



November

Minneapolis, Minnesota U.S.A.

2016

Flite Metal Program At October Meeting

by Jim Cook



The Tuesday membership meeting on October 11th featured a fantastic program on the use and application of Flite Metal on our R/C models.

Chris O'Connor, model builder extraordinaire, gave the program and his example of the appearance of the finished product was the giant-scale P-47 he had covered for his son Nathan. The aluminum skin appearance of this plane was nothing short of unbelievable. Chris explained that this plane was done in sections of Flite Metal, and the application of the product was not near as hard to do as a hobbyist would expect.

To prove his point, Chris showed how the Flite metal is applied, using a tool made of dense paper. He then had the members come up and try their hand on the aileron that was being covered. Everyone marveled at

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TCRC Elections November 1st

TCRC is holding its annual election on Tuesday, November 1st at the regular membership meeting.

All four of the officer positions are up for election this year plus one of the three at-large board seats.

For president, incumbent Bob Breisemeister is running for re-election.

For vice president, incumbent Mark Wolf is not a candidate for 2017, and as of press time the editor was not aware of another candidate.

For treasurer, incumbent Tim Wirtz is running for re-election.

For secretary, at press time the editor was not aware if incumbent Jim Ronhovde would be running for re-election.

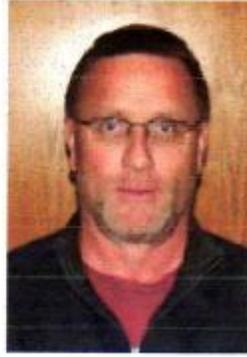
For the board seat, incumbent Gerry Dunne is running for re-election.

Please consider being a candidate for TCRC office. The club needs you. Be both a voter and a candidate at the TCRC elections on November 1st.

J

A Note from The Head Wing Nut

By Bob Briesemeister



TCRC Members

As Johnny Cash once sang “How High’s The Water Mama 3 Feet High and Rising”. Yes we are flooded again but it looks like only for a week or so. It is November though and the snow is not too far off!

There are a few things club related this month. The first is the elections which will be held on the 1st of November at the membership meeting along with the ugly airplane contest. The 2nd is the banquet on Saturday November 12th at Fong’s in Prior Lake. Cost is \$25.00 per person for the buffet dinner. Appetizers will be out by 5:00 pm and the bar will be open. Dinner will start around 6:00 with games to follow and the opportunity to win some nice prizes for both pilots and their spouses/guests. So come and join us at the banquet and enjoy an evening of delicious food, prizes and TCRC fellowship.

The board will be meeting in early December to work on the 2017 budget and calendar. Please let me know if you have any input for next year.

Remember to mark your calendars for the auction on February 4th 2017. We moved it up a week so that it does not conflict with Valentine’s Day. More details about the auction to come in the next two months.

This month’s raffle plane is a Phoenix Model Spitfire MK2 1:8 Scale. It can be powered by gas, nitro or electric. Join in and take a chance at \$5.00 each number.

See you at the meeting

J

New TCRC Apparel At November Meeting

by Tim Wirtz

The new gray T-shirts with the TCRC 60th anniversary logo should be available at the club meeting on Tuesday, November 1st. Price is only \$10.

Hopefully the TCRC hats, with or without the anniversary logo will also be available. Price is only \$10.

Calendar

- | | |
|-----------------|---|
| Nov. 1 | TCRC Membership Meeting, 7:00 PM
CrossPoint Church
Bloomington
(Note: Moved Because Of National Elections) |
| Nov. 1 | Ugly Airplane Contest
7:00 PM
CrossPoint Church |
| Nov. 1 | TCRC Elections
7:00 PM
CrossPoint Church |
| Nov. 12 | TCRC Banquet
David Fong’s
Restaurant, 5:00 PM
Prior Lake |
| Nov. ??? | Jordan Field
Clean-Up and
Season Finale
Date TBD |
| Dec. 3 | All Season Flyer
2016 Finale
Jordan Field
10-10-10 Rule |
| Dec. 7 | TCRC Joint Board Meeting
Pres’ Home 7 PM |
| Feb 4 | TCRC Auction
CrossPoint Church
Bloomington, MN
7:00 AM to 5:00 PM |

TCRC hatbands have been ordered also. These are cloth bands that fit around most of the broad-brimmed hats that the guys wear at the flying field.

