Firewall Construction

Steve Wright (TN) - I was curious about a material previously called Ocean 77 and presently called 477 Epoxy (call 800-877-3473 for technical information) and its possible use as a sole firewall material. I purchased a gallon from Hi Grade paint company in Chicago (773-463-3050) Mike Boden (twin engine Long-EZ designer) and I conducted several tests of firewall material which were previously recommended for Long-EZ and Cozy, along with the 477, to see which combination of firewall protective material is most effective in preventing a propane torch from burning through the material tested.

All materials were obtained from Wicks Aircraft (except for the 477 Epoxy) and are the "normal" material used for firewall protection in our planes. These tests, while not very scientific, gave us a good indication of the most effective and lightest firewall system to use for my Stagger EZ. All tests were conducted with a 6" X 6" firewall mounted on a long stick. The plywood used was given 2 plys of BID with safety poxy. The 477 epoxy was applied as the manufacturer recommended (2 coats) with a spray gun except for test 5 where I rolled it on. The carbon used was the 282 BID cloth 5.7 oz/sq.yd.

Firewall Test 1. Plywood - fiberfrax aluminum. After 30 seconds the aluminum melted and after one minute the plywood began to smoke on the aft side.

Firewall Test 2. Plywood - fiberfrax - stainless steel. This combination lasted 5 minutes before aft side of the plywood became hot to the touch (seconds to pain). This is the current recommended firewall system and performed as well as any we tested.

Firewall test 3....2 plys glass-1/4" 20 lb Clark foam-2 plys glass-477. We were amazed that this performed almost as well as the stainless. After 4 minutes we gave up as the aft side of the composite firewall became hot. The torch melted the BID surface and began to burn through after 4 mins.

Firewall test 4.....Same as test 3 but with one ply of carbon over the 477. This combination was an improvement over test 3 as the carbon behaved similarly to the stainless, preventing burn-thru to the glass surface.

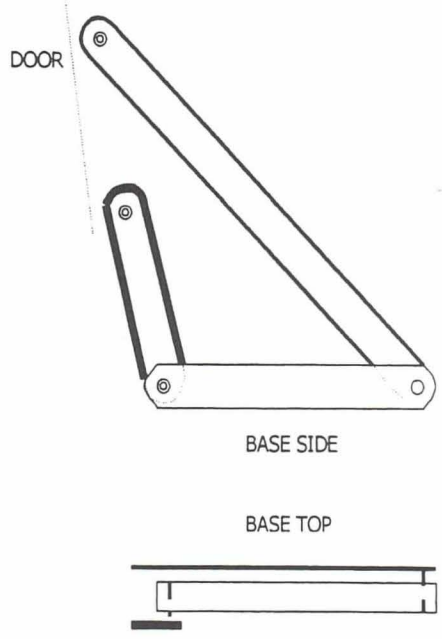
Firewall test 5.....2 plys glass- 1/4" plywood- 2 plys glass - one ply of carbon-477. This combination lasted as long as test 2 and the aft side of the plywood felt cooler than test 2 after 5 minutes. The carbon BID prevented burn through. I rolled the 477 on and applied 3 thick coats.

Results/comments/opinion. The presently recommend firewall system, while heavy, works well. I plan to use the combination of materials in test 5 on my Stagger EZ as it is light (half the weight of stainless) and performs as well as stainless. The least effective firewall system was test 1. If anyone is flying with the firewall system used in test 1, I would strongly recommend you change to the recommended system. When heated, the 477 will expand and swell up to a thickness of 1 1/2" to 2". This material acted as both an insulator and an extinguisher. During one test the 477 extinguished the flame. As the 477 expands it is soft and pliable and would not interfere with control systems and may even act to protect them from heat. The concern we had about this product is, as it expands, it can be blown off the surface with an air gun and this may degrade its effectiveness as a firebarrier. I plan to build a small box to represent the inside of an engine cowl and then blow high velocity air in it as the firewall system is heated. This will give me a farbetter idea of the performance of 477 in a real-life situation.

Steve Wright
Wright Aircraft Works LLC
Stagger EZ, N700EZ

Access Door Hinges

Charles Wilhite (MD) - One way to get more access to an opening is to get the cover to swing wide out of the way. Simple hinges can do this but will be up in the air stream. The "J" shaped hinges work but take up much interior space. Car manufacturers are using a two arm hinge to make hoods and trunk lids swing well past 90 degrees. The simple drawing shows a top and side view of such a design. The arms are usually about a 2:1 ratio in length. The spacing of the base pivot points being close to the length of the short arm. I use cardboard and pins to play with the design. The two arms will cross over so side spacing of bent arms will be needed.



Long-EZ for sale

'90 Long-EZ For Sale. O-235-L2C TTSN 1465. TTAF 290. Terra Tri-Nav, u monitor, mode C, Flitecom intercom, ELT, new Ramair kit, $15K firm. No damage. Hangared. John Nicholson (803) 635-3221 OR 337-8870

For Sale

Roncz canard ready for finish fill with elevators and antennas $2500. Used HI-Torque Skytech starter $250.

Steve Drybread
12050 Kingfisher Circle
Indianapolis, IN 46236
317-826-9481