event and asked if he could fly his full-size Tiger Moth up to Havasu. I thought it would be a great idea. His arrival was one that later I came to accept as his style, a class act.

Bob arrived and made several slow flybys that thrilled all of us. After he landed, he came over to the event and offered to allow us to raffle off a ride. (I was very disappointed that I didn't win!) The following year he returned and repeated his kind offer. A fellow by the name of Ken Lagge won that flight and proclaimed it the highlight of his life. The point here is that Bob has shared his wonderful aircraft with many, including terminally ill children. He is a gentle, kind and caring man, but he does enjoy challenges of an unusual nature—hence this story.

In November 1991, Bob told me of a project he wanted to tackle: a huge 1/10-scale model of the German Dornier DO-X, the largest flying boat to ever go into passenger service, carrying over 150 passengers and a crew of 10 in luxurious comfort.

Professor Claude Dornier began his design studies in 1916 and by 1922 had formed his own aircraft company. Because of the ban by the Allies after WWI, Dornier built most of his flying boats in Italy, beginning with the Delphin, an eight-passenger seaplane. Next was the DO-J Wal, which had two engines in tandem and sported thick, stubby, wing-like sponsons that replaced the need for tip floats. There were many versions produced, each larger that the previous ones, and as they needed more power, Dornier simply added more engines, culminating in the four-engine DO-R Super Wal.

With the desire to produce an aircraft that could span the oceans and carry a substantial load, Dornier doubled the size of his DO-R. The result was the DO-X, which at the time was by far the largest aircraft in the world, powered by a dozen 500-horsepower Siemens Jupiter engines. Later these were replaced by 650-horsepower Curtiss Conquerors.

Three of these giants were built. Two were sold to Italy, but never achieved much success. The third carried passengers around the Atlantic rim, from Europe to South America, to North America and back to Europe. However, the tour was plagued with problems, and the aircraft was later sold to Deutsche Lufthansa. It ended up in the Berlin Museum where it was destroyed in the bombing of Berlin in WWII.

Building a model of this giant is no small

A clever design feature of the model Dornier is the engine module—a strong, removable section of the wing that supports all six engines along with their fuel systems, mufflers, servos and throttle radio. It's a completely self-contained unit that simply bolts to the wing, no other hookups required.

The Dornier uses a separate radio system to control the six engines; each engine can be controlled independently by the flight engineer by means of this special transmitter devised by John Wisniewski. John was the pilot for the flight, Bill Reed was the flight engineer.

project for a longtime modeler, let alone a person with little model building experience. The Dornier is only Bob's third RC aircraft, but he didn't let that discourage him, and set out to gather every possible bit of documentation available. Mike Kelley, Bob's neighbor, has offices in Germany, and assisted in locating some of the information.

The drawings he received needed to be enlarged. Not just blown up with wide lines, but done properly, so he enlisted the

The Dornier is only Bob's third RC aircraft, but he didn't let that discourage him, and set out to gather every possible bit of documentation available.

services of Dave Bueschl of Concept Technology of Poway, California, to enlarge the three-views. Bob also enlisted the services of Professor Bill Reed at the University of Arizona to help engineer the huge wing spar and perform computer simulations to determine power, drag and lift coefficients, propeller selection and efficiency, etc. Professor Reed is an RC modeler and later served as flight engineer.

Gary Thompson of Gary's Hobby Center in Racine, Wisconsin generously supplied six G-23 Zenoah engines and props. Bob then contacted Ralph Cunningham of RC Ignition in Phoenix to assist with converting the engines from magneto to electronic ignition—a vast improvement in performance. Ralph also built the special exhaust systems.

One question that came up had to do with controlling the six engines. With no water rudder, if one or two engines on one side were to quit while on the water, the aircraft would taxi in circles. In the air, it could be disastrous.

John Wisniewski, an electrical engineer and pilot for the project, solved the problem. He designed and built a special transmitter with six individual throttles, so that each engine could be controlled independently, making for extremely precise maneuvering on the water. On-board telemetry was used to alert the flight engineer in the event an engine quit in flight, allowing him to back off the matching engine on the other side. As it turned out, the engines all ran perfectly and this built-in safety feature never came into play.