TCRC sweatshirts should be available at the December 13th meeting.

J

Flite Metal Program

Continued From Page 1

The ease it was to apply the material and get a nice shiny finish. And the guys were not just sealing it down in a flat area, but around the curve.

Chris explained that after the metal was on the model, it could be left as is, or could be given its polished aluminum finish by the application of various abrasive treatments.

One of the things that made the Flite Metal so easy to work with was the condition of the surface it was being applied to. Chris had the receiving surface sealed to the point that it felt like glass.

When the program was done, almost everyone in the room had worked with the metal, and most were thinking of what model they should build this winter so that they could cover it with Flite Metal.

A big thank you to Chris O'Connor for sharing some of his expertise, and for the hands-on presentation for the members. J

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

Does This P-47 Have A Fantastic Finish Or What!



A close up view of the Flite Metal finish on Nathan O'Connor's P-47. The aluminum appearance was great and of course Chris' scale detailing of the metal was icing on the cake. (Photo by Jim Cook)

I Can't Believe This Material Is So Easy To Work With!



The hands-on part of the program gave everyone a chance to work with Flite Metal. Here, Chris shows new member Alex Dahlseid how to apply the material. (Photo by Jim Cook)

The Right Seat

by Mark Wolf



The Four Forces

We have a lot to do as we fly our airplanes and have some fun while doing it. While managing power and the flight controls we have our hands full – literally; holding the transmitter, with thumbs and fingers on the sticks and switches. There are many aerodynamic forces acting on an airplane in flight. Our job is to control the effects of those forces acting on the airplane in a safe manner. In flight there are four basic forces considered to be acting on the airplane during all maneuvers. These four forces are lift, thrust, weight and drag.

Lift is the upward acting force. The major source of the airplane's lift is exerted by the wings. Lift is always considered to be acting perpendicular both to the airplane wingspan and to the relative wind. Several design aspects influence the amount of lift generated by the wings of an airplane. Examples include the airfoil section (flat bottom, semi-symmetrical, symmetrical), wing area, wing planform (straight leading and trailing edges, tapered leading and trailing edges, tapered leading or tapered trailing edges, sweptback wings, delta wing), wingspan and the design speed of the airplane. Note that important detail about lift acting perpendicular to wingspan. (Not necessarily acting 'up' vertically). When the airplane is banked for a turn, some of the lift force is directed horizontally to pull the airplane "around the turn". As the wing moves through the air, lift and drag are produced. The angle of attack (the difference between the wing chord line and relative wind) is variable and we control the angle of attack and influence lift by our pilot elevator control inputs. Lift opposes weight.

Thrust is the forward force that drives the airplane through the air and is furnished by a propeller or jet. Our reciprocating engines or electric motor displacement and fixed-pitch propeller combinations produce the power (rpm's or watts) we need to counteract the forces of drag and move the airplane forward. The direction of the thrust force is referred to as the thrust line and simply stated thrust moves rearward and the airplane moves opposite or forward. We use the throttle to establish and control thrust. Thrust opposes drag.

Weight. Always there and always a downward acting force. Not much we can do about it. The airplane's center of gravity (CG) is the point where all aircraft weight is considered to be concentrated. We try to minimize weight during the construction of our airplanes and ensure the correct CG location for proper aircraft performance and stability. Weight opposes lift.

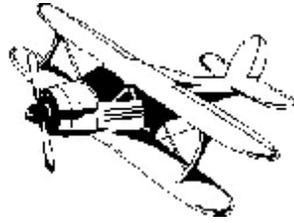
Drag is the rearward acting or retarding force which resists the forward movement of the airplane. It acts parallel to and in the same direction as the relative wind. Any part of the airplane exposed to the air when the aircraft is in motion produces some resistance and contributes to the total drag. As with lift, there are several design aspects to minimize it. The shape of the wings, fuselage and tail, wheel pants, retractable landing gear, etc. We can affect drag by retracting/extending landing gear and/or flaps. Drag opposes thrust.

