

HI-LOW LANDINGS The Newsletter of the Navy Carrier Society

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Issue 21.1: 4 March 2021

It's a New Year and a New Season with New Opportunities

Editor's Notes, Dick Perry:

COVID is still with us, but there's hope for a better future with vaccines becoming available and being administered. One of our concerns in the CL Navy Carrier events is the aging (EXPERIENCE is my preferred term!) of our population. In the case of the vaccine administration, that characteristic is finally becoming an advantage! We are likely to have the opportunity to receive the vaccine, if we want it, by the time the flying season gets into full swing. Maybe even before the NATS, in spite of the early date this year – 21-24 June.

The COVID isolation has provided one advantage for many of us. We've had increased opportunity for building, if not flying. I hope that you have been able to take advantage of the situation and produced a new model or two for the approaching flying season. If you have, please let me know about it so I can spread the word and get your new creation in the H-L-L newsletter for our readers to see, enjoy, and perhaps be inspired.

It's been a while since we've been able to gather for contests, and I'm optimistic that 2021 will be significantly better. We have a lot of catching up to do! We've already missed the Southwest Regionals in Tucson, and there are no other contests scheduled for the spring. To get things started, NCS will hold another Postal Navy Carrier Contest. Details appear later in the newsletter.

The AMA Control Line Nationals are earlier this year to avoid conflict with international events in July at the National Aeromodeling Center. That leaves less time for preparation, but other changes this year could also mean new opportunities. With the unfortunate passing of John Brodak, there will no longer be a Brodak Fly-In in June. The Fly-In provided a CL Navy Carrier contest in the Northeast that was popular with modelers from that part of the country, and I'm sure it will be missed. In the past, there have been few Carrier modelers who attended both. This year's NATS schedule is close to the traditional dates for the Fly-In, so those who had schedule conflicts or vacation issues that prevented participation in both Fly-In and NATS in the past now have an opportunity to participate in the NATS. I'd like to encourage anyone feeling withdrawal symptoms with the demise of the Brodak Fly-In to consider attending the NATS this year. If the less formal format of the Fly-In has been an excuse in the past, remember that in addition to the AMA competition events, NCS offers Sportsman Profile Carrier and the unofficial events -- Nostalgia, .15, and Skyray. If you've participated, or even anticipated participating, in the Fly-In in prior years, I'd like to encourage you to come to Muncie this summer in June and Fly Navy Carrier.

NATS Registration Open

The online registration for the NATS is open. Go to the AMA home page, <https://www.modelaircraft.org/>, sign in, select "Events" then "National Aeromodeling Championships (Nats)" then "Register" then "CL NAVY CARRIER." From there, use the "REGISTER USER TO THE EVENT" button at the bottom of the page and you're ready to register. If you fly only unofficial events, please register so we can plan for you, but you need only pay the Unofficial Event Fee of \$10. We'll collect the individual event registration fees at the field.

FUEL TANKS for NAVY CARRIER

I've had many inquiries throughout the years concerning fuel tanks and reliability in engine runs during high speed flight – most recently this summer. They are really the same subject. I wrote about it in *Model Aviation* in CL Navy Carrier column in 1984, and the information is still relevant. Bill Calkins and Bill Bischoff have also provided their take on fuel tanks for Carrier which were published in the H-L-L newsletters in 1995. I'll include them in a later issue when I can work out a good means of duplicating them to today's standards for resolution.

From the January 1984 Model Aviation, CL Navy Carrier column, Dick Perry

A common problem among Profile Carrier models (or Class I/II models using a suction fuel system) is a tendency for the engine to go lean on acceleration or to be rich when airborne. The problem of achieving good engine performance both during takeoff and in flight is more pronounced with larger venturi intake areas. Some modelers have resorted to partially closing the throttle for takeoff and opening it once the airplane is airborne. Consistent performance under these conditions can be hard to achieve.

The ideal situation would occur if one could set the needle valve consistently on the ground (say at ½ turn open from optimum, or at the first break from a hard two-cycle) and have the engine lean out immediately upon release (without sagging) and hold an optimum setting through acceleration and high-speed flight. It's not impossible! To achieve this type of performance, one must use a variation of the uniflow tank-venting scheme. The vent line should end near the front of the tank to reduce the fuel pressure variations during acceleration. It should also be outboard of the needle valve to achieve a good mixture for both acceleration and high-speed flight. The vent should end at a point below the carburetor – to prevent fuel siphoning through the carb before the engine is started.