Redundant receivers were used for both the flying as well as the throttle systems. The flight system was a JR PCM-10S; the receivers for the throttles were also JR.

A project of the size requires a great deal of glue and wood. Tom Walker of Robart donated tons of ZAP CAs and epoxies, and Frank Garcher of Midwest Products supplied a tree or two worth of balsa. Matt Parsons of Bob's Woodworking in Phoenix supplied a huge piece of spruce for the spar.

George Zien of Custom Screen Print in Phoenix did all of the markings and windows, as well as the team T-shirts. Aerospace Composite Products made the material for the firewalls (carbon fiber/balsa laminate) and engine boxes (fiberglass/balsa laminate). Most of the other products needed were purchased from Bernie Frank of Frank's

Close-up of the wing cavity where the engine module fits. Note the simulated sheet metal corrugations along the leading edge.

Hobby in Phoenix. Bob's longtime friend Walt Kessler, in Marengo, Illinois, made the team hats.

The model was built in components—fuselage, wing, engine module, and tail assembly. Although Bob Curtin built most of the aircraft, he's quick to point out that without the many hours of hands-on assistance of friends, the project would have never been completed. Bob's wife not only supported and encouraged him, but actually was involved in the construction, including the corrugations on the leading edge of the wing—some 586 of them. Tom Hill assisted in the fiberglass and painting. Terry Jenkins helped cover the huge wing (lots of yardage here, folks). Marshall Sims helped with many areas. Pilot John Wisniewski built the tail assembly and the throttle transmitter.

continued on page 77

Photo taken midway through the construction shows the partly built engine module being assembled in place on the wing. Despite the sturdy construction, the finished aircraft has a wing loading of only 32 ounces per square foot—quite low for a model of this size.

The tedious job of adding the corrugations to the wing leading edge was aptly handled by Carol Curtin, Bob's wife. Each of the 586 corrugations was done by gluing a piece of string to the leading edge—whew!

DO-X *continued from page 49*

With the '93 London Bridge Seaplane Classic approaching, Bob kept me informed by sending photos of the progress of each major component. On November 10 the aircraft was taken to Lake Pleasant near Phoenix for the maiden flight. The lake was glass-smooth, but for some reason, the Dornier refused to fly. Bob had promised he would bring it to Lake Havasu, so undaunted, he rented a 24-foot moving van for the trip.

On November 13, I accompanied Bob, Carol and a small army of advisors, technicians and helpers to a secluded location near the London Bridge for assembly and photos. This location didn't remain very secluded for long. It's difficult to hide a monster of this size from view, and everyone who saw it was overwhelmed by its size. Once the pictures were taken, it was decided to taxi the Dornier back to the Nautical Inn beach—a mere 1/2 mile of open water. Its arrival brought over a thousand pilots and spectators to the shore.

Shortly after the Schneider Cup heat, the frequencies were cleared and the DO-X was allowed to taxi outside the event boundaries and make an attempt to get airborne. Still no luck. She was brought back in and the brain trust went to work. Why won't she lift off? Everything checked out OK. Then Bob Curtin said, "Change the props!"

The group determined that cutting down the APC prop tips had destroyed their efficiency. Several modelers from the London Bridge Seaplane Classic came forward with six 14x10 props and the Dornier was soon ready for another try. Tension was at a fever pitch for those involved.

The Dornier taxied out, throttles were advanced two-by-two and as graceful as a swan, the big ship lifted off and began to climb. The collective gasp of the few hundred contestants and spectators announced its departure from the water.

John brought her around and began the first of several passes by the beach. Bill Reed was busy pulling back on the power as we on the ground marveled at the huge flying boat with its six engines purring in unison. Oh, how magnificent it must have been to have seen and heard the original! Alas, that can never be. But those of us present were witnesses to a historic event of its own that we will all treasure forever.

