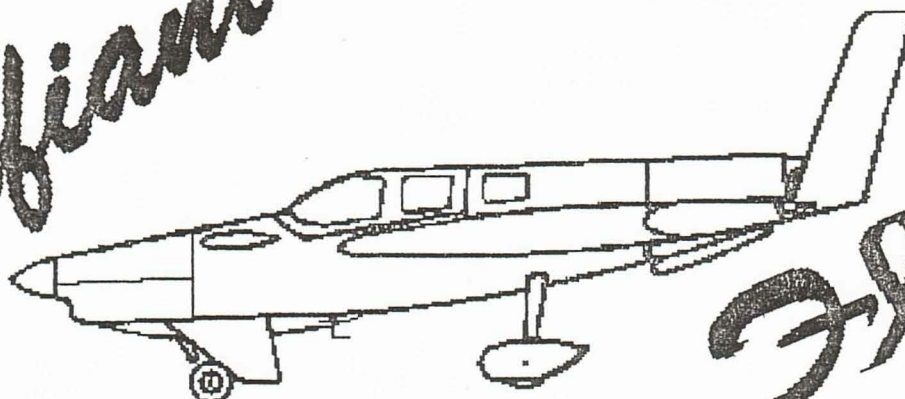


Defiant



Flyer

DEFIANT ENTHUSIAST NEWSLETTER

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Editor John P. Steichen
 Brookeridge Air Park
 960 86th Street
 Downers Grove IL 60516
 Phone Days: 708-969-3535
 Nights: 708-985-6671
 FAX: 708-969-4692

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(PLEASE DO NOT WRITE CHECKS TO DEFIANT FLYER. WRITE THEM TO JOHN STEICHEN)

DUES

Just a note that the 94 dues are now due. Some people have sent several years dues in at one time in the past. I do not encourage that. I would prefer that you only send a year at a time. (That way I can quit the job any time I want, without a lot of accounting to the next person who might take over. yuk yuk !)

1994

NOW THAT a new year is here, I encourage you to keep us updated on your progress. I suspect that this year we should have a few first flights. When you guys get close to first flights, you all get so excited that I stop getting progress reports. For the benefit of the other builders, please keep the technical reports, progress reports and builder hints AND PICTURES coming.

This year will represent the **10 year anniversary** of the release of the Defiant Plans. It is a credit to the design that 8 years after the Burt Rutan pulled the plans off the market, I still hear from people who are thinking about beginning to build one. Amazing !

From Charles Caldwell.

Dear Defiant Flyer

Here are some data which might be of interest to builders in the finishing stage. I'm practicing on the bottom with various fillers and was curious about the relative weights, so I weighed a few. I used a 3 oz paper cup and in each case filled it level with the brim. These are net weights (cup weight not included).

X40 Pour in place foam	5.3 gm
glass bubbles	11.6
West System slurry (cake icing consistency)	47.7
water	97.4
Dynalite plastic filler	117.8
Bondo auto body filler	117.8
Kondar (PPG) primer	120.7 gm

DISCLAIMER

It is important to remember that this newsletter is only a conduit for information passed among Defiant Builders sharing their experiences. Its stated purpose is fellowship and encouragement of Defiant Enthusiasts. It is not our intent to give authoritative advice on aircraft construction. The Editor and the contributing writers disclaim any liability for accuracy or suitability of information that is shared. You can assume that some of the information in each issue is not correct for your aircraft. Each Defiant is really a unique aircraft with different performance characteristics, and different flight limitations. Each subscriber signifies their agreement to this with their subscription payment. The Rutan Aircraft Factory is the final authority and resource on construction details for licensed builders.

According to the Aircraft Spruce catalog, Bondo is 12 lbs/gal while Dynalite is 7.5 lbs/gal. I have a can of each; they look the same, smell the same and weigh the same! Note: Both are produced by the Dynatron/Bondo Corporation in Atlanta. It looks like the old brewery trick to me; to increase market share, put the same stuff in a different container and sell it for a different (higher or lower) price. I do not have any Morton's or Sterling and so no weights on those.

