



February

Minneapolis, Minnesota U.S.A.

2021

# Summary of FAA's Final Rule on Remote ID

(Reprinted from [amablog.modelaircraft.org](http://amablog.modelaircraft.org))

The Final Rule for Remote ID of Unmanned Aircraft was released on December 28, 2020 and published on January 15, 2021. There are three ways to comply with the new rule:

## Standard Remote ID

- Broadcast equipment must be built into your Unmanned Aircraft System (UAS) by the manufacturer.
- Your UAS is required to have a radio frequency spectrum to broadcast your location, altitude, identification, emergency status, etc. to both your UAS and control station.
- Your UAS must be designed to not take off if it is not broadcasting a signal.
- All UAS manufactured to fly in the National Airspace System (NAS) need to meet standards and have certification of the Standard Remote ID requirements.

## Broadcast Modules

- If your UAS is older (nonstandard), a broadcast module option is available.
- Your module will send the same signal as Standard Remote ID, except for emergency status and control station information. The information that will be broadcasted is your UAS takeoff location and your altitude. Your module will also need to signal if your UAS is not working properly.
- The FAA anticipates these modules to cost approximately \$20 to \$50.
- These modules are only permitted for visual-line-of-sight operations.

## FAA-Recognized Identification Area (FRIA)

- FRIAs are valid for 48 months and can be renewed and changed.
- FRIAs require that the flying site be under the umbrella of a community-based organization or educational institution.
- Only visual-line-of-sight operations are permitted at FRIAs.

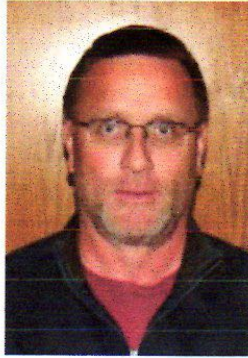
The Final Rule for Remote ID will have an implementation period before operators will be required to fully comply. A person operating in the NAS will need to comply with Remote ID requirements beginning September 16, 2023. Manufacturers will need to begin complying with the new rules beginning March 16, 2021 for production of broadcast modules and September 16, 2022, for production of Standard Remote ID UAS. The process to apply to become a FRIA will begin on September 16, 2022.

The registration requirements for UAS have remained the same. [1] You will need to register with the FAA and receive a unique registration number that must be displayed on all of your UAS. If you are complying with Remote ID via option 1 (Standard Remote ID), the serial number associated with the UAS you are flying must be registered under

**Continued On Page 3, Col. 1**

## A Note from The Head Wing Nut

By Bob Briesemeister



Hello Members,

Happy Groundhog's Day. We have had a mild January with no days below zero, but it sounds like the cold weather is on its way. It is February and we are starting to climb out of winter with the average temperature in the mid-20s.

This is the article that I should be talking about last prep work for the auction, but we will have to wait till 2022 and hope it will be our best year ever! I would like to remind everyone that we are looking for items to be donated to the club that can be put on the TCRC store on eBay or sold on Craigslist and Facebook Marketplace. This will help make up for the loss of the proceeds from the auction. If you have anything that you would like to donate, please contact Brian Johnson.



**The TCRC flying field is ready and waiting for you to come and fly.  
(Photo by Bob Briesemeister)**

The road and parking lot at the field is plowed. There have been a few people taking advantage of the warmer weather. There have been some members flying off the parking lot with smaller planes with wheels instead of skis. It is possible to take off and land on the parking lot, but some members have chosen to land on the snow. Just be careful!!!

The February meeting is going to be another Zoom meeting on the 8<sup>th</sup>. We have been cleared by Crosspoint Church to have meetings at the church with a limit of 30 people. The thought is to have the meeting at the church in March and also do it as a Zoom meeting for the members who

are not comfortable attending and those snowbirds, and of course Nate! Ha Ha!

We will do Show & Tell and shop tours at the Zoom meetings if you are so inclined. Please keep your descriptions to less than 5 minutes.

Happy Flying!



## Always Wear An Orange Vest To Retrieve A Plane

Every member is reminded to wear an orange vest if your plane goes down in the wooded areas surrounding the runways.

Even though Minnesota deer season for firearms and duck season for firearms ended on November 29<sup>th</sup>, hunting season is NOT over.

Squirrel season does not end until February 28<sup>th</sup>. And we do have some squirrely members!

If your airplane does go down in the woods, the orange vests are quite close. The orange vests are stored in the rafters of the shelter and easy to reach.

Be safe! Where an orange vest anytime you have to retrieve an airplane.



# Summary of FAA’s Final Rule on Remote ID

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your unique FAA registration number. If you are complying with Remote ID via option 2 (Broadcast Modules), the broadcast module’s serial number must be registered under your unique FAA registration number.

[2] To register with the FAA, you will need to visit [faadronezone.faa.gov](http://faadronezone.faa.gov). Your registration will still need to be renewed every 3 years and costs \$5. **If you are being asked to pay more than \$5, you are on a scam site.**

Special events, such as air shows or other temporary events, will have a path to receive authorization from the administrator to deviate from the Remote ID operation rules. Additionally, recreational and educational operators can “home build” UAS without meeting manufacturer certification standards. This allows homebuilt UAS to be operated at a FRIA or under option 2 (Broadcast Modules).