As the sun was beginning to set on this beautiful day, the Dornier began its graceful descent back to Lake Havasu. As she gracefully kissed the water, she must have known this would be her one and only flight, as she gently rose back into the air for a moment and then settled into the clear water to prepare for the taxi back to shore.

Those of us present and those who read this story and see these photos can bless your lucky stars that modeling and people like Bob Curtin and his dedicated team can bring us sights, sounds and experiences that we can in no other way experience. **MB**

SVF Sun Valley Fliers

Sun Valley Fliers

Sun Valley Fliers

The take-off! Practically all flights are made in this manner to ensure good take-offs despite the man at the controls. The plane is being guided, not lifted.

Winning the National Radio Control Meet

Details of a Radio-Controlled Model Airplane That Has Made Over One Hundred Successful Flights

BY WM. E. GOOD,* W8IFD

ONE of the most interesting by-products of ham radio is that of radio control of gasoline-powered model airplanes. Here is one sport where your signals must be QSA 5 or you may have to start on a cross-country jaunt, praying that those two ounces of gasoline will hurry up and run out. If your signals are "getting through," you find yourself landing the radio-controlled plane right in the middle of the runway. Exciting? I'll say! Every flight is just like that memorable first QSO!

Radio control of model planes began with the advent of small gasoline motors and has been progressing slowly ever since. Most of the development has been done by hams in coöperation with the gas model enthusiasts. [1]

Our equipment is the result of over four years' experimentation and of late has proved rather successful. The control consists of two frequency channels — one for the rudder and the other for the elevator. For each channel there is a modified five-meter superregenerative receiver. In its plate circuit is a sensitive relay which is connected to an electromagnetically-operated rubber-powered escapement in the tail which moves the controlling surface in the fashion desired.

The plane, designed and built by my twin brother Walter, has an 8-foot wing span and weighs slightly over eight pounds, including its two pounds of radio gear. Its gasoline motor is of the one-fifth horsepower variety and does a good job of flying this stable ship. The cruising speed is about 20 miles per hour and the ship glides very well, insuring excellent landings if reasonable skill

* 934 Hillcrest St., Kalamazoo, Mich.

[1] *QST*, Oct. 1937 and June, Sept. and Oct. 1938; *Model Airplane News*, January and August, 1938; *Air Trails*, August 1938, January and May, 1939.

Four years ago a radio-control event was added to the program of the annual National Model Aircraft Championship Meet. But it was not until last year that a wholly successful demonstration of radio-controlled flight under a variety of conditions was finally achieved. The Good brothers of Kalamazoo were responsible, their triumph climaxing years of experimentation. Here is the story of their success.

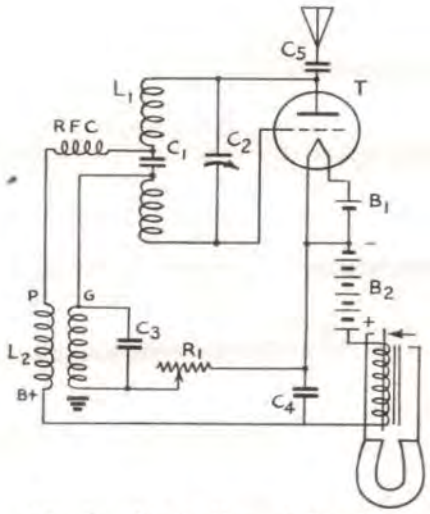

Fig. 1 — Radio Control Receiver.

T — RK42 (*not* RK-62).
C_1 — 250-$\mu\mu$fd. midget mica.
C_2 — 15-$\mu\mu$fd. midget variable.
C_3 — 0.002-μfd. midget mica.
C_4 — 0.005-μfd. midget mica.
C_5 — 30-$\mu\mu$fd. mica trimmer.
L_1 — Each half 5 turns No. 14 or smaller wound on $\frac{3}{8}$" diameter form, spaced wire diameter.
L_2 — Interruption-frequency oscillator coil (National OSR).
B_1 — 1.5-volt flashlight cell.
B_2 — 45-volt midget 10-oz. "B" battery.
R_1 — 10,000-ohm midget variable.
Relay — See text and Fig. 3.

is used at the controls. The plane banks automatically when the rudder is turned, due to the dihedral in the main wing.

