**Plarg's Canard Aviator Notes:**

***-Anodize:***

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

Subject: [c-a] Anyone on here set up to anodize?

Date: Fri, 16 Nov 2012 14:50:38 -0000

From: lisnion <lisnion@yahoo.com>

To: canard-aviators@yahoogroups.com

I like these guys for anodizing right now:

KMG

1225 BOSTON AVE.

LONGMONT,CO 80501

303-651-7665 Ask for Mike.

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

Subject: Re: [c-a] Anyone on here set up to anodize?

Date: Fri, 16 Nov 2012 20:16:48 -0000

From: aviationeyes <skyeyecorp@airpost.net>

To: canard-aviators@yahoogroups.com

It is possible to anodize parts your self. Lots of ghetto as well as expert technical advice on the internet ...part in a sulfuric acid solution, pass current, and boil in water. ... (with a few more specifics) ... clear anodization. ...confirmed by checking for non-conductance with a multimeter. ...colors... organic dye ... very difficult to get in small batches. (Some have suggested RIT clothing dye, but I didn't get good coloring that way.)Deep persistent black, I think is the most difficult color. ... bit of a mess and the acid will get everywhere and mysteriously eat your clothing and rust your tools. ...much prefer to send parts out to a pro establishment. ...minimum lot charge of about $100 and you can include many, many parts in a lot.

--Jose

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

Subject: [c-a] Re: Anyone on here set up to anodize?

Date: Sat, 17 Nov 2012 00:13:37 -0000

From: Joe Person <ezejoe@comcast.net>

To: canard-aviators@yahoogroups.com

Anodizing what? To what control spec? What will various types/categories of anodizing do to the fatigue life of critical airframe parts???? The last question was a rhetorical one. You can knock the crap out of the fatigue life of a part by wanton anodizing...

-Joe Person

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

Subject: Re: [c-a] Re: Anyone on here set up to anodize?

Date: Fri, 16 Nov 2012 14:47:14 -1000 (HST)

From: Bruce Hughes <ezcopilot@fairpoint.net>

Reply-To: ezcopilot@fairpoint.net

To: Joe Person <ezejoe@comcast.net>

CC: canard-aviators@yahoogroups.com

Whoever wants to anodize: Are you mistaking alodining with anodizing? Even alodining is somewhat dangerous. ....I was a Chemistry professor and NEVER wore cotton clothes when working with sulfuric acid. ... VERY careful. ...get it in your eyes (undiluted, it will cause instant blindness). ... Diluting it is VERY dangerous.

Bruce Hughes

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

Subject: RE: [c-a] Re: Anyone on here set up to anodize?

Date: Sat, 17 Nov 2012 05:59:09 -0500

From: Ken <kenezmiller@optonline.net>

To: 'Joe Person' <ezejoe@comcast.net>, canard-aviators@yahoogroups.com

....Be very careful of anodizing anything used in structure. AL has a number stamped on it, which is an indicator as to what strength it has in general terms. Aerospace alloys are the 2, 5, 6, and 7000 series.

2024T3 and 6061T6 are the common structural materials used in stressed aircraft skins and structure. The “T” number is critical in determining what you use it for. For instance, 5052 is so soft, you can easily bend a sheet .050 thick with your finger. Heat it, and it drastically changes properties and how it is cooled will affect it’s strength and durability. All of those processes are too complicated to go into here,

but heating is required to anodize and it will change the properties of the Al, so be aware of this.

I don’t know of any parts on a jet that have been anodized unless it’s a knob on a galley door. Everything I’ve seen is Alodined and epoxy primed in structure. This is what we all should be

doing with our parts for longevity and corrosion resistance, not anodizing.

Ken

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

Subject: Re: [c-a] Re: Anyone on here set up to anodize?

[bcc][faked-from][mx]

Date: Fri, 16 Nov 2012 22:15:38 -0500

From: David Froble <davef@tsoft-inc.com>

Reply-To: davef@tsoft-inc.com

To: canard-aviators@yahoogroups.com

...tubing sitting at the anodizer for several months. They decided to make it up to me for taking so long, and left some 1/2 x .035 tuning in longer than normal. When I tried to bend it, almost every time it snapped off. Had to buy more tubing and ask for a very light anodizing.

David Froble

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

Subject: [c-a] Re: Anyone on here set up to anodize?

Date: Sat, 17 Nov 2012 17:09:02 -0000

From: Joe Person <ezejoe@comcast.net>

To: canard-aviators@yahoogroups.com

...without going into deep technical detail:

1. There are numerous processes for anodizing, ranging from the sulfuric acid-based "hard" anodize (which you find in the expensive non-stick aluminum cookware, AND, sometimes specific aluminum parts used in

aerospace), to a process that uses phosphoric acid (used for anodizing aluminum that requires an adhesive bonding surface, and minimal effect on fatigue life).

2. Items that we use "off the shelf" that are purposely anodized include our nifty AN fittings, and MS20001-series extruded hinge (the stuff specified for our aileron, rudder, and canopy hinges), and Saber prop

extensions.

3. Items that are already anodized have known properties, with respect to strength, etc., as the effect of the anodize is included in the design of the item.

4. Anodizing parts whereby the anodize is NOT factored into the design parameters of the parts can have unintended consequences (Example: canard lift tabs subject to a "deep" sulfuric acid anodize - fatigue

life reduction / susceptibility to cracking would be the concern).

5. In one of the CPs, RAF makes mention of alodining vs anodizing with a cautionary "Do not anodize" (search for this tidbit is left to the reader, but it is in there, and is part of a narrative on corrosion protection of some specific aluminum parts).

Anodizing is a neat process, but I'd not go charging off (pun there...) and simply anodize parts like lift tabs, etc., without evaluating the effect on the fatigue properties of the part. Anodizing can yield all sorts of "finish" characteristics, from the black anodize (done with dyes prior to "fixing the anodized surface" of a Brock throttle quadrant to the black anodize of a Saber extension, to the blue anodize of AN fittings, to the clear anodize of MS20001 series hings.

....Joe Person

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

Subject: Re: [c-a] Re: Anyone on here set up to anodize?

Date: Sat, 17 Nov 2012 12:24:37 -0500

From: Bulent Aliev <bulent.enginegear@gmail.com>

To: Joe Person <ezejoe@comcast.net>

CC: canard-aviators@yahoogroups.com <canard-aviators@yahoogroups.com>

Also anodized surface does not provide good electrical contact for grounding. Specially for low current sensors, electronics etc.

Buly