Finally, below are the key changes to note from the proposed rule to the final rule:

<b>Proposed Rule</b>	<b>Final Rule</b>
Internet connectivity required.	Broadcast only, no internet needed.
Paid monthly subscription to UAS service supplier.	Requirement removed along with removal of internet requirement.
FRIAs could only be requested in first year.	FRIAs can be requested or changed indefinitely.
Pre-aircraft registration.	Individual registration, operator registers only once.
Special events not addressed.	Pathway for special events to deviate from Remote ID rules.
Included a 400-foot range limit.	400-foot limit removed.
High cost associated with compliance.	Cost decreased by 60%.
Amateur-built aircraft included a 50% build/fabrication requirement.	Build percentage requirement removed and “home-build” was added with no requirements to meet manufacturer certification standards for recreational or educational use.

If you have any further questions or concerns, contact the Government Affairs department at (765) 287-1256 or [amagov@modelaircraft.org](mailto:amagov@modelaircraft.org). →



## THE TCRC FLARE OUT Monthly Newsletter



### \*\*TWIN CITY RADIO CONTROLLERS INC.\*\*

**Purpose:** To preserve, encourage, and further develop the hobby of building and flying radio controlled model airplanes.

#### 2021 Officers

<b>President</b>	<b>Bob Breisemeister</b> 612-964-8877
<b>Vice President</b>	<b>Chris O’Connor</b> 612-619-5471
<b>Secretary</b>	<b>Ken Weddell</b> 952-500-3446
<b>Treasurer</b>	<b>Tim Wirtz</b> 952-941-5357

#### TCRC Flare Out

**Editor** James R. Cook 952-200-2030  
**Publishers:** Pat Dziuk 952-445-3089  
 & Mike Timmerman 952-496-1631

**Website:** <http://www.tcrconline.com>

# TCRC Zoom Membership Meetings Attracting A Full House

by Jim Cook

Tuesday, January 12th was the membership meeting for TCRC and it was again attended via Zoom because of the need for social distancing.



Treasurer Tim Wirtz, using his IT skills, moderated the meeting again for the club and it proceeded without any glitches. At the peak of the evening there were 40 members in attendance.

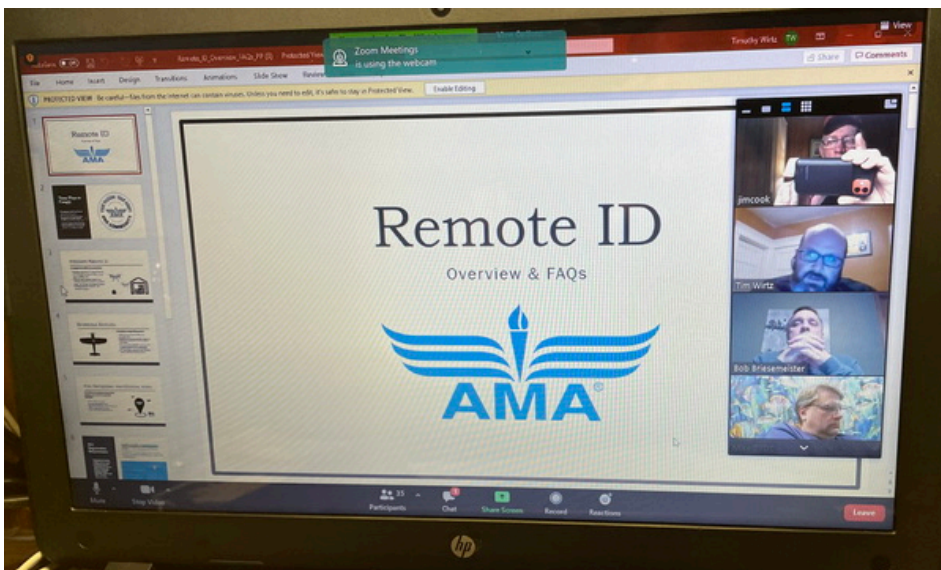
The Zoom site was available from 6:45 PM on, and several members took advantage to be there early to have a little social time. This was also a good time to give a hand to any member who needed some assistance in getting their video and audio working properly.

The business meeting was convened shortly after 7:00 PM and the secretary's minutes of the previous meeting, the treasurer's report and the membership report were presented. Tim also noted that so far the club has received \$1,700 in donations from the members to help defray the budget shortfall the club is experiencing without the income from the cancelled annual auction.

Then the meeting was turned over to Tim Wirtz who had a very nice presentation on the FAA's Remote ID Rules. Tim had slides and did a great job fielding the many questions the members had on this topic.

Brian Johnson did a review of the TCRC Store that has been created from equipment donated by the members that will be sold on eBay and on Facebook Marketplace, with the proceeds helping to lower the budget shortfall.

It has been great to see the growing attendance at these Zoom meetings. February 9th and the March 9th will also be Zoom meetings. Plan on attending and have a plane to display after the business portion is completed. 😊

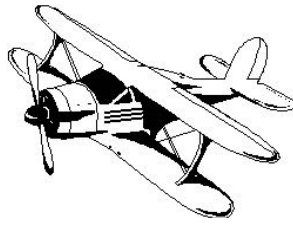


❄️ ❄️ ❄️ ❄️ ❄️

**Gerry Dunne is officially recognized as having made the first flight of 2021 at the TCRC Model Air Park Flying Site!**

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## Show & Tell



A member can have his new or rebuilt airplane appear in the Show & Tell column just by sending a picture of the plane and a data sheet about the plane. (Data sheets can be obtained on the club website, TCRConline.com).

Send your pictures and info by texting to Jim Cook at 952-200-2030 or emailing them to him at [jimcook888@q.com](mailto:jimcook888@q.com). Data arriving before the last day of the month should make the newsletter.