Before a flight the receiver in each channel in the plane is adjusted so that its sensitive relay closes when the carrier from the five-meter transmitter is turned on. The sensitive-relay contacts actuate the small electromagnet (in the tail) which allows the rubber-powered escapement wheel to go through one position or one-quarter of a revolution at a time (i.e., for each dash sent). The controlling surface is connected directly by a small steel-wire arm to a pin on the escapement wheel. The power used to move the surface through its positions is taken from the wound-up rubber band. Our control surfaces have three main positions, e.g., the rudder has left, neutral and right, plus two half or intermediate positions, making five in all. Naturally, the movements take place in a cyclic fashion. Each pulse or dash from the transmitter causes the surface to move from one main position to the next.

Walter has done practically all of the design and detail work on the escapements and the sensitive relays, although he's not even a ham. We did have him in the RI's office one Saturday morning to take his exam — but he sneaked out and made the rounds of the model airplane shops in Chicago!

Escapements Located in Tail

The escapement units in their present state weigh just a half-ounce each and are mounted permanently in the tail surfaces, so that direct mechanical connection can be made to the moving elements (rudder and elevator). This makes for extreme reliability in addition to the fact that the units boast almost instantaneous response, which has been shown to be practically a necessity under actual flying conditions. A control stick or "joy stick" (one for each control) which adapts itself very well to the escapements is a Western Electric

In flight! Framed by the center-fed doublet atop a bamboo mast, the ship is but a speck in the sky. The radio controls operate as far as the ship can be seen.

telephone switch which was rebuilt so that contact is made and broken (sending a dash) as the switch is moved from neutral to either extreme position. Thus the rudder or elevator will be in the same position as its corresponding control "stick," and this synchronization will be maintained as long as the control switches are moved through complete cycles. The moving elements will follow the motions of the switches even though they are jerked back and forth as fast as four or five times a second. Thus the surface may be moved to any desired position with such rapidity that the motion of the plane is not affected while so doing. Due to the arrangement of the switches and the tail escapements, the corresponding moving element will be in a half or intermediate position when its control switch is in a half position. This system allows the operator to know exactly where the rudder and elevator are positioned at any instant. Actual flying has shown this to be a natural method of control.

The sensitive relays have been the result of a generous mixture of theory and experiment on the ground and in the air. In all, six relays have been developed. The one that has proved the

Top — Bill Good, W8IFD, with the fuselage and ground control set-up. *Left*, the genemotor and its battery box; *center*, the two-frequency transmitter in its travelling case; *lower right*, the control box with two telephone-type switches as joy sticks.

Bottom — Ready to fly! Walter Good, national radio-control champion, holding his winning ship. The receiver is accessible through the open doorway in the side of the cabin.

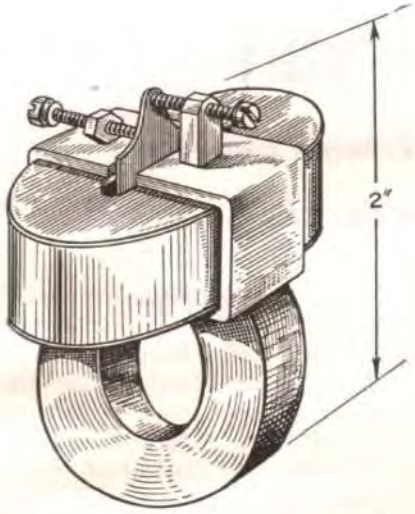

Fig. 3 — **The DG-6 Sensitive Relay.**

This polarized relay, designed and built by Walter Good, is of the balanced armature type, having no springs on the armature. A small Alnico horseshoe magnet holds the thin iron armature against the back contact until the coil and its surrounding soft-iron magnetic circuit is energized. With a 2500-ohm coil the reliable sensitivity is 1 milliwatt. The weight is slightly over 2 oz.

porated to remove the power from the 807, leaving just the weak five-meter harmonics from the e.c.o.'s for tuning the receivers when the plane is near the transmitter. The genemotor mounted on top of the storage battery is a 400-volt 125-ma. job. Nevertheless, only 20 to 30 watts of the fifty available is the accustomed power input.

