

# The Aero Historian



Volume 56 Number 5

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May 2023



Young Rod MacKay, volunteer caretaker of the B-37 lightning bolt target plane at L&T Research Institute.  
1972 photo by **Noel Allard**

## LIGHTNING AND TRANSIENTS RESEARCH INSTITUTE

by Noel Allard

*Editor's note: This article originally appeared in the Aero Historian many years ago,. It is re-printed by popular demand so our newer members can also enjoy it.*

During World War II, fighter and bomber aircraft were flying higher and faster than ever before. They were flying in

instrument conditions for the first time. Commercial aircraft, flying in support of the military, such as the Northwest Airlines routes into the wilds of Alaska and Canada, encountered weather which they were never expected to fly in during peacetime.

Commercial and military aircraft were flying in conditions where high static buildup on aircraft bodies caused such things as "St. Elmo's Fire", a form of electrical glow, resulting

in rolling balls of lightning along the wings and cockpit canopies. Something had to be done to counter the effects. The situation didn't just spook the crews, but caused considerable trouble with the radios and early radar gear, knocking out navigational components and making radio communication impossible. On occasion, lightning might even punch a hole in the metal skin of an aircraft. The military began research on countering the

*(Continued on page 3)*

## TCAH Officers

**President**, Mark Copeland

**Vice-President**, Steve Hustad

**Secretary**, Bob Maderich

**Treasurer**, Dennis Strand

**Historian**, Merrill Anderson

## Newsletter Info

*Article Submission Deadline: 22nd of each month*

*Editor*

**Bob Arko**

**6417 Rice Court**

**Lino Lakes, MN 55014**

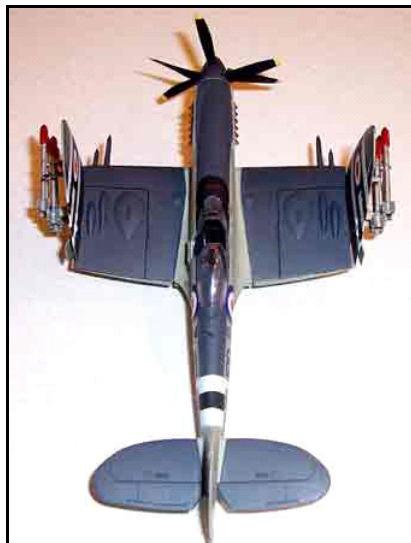
**651-481-8887**

**boba@arkokraft.com**

Send Change of Address Notice to:  
Dennis Strand

## TCAH This Month

The monthly meeting will be held Saturday May 13, at Fleming Field, South St. Paul, beginning at 1:00 pm. Come early.



## President's Address

*by Mark Copeland*

It is a pleasure to begin this address by announcing the results from our annual club auction that was held during our April meeting. Due to the amazing generosity of our membership that donated items for the auction and the resulting bids, the club had a record setting result. With the amazing assistance of Bernie Kugal, Steve Hustad, Bob Maderich, Marty Agather, Axel Kornfuehrer and Dennis Strand we moved through the seemingly never ending piles of kits, books, artwork, etc. in less than two hours!!! Our result.....\$1456.00 was raised and put into the club coffers!!

Thank you to one and all who contributed to the auction and for all your generosity. You guys killed it and through your efforts the club's treasury is once again, "flush."

The weekend after the club May meeting, Saturday, May 20, 2023, is the IPMS Region 5 Convention in Eagle River, Wisconsin. This is one of the feature contests of the season. A short four hour drive from the Twin Cities to the north woods of Wisconsin, the Northwoods Scale Model Phanatics will host this fun, one-day event.

My work schedule requirements unfortunately conflict with the May club meeting, so I won't in attendance. Therefore, you will be in the capable hands of our Vice President, Steve Hustad who will take over and lead the meeting.

Again, thank you everyone for your continued support to the club!! You guys are terrific!!



## Treasurer's Report

*by Dennis Strand*

The TCAH Annual Auction went very well at our April meeting. The total came to \$1648.00. Although we have come close in the past, this is a new high water mark for the auction. A sincere thank you to all the people who helped put it on and all those generous people who brought in the models, books, aviation art work, etc. and of course the active bidders, who came away with some very good deals.

Our only expense was \$94.48 for a card and flowers sent to the family of Gerry Fritsch, who passed away recently. The club's current available cash stands at \$5366.36.

Hope to see you all at the May meeting. The monthly theme is 'Axis', so it should be an interesting "Show and Tell".



