

WARBIRD FLYER



★★★EAA Warbirds Squadron 2 Newsletter★★★



CO's Cockpit

By Ron Morrell

Welcome to 2015. As we move toward the next flying season, now is the time to start considering how we want to support the goals and purposes of our squadron. The next couple of months will involve generating ideas, prioritizing and planning our flying season activities. As always, we will need all the ideas, help and volunteers we can muster from our membership. Those members that are able to attend our monthly meetings will have their opportunities to make their ideas and priorities known but we also want to hear from the members that are unable to make the meetings. My email, and the email of any members of the Board of Directors, are great ways to communicate your desires and give us your feedback. Preferably, send your messages to all of us in case some of us are unavailable so that we can get back to you in a timely manner. A new venue for our squadron this year will be the Northwest Aviation Conference and Trade Show. To keep with one of our squadron goals, education, we will be manning a small booth during the trade show hours as well as

putting on a panel presentation each day discussing warbird ownership issues. We will need volunteers to help us talk with people about our squadron as well as owners and maintainers willing to spend the time to educate and answer questions from the aviation enthusiasts. Please contact myself or Dave Desmon if you can spend some time in Puyallup the weekend of Feb21-22. The week following the NW Aviation Conference will be the yearly meeting of the Northwest Council of Airshows. This is where we make ourselves known to all of the Pacific Northwest airshow



planners. I need to attend this meeting armed with the priorities of our membership. This meeting always contains pertinent information for our group as well as highlighting the “state of the airshow industry”. I will report back to the membership what I learn and what we can do to increase the awareness of our squadron throughout the Pacific Northwest. Over the last few months we have received information about the travel schedule of the EAA B-17 and are hopeful to gather more details that should include the return to our skies. We will be soliciting volunteers as soon as we get a firm schedule. While attending the Reno Air Races I was able to spend some time discussing the Madras Airshow with their primary planner and may made a case for an invite of our squadron to participate; we will be exploring ways to see if that can happen. There may even have been a glimmer of light come out of the Arlington arena. I was invited to spend some time with the Arlington Board and decided, after a careful inventory of my body parts, to have an honest and straight forward talk about our squadron, why we attend certain venues and how we decide our

priorities. I answered plenty of questions and gave them plenty to consider while they plan their event. There are no guarantees of any real progress or change to our relationship but nothing will change without being open to the possibilities. As you can see, we could have a very busy year and the Board of Directors will have plenty to discuss during the coming months. Your input is welcome and cordially requested. I hope everyone's holiday season was full of peace and joy. Let's now look to 2015 as the year we strap on the machines and “Keep Em' Flying”! ✪

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★★★ Cascade Warbirds ★★★
EAA Squadron 2 Newsletter

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This is the official publication of the Cascade Warbirds EAA Squadron 2. As such, it serves principally as a communications vehicle for our membership. The views and opinions expressed in this newsletter are those of the individual writers, and do not constitute the official position of the Squadron or the EAA. As members you are encouraged to contribute articles, comments, squadron news, and anything else involving Warbirds or associated subjects to the editor. He will gladly work with you and see that your material is put into print and included in the newsletter, no matter your level of writing experience or computer expertise.

Articles can be submitted via e-mail, to the editor's address. Deadline for submission of articles is generally two weeks prior to the next publication, but earlier is always appreciated!

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Ops Tempo

By Bob Hill

What a year 2014 was! As a group we traveled far and wide. Attended flying and ground-based events. And just generally had a great time with ourselves and our airplanes.

What will 2015 bring?

Right now the event schedule is just starting to come together. While we know of the ongoing yearly stalwarts such as the Paine Field GA Day, Idaho's Warbird Weekend, Arlington, Oshkosh and John Sessions' Vintage Aircraft Weekend, there are still questions about other events.

Will McChord or Comox step in to fill the void of the Fairchild AFB airshow off-year?? Will the CWB be involved in SeaFair at some level? Will we have our own fly-in weekend? Will the movie night series continue?

While we push forward on the 2015 schedule, I'd like everyone who reads this to drop me an email at cwbopso@gmail.com and let me know your ideas. Don't feel afraid that something is too simple or too grandiose. I want to hear from our membership. I'll respond to every suggestion.