When the plane is properly adjusted it flies and glides straight with the neutral rudder position and gives the same size circles to the right or left for the extreme positions. This is true both under power and in the glide because of proper power and wing loading. A great deal of flying is done with the rudder alone. For this, the elevator is adjusted for a good climb and then it maintains level flight in the turns. Theoretically, the gyroscopic effect of the motor should cause the nose of the plane to come up when the plane is turned left and down when turned right, but practically this effect is not noticeable.

When the rudder is turned to either right or left maximum position, the plane banks automatically and proceeds to execute a beautiful right or left circle. If the control is kept in this position for more than one turn or so, the bank gradually becomes steeper and the turn develops into a large spiral. It is not difficult to lose any amount of altitude in short order by spiralling the ship down in this manner, even if it is only for the gratifying sensation of pushing the control stick neutral to watch the plane straighten out and start into a fast climb, using up the speed just acquired by the descent.

One question that always arises in radio control discussions is, "Is it necessary to have such speedy snap-action controls?" In our flying we have found that fast control has been more than convenient, especially in take-offs and landings. Many times in coming in for a landing it has been imperative to give opposite rudder to straighten out the glide when the ship was only four or five feet from the ground. A second of time in such a predicament is precious. Take-offs call for more precision and speed of control, because the controls are more sensitive and the operator really has to have the "feel" of the controls to keep the plane right-side up. The picture shows the usual take-off procedure of running the wing tips until the plane is well off the ground. We've found it's much safer to learn how to "fly" after the plane is up in the air! Lately, however, we have been merely starting the plane down the runway (tail

(Continued on page 86)

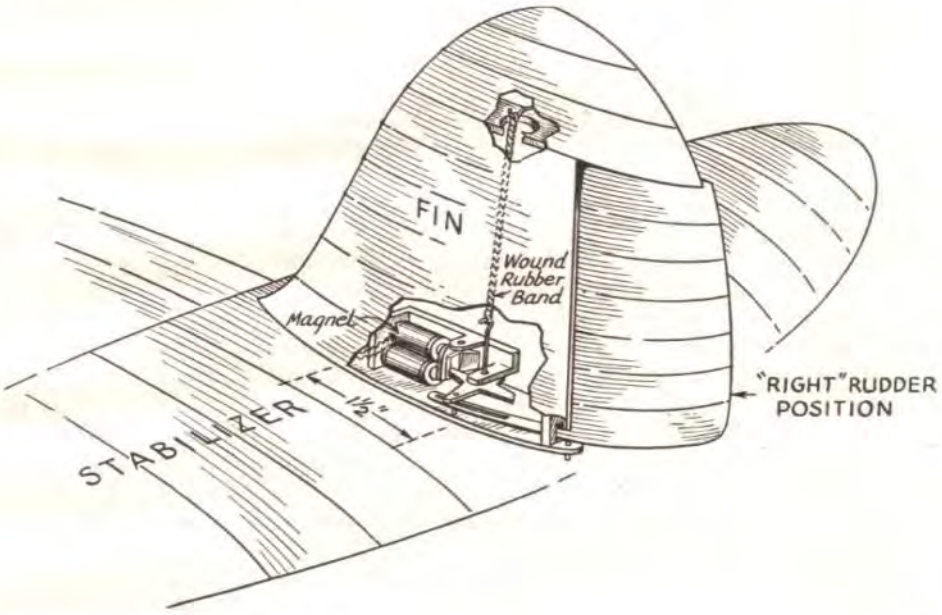

Fig. 4 — **Isometric View of the Tail Assembly in the Good Championship Plane.**

The small control escapement is considerably exaggerated in size to show detail. Actually the small magnet coils are about ¼" diameter and each escapement weighs about ½ oz. The elevator control escapement is similar, being located in the stabilizer just to the right of the fin juncture.