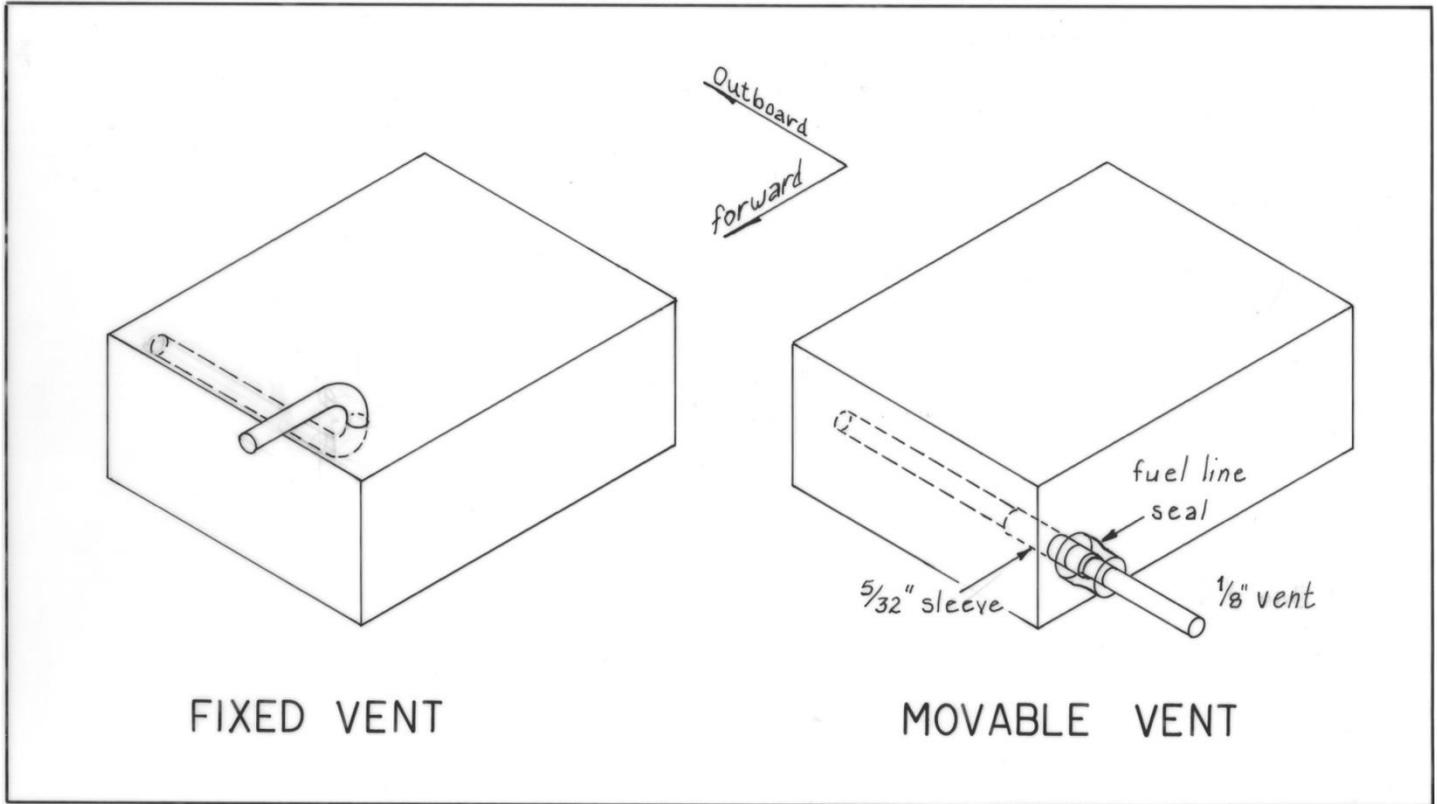
The two drawings illustrate tanks used by Carl T. (Tom) Schaefer (NATS Profile Carrier Open winner, circa 1984) and me on our airplanes. Tom's tank (left illustration) is a little harder to adjust, but it doesn't require a hole through the fuselage for the vent line. Though the vent line is shown as a straight tube on my tank (right illustration), I bend the end into the slipstream as shown on Tom's tank.

To tune a model for high-speed flight, first determine a needle valve setting that is richer than optimum and easily repeatable. The acceleration on takeoff should lean the mixture to a good setting as soon as the airplane begins to move on takeoff, but it should not go over-lean. If the engine leans out and sags, you must find a richer setting or move the vent tube lower in the tank. If the engine doesn't lean enough, then you need to find a leaner static needle valve setting. As the airplane's speed increases, the acceleration slows, and the centripetal force on the fuel takes over as the dominant influence on fuel/air mixture.

The next step is to set in-flight mixture by adjusting the vent. If the engine is too lean, you can: 1) Start with a richer mixture on the ground; 2) Tilt the external vent so that the end is pointed more directly into the airstream; or 3) Move the tank (internal) end of the vent (or the entire tank) inboard. If the engine is too rich in flight, you can: 1) Start with a leaner setting (be sure the engine won't sag on takeoff); 2) Bend or cut the external vent so that it is pointed less squarely into the airstream (start with 45 degrees, then go to 60 degrees or even 90 degrees, as required); 3) Move the tank (internal) end of the vent tube (or the entire fuel tank) outboard. In each case, moving the position of the vent line relative to the needle valve will have the greatest effect, whether it is accomplished by moving the vent within the tank or by moving the tank, itself.

During the set-up testing, be sure to start each takeoff with a full tank to duplicate competition conditions. By following this procedure, any engine which can be set a little rich on the ground can be made to perform well throughout takeoff and high-speed flight. You can have an overflow tube on the tank or not. It will, of course, need to be capped for flight. My preference is to fill through the uniflow vent with the airplane oriented so that

the fuel line serves as the overflow (disconnected from the engine to facilitate venting the air and avoid flooding the engine).