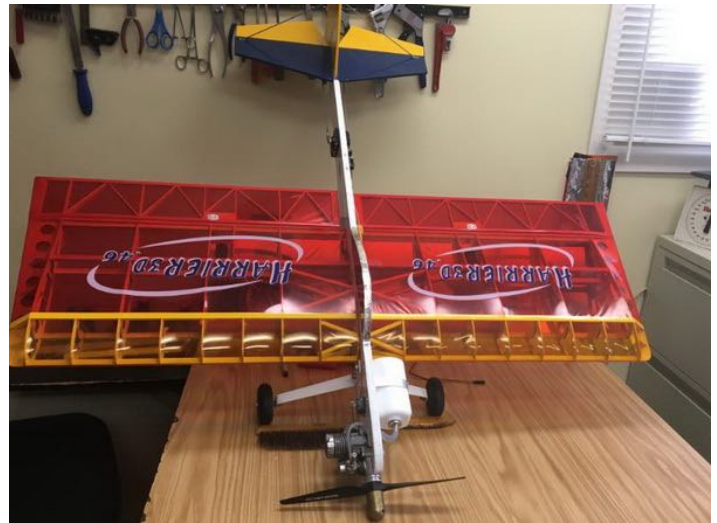
Now, you don't have to attend a meeting to show the membership what you have been building.

Larry Couture took advantage of the new Show & Tell format and submitted the following:

This model Larry calls the Excite 61. It is a collection of parts from other models that he has left over parts from. The wing is from a Mayhem and the fuse and tail feathers are from my drawing board. The engine is an OS 61 with a 12x4 propeller. The covering is Monokote and it weighs 6 pounds.



This model Larry calls the Sky Rider. The wing and tail feathers are from a Mayhem and the fuse is from my drawing board. The engine is a Saito 100 with a 14x4 propeller. The covering is Monokote and it is 6.5 pounds.

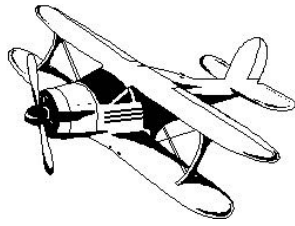


This model Larry calls Harrier Profile. The wing is from a Harrier 46 and the tail feathers are from a 4 Star 40, and the fuse from my drawing board. The engine is a Thunder Tiger 45 with a 11x4 propeller. The covering is Monokote and it is 4.5 pounds.

These are three of the seven models I designed or built from extra parts from other old models that crashed, and the parts were saved. Out of the seven total planes three have been flown and one of those flew away on its own never to be seen again (something in the plane failed) and it flew out of sight going east down river above the trees until out of sight.

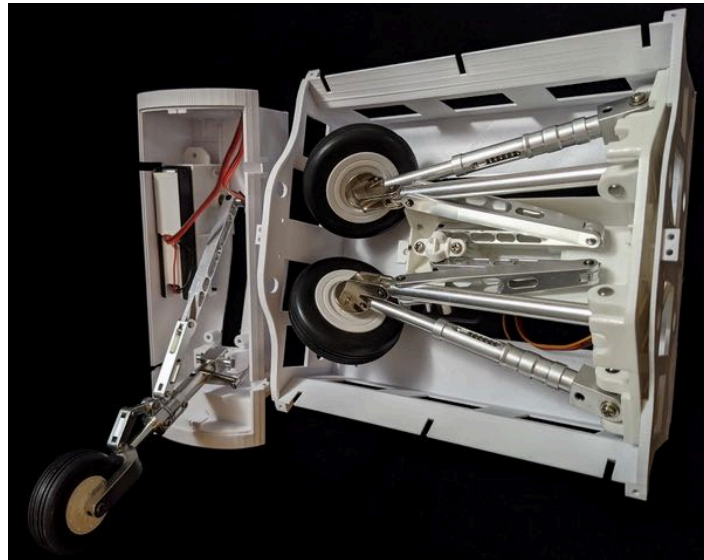
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# Show & Tell



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Three members took advantage of the January 12<sup>th</sup> Zoom meeting to display some Show & Tell:

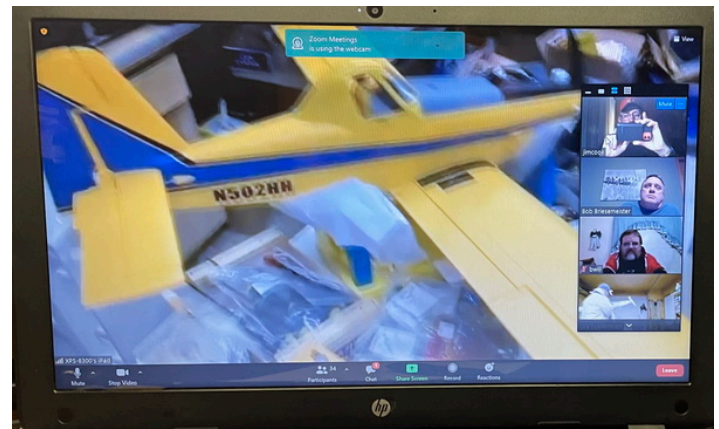


Pedro Restrepo showed a really neat landing gear retract mechanism manufactured by Aliexpress. He plans to install it in his Aerotetris JAS-39 Gripen. The picture shows the gear installed in the landing gear wells that he made with his 3D printer. He also printed the gear doors for the retracts. He said the retracts were a little pricey at around \$200 and maybe somewhat heavy.