Winning the National Radio Control Meet

(*Continued from page 27*)

off, but wheels still touching) and keeping it as straight as possible with the rudder control. Strangely enough, when the plane starts towards the edge of the runway (and it usually does) plenty of control is needed instantly to bring it back and then care must be taken not to over-control. Thrilling? Yes! But if you control wrongly a wing tip starts digging up the runway or vice versa!

The National Championship Meet

In winning the Radio Control event at the National Model Airplane Contest at Detroit this year, the radio and the plane performed in grand style. The radio-control planes were judged on their ability to execute a number of pre-decided maneuvers. The best flight we had lasted about 14 minutes. The ship climbed to approximately 1500 feet during the six minutes the motor was running. During the first part of the flight the model was sent down-wind to a field-light objective about one-quarter of a mile away, following the judge's instructions, and then was turned around and brought back over the transmitter. As you can see, this is an excellent stunt really to test the controllability of the model. Next, as we usually do, the plane was guided up-wind and the rest of the flight consisted of right and left circles, figure eights and the like, on command of the judge. At the end of this particular flight the job was landed about a hundred feet from the transmitter, thus establishing the first real radio-controlled flight at a National Contest.

Will any transmitter work the control? Yes, any one that's on the right frequency in the five-meter band. The five-meter gang from Detroit was on hand at the Nationals to help with the radio-control event and their main transmitter — a portable-mobile outfit — operated our controls very effectively. However, the coöperation between the contestants and operators was very gratifying and for the most part no interference resulted.

The only case of interference we've had in over a hundred flights this year and about fifty flights last year occurred in Chicago during a demonstration at the big Mid-Western States gas-model contest. We had flown the job in a strong wind in the morning and Walter had succeeded in landing the plane within two feet of the point where the wheels had left the ground on the take-off! Naturally, feeling so confident about the success in such windy weather, we decided to send her up again in the afternoon. It was my turn to "fly." Everything went fine until about thirty seconds after the motor cut, when the plane refused to respond any more — 1200 feet up, slightly up-wind and a 15-mile "breeze" blowing! Nothing we did on the ground had any effect — the plane was making great progress cross-country in a

(*Continued on next left-hand page*)

large circle, indicating half rudder position. Possibly another five-meter carrier was holding the relay down? The plane eventually landed about a mile and a half away and was finally recovered — but that's another story. The controls were checked and found to be in working order, leaving us with only one conclusion — that some amateur in the Chicago area was operating on the same frequency! (Time of flight, 4 P.M., Aug. 6, 1939.)

This system of control has worked as long as the plane has been in sight — about two miles. So far we've found no reason for flying it at a greater distance than that, especially when our original purpose was to bring the model back to the field so we wouldn't have to chase it!

This plane has done itself proud by winning the "Nationals" two years in a row, by taking the radio-control event in Chicago, by receiving first place in the original-design event at the Scripps-Howard Junior Air Races at Akron, by being possibly the first radio-controlled plane to be flown in Canada through a number of flights made at the Canadian National Contest at Toronto, and finally by its good behavior during demonstration flights at contests around Michigan.

We hope we've worked up your enthusiasm so that you may join this exciting diversion of amateur radio. All bragging aside, it's not easy, but, boy — it's lots of fun!

The Ionosphere

(*Continued from page 35*)

between the transmitter and receiver whose conditions determine the transmission, because it is there that the reflection from the ionosphere takes place. In multi-hop transmission, when the radio waves are reflected from the ionosphere, then from the ground, then back to the ionosphere, etc., the determining conditions are in the middle of each hop.

The maximum possible distance of transmission by a single hop is limited by the geometry of the earth's surface and the layer, and also by absorption or other limitation at the ground of those waves which are nearly tangential to the earth's surface. It is found in practice that the minimum angle with the ground of the radio waves transmitted or received (over land) averages about 3½ degrees. From these considerations the geometry indicates that the maximum distance along the earth by a single hop is ordinarily about 3500 kilometers for the F_2 layer, and about 1700 kilometers for the E layer. Single-hop transmission may sometimes be possible at greater distances than these while at the same time multi-hop transmission over the same path may be more efficient.

