



# Hangar Talk

A Publication of the Lake Superior Squadron, Commemorative Air Force

Spring 2020

## FROM LAKE BOTTOM WRECKS TO MUSEUM EXCELLENCE, THE EXTREME IN AIRCRAFT RESTORATION

Does salt water corrode aluminum? That depends!

The Lake Superior Squadron's PBV Catalina 324FA, BU 64092, was moored to a dock on the Pacific Coast of California, waiting for a buyer. It had gone through several owners, one a CAF unit, before coming to the LSS. It was flyable -- it had been flown to Duluth. It had been converted to a water bomber and restoring it back to its original condition was questionable as knowledgeable minds thoroughly examined the aircraft. The conclusion -- NO! The body was too badly corroded to warrant the effort of restoring it to an air-worthiness status which would include removing the tank and water-drop doors.

Now consider this:



A Grumman F3F bi-plane had been sitting on the bottom of the Pacific Ocean off the coast of California for nearly a half-century. Discovered by the Navy Superintendent of Salvage plans were made to raise the aircraft and donate it to the National Naval Aviation Museum. "Experts" in metal deterioration insisted the aircraft would disintegrate in the attempt to pull it off of the ocean floor. Disregarding their opinion the "non-experts" were determined to go ahead with the recovery project. The recovery of the nearly intact aircraft was successful with little deterioration with the

exception of some magnesium parts. The bi-plane has been fully restored by the San Diego Air & Space Museum and now resides in the National Naval Aviation Museum, Florida --- where they also have a pure 5-A PBV flying boat.

On the subject of restoring old aircraft amazing examples can be found in a recently published book by Taras Lyssenko: "The Great Navy Birds of Lake Michigan" which chronicles the discovery and restoration of numerous WWII aircraft from the bottom of Lake Michigan.

The effectiveness of aircraft carriers was demonstrated as the Japanese Imperial Navy attacked Pearl Harbor, making a fallacy of the idea that America was safely guarded by the vast expanse of water on both sides. A California oil refinery was shelled by a Jap sub and the sighting of a German U-boat in the Gulf of Mexico was further proof. American industry kicked into high gear, switching from consumer to war-time production. The Navy needed aircraft carrier pilots in a hurry and a safe place to train them. Training carriers on the East or West Coast were vulnerable to German and Japanese submarines. Chicago with the Glenview Naval Air Station and the Great Lakes Naval Training Station nearby was selected as the training site and two Great Lakes passenger steamers with side-mounted paddle wheels were quickly converted to flat-tops. Training began in Oct. 1942. Some 130 aircraft and about a dozen pilots were lost as trainees missed or ran off the flight deck; some pilots succumbing to exposure as operations were continued year-around.

A group of boys began looking for shipwrecks off the coast of Lake Michigan near Chicago. Their interest was piqued as they soon learned of the

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Hangar Talk is a publication of the Lake Superior Squadron, Commemorative Air Force, Richard I. Bong Airport, 4804 Hammond Ave. Superior, WI 54880 Spring 2020

2020 officers  
Bill McMahan Unit leader  
wcmcmahan16@gmail.com  
DeWayne Tomasek XO  
yellowstone26@gmail.com  
Gary Smith Finance  
gsmith79y@yahoo.com  
Tom Wilk Adjutant  
tawilk636@live.com  
Peter Prudden Operations  
corsa@aol.com  
Bruce Hosking Safety  
Bob Wolfe Aircraft  
rpwolfe1967@gmail.com

Meetings are first Thursday of each month, 6:30 at the Amorde terminal building, Bong Airport, Superior, WI

## WORDS OF WISDOM FROM OUR LEADERS PAST AND PRESENT

I was asked as the outgoing unit leader what the future of our unit looks to be, Well in my opinion the future looks so bright. With Bill taking over the reins as unit leader plus having people like DeWayne, Pete, Gary, Brian and everyone else helping out and contributing new ideas there is no limit as to what the LSS can do and become. With the influx of new colonels and volunteers things are getting done at a level rarely seen in the past, including the incredible move from Duluth to Superior. Not that we could not do tasks we just did not have the personnel to do everything. Plus I have seen that old level of enthusiasm return in a big way, We have turned the corner from having to move from Duluth and basically started from scratch in Superior. And now we are a unit that HQs has not and will be noticing by the quality of what this small unit way up north can and will do! Thank you for allowing me to lead for the past eight years. It has been an honor and a privilege! Keep up the fantastic work and I will see you soon.  
Kevin

Editor's note: After years of trying to secure a "flyable" aircraft for the unit Kevin finally got a lead on one at HQs and with Peter Prudden and Bob Wolfe doing the moving the OY-2 was delivered to the LSS and with a complete engine rebuild and other body work will soon join the fleet of CAF's flying museum.

