

From: "burt rutan" <voyagerss1@gmail.com>
To: "David Orr" <canardfinder@att.net>
Date: 8/24/2011 4:49:04 PM
Subject: Re: Roll Over Structure

I am not familiar with this roll-over structure. Is it the one Mike Melvill developed?
burt

On Wed, Aug 24, 2011 at 4:45 PM, Tonya Rutan <tonyamojave@me.com> wrote:

Begin forwarded message:

From: David Orr <canardfinder@att.net>
Date: July 29, 2011 1:36:52 AM PDT
To: Tonya Rutan <tonyamojave@mac.com>
Subject: Roll Over Structure

I've tried all the machine shops I know and I get back very expensive estimates - but this one was more enlightening...

Would you ask Burt if we can switch steels and get some portion of the strength we need?

Beagle, aka David Orr

----- Original Message -----

Subject: Roll Over Structure

Date: Fri, 29 Jul 2011 00:55:18 -0700

From: Glen And Rose <longez102@earthlink.net>

To: David Orr <canardfinder@att.net>

David,

I can see why no one wants to tackle this project including myself. The 17-4PH Stainless Steel used in the locator pins is both very hard and difficult to work with. You would have to work it in the annealed condition and then send it out to have it heat treated to whatever value is specified. It appears to be center drilled, but I could not find the ID dimension. The flanging on the portion embedded into the longeron would cause a high failure rate unless diamond bit ground to create the retention flanges. This would have to be worked down from a 1" piece of expensive Stainless to achieve the .88 seating flange. I suspect it would take 30 or 40 passes to remove excess stock which would make the machine time extremely expensive. All of the other parts are simple CNC mill work.

I think you would have to make these 100's at a time to keep heat treating costs down, unless you were able to share oven time with someone else's material. That's not likely as 17-4 is widely used in the production of turbine compressor blades, radiation containment casks and off shore salt water influenced projects. Most of whom are not going to be happy about a potentially contaminated lot going in with theirs.

If Rutan could spec a different material, say tool steel, it would be a much easier build.

Glen