NCS POSTAL CARRIER CONTEST

1-31 May 2021

Let's have another Carrier contest! With all the restrictions because of the COVID-19 issue continuing well into the spring, Navy Carrier Society has decided to start the flying season with a contest that won't require any travelling and won't require large groups gathering together for flying. Most of us are feeling withdrawal and wishing we could get out and compete again. We're hoping that the lockdowns and COVID precautions have given you plenty of building opportunities this winter. If your latest project isn't completed yet, or even if it hasn't yet moved beyond the planning stages, there's still time to get ready for the NCS Navy Carrier Postal Contest. The contest will run the entire month of May – four weeks, five weekends, and a holiday.

As with the first NCS Postal Contest last September, the contest will not be sanctioned, though any local activities can certainly be sanctioned if your club desires to do so. We've scheduled the Postal Contest window to precede all of the traditional Carrier contest dates and to have a likelihood of reasonable weather wherever you're flying.

To make things as easy as possible for local flying fields and small groups, you can use a painted or otherwise marked carrier deck (as allowed in the rules), and without a sanction, you can use as many (up to ten) or as few arresting lines as you have or are willing to risk a bolter with. You can also lend a model to another potential Carrier modeler, teach them how to fly and have them fly for score. Share the fun! With a painted outline at your local flying field, your local club members might be encouraged to practice more often or even sanction a local contest in the future. Here are the details – same as they were for the Fall NCS Postal Contest:

Navy Carrier Society is the sponsor. All official and unofficial events are included. There are no prizes and no entry fees, but NCS will issue certificates electronically to the winners. What you get is bragging rights and a Top Twenty listing – plus the opportunity to participate in a contest this spring. Enter as often as you like. Treat each day as a new opportunity to try for better weather, get your equipment act together, or better your previous score. Your best score for the month will count.

All AMA rules apply, except for the requirement for a full set of arresting lines and the ability to share models.

The only requirement for entry is that each entry be accompanied by an electronic photograph of the activity – models, contestants, etc., even the pizza party after flying – plus a brief description (who, what, where). Send scores (and high, low, landing data if you like) and photos to Dick Perry (Tailhooker@comcast.net) We'll publish the photos in periodic High-Low-Landing newsletters and on the NCS Facebook site.

We'd like to see who is flying and what you are flying. Do you have a new model ready to go because of the enhanced building opportunities afforded by the COVID isolation Was it not quite finished for the Fall Postal? Bring it out. Even better, if your new model still isn't quite finished, finish it in time to enter it in the Spring Postal Contest. We'll be looking for your entry, and we'll be looking forward to filling up the Top Twenty rankings early in the year in spite of the COVID restrictions.

Rules Change Proposal Process **15 March 2021**

After taking a year off for COVID, the rules proposal process is cranking up again in 2021 for changes to be effective at the start of 2022. Proposals will be accepted until 15 March 2021. The process for submitting can be found at the AMA web site at [Rules Proposals | Academy of Model Aeronautics \(modelaircraft.org\)](https://www.modelaircraft.org/rules-proposals). There were no proposals submitted in the previous cycle, and so far there are no proposals for consideration this year.

Memory Lane **1999 NATS**



1. Bill Calkins brought two Hawker Sea Fury models for Class I and Class II. Nearly identical except for the engines, this is his Class II.
2. The Texas Contingent (in case you can't tell from the flag!) included Mike Greb, Kelly Hite, Dale Gleason, and Bill Bischoff (not pictured). All flew MO-1s.



3. Bill Calkins and John Vlana prep Art White's Boeing F4B4 for flight. Biplanes are rare in Carrier competition, but they are fun to watch!
4. Leon Ryktarsyk, Marc Warwashana, and Gary Hull tuning Marc's (?) MO-1.



5. Though the MO-1 was the predominant design in 1999, Guardians were also popular. Art Johnson flew two in Class I and Class II, and Bill Calkins entered his Profile, newly (at the time) produced as a kit by Brodak Manufacturing. The kit is still available from Brodak. Bill Melton also entered a Profile Guardian – his 15th iteration!



- 6. Other unusual aircraft appeared at the 1999 NATS, including Ted Kraver's Grumman F7F Tigercat for the .15 Carrier event.
- 7. Gary Hull brought this obscure Brewster XSBA-1. A single aircraft was the first aircraft from the Brewster Aeronautical Corporation in 1934. Thirty SBN-1s were produced by the Naval Aircraft Factory



8. Pete Mazur and an unidentified spectator (Can anyone tell us who this is?) observe Bill Melton as he prepares his Profile Grumman Guardian. The biplane is a Berliner-Joyce OJ-2 by John Vlana, another fan of obscure aircraft prototypes for CL Navy Carrier competition.

Temporary Editor

For the next couple of months, I'll be producing and distributing the H-L-L newsletter. It will be primarily a means of distributing information about the NCS Postal Carrier Contest, but I'll be including additional items from my archives. If you have an item to share, send it to me at tailhooker@comcast.net.



Dick Perry
Temporary Editor