Hello everybody.

I would like to start with introducing myself. I am William (Bill) McMahan and have been around aviation since the Airforce in '79. While with the USAF I worked on F16s and did some work on F4s. It was a short stay but it allowed me to do and see many things as an Airman. After the military I earned my Commercial Mailer's Certificate with the International Typographical Union and pursued a fifteen-year career as a Journeyman Mailer and Press Operator for some major newspapers around the country. During those years I was able to participate in part-time work at local airports working the fuel depots and overnight servicing of commercial aircraft.

After the internet broke the hard copy news business I decided to go into aviation full-time again. I received my A&P certificate years ago and have not stopped since that day. My experience with aircraft encompasses both WWI and WWII aircraft as well as modern aircraft. Not only do I enjoy maintaining aircraft I have built from raw materials: a Moraine Salnier, a single-seat French fighter, a Neuport 11 single-seat French fighter, but have also spent the last ten years assisting with the construction of a SESA British bi-plane, all of which has been fabricated from the ground up.

Currently I teach airframe and powerplant mechanics at the Lake Superior College, Duluth, Having been at the school for about three years I truly enjoy my work. That was where I met Peter Prudden, Bob Wolfe, Gary Smith and was introduced to the CAF in Duluth. I had a great introduction that night as I met several other unit members who kindly admitted me in. They were not talking airplanes. The conversation went something like this: "Hi Bill. Welcome to the Commemorative Air Force. These kind folks are also here from the Duluth

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# WELCOME TO THE WORLD OF MICROFILM

## --- AS IN MICROFILM MODEL AIRPLANES

When passing the Hartley Building at 740 East Superior Street the memory of George Vipond and his hobby shop comes to mind. I bought my first model airplane engine from him - the Atom with a coil and spark plug. The next was the .049 Arden with a glow plug.

George and I attended a model show in a Twin Cities arena -- tethered gas-powered race cars and U-controlled high speed airplanes all with the goal of who can go the fastest -- and the odor of glow fuel permeating the atmosphere -- a mixture of methanol, nitromethane and castor oil.

What got my attention was a micro film airplane that seemingly defied gravity as it floated in and around the steel work holding up the roof.

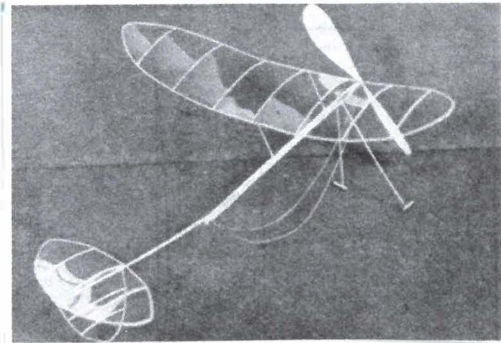
That was eons ago and being curious went on line to find if microfilm aircraft are still being made and flown. And yes they are and associated groups are just as active though few in number. Ninety-nine out of a hundred do not know how to make microfilm and nine out of ten had never heard of it. It is one ten-thousandth of an inch thick, .003 oz. per 100 square inches.

A micro film aircraft is very fragile. A person walking by while it is in the air would disturb its flight. Its weight is measured in grams without the rubber motor. A gram is .0353 ounce. Maximum wing span is 550 mm - 22 inches. It is flown in an arena or an inclosed court yard where the air is still -- the only thermals coming from body heat or sunshine on the floor and fixtures.

The hollow motor stick -- corresponding to a body or fuselage -- is made from 1/64 sheet balsa wrapped around a dowel. The frame work for the wing and tail sections are made with very thin balsa. The covering is made by pouring a mixture of DuPont clear lacquer with eight drops of castor oil on a water surface. Other solutions such as tricresyl phosphate or a pyroxlin mixture could also be used.

Proper ventilation and water temperature is needed. The thickness is judged by the color of the film, much like the sheen of machine oil on a water surface or the sheen of dragon fly wings. Clear or green is too heavy. Red, red-gold and red-violet are most used. Dark violet is the thinnest and silver would be difficult to pick up. A wire loop made of 1/8 inch clothes-line wire is used to pick up the film, its thickness about a half a micron. The loop is placed over the wing or tail section, the film transferred to the frame work.

The very large propellor is made the same way. Competition models often will have a propellor with



a self-adjusting pitch -- the pitch decreases as the rubber motor winds down. The motor is 1/32 flat brown rubber and is wound at least 500 turns. In competition upwards of a thousand turns are used. A special battery-operated device or hand crank is used for the winding after which the rubber motor is attached to the motor stick and the aircraft is ready to fly - the propellor turning about one revolution per second -- talk about slow motion.