Joe Neidermayr had a foam T33. (Picture bottom left.) This electric had a ducted fan powered by a 3658 1900 kv motor and using a 5,000 mah 6-cell lipo. The

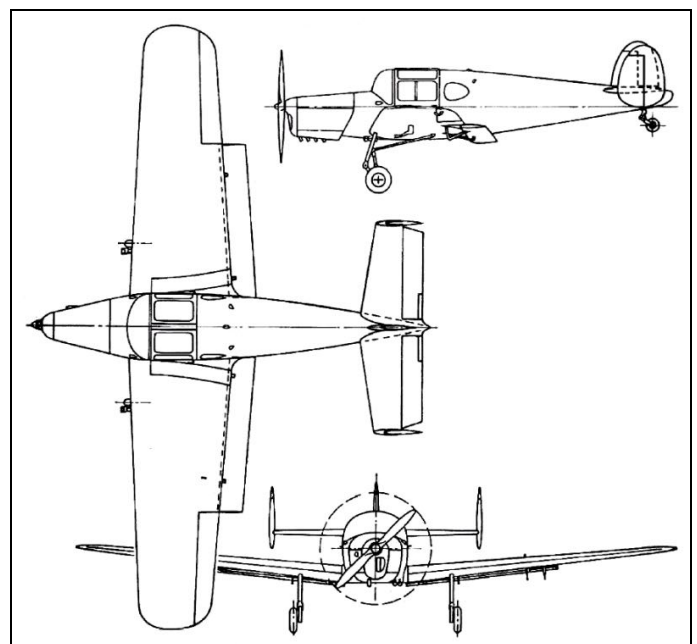
plane had retracts which he demonstrated and flaps. This neat looking aircraft had not had its maiden flight as of the date of the meeting.



Scott Anderson had a great looking AT-802F Air Tractor at the Zoom meeting. This plane was 1/12-scale and was done in yellow with blue trim. It was electric-powered, and Scott was going to be adding a set of skis so it will be flying shortly in the snow. It had not been maiden as of the meeting.

You too can have your new project at Show & Tell. At the end of the next Zoom meeting just give it a go, or do as Larry Couture did and send the editor a picture or two and a description of the aircraft. 😊

## February Mystery Plane



# AWN

(Assistant Wing Nut)

by Chris O'Connor



Last month I talked about building a 70's pattern plane. I now have the plans and the short kit from Eureka Aircraft for the Mach 1, but I haven't started it yet.

My current project is a 1/4-scale Beechcraft Bonanza that is Nate's and is funded by Nate. This is scratched-built from plans drawn by Dave Andersen and using a foam core for the wing and tail surface, along with vacuumed formed corrugated surfaces and a fiberglass cowl from Mark Frankel's T-34 design. Both planes were built by Beechcraft and many of the parts from the Bonanza and T-34 are very similar. The plane will have Robart retracts that are very scale to the Bonanza and brakes, also powered with a Zenoah GT 80cc engine. Same as my T-34. I started out by cutting all my own parts which took about two weeks to complete. Not all that bad. Dave draws amazingly accurate plans.



So, started out with copies of the formers lightly glued with spray contact cement to the wood that I would use for each part and then the paper pattern was removed when finished. As Dave had said, it would be nice to have a 1/4-wide jigsaw blade when cutting the slots for quarter

square fuse stringers. Even doing all that wasn't that bad. The only thing you have to be consistent about is cutting it and sanding to the line, on the line, or taking the line off. For me all the slots were cut on the line and the edges of the formers were cut outside the line and then sanded with a table sander or by hand down to just touching the line. This worked the best for me.

I had picked out the wood that I wanted for covering the wings and tail. I went with 3/32" sheeting for that and also fairly light weight. I actually weighed each piece taking the lightest weight ones for the tail.

So, after my kit was made, I started construction on the wing with the spars that plugged into two of the fuse formers. Once done with that the fuse was started over the top view plan with center lines to keep everything straight. The bottom half was built upside down on the plan. Once everything was sheeted, constantly checking to keep things square and true and using a laser level, that helped tremendously, then it's ridged enough to turn over and glue the top half of the formers on.

The top half is sheeted, but keeping some parts open to put mounts for antennas or air bottles for retracts in. Whenever possible the parts were dry fit before gluing in permanently. Most of the construction is being glued by CA, or Titebond, with epoxy or Hysol in the high strength areas. I will try to send some pictures along, but Nate has a Facebook posting of the progress.

So, as of now the plane factory is closed for 3 weeks for retooling and mental adjustments in Arizona.

Happy building!



# Is Your FAA Registration Up- To-Date?

by Jim Cook

Have you registered with the FAA so you can legally fly your R/C airplanes? Not sure if your registration has expired? You should definitely check it out.

In your search bar, type in "FAADroneZone".

From the choices provided, select "FAADroneZone."

This will land you on the blue FAADroneZone page. In the upper right corner you will see "sign in".

Enter your email address and your password if you remember it. If not, follow the prompts on "forgot password".

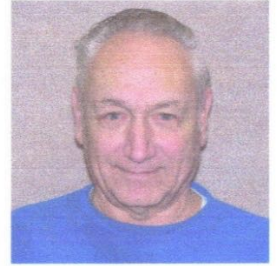
Once you are in, you will see your FAA data and whether your registration is current. If you checked last year, it would probably show that your registration expires on December 31, 2023. Print out your registration card with the new dates.

If you did not check last year, it will probably say your registration expired on December 12, 2020. You will have to renew, and pay \$5 to renew. You will be able to keep your original number. Your renewal will be for three years. Be sure and print out your registration card.