From these values, it is clear that the lightest weight finished product will be achieved by using West System as much as possible. My limited experience so far indicates that the West System should be sanded very smooth (at least 100 grit) before applying any primers. I left a few 36 grit sanding scratches which I assumed the primer would fill; it doesn't (Well, maybe after several coats it will, but sanding the West System smooth in the first place would have been a better choice). Once primer is on, then it is necessary to use Dynalite or something similar to get the surface really smooth, fill pinholes, etc. All of this could have been done with West System, and will be after I finish the bottom.

Others probably have a lot more experience with finishing than I do, and I would like to hear any comments in this regard. There is so much surface area to the Defiant that I will do just about anything to reduce the amount of sanding!

Sincerely, Charles Caldwell Serial No. 176

Editor-

As a general rule, don't use Bondo of any type. I know it is tempting especially when looking for a quick set. I must confess that I have used it to fix small dings on the airplane after it was painted. The local Velocity builder that I have been monitoring did a great job using West Epoxy and glass bubbles, contoured then sanded to 100 or 120, sprayed Sterling primer using a Croix sprayer. Sanded to 120 -240, proofed for pin holes, and spotted the pinholes by spraying the Sterling primer and then going over it with a metal body work spatula to drive the primer into the pinholes. He then sprayed with a surfacer primer and then sanded from 320 to 600 (wet) and shot the color. It came out beautiful with no pinholes. You can't avoid a lot of sanding. The Croix painting system seems like a good investment if you can get several people to go in on one. The Croix uses its one turbine and is a low pressure high volume sprayer. John Steichen

PERRY MICK - Still working on my Long EZ. A couple of moves this year set the project back a little. I am currently constructing the canopies, split and hinging forward similar to the article in the Central States newsletter awhile back, but my hinging system is

different. Still would like to build a Defiant someday, and like to keep up with what is happening in the Defiant world. I told my wife if I ever win the lottery, the first thing I will do is go buy a Defiant. I own and operate a small avionics shop at the Eugene airport.

Ed. I have published Perry's business card in this issue. We might as well support and use our own builders when we can.

CLAS LUNDGREN..... Right now I am shopping around for a complete set of instruments and avionics and the shopping list includes an S-TEC 50 autopilot. Presently, my partner Joe Mollendorf and I are getting the engine mounts TIG welded. They are tacked with the engine in place, using aluminum mock-ups instead of the rubber mounts since we were concerned about burning the latter. The welding is then completed with the mount bolted to a C-channel jig replacing the fire wall, but we do not use any jig for the engine end of the mount at this stage. Talented students of Joe's at the Departmental of Mechanical and Aerospace Engineering here at University at Buffalo, have designed various non-standard details that we have now made and installed. They include winglet rudders with wire controls, rudder pedals for the right seat, shimmy damper mounted on the upper arm of the nose gear and gear doors with closing mechanism. After much experimentation and fiddling with the latter we decided that we could not come up with a good gear coupled mechanism and developed instead a separate lever placed close to the gear retract arm which seems to do the job. None of this stuff is currently mounted in place, but once it is I will get the camera out and send pictures together with drawings or sketches.

As for cooling, we are making it down draft in the front with pressure plenums. (see Bingelis's Fire Wall Forward). We are not however making separate closures of the tops of the boxes but seal them off the conventional way with rubber strips against the cowling. The latter will be made of carbon fiber. To deal with the risk of shock cooling and reduce cooling drag in cruise we will probably put in cooling flaps in the sides of the cowling. How we will go about doing this in the rear has not been decided yet. We are going to use arm pit scoops instead of the standard belly scoop. Monty Barrett rebuilt the IO-360 engines and each of them will be fitted with a Klaus Savier electronic ignition and a 10 inch Lynn Woofter prop extension carrying a Savier carbon fiber prop. One concern I have in this connection is whether we will be able to eliminate interference from the electronic ignition with the ADF and Storm Scope. However Klaus feels that with proper shielding it can be taken care of.

CALENDAR OF EVENTS

June 17-19 1994 -

4th National Gathering for Canard type
Airplanes- Olathe Kansas (KIXD)