(Continued from page 1)

problems and engaged several universities and private firms to study ways of dealing with static discharge in snowstorms and lightning strikes in thunderstorms.

One such private company was Lightning and Transients Research Institute. Located in an old NSP facility at the intersection of Highway 280 and Larpenteur Avenue in St. Paul, whose work up to 1946 was to study lightning's effects on power lines and transformers. Lightning and Transients Research was founded by the University of Minnesota under Dr. M.M. Neumann and John Bryant. Taking over the NSP building with its arrays of transformers and capacitors gave it the opportunity to study lightning effects on ships, aircraft and the new-fangled things called computers. Work was contracted to Boeing and Lockheed, and soon the government sought their help as well. L&T's mission was to develop federal standards for aircraft and electrical component shielding.

You perhaps remember driving past L&T before highway 280 was routed alongside, and again, after the road was built. You would immediately have noticed an old Army bomber parked between the highway and the big building. What you probably didn't notice was that the side of the building held a three-story-high sliding door. If you traveled past at night during the 1950s, you may have been shocked to see a huge fireball sail out of the open door, aimed at the airplane. The bomber was a 1942 version of the Navy PV-2 Ventura, known by the Army as an RB-37. It sported English flashes on the tail because the plane was one of a group

originally lend-leased to the British, but never sent to Europe. It was outfitted as a photo-recon ship, but donated to the research facility by the Army.

Critical parts of the airplane, such as various radio components were subjected to lightning strikes of as much as 200,000 amperes, ten times the power of the average lightning strike. The plane was also the victim of 700,000 volt charges zapped at it to determine the effects of DC current generated in snowstorm clouds by static electricity. A scan of the grounds around the plane would have shown various different aircraft nose cones, armored component boxes, and other parts used in the tests. Inside the facility was quite akin to Dr. Zharkov's laboratory in the Flash Gordon movies. The three story high walls were lined with capacitors and transformer coils. In the center, riding a girder trolley was a star-wars device that could be rolled out the side door to send strong lightning bolts at the aircraft. Control counsels were spread around the large open interior. I once stopped there to visit with Mr. John Robb, the director of research and some of the scientists at work, just out of curiosity. Later, when the site was dismantled and the aircraft removed, I was ashamed I didn't conduct a full-blown interview of the men.

The Air Force Museum owned the bomber and retrieved it sometime in the 1980s to the best of my recollection. It is now at Wright Patterson Museum of the Air Force. Toward the end of the Institute's tenure, work was being done for NASA, beginning with the Mercury flights right up to the time of the Shuttle.

In the pictures attached, you

can see the bomber. The young man in the picture by the aircraft nose is Rod MacKay, at the time a member of the Twin City Aero Historians model airplane club. He was a volunteer caretaker of the plane and worked to clean up the yard and the inside of the plane. Rod was last known to have been working for the FAA and his whereabouts unknown.



### Monthly Themes 2023

May 2023- Axis

June 2023 - Carrier Aircraft/  
Carriers

July 2023 – Sci Fi

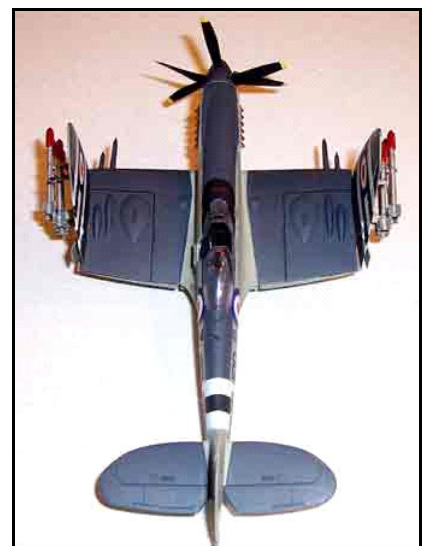
Aug 2023 - 1/32 Scale

September 2023 – Korea/  
Viet Nam

October – Ukrainian War

November – Interwar Years

December – White Elephant –  
Christmas Event







Army B-37 bomber parked alongside the Lightning and Transient Research Institute  
at Highway 280 and Larpenteur Avenue in St. Paul. November 1971  
Picture by Jim Borden.