Because of the variation of ionosphere characteristics with longitude, different frequencies may be necessary for transmission in different directions from a given place. For example, around sunset in winter lower frequencies are used in transmitting eastward than in transmitting west-

(*Continued on next left-hand page*)

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Limited number dry camping available on site

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Registration available at event.

Pilot entry fee $60 includes pilot raffle.

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and glow jets

NOTAM summitted for 1200 ft flight altitude.

For more information:

Contest Director: Bob Ruff

(480)209-7081: bruff@cox.net

Asst. Contest Director: Shannon Gallagher

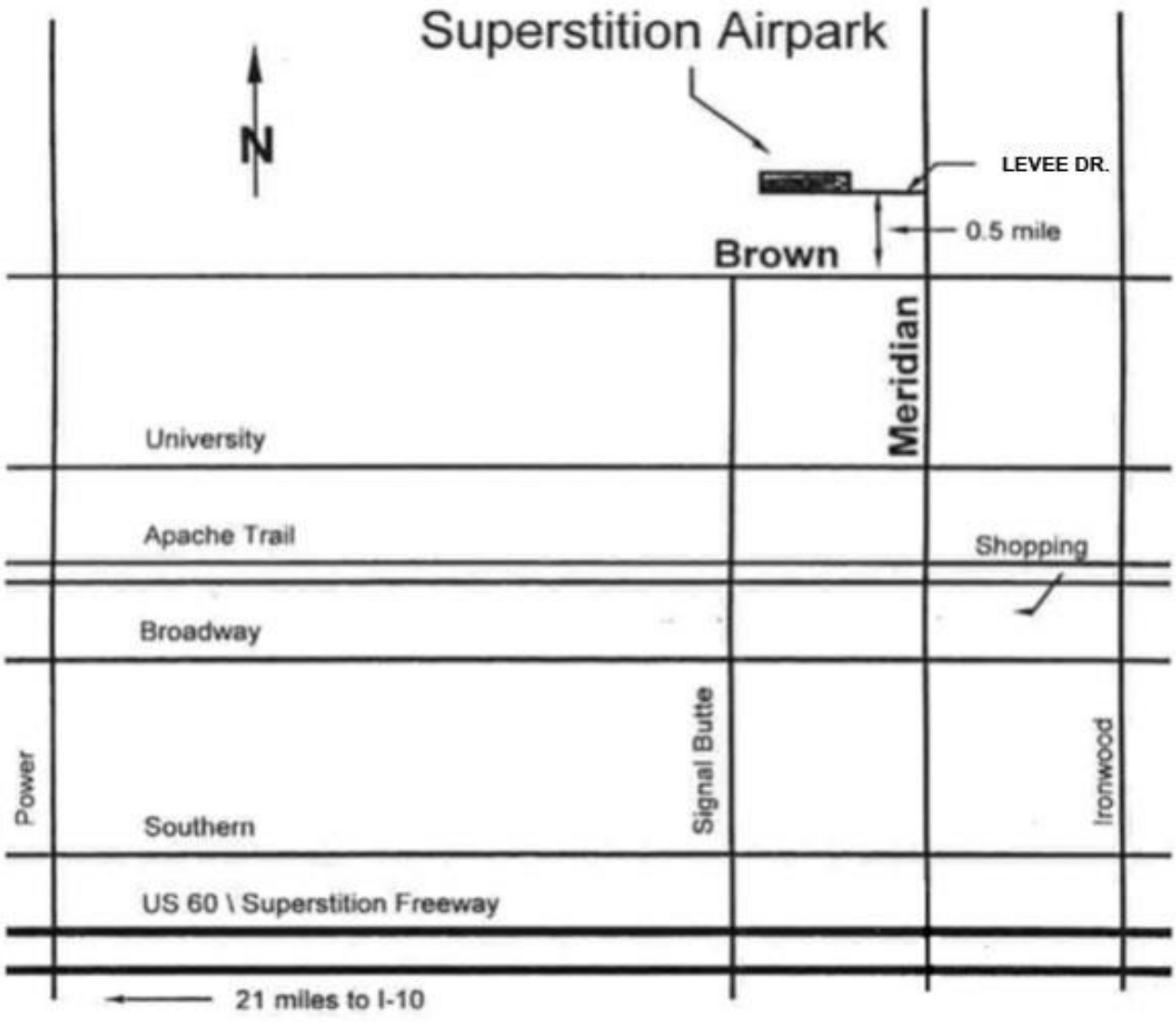
(602)510-3074: wyldkrdsg@gmail.com

www.azmodelaviators.com

MAP TO SUPERSTITION AIRPARK

The Arizona Modeler Aviator's flying site, *Superstition Airpark,* is at Usery Park near Apache Junction, AZ. Follow Route 60 until Signal Butte exit, go north until Brown Rd. then turn right. At Meridian (1 mile) turn left, then 1/2 mile past the Rodeo grounds to Levee Dr. Turn left to enter the club field. Look for the signs.

GPS Coordinates N 33 26.708, W 111 34.845



December 9, 2023 8AM to 3PM

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To Benefit

MARINE CORPS RESERVE

TOYS FOR TOTS