If you have never registered, when you get to the blue FAADroneZone page, click on "I fly under exemption" and follow the easy instructions to register.

## Safety At The Field

By Larry Couture



Well, here it is the end of JANUARY. I have not been to the field this month, so I know everything is OK and the weather has been good on some days for flying. More snow is expected today as I write this column.

When working with CA glue I find that the use of rubber gloves keeps your hands free of glue which is not easy to remove from your hands. The one drawback is the gloves sometimes stick to the project and that also is hard to remove, but your hands stay clean. They also can help protect you when using that Exacto knife cutting balsa parts. The glove gets cut and the holding hand does not. That also cuts down the use or need for bandaids.

The new year is here and it's time to plan all the things you forgot to do last year. Winter is the time for building, fixing or just plain dreaming, so you just better get with it very soon or spring will sprang and will have left you behind.

As of today, it looks like the skis will need to be on the airplane as the ground seems to be very white and my memory says it's SNOW at last. I'm now writing my required column for the monthly squeak. By tomorrow I will be plowing some more new snow as per the forecast.

So just remember to keep the skis down and all landings from which you can fly again are great but not always graceful. Have fun and keep flying. ☺

### Safety Always Comes First!

Remember, you must be registered and have your registration number on every aircraft you fly. You must also have your registration card on you.

The fines are substantial, and are for each instance that can be proven. A flyer in New York who flew a drone and aired the transmission from the drone live onto the internet was just fined more than \$180,000!

Check your FAA registration today. ☺



# TCRC Dues Notification

by Tim Wirtz, Treasurer

Hi, all,

I have just sent out the Membership Renewal forms. You'll notice that the dues have gone up this year. If you were at the last Zoom membership meeting on December 8th, you heard the news that the auction has been cancelled, leaving a \$4,500 hole in our income. Though we cut back the spend in the budget next year and agreed not to fund the Runway Fund on a one-year exception, we still found we could not meet our operating needs without increasing the dues. We hope to be able to reduce the dues next year and that this is a one-time situation.

We understand that there are a few members for whom this increase may pose a hardship. If you feel it may cause a hardship for you, please reach out to any member of the board to discuss it.

Also, if you feel you are in a place to donate more and wish to do so, you can certainly do that. Please reach out directly to Tim Wirtz to help you make a donation via PayPal or credit card. Of course, you can also send a check, made out to TCRC, to:

Tim Wirtz  
1511 Emerson Ave N  
Minneapolis. MN 55411

Thank you for your continued membership 😊

## For Sale

President Bob Breisemeister has some very nice airplanes for sale.

Bob's planes range from small electric ARF's up to 1/3-scale sport planes. Some planes are still in kit form, and some are entirely completed.

The prices of the various planes are very moderate and any one of the aircraft would be a great value for the money.

If you are interested, give Bob a call at 612-964-8877, or see him at a meeting. 😊

# 2021 TCRC Auction Cancelled

Our hobby prides itself on safety above all. Our AMA rules, our club rules and our personal code of ethics govern the actions we take in pursuing our passion of building and flying R/C Aircraft.

It is with safety front and center, that we have made the difficult decision to cancel the 2021 TCRC Auction.

This was a difficult decision but a necessary one. The 8-hour length of the auction, the confines of the church, the communal concessions, and the attendance by 250 modelers from five states, would classify the auction as a possible COVID-19 Super Spreader event.

TCRC values the health and safety of all members of the modeling community. It would be unconscionable if members of the modeling community became ill or succumbed to COVID-19 because they came to the auction.

We fully expect that the TCRC Auction will return in 2022. In fact, we already have the date confirmed and the church reserved. The 2022 TCRC Auction will happen on February 5<sup>th</sup>, 2022, at the CrossPoint Church in Bloomington, Minnesota. We hope to see you there.

Thank you!

Bob Briesemeister – President, Twin City Radio  
Controllers

Chris O'Connor – Vice-President,

Tim Wirtz – Treasurer

Ken Weddell – Secretary

Gerry Dunne – Board Member

Brian Johnson – Board Member

Jim Ronhovde – Board Member

**We Will See You At The TCRC Auction  
Next Year – Saturday, February 5, 2022**

# TCRC 2021 Membership Renewal

by Tim Wirtz, Treasurer

*(Editor's Note: At the December 8<sup>th</sup> TCRC Zoom Meeting the dues for 2021 were discussed. Following that meeting, Treasurer Tim Wirtz emailed the membership their official renewal notice on December 16<sup>th</sup>. The following is a copy of the Renewal Statement that every member should have received in their email.)*

## TCRC 2021 Renewal Statement

This is your official 2021 TCRC Club renewal notice. Before your renewal application can be processed by TCRC, your 2021 AMA Membership must be current. A 2021 Membership Card will not be issued until the AMA website shows your AMA status as current. Your 2021 AMA Membership status will be verified using an AMA website application. There is no need to submit a paper copy of your AMA Membership status with this application.