Northwoods Scale Model Phanatics presents, the 9th. annual,

# ***“Spring In The Pines”***

***I.P.M.S. REGION 5 Model contest & Swap Meet***

***Saturday May 20th. 2023***



Eagle River Derby Track Convention Hall  
1311 N. Railroad St. (Highway 45 N.)  
Eagle River, WI 54521

**Time:** 9:00 AM until 4:00 PM

**Entry Fee:** Adults: \$10.00 for the first 12 models, and \$1.00 for any additional models. Juniors: \$5.00 for any number of entries. Each entrant receives a free raffle ticket. **“FREE TO THE PUBLIC”**

**Other Activities:** Large Raffle, Make & Take for the Kids, Large Swap Meet, Activities for Spouses and Families, Hotel accommodations available.

**Special Awards:** First Responders, “Beat Up!”, Civilian Aircraft, Red White & Blue, Best of Show, Peoples Choice, Most Innovative model (Traveling Trophy) , “Golden Tiger” Presidents Pick for best German Armor Subject (Traveling Trophy), Best USMC Subject (T.J.R. Memorial Award), Best MOPAR

**Categories:** Autos; Factory Stock, Street Machine, Racing, Custom, Curbside, Motorcycles

Trucks; custom, Light duty, Commercial

Armor; WWI, WWII Allied, WWII Axis, Post WWII Before Gulf War, Gulf War and beyond, Soft Skin, Other

Aircraft, WWI, Large Scale Prop, Large Scale Jet, 1/48 Scale Prop, 1/48 Scale Jet, Small Scale Prop, Small Scale Jet, Multi Wing, Rotary Wing

Ships; 351 Scale and under, 350 scale and larger

Figures, Dioramas, Vignettes, Si-Fi, Real Space, Misc., Open Junior (Under 12 years), Intermediates (13-17)

Judging from 12:00-3:00; awards for First, Second, and Third in each category presented at 4:00. Northwoods Scale Model Phanatics rulings are final!

For information, contact: Tom Foerster (715) 479-4988 email; [foerstertm@yahoo.com](mailto:foerstertm@yahoo.com)

Vendor Information, Jim Unger (715) 360-3355 email; [ungerjp@charter.net](mailto:ungerjp@charter.net)

***Modelers, get busy and start building that trophy winning model and bring it to the “Spring in the Pines” Contest!!!***

More info at [www.nsmmodelclub.org](http://www.nsmmodelclub.org)



## Directions to the Club Meeting Location

**Where: South St. Paul Municipal Airport, a.k.a. Fleming Field**, located on the southern extremity of South St. Paul, south of 1-494, west of Concord Street and East of Highway 52.

### If coming from the western Twin Cities going east on 494:

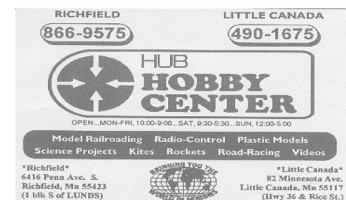
- Exit at the 7th and 5th Avenue exit (Exit No.65)
- Turn right (South) on 7th Ave and go approximately .6 miles to a 4-way Stop sign. This is South Street W. To your left there will be a McDonald's; to your right front there will be a Walgreen's.
- Turn left (East) at the 4-way Stop onto
- South Street W and go approximately .6 miles. Along the way you will encounter three more Stop signs—the third Stop sign (Henry Avenue) will be a "T" intersection. At the "T" intersection on your left will be homes and on your right softball fields.
- Turn right (south) onto Henry Ave. and go approximately .2

- miles toward the Fleming Field airport terminal building.

### If coming from east Twin Cities on westbound 494:

- Exit at the 7th and 5th Avenue exit (Exit No.65)
- Turn left (South) on 7th Ave and go approximately .6 miles to a 4-way Stop sign. This is South Street W. To your left front there will be a small strip mall; to your right there will be an Amoco station.
- Turn left (East) at the 4-way Stop onto
- South Street W and go approximately .4 miles. Along the way you will encounter two more Stop signs—the third Stop sign (Henry Avenue) will be a "T" intersection. At the "T" intersection on your left will be homes and on your right softball fields.
- Turn right (south) onto Henry Ave. and go approximately .2 miles toward the Fleming Field airport terminal building

The terminal is on the right with parking available.



The Aero Historian is published monthly by the Twin City Aero Historians, Inc., a joint chapter of the American Aviation Historical Society and International Plastic Modelers Society/USA, for members and readers as part of their annual dues or fees.

The group is open to aviation enthusiasts from teenagers on up who are interested in aviation modeling, photography, collecting, art and writing.

The Twin Cities Aero Historians (TCAH) meet the second Saturday of every month at 1:00pm.

See above for the new meeting locations and directions.

Mail Newsletter material to the editor and address changes to the treasurer.