The goal of microfilm aircraft competitions is who can stay up the longest. Flights of 30 minutes or more are common. Adjustments made during construction will allow the aircraft to fly in circles -- ideal for a winter time project when it is too cold to fly outside and flying gas-powered models in the living room is not a good idea.

Bob Clary and Jerome Kittel discovered and introduced the microfilm model airplane about 1930. The Academy of Model Aeronautics, Lucerne, Switzerland, awarded the U.S. team in March 2018 the FAI F1D World Championship for Indoor Model Aircraft. The competition was held at the West Baden Springs Hotel, Indiana. The luxury hotel has an atrium with a dome just over 29 meters (95 feet) high -- ideal for flying microfilm airplanes.

Another excellent place is a salt mine in Slanic, Romania, 400 feet below the surface. The elevator takes a minute and 20 seconds to descend into the mine with its 210 foot ceiling; the temperature a constant 54 degrees, relative humidity a constant 70 percent. This is where contestants from around the world assemble for the world championship competitions. ----- J Fuhr

**How is it that we put man on the moon before we figured out it would be a good idea to put wheels on luggage?**



## Lake Michigan continued from page one



many aircraft beneath the surface. Finding a WWII Wildcat they turned it over to a marine salvage company. After graduation the group broke up -- college, military duty, marriage. Two returned to Chicago to satisfy their curiosity of what lies beneath the waters of Lake Michigan.

Allan Olson and Taras Lyssenko purchased a used cabin-style boat, modified it with the installation of a side-scan sonar and were off and running in the business of finding and salvaging aircraft from their watery depths. They were a rag-tag group and often times politically incorrect when it came to dealing with government authorities and who does own the aircraft. High praise came from the director of the National Naval Aviation Museum for their honesty and dedication to the task of recovering as many aircraft as possible without damage or loss of any kind, more than what any other entity could provide. They were dealing with national treasures.

Carrier aircraft had a lifting device behind the cockpit enabling the aircraft to be lifted for repairs/maintenance or lifted from the dock while loading the carrier.. Some engine mounts were made of magnesium which corroded when under water for decades, resulting in a detachment of the engine from the airframe as the lift began.

As one particular Wildcat came up out of the water the morbid minds of some spectators kicked in. The canopy was closed and locked prompting them to ask if the pilot was inside. The canopy was opened -- no body. A simple solution: The pilot opened the canopy half way and bailed out. As the aircraft hit the lake bottom the un-locked canopy slid forward and locked.

The TV show "America's Most Wanted" first aired in 1988 and continued for 25 years. The services of A and T Recovery were needed by the host to find a Piper Archer II in Lake Martin in Southern Alabama. Insurance broker D. Blane Stewart was suspect for defrauding clients out of

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Paranormal Society. The hangar has orbs . . . . ."

And so my journey begins.

That was three years ago and here I am today taking on the roll of your unit commander. I have met many new folks whom I can call my friends and with many new members coming on board the challenges we have and will continue to face inspires me to become a leader deserving to take us, the Lake Superior Squadron, further into the new decade.

It will be two years this July 9th since the big move of our planes and we have come a long way since then. We are moving ahead at a steady pace for maintenance on both the PBY and the OY-2.

The road to continual success lies with new member growth, outstanding fund raising, communication amongst the ranks and last, but not least, commitment to the mission statement: "Keep 'em flying."

Col. Bill McMahan

Unit Commander

Lake Superior Squadron, CAF

Editor's note: August 2017 was the last meeting of the LSS in hangar 101 with a stiff wind off the lake and a temperature of 54 degrees. Personnel from the Duluth Paranormal Society had set up their video and sound recording equipment to record the existence of some strange objects and sounds in the hangar. The video was played at the meeting showing an orb floating around and some weird sounds in the hangar.

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**A Cessna 180 was ordered by the tower to hold short of the runway as a DC8 was inbound. The big plane touched down, rolled out, turned around and taxied past the Cessna. As it passed a crew member commented: "Oh, look at the cute little airplane. Did you build it yourself?"**

**Cessna: "Yes, from DC8 parts and if you make a landing like that again I will have enough parts for a second one!"**

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\$600,000. Stewart rented the aircraft to fly home from a business meeting on Halloween. Having engine problems he contacted Flight Service and was vectored toward the nearest airport, He never made it. It was assumed he had carburetor icing, the weather was ideal for it to happen, and neglected to flip a switch which would have corrected the problem,

Then there is the story about a German U-boat on the bottom of Lake Michigan . . . . .

These and many other fantastic stories of restoration and amazing photographs are laid out in the 2019 must read book from Arcadia Publishing.