To serve the TCRC Membership, the Board requires a signature of each pilot confirming their intent to abide by the Field Rules that are posted on the TCRC website, [TCRCOnline.com](http://TCRCOnline.com) and in the shelter at the main field. **This year, due to COVID, your payment of your yearly dues constitutes your acknowledgment that you intend to abide by the Field Rules**

TCRC Membership types are as follows:

- **Regular:** Those 19 years or over as of July 1, 2021
- **Family:** Regular member plus all son(s)/daughter(s). Pilots under 19 years of July 1, 2021 must have a current 2021 AMA Membership
- **Junior:** Those under 19 years as of July 1, 2021 (who are not part of a Family Membership)
- **Social Affiliate:** An affiliate of TCRC with no flying privileges (*does not require AMA Membership*)

The 2021 Membership Dues are listed below. **Receipt of payment is proof of renewal. NO NEED TO PRINT AND SEND THIS FORM**

- |                      |          |
|----------------------|----------|
| • Regular Membership | \$105.00 |
| • Family Membership  | \$105.00 |
| • Junior Membership  | \$ 47.50 |
| • Social Affiliate   | \$ 35.00 |

If you had a Family Membership in 2021, your family membership will automatically be renewed as such with the family members on file. If there are additional family members that need to be added, please email [treasurer@tcrconline.com](mailto:treasurer@tcrconline.com).

Please confirm you member information (*that were supplied in the renewal email*) (if corrections are needed, you can send it via email to [treasurer@tcrconline.com](mailto:treasurer@tcrconline.com))

The preferred payment method this year is PayPal, however credit cards and checks will be accepted. If paying by PayPal, use the following link:

[www.PayPal.Me/TCRCTreasurer/105](http://www.PayPal.Me/TCRCTreasurer/105)

If paying by Credit Card, please call Tim Wirtz at 952-297-5226

Mail your check payment to:

Tim Wirtz  
1511 Emerson Ave N  
Minneapolis, MN 55411 ☺

## Calendar

- |         |  |
|---------|--|
| Feb. 6  | TCRC Annual Auction<br>CANCELLED                                 |
| Feb. 9  | TCRC Membership Meeting, 7:00 PM<br>Virtual Zoom Meeting         |
| Feb. 13 | All Season Flyer Session<br>TCRC Model Air Park<br>10-10-10 Rule |
| Mar. 6  | End of Winter Fun Fly<br>TCRC Model Air Park<br>10-10-10 Rule    |
| Mar. 9  | TCRC Membership Meeting, 7:00 PM<br>Virtual Zoom Meeting         |

# Northrop XP-56

by Conrad Naegele

The January Mystery Plane was the Northrop XP-56.



One of the most radical U. S. experimental fighters of World War II, the XP-56, was the result of an informal competition in 1939. The winning contractor was Northrop.

The plane was a tailless pusher, of all-welded magnesium. Two prototypes were finally ordered in 1942. The original engine was a Pratt & Whitney X-1800 liquid-cooled inline, but P&W discontinued work on it. Instead, Northrop chose a P&WR-2800 radial, buried in the fuse, driving contra-rotating propellers. There was no vertical stabilizer, only a lower stab, to protect the props.

Flight tests did not start until 1943, and were unsuccessful, as the plane was grossly nose heavy (pilot was unable to rotate until he reached 160

mph). Weight and balance then resulted in extreme tail heaviness. There was trouble with the landing gear, the plane crashed, pilot being thrown out.

Rudder control was by a bellows affair on the wingtips. As the flight tests continued, severe lateral instability and control reversal appeared. After ten flights with the second prototype, the USAAF considered further testing too hazardous, and discontinued further work. You wonder how much money was spent on two airplanes? One thing, this plane has been voted one of the worst planes in the world!

The XP-56 had a wingspan of 42-feet 6-inches, and a weight of 11,350 pounds. The engine was a Pratt & Whitney R-2800 18-cylinder radial that developed 2,000 horsepower. This plane was called the Black Bullet. ☺

## TCRC Has A New Neighbor

The land to the west and adjoining the TCRC land has been purchased by the Wisconsin DNR. The purchase includes Alswedes Lake which is on that property. The land was previously owned by Burdett Steif. ☺

**MNBigBirds.com** Free! Scale Plan Downloads

**Andersen Designs**

**New!** Hawker Hurricane Mk II 1/4 Scale British Fighter

**New!** Howard Pete 1/3 Scale Racer

**New!** KI-45 DRAGON SI AVFR

**Add'l Extras**

- In Flight Videos
- Construction Articles
- Scale Documentation
- Paint Masks & More!

Composite Parts Available Thru MICKO

TCRC meets every month on the 2<sup>nd</sup> Tuesday at 7:00 PM in Fellowship Hall of CrossPoint Church located on the southeastern corner of the intersection of 98<sup>th</sup> Street and France Avenue in Bloomington. Guests are welcome to attend these meetings.

# TCRC Donations Store

by Brian Johnson

Hello TCRC members,

By now you have likely heard that our 2021 TCRC auction has been cancelled due to restrictions resulting from the COVID-19 pandemic. This event is the primary fundraiser for the club, and we depend on the profits from this event to pay for much of the operating costs of the club.

The board worked very hard to decrease expenses wherever possible in order to balance the budget and keep dues as low as possible. One of the major cuts was to the runway fund to which we normally contribute two thousand dollars annually in order to assure we can make necessary repairs in a timely manner due to the extreme conditions to which it is subject.

Many of you have already donated money in addition to your annual dues to replace some of the lost revenue and for this I extend a heartfelt THANK YOU! Another way in which we will make up this lost revenue and replace some of the contribution to the runway fund is by selling club owned products, donated by our members, either on eBay or by local market app -- one of which is Facebook Marketplace.