In steady unaccelerated flight the opposing forces are in balance; lift equals weight and thrust equals drag. During our flights we use the controls to temporarily and purposely change one or more of these forces creating an imbalance to move (force) the airplane in the desired direction. These forces are present during all maneuvers. Straight and level flight, turns, normal climbs and normal glides. Those are the basic maneuvers of flying – the four fundamentals.

Until next time . . .

J

Show & Tell



Some really interesting airplanes showed up at the October 11th membership meeting.



Pedro Restrepo had a great looking Saab Gripen JAS-39 electric ducted fan. He scratch-built it from a design by Steve Shumate. This unique aircraft had a computer-controlled canard that could change the plane's angle of attack. Pedro showed that half of the weight of the plane was for the wiring for the electronic gear he had installed. On its maiden flight, he flew with the computer controller on and the airplane crashed because of pitch stability.



John Berk had his 'FMX-4 Facetmobile' at the meeting. This stealth plane had a white fuse with black underside and yellow winglets. He said this electric is a great flyer and has handled 15 mph winds with no problem. Controls were elevens and he said he needed to add a cooling airflow through the fuse.



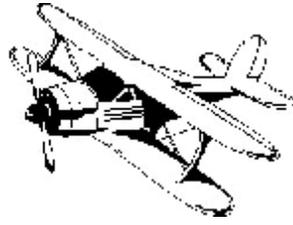
John also had a round wing biplane for display. He built this aircraft from the non-flying plane that appeared in the movie *Those Magnificent Men In Their Flying Machines*. The plane, designed by Kitchens, was all white and he actually has two of them. One is in Arizona and John has flown that a number of times, and he said it flies quite well.



Sherwood Heggen had a Sig Something Extra that had been resurrected from the pile of balsa shown in the above picture. He obtained the 'trash-barrel aircraft' from a fellow modeler. As can be seen, the

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Show & Tell



Continued From Page 5

fuse was destroyed to behind the wing. The leading edges of the wing were destroyed in addition to the front of all of the wing ribs. Sherwood again worked his magic on a derelict without a pulse and created the Something Extra shown in the second picture on page 5. This plane done in red and white Ultrakote weighed in at only 5-3/4 pounds, had a wingspan of 51-inches and was powered with an OS Max 46 two-stroke glow engine. He said the maiden flight was uneventful and he has had many flights since. Sherwood stated, "A little bit of work and material brought about a rewarding experience in a good looking and nice flying model." *(Editor's note: I think the term 'a little bit of work' has a very different interpretation in Sherwood's mind than it has in mine!)*



Scott Anderson showed up with a good looking FMS P39 Air Cobra electric. This foam ARF was done in tan/olive green camouflage and had electric retracts. Scott said the plane was fairly heavy and as of the meeting he had not given the Air Cobra its maiden flight. J

**With The Arrival Of The Building Season
There Should Be Some Neat Aircraft At
Every Show & Tell This Winter!**

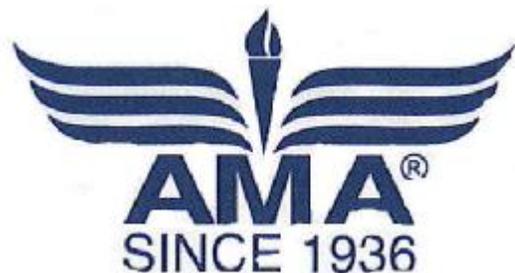
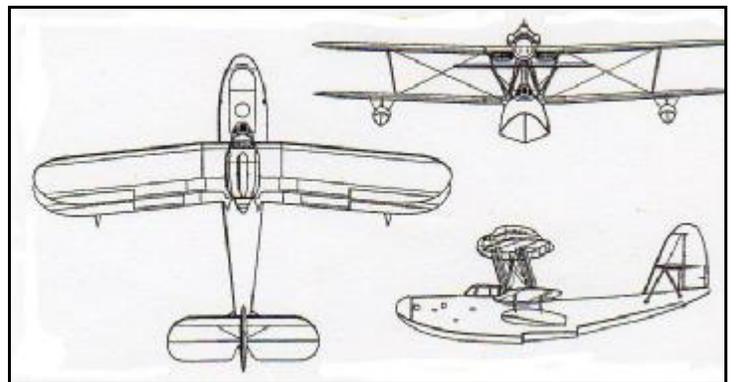
November Raffle Winner



Luck Allan Boucher won again at the October raffle at the membership meeting on October 11th. The plane was a very nifty looking FMS P-38 Lightning ARF.