Congratulations to the membership on a fun (and safe) 2014. Best wishes for continued success in 2015. Let's make it our best yet!! ✪



To Fold or Not to Fold

By Frank Almstead

Sometimes having an interest in history is a bad thing... Especially when it has kids school projects and sports to contend with. It drives ones research into the small hours of the morning. My latest curiosity is around the origin of the folding wing. It seems that almost as soon as the Wright Brothers flew, designers started looking for innovative ways to make aircraft fit into smaller spaces, whether it be in the hangars of the day, or on-board ships. Even today, as airport congestion grows, an airframer with a product that is able to save room at the gate could have a competitive advantage.

So, where did it all start? Interestingly, but not surprisingly, the very first aircraft manufacturer holds the first patent for the wing fold. The Short Brothers of London filed for a patent on the wing fold in 1913, in order for their aircraft to fit aboard ship. Remember, this was prior to WWI, and the emergence of the first flattop in 1918. The folding wing mechanism they designed hinged the wings so that they folded back horizontally alongside the fuselage. The wings were then held in place by latches projecting sideways from the aft portion of the fuselage. Their aircraft became known as Short Folders.

The next patent of note is from Frank Osborne of Butte, Montana who filed his patent application "Airplane" in 1920 which included folding wing feature. It was never produced, but it is the first recorded concept of the overhead wing fold, similar to what is seen on the F4U, A-1 Skyraider and more contemporary jets such as the S-3 and A-6.

Leonard Bonney filed his patent application "Aeroplane Wing or Aerofoil Structure" December 14, 1925. This was concurrent to the design and build of his Gull aircraft. The aircraft, in which Bonney was killed, was ahead of its time in many regards. It

featured variable incidence wings (F-8 Crusader) and a rearward wing fold that swept the wings from 10 to 45 degrees for storage (B-1, F-111, F-14). He also used differential sweep for roll control on the Gull. Boeing references this patent several times, as late as 2011.

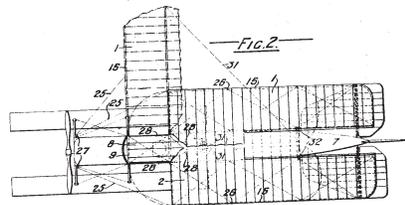
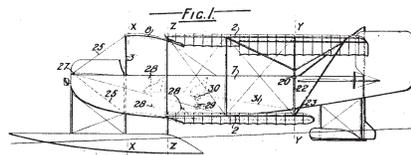
The next major patent came from James "Dutch" Kindelberger when he was at the Douglas Aircraft Company. He filed his patent application for the Folding Wing Plane on Oct 12, 1931 in conjunction with the development of the XT3D torpedo bomber.

Of course Leroy Grumman is who everyone thinks of when wing fold is mentioned. Grumman, inspired by the way birds fold their wings against their bodies, wanted to fold his wings vertically and then rearward along the fuselage. He called this the STO-Wing and the story of how it was developed is as legendary as his aircraft. As Richard Thruelsen writes in The Grumman Story, Roy Grumman took a soap eraser, such as those used in drafting, and used that to represent the fuselage of the plane. Then he took two paper clips for the wings and bent out the short end of each of the clips so that it was normal or perpendicular to the body of the clip. Then he began sticking these short ends into the eraser until he found the proper angle and position at which the clip, when

twisted to a vertical position, would also fold back snugly against the eraser. It was as simple as that. Of course this design was featured on aircraft such as the F4F, F6F, TBM, and the E2C. I could not find a patent for Grumman's design.

Wing folds are complicated by in wing fuel tanks, electrical connections, systems and structures requirements. As such, designers have adapted the wing fold with concepts such as the double fold, and the rotating wing on the V-22. It's fascinating to see evolution of the folding wing from its simple start. ✪

H. L., A. E. & H. O. SHORT.
AEROPLANE.
APPLICATION FILED SEPT. 5, 1913.
1,128,065.
Patented Feb. 9, 1915.
4 SHEETS-SHEET 1.



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Walter D. Weller

Inventors
H. L., A. E. & H. O. Short
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by Samuel L. ...