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Time: 8:00 AM till 3:00 PM

AMA card required
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VIDEOS and Websites Links

Click on to view video, website

Amazing SR-71 Blackbird Stealth RC Turbine
https://www.youtube.com/watch?v=XHmL_My0_A4

GIGANTIC RC SCALE FLYING BOAT DORNIER DO X

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

Top 10 Reasons to Join an RC Club
https://www.modelairplanenews.com/top-10-reasons-join-rc-club/

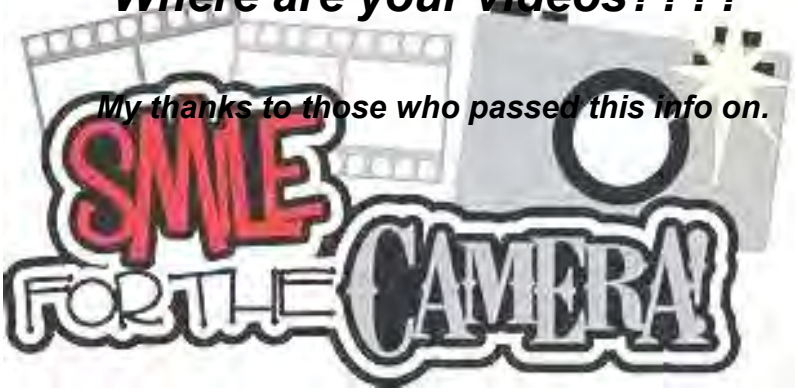
RC Warbird Formation & Pyrotechnics!
https://www.modelairplanenews.com/rc-warbird-formation-pyrotechnics/

Top 10 Strangest RC Planes
https://www.modelairplanenews.com/top-10-strangest-rc-planes/

CHECK THESE VIDEOS OUT

Where are your videos????

My thanks to those who passed this info on.



NOVEMBER 2023 SVF Birth Day Boys

Baker	Wayne
Beverson	Charlie
DeBenedetto	Brian
DeMarcus	Craig
Gerhardt	John
Goessling	James
Graff	David Martin
Kennedy	Howard
Martin	Lucas
Mccarthy	Jeffrey
Nhili	Adam
Nixon	Hudson
Poe	Robert
Quist	Tony
Roqueni	Val
Spandau	Michael
Thompson	Brandt
Thompson	Gary
Van Dyke	Derek
Wiersma	Michael

THE SLOW ROLL

Club Officers 2022-2023
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John Geyer, Vice President
Oliver Heinen, Treasurer
Mike Peck, Secretary
Safety Officer Kenny Rhoads
Bobby Santoro
Website Supervisor
Please check your Membership list for Phone numbers.

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