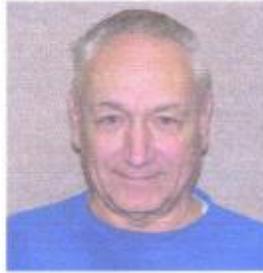
At the November 1st meeting, the raffle prize will be a Phoenix Model Spitfire MK2 1/8th-scale. Chances are only \$5/each and you may enter as many times as you wish. Come to the monthly club meeting on Tuesday, November 1st at CrossPoint Church and be the next winner of the TCRC raffle. J

November Mystery Plane



Safety At The Field

By Larry Couture



Well here it is the end of October and the field is under water again at 3 to 4 feet and rising. This year is getting to be one of the worst years for flying at the field and that is the truth, so there!

Don't forget to wear a colored vest if you go into the woods to find a plane, because it is now the hunting season and the people that rent the property around us are in there hunting all during the season.

Since this is the building season, here are some safety tips for you while you are working in your shop:

- When discarding used knife blades it is a good idea to wrap them in tape so that someone sorting the waste does not get cut as it may be your hand as you fill your garbage can.
- When using a Dremo tool or power cutter be sure to put on safety glasses as you do not want anything to fly up in your eyes. Just because you have a pair doesn't mean one is expendable!
- Try to keep your work area free from other tools lying here and there as you can get cut by that Exacto blade when you're trying to pick up a screw driver or other tool.
- When you're done using the iron for shrinking covering, be sure to place it on a non-burnable surface to cool. I like to use the base of my band saw.
- When charging lipo batteries do not leave them alone. I like to charge them in the same room as I watch TV, or in my case, as I work in the office. (The word work is not quite true.)

There are many items like this that should be mentioned and if you think of any please tell me so. I can include them in another rant.

That's it for now. And remember, every landing that you can fly again after is great but not always graceful, so just keep the rubber side down and have fun.

The 2016 TCRC Ugly Airplane Contest

by Sherwood Heggen

On November 1, 2016, the TCRC Ugly Airplane Contest will again be held at the TCRC membership meeting. Make no mistake! This is a serious contest with a \$25.00 Hobby Warehouse gift certificate prize to the owner of the ugliest airplane!

The name of the contest may be a little misleading since the airplane entered doesn't need to be totally bedraggled and nearly left for dead. Most of our airplanes just see a lot of wear during the flying season and are no longer as pristine as they were when they left the workbench for the first time.

To qualify with an entrant, your airplane needs to be flyable and not entered in any previous TCRC ugly airplane contest. Runway scuffs, sagging and/or peeling covering, hangar rash, oil-soak, "hard landings" repaired to good enough, hard use, etc., all aid in making an ugly airplane. We all have them. Bring yours.

There is no entry fee and you might bring home the valued gift certificate to aid in bringing more modeling stuff to your workshop. Not only that, you could be the proud possessor of the coveted UAC traveling trophy!

Remember, behind every ugly airplane there is an active modeler who owns it. Be proud and enter!

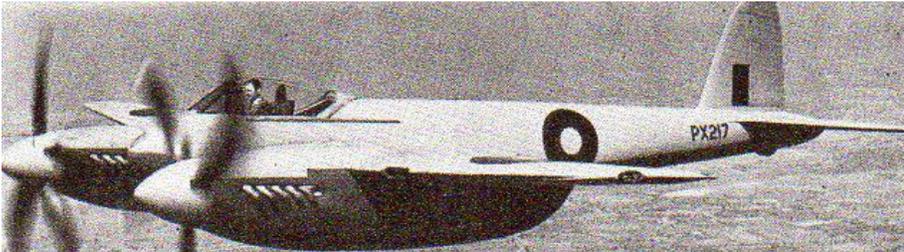
We'll see you there!