Short Brothers Aeroplane patent illustration (1913)

Squadron News

DINNER PARTY A HUGE SUCCESS

Nearly seventy members and guests gathered at the Medallion Hotel on 06 December to once again welcome in the holiday season, meet old friends (and some were very old), and enjoy the camaraderie that makes our group so special. After dinner came the annual awards, some silly and some sincere, that bespoke another successful season. The Frank and Susan Almstead Literary Award went this year to Dan "Speedo" Barry for his entertaining contributions to the quarterly newsletter. Crash William's Search for Excellence Award was presented, in absentia, to John Clark for his many years of service as the squadron photographer, historian, web meister, and, more recently, for overseeing the video recording of our featured meeting speakers and subsequent posting of the videos online. Finally, the squadron's Volunteer of the Year Award went to Paul Youman, the longtime head of our marshalling effort. Paul has been the leader of that hardworking group from the very beginning. For those of you who like to plan ahead, the 2015 dinner is scheduled for 12 December, venue to be announced at a later date.

RENO RACES 2015

It's time to get serious about whether you plan to attend the Races in September. Word has just been received from the RARA folks that the box seat prices will remain as they were last year at \$380 and \$360. Also, they want their money early in March, so those of you who have already made deposits on seats will have to settle up by the end of February; contact Fred at fred@fcsmyth.com for your final amount due. For the rest of you, take

note that box A-41 is full, but there are still seats available in B-40. You may wish to make your decision earlier rather than later so that we don't have to give up that box for lack of interest. Any questions – contact Fred.

SCHOLARSHIPS

The squadron is again in 2015, in concert with Galvin Flight Training at Boeing Field and Avian Flight Center at the Bremerton airport, sponsoring Private Pilot Ground School (with Instructional Flights) for area youth ages 16 to 21. If anyone within your sphere of influence might like to consider a career in aviation, have them visit our web page (www.cascadewarbirds.org) to fill out an application. The deadline to apply is 28 February and awards will be announced by 15 March.

FRESH FACES

We should all be proud that this organization continues to attract new members. It is a testament to our mission when others decide to join us. In recent weeks, we've welcomed Eric Olson of Seattle, and Patty Jones of Sequim. Patty actually joined several weeks ago with her husband Gary, but she was mistakenly left off the last roster. We welcome the two of you to our squadron.

BRAND NEW YEAR

It's that time of year again – time to renew your membership. Still only \$20, so if you haven't already done so, get your check to CWB, 1066 Yates Road, Oak Harbor, WA 98277. We'd like to thank the more than 80 of you who have already done so.

RECRUITING

Our organization is only as good as the individuals who take the time to make us relevant. Thus, we can never have too many people who are wishing to learn of the heritage we honor. When you are out and about your local community or even stuck in a far-away airport or elevator, keep an eye open around you to see just who might make a worthy addition to our group. And don't forget the warm feeling you'll experience if you decide to sponsor their first year's membership. We're just saying . . .

LOCAL BUSINESSES CONTRIBUTE

A couple local businesses familiar to us have programs where they contribute a portion of their revenue to their customers' favorite non-profits. Cascade Warbirds is registered with the Amazon Smile initiative and with the Fred Meyer Community Rewards program. All you, as squadron members, need do is register with the companies and remember to have each purchase you make be applied to our account. Our first quarter's check from Fred Meyer was for \$75.00. Our thanks to those of you who have already signed up.



CHRISTMAS PARTY!



(Dave Desmon Photo)



(Dave Desmon Photo)



Vic Norris awarded the Official "BBQ Officer" Apron. (Dave Desmon Photo)



Ron Morrell getting the "Peoples' Cats' Choice Award" from the "Hair-itage Trophy Invitational" competition. (Dave Desmon Photo)

There's No Shortage of Stories From the Last Frontier

by Fred Smyth

VTOL capability and external load lift are the two huge benefits of rotary wing aircraft. Extremely high operating expenses are the major drawback. Thus, operators always seem to use the minimum aircraft possible to accomplish a given task. Or, said from the other perspective, operators always seem to task a given machine to the maximum.

Heli-logging is a particular example. Especially suited to steep terrain or roadless forests, high-value logs are plucked from the ground with little or no damage to surrounding timber and delivered to the siding in mere seconds. A common helicopter in the Northwest and Southeast Alaska for this task was the Boeing Vertol 107 with a useful load of some 10,000 pounds. It's expensive to operate and it doesn't make many "turns" without a full load.