We are asking for members to go through their shop and find items that have some value and donate them to the club for this purpose. A lot of us have a drawer of engines, motors, and ESCs of which one or two will not be missed. New stuff brings the highest prices but used items in good condition are great for this type of sale. Items that can be shipped will bring the highest price as they can reach a larger audience through eBay than the local marketplace apps. Some examples of great selling items are:

- Engines-particularly four cycle or vintage collectables
- Electric motors/ESC combos
- Electronics-servos, 2.4 G radios, BECs
- Brand new repair parts
- Brand new hardware
- New kits and ARFs
- Tools and shop supplies

Airframes and larger items can be sold as well but are fit only for local pick up, so they tend to move slowly. Dangerous goods such as LiPos and liquid fuel will not be shipped at this time and so would be offered for local pickup only.

With enough participation we can replace much of the missing income so please take some time to dig around and find something to give.

Now for some of the details:

All the items will be property of the club once they are donated. We will work as hard as possible to get the maximum amount of money we can for each item but inevitably there will be items that do not sell. The store operator will determine the best value to the club for these items and either use them for functions, offer them back to club members, or find some other use for them. They will not by default be returned to the individual who made the original donation.

Timing and pricing of listings will be determined by the store operator. I will get to every item, but it may take time to get listings created, clean and package product, and ship orders.

Donations can be made to Brian Johnson. Product can be dropped off at my home in Chaska, I can meet you at the field, or I can meet you at the church to pick up donations with prior planning. Contact me via email at [bjj4202000@gmail.com](mailto:bjj4202000@gmail.com) to make arrangements or by cell at [763-744-6379](tel:763-744-6379). If using my cell, a text message letting me know who it is works best as I rarely answer unknown numbers. If you prefer speaking to texting, I understand. Please just leave me a message and I will return your call.

If you want to follow the eBay store we are TCRC-22. Facebook marketplace seller will be [bjohnsonfam](https://www.facebook.com/bjohnsonfam). Club members are eligible to bid on or purchase any of the items listed.

If you wish to make a cash donation to the club you can do so by PayPal at TCRC Treasurer.

Thanks for reading and I look forward to sharing the results at the banquet this year! ☺

# For Sale

## What A Bargain!



Brand New-In-Box – Never Opened

## Multiplex Fun Cub ARF



Price On Box -- \$339  
Price Today on eBay -- \$250

## Price Reduced -- \$125

This ARF comes complete with 7 servos installed, brushless motor installed, brushless controller installed, flaps, propeller. Floats NOT included. See picture above for complete listing.

Jim Cook  
[jimcook888@q.com](mailto:jimcook888@q.com)  
952-200-2030

## 2020-2021 AMA Dues Statements

Most older TCRC members should have received their 2020-2021 dues statements in the mail in September from the Academy of Model Aeronautics. Newer members renew on the anniversary of the month they joined.

AMA 2020 dues are the same as the previous year. They are:

- Adult (19-65) \$75
- Senior (65 and up) \$65
- Under 19 Free  
or \$15 with *MA*

Your AMA membership gives you \$2.5 million in personal liability coverage, \$25,000 in medical coverage and also a subscription to *Model Aviation* for the year.

To belong to TCRC, you must have a valid membership for the year in AMA.

Please note that AMA also has a Park Pilot membership that has a cost of \$38 per year, but that membership is not valid for membership in TCRC.

To renew your membership in AMA, the Academy gives you four methods: at the AMA website, [www.modelaircraft.org](http://www.modelaircraft.org); by fax at (765) 741-0057; by phone at (800) 435-9262; or by returning the renewal form you received in the mail in the supplied envelope.

Deadline for paying your 2020 AMA dues was December 15 to avoid a lapse in membership services. ☺

## WWII Statistics Army Air Corps

(Reprinted from the Internet)

Almost 1,000 Army planes disappeared en route from the US to foreign locations. But an eye-watering 43,581 aircraft were lost overseas including 22,948 on combat missions (18,418 against the Western Axis) and 20,633 attributed to non-combat causes overseas. In a single 376 plane raid in August 1943, 60 B-17s were shot down. That was a 16 percent loss rate and meant 600 empty bunks in England. In 1942-43 it was statistically impossible for bomber crews to complete a 25-mission tour in Europe.

Pacific theater losses were far less (4,530 in combat) owing to smaller forces committed. The worst B-29 mission, against Tokyo on May 25, 1945, cost 26 Superfortresses, 5.6 percent of the 464 dispatched from the Marianas.

On average, 6,600 American servicemen died per month during WWII, about 220 a day. By the end of the war, over 40,000 airmen were killed in combat theaters and another 18,000 wounded. Some 12,000 missing men were declared dead, including a number "liberated" by the Soviets but never returned. More than 41,000 were captured, half of the 5,400 held by the Japanese died in captivity, compared with one-tenth in German hands. Total combat casualties were pegged at 121,867.

US manpower made up the deficit. The AAF's peak strength was reached in 1944 with 2,372,000

personnel, nearly twice the previous year's figure.

The losses were huge -- but so were production totals. From 1941 through 1945, American industry delivered more than 276,000 military aircraft. That number was enough not only for US Army, Navy and Marine Corps, but for allies as diverse as Britain, Australia, China and Russia. In fact, from 1943 onward, America produced more planes than Britain and Russia combined. And more than Germany and Japan together 1941-45. However, our enemies took massive losses. Through much of 1944, the Luftwaffe sustained uncontrolled hemorrhaging, reaching 25 percent of aircrews and 40 planes a month. And in late 1944 into 1945, nearly half the pilots in Japanese squadrons had flown fewer than 200 hours. The disparity of two years before had been completely reversed.