Safety Always Comes First!

deHavilland DH 103 Hornet

by Conrad Naegele

The October Mystery Plane was the British deHavilland DH 103 Hornet.



Most airplane guys are familiar with the deHavilland DH93 'Mosquito', the WWII twin-engined wooden fighter bomber.

Immediately following that plane, the DH 103 was planned, in December, 1943. The prototype flew July 28, 1944. This plane continued the Mosquito with a plywood/balsa/plywood construction, and attained the rather phenomenal speed of 482 mph! With a full up operational weight it still reached 472 mph.

The plane was nicely armed with 4-20 mm cannon, plus considerable fuel, as it was to be used for island hopping in the South Pacific. Some models were 'Navalized' with folding wings and arresting gear. These were called the 'Sea Hornets'. While never heavily produced it continued in service, until the last Hornet was retired in 1955. This plane was the last single-seat piston-engined plane in the RAF.

The Hornet must have been a thrilling plane to fly, clean, streamlined, rather lightweight, with over 4,000 horsepower at hand, and with superb visibility!!

The Hornet, a single-seat long-range fighter, was powered with two Rolls Royce Merlin 12-cylinder Vee, liquid-cooled engines, each developing 2,030 horsepower. The plane had a 45-foot wingspan, a gross weight of 17,700 pounds, a max speed of 472 mph and a range of 2,500 miles. J

2017 AMA Dues Statements

All TCRC members should have received their 2017 dues statements in the mail in September from the Academy of Model Aeronautics.

AMA 2017 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*
- Additional family \$38

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; 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 2017 AMA dues is December 15 to avoid a lapse in membership services. J

Minnesota River Flow History

by Pedro Restrepo

With the TCRC flying field being inundated by the Minnesota River again this year, members are starting to wonder if this is the worst year ever for river flow.

The latest readings for the River on Halloween is 20.9 feet. I was curious to see how this year compares with previous years. For some reason, the actual stage observations are only available since 2001, so, instead of stage, I used the flows. This is only approximate, since because of the nature of hydraulics, the river may be at a given stage under many different flow values (depending, for example, on the downstream conditions or the sharpness of the water level rise, to cite just two.) I selected for this test a flow of 15,300 cubic feet per second (cfs) at the Jordan gauge.

This year, so far, stands at #10 with 71 days with flows over 15,300 cfs. Here are the top 10:

- | | |
|--------|-------|
| • 1993 | • 164 |
| • 2011 | • 134 |
| • 1986 | • 98 |
| • 2010 | • 93 |
| • 1995 | • 91 |
| • 1984 | • 83 |
| • 1983 | • 81 |
| • 2001 | • 79 |
| • 1997 | • 74 |
| • 2016 | • 71 |

And I plotted the number of days with flows above 15,300 cfs for all years since 1934. The trend line indicates that the number of days with flows above 15,300 is increasing.

(Editor's Note: Having lived in Minnesota since the fall of 1969, I had never seen the Shakopee and Chaska bridges go under water until 1993. You will notice that the 3rd, 6th and 7th highest flows were in 1986, 1984 and 1983, respectively, and yet the bridges did not go under in those years, so even though those years were high flow years, they were not flood years.) **J**



TCRC Annual Banquet November 12th

The TCRC Annual Banquet is almost here. It is scheduled to be held starting at 5:00 PM on Saturday, November 12th at Fong's Restaurant in Prior Lake at the intersection of Highway 13 and County Road 21.

The banquet is always a very enjoyable time with TCRC members and their families coming together to partake of a great meal, indulge in camaraderie with both old and new friends, to see a recap of the club's 2016 events, and to be a part of some fun games with nice prizes for the winners.

Cost is \$25/person and includes a buffet dinner of Fong's exquisite cuisine.

Time is running out. Plan on attending the TCRC Annual Banquet. Bring your spouse, a good appetite, and come and enjoy this fun event. President Bob needs a nose count this week, so let him know you are planning on attending. You can give him a call at 612-964-8877.

Be a part of the fun at the TCRC Banquet on Saturday, November 12th. **J**

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.

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