When the big ships are done, the smaller ones come out to clean up the butt ends that still have value, but not enough weight nor proximity to each other to comprise a five-ton load. The MD (nee Hughes) 500D with a maximum hook weight of approximately 1,500 pounds adequately serves the need. Since much of this terrain is very steep, a long rope is necessary to reach from the belly of the aircraft to the choker grasping the logs – thus the term long-lining. What comprises a "long" line

varies with pilot experience and proficiency, but generally runs from a modest fifty-foot length to as much as 200 feet. Anything longer than that is hard to handle.

Cargo hooks on helicopters are electrically operated from a push button on the cyclic control.

A backup mechanical release is located either on the floor to be foot-actuated or on the cyclic to be hand-activated. But when working with a long line and with no help at the log landing site, a modification is necessary. The electrical connection between the belly of the aircraft and the cargo hook is disconnected and an extension cord is run the length of and taped to the rope, connecting from the belly to another electrically operated hook at the bottom of the line.

So this is what we have: the pilot dangles the long line to a choker setter who attaches the load to the lower hook. The pilot takes the load to the landing and punches the button to open the lower hook and release the load. The line stays attached to the helicopter at the upper hook on the belly for the

next "turn." In an emergency, the pilot actuates the mechanical release and the long line with the load falls away from the belly, leaving the pilot to deal with the emergency unencumbered.

In this particular operation, the logs were being delivered directly to the water. The inlet was at the base of the hill and "punching off" the load directly



MD500 with longline. (heliman.us photo)

into the bay saved the effort of later moving these butt ends from shore to water – where they were rafted together for towing to the sawmill. The rope of choice in this situation was polypropylene. Not only is it bright yellow and easy to see, but it also floats in both salt and fresh water. It stretches about 7% under load. (You may wish to remember this metric.)

We mentioned earlier that the 500D has a maximum hook weight of 1,500 pounds. In fact, Hughes' publicity photos at the introduction of the model show the

helicopter carrying a Volkswagen Beetle, though the cynics among us were certain that the engine and drive train had been removed. Anyway, my buddy was assigned to clean up some logging butt ends. It was a hillside location and the slope was steep; being the cautious type, he grabbed a 50-foot long line. He then taped a 50-foot (!!!) extension cord to the line between the belly hook and the lower hook. Off

he went to do the job: lower the hook to the ground, have the load attached, lift the load just enough to get it started downhill, then follow it to the water and release the load.

You can probably see where this is headed. This particular remnant was (significantly) heavier than 1,500 pounds and as soon as it was nudged downhill, it took off with a vengeance. Akin to the monkey trying to put the cork back in and not making any progress, my buddy was mashing the electrical

release button for all he's worth and getting nowhere in a hurry. Of course, the electrical connection had been lost because as the rope stretched some three and a half feet, the extension cord pulled away from the belly of the aircraft. He was losing altitude so quickly he never even looked for the mechanical release, even assuming he would have had the presence of mind to use it.

The ride didn't really come to an end when the log hit the water. There was enough energy that the log continued to the bottom of the inlet,

towing the helicopter behind it. Then the helicopter hit the water and started down. Fortunately, the log had hit bottom by this time and the helicopter didn't get much more than just wet. Until the log, being buoyant as wood is wont to be, shot to the surface. And projected itself into the air some six or eight feet, missing the still-spinning rotor blades by mere inches.

The insurance company decided that there had been enough stress on

the airframe, along with the obvious damage to the belly from smacking the water, that they totaled the helicopter. My buddy gave up flying helicopters. And the moral to the story? Have someone with logging experience estimate the weight of those butt ends. 🌟



TEMSCO MD500 with longline. (tripstapix.com photo)



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**Have Your Dues Expired?
Check The Expiration Date Below.**

**Cascade Warbirds
Quick Look Calendar**

January

10 Squadron Meeting at
Musuem of Flight

February

14 Squadron Meeting at
Musuem of Flight
21-22 Northwest Aviation
Conference
27-28 Northwest Council of
Airshows
26-Mar1 National Warbird
Operators Conference

March

14 Squadron Meeting at
MoF Restoration
Facility (PAE)

* Denotes Max Effort Event
See Website for Detailed List

Check Six



Paul Youman receives the Volunteer of the year award. (Dave Desmon Photo)