### Experience Level:

Uncle Sam sent many of his sons to war with absolute minimums of training. Some fighter pilots entered combat in 1942 with less than one hour in their assigned aircraft.

The 357th Fighter Group (often known as The Yoxford Boys) went to England in late 1943 having trained on P-39s. The group never saw a Mustang until shortly before its first combat mission.

A high-time P-51 pilot had 30 hours in type. Many had fewer than five hours. Some had one hour.

With arrival of new aircraft, many combat units transitioned in combat. The attitude was, "They all have a stick and a throttle. Go

fly 'em." When the famed 4th Fighter Group converted from P-47s to P-51s in February 1944, there was no time to stand down for an orderly transition. The Group commander, Col. Donald Blakeslee, said, "You can learn to fly '51s on the way to the target.

A future P-47 ace said, "I was sent to England to die." He was not alone.

Some fighter pilots tucked their wheels in the well on their first combat mission with one previous flight in the aircraft. Meanwhile, many bomber crews were still learning their trade: of Jimmy Doolittle's 15 pilots on the April 1942 Tokyo raid, only five had won their wings before 1941.

All but one of the 16 copilots were less than a year out of flight school.

In WWII flying safety took a back seat to combat. The AAF's worst accident rate was recorded by the A-36 Invader version of the P-51: a staggering 274 accidents per 100,000 flying hours.

Next worst were the P-39 at 245, the P-40 at 188, and the P-38 at 139. All were Allison powered.

Bomber wrecks were fewer but more expensive. The B-17 and B-24 averaged 30 and 35 accidents per 100,000 flight hours, respectively - a horrific figure considering that from 1980 to 2000 the Air Force's major mishap rate was less than 2.

The B-29 was even worse at 40; the world's most sophisticated, most capable and most expensive bomber was too urgently needed to stand down for mere safety reasons. The AAF set a reasonably

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## WWII Statistics Army Air Corps

Continued From Page 14

high standard for B-29 pilots, but the desired figures were seldom attained.

The original cadre of the 58th Bomb Wing was to have 400 hours of multi-engine time, but there were not enough experienced pilots to meet the criterion. Only ten percent had overseas experience. Conversely, when a \$2.1 billion B-2 crashed in 2008, the Air Force initiated a two-month "safety pause" rather than declare a "stand down", let alone grounding.

The B-29 was no better for maintenance. Though the R3350 was known as a complicated, troublesome power-plant, no more than half the mechanics had previous experience with the Duplex Cyclone. But they made it work.

### Navigators:

Perhaps the greatest unsung success story of AAF training was Navigators.

The Army graduated some 50,000 during the War. And many had never flown out of sight of land before leaving "Uncle Sugar" for a war zone. Yet the huge majority found their way across oceans and continents without getting lost or running out of fuel -- a stirring tribute to the AAF's educational establishments.

### Cadet To Colonel:

It was possible for a flying cadet at the time of Pearl Harbor to finish the war with eagles on his

shoulders. That was the record of John D Landers, a 21-year-old Texan, who was commissioned a second lieutenant on December 12, 1941. He joined his combat squadron with 209 hours total flight time, including 2 in P-40s. He finished the war as a full colonel, commanding an 8th Air Force Group --- at age 24.

As the training pipeline filled up, however those low figures became exceptions.

By early 1944, the average AAF fighter pilot entering combat had logged at least 450 hours, usually including 250 hours in training. At the same time, many captains and first lieutenants claimed over 600 hours.

### Fact:

At its height in mid-1944, the Army Air Forces had 2.6 million people and nearly 80,000 aircraft of all types.

Today the US Air Force employs 327,000 active personnel (plus 170,000 civilians) with 5,500+ manned and perhaps 200 unmanned aircraft.

The 2009 figures represent about 12 percent of the manpower and 7 percent of the airplanes of the WWII peak.

### In Summation:

Whether there will ever be another war like that experienced in 1940-45 is doubtful, as fighters and bombers have given way to helicopters and remotely-controlled drones over Afghanistan and Iraq. But within living memory, men left the earth in 1,000-plane formations and fought major battles five miles high, leaving a legacy that remains timeless. →

## Who's At The Zoom Meetings?



(Photos by Scott Anderson)

# Twin City Radio Controllers



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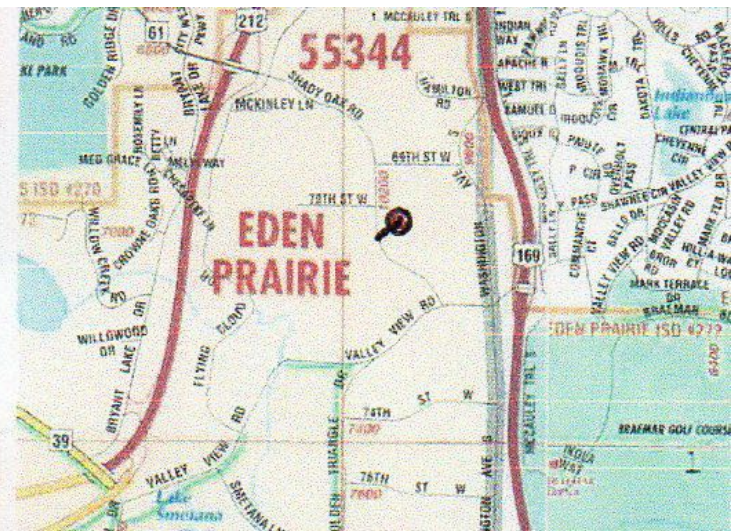
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