

EVA EXHAUST SYSTEMS

The Newsletter of the East Valley Aviators

October 2002

Officers:

President - John Pomroy #759-4976; Vice President - Brian Sodt #539-9781;
Secretary - Gene Coleman #982-4338; Treasurer - Don Manchester #854-8396;
Safety Officers/Board Members - Mike Wyman #641-4810, Bill O'Brien #985-9261
Newsletter Editor - Doug Sharpe #288-6300

VIP Visits EVA

The East Valley Aviators were honored by the presence of a VIP at the field in the form of Delia Rubio and her family. Delia along with her Dad Juan, Mom Lidia and sister Janet were our guests at



the field on September 14, 2002. Delia, who has cancer, has wanted for some time to fly an RC



airplane. Keith Bergeron and club president, John Pomroy helped make her wish come true. With the assistance of a buddy box, John and Delia had two successful flights and sister Janet also took a turn on the sticks. A very rewarding time, with lots of smiles and laughter, were had by all. Assistance (and photos, *ed.*) were provided by Gene Coleman, acting as crew chief on John's Seniorita. #

October Membership Meeting

Palmas Del Sol East
Wednesday, October 2nd
7:00 pm

Located at 3400 S Ironwood Drive

Directions are: Go east on Highway 60. Exit at Ironwood Drive as if you were going to the field. Go South on Ironwood and take the first right (200 yards) into Palmas Del Sol East park. The gate guard will know that you are coming and will direct you to the clubhouse which is 1/4 mile straight in on the left. You can't miss it.

PRESIDENT'S PODIUM

Submitted by John Pomroy
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By the time you read this the long summer heat will be over and the great flying weather will be back. Hope you all had a great summer. Please bring your latest project and/or flying stories to share at the October meeting.

Over the summer the BOD discussed and decided to change the membership cap definition to allow people on the waiting list to join. The old cap limit was 250 where each **member** counted as one. The new cap limit is still 250 but each **family** counts as one. This opened up approximately 16 new membership positions. At this time we have been able to admit everyone on the waiting list leaving about two or three additional membership slots open. The December meeting will require a vote of the general membership to approve this new membership cap as a permanent By-laws change for the club.

Bill O'Brien's and Mike Wyman's duties as the club safety officers end on January 1st 2003. Elections for the two safety officer positions will be held at the December meeting. We need candidates to step forward and fill these roles as club safety officers. The BOD would like candidates who are at the field on a pretty regular basis. Preferably a regular weekend person and a regular weekday person. Please consider offering your services to perform this vital role for the club. Safety is everyone's job but we still need a couple people to step forward to provide safety leadership for the club.

Jon Thompson is stepping down as the club Training officer. He recently got married and will be a new daddy soon (congratulations Jon!!) and doesn't have time to fulfill his duties. Thanks to Jon for his time and energy during his stint as the club T.O.

I'd like to welcome Olen Trenary as the new T.O. for the club. Please contact Olen if you would like to be an instructor or are a student in need of an instructor.

The club will be holding it's first ever **Turkey Shoot Fly-In on Saturday, November 23rd** at 9am. This event is a non-competitive social get together open to all members, their families, and friends. Just bring your plane(s) and fly. We'll have prizes for ugliest plane, prettiest plane, and most unusual plane based on ballots provided to everyone that attends. Everyone will get a raffle ticket for attending and one for each flight (over 5 minutes) toward winning a ButterBall frozen turkey. The club will also conduct a Swap Meet like the one last Spring. Bring your stuff to sell or come out and/or get a deal on something you want. The club will also be providing lunch for everyone that comes out. All this great fun, socializing, and enjoyment for the low, low price of **free!!** More details to be posted at the field in the next few weeks.

The next meeting will be at the **Palmas Del Sol** location on **Wednesday, October 2nd at 7pm.** Directions are located elsewhere in the newsletter.

That's it for now. Fly safe and see you at the club meeting. *John #*

Treasurer's Report October 2002

Submitted by *Don Manchester*

2002 MEMBERSHIP. We now have 238 paid members plus 23 family members. The Board decided in July to change the way we apply the membership limit specified in our By-laws so that only paid members will count towards the ceiling. We will offer a change to the By-laws at the December meeting to validate this decision. It was clear that family members normally fly with their respective sponsors and this change allowed us to offer enrollment to everyone on the waiting list. There are no applicants on the waiting list at this time. Call Don Manchester (480) 854-8396 if you have any questions about membership.

NEW MEMBERS. We have 16 new members since the last meeting. They are: Kevin Tittsworth, Bob Geiser, Micheal Johnson, Mike Rauchle, Lindsey Mincher, Bill Myers, Tim Stefaniak, Greg Starr, Devon Starr, Robert Aepli, Mark Smith, Timothy Smith, Dave Litt, Glenn Williams, Daniel Johnson and Jim Whitfield. They bring a wide range of RC talent and interests to our club and I look forward to seeing them at the field. If you see a new face at the field take the time to

introduce yourself and find out about our new members.

FIELD LEASE RENEWAL. We are currently negotiating with the Arizona State Land Department to renew our Permit for another five years. The current Permit expires October 11, 2002. We anticipate that a State Land Department representative will inspect our field in the near future as part of the renewal process so please make an extra effort to keep things neat. Also let Don or John know as soon as possible if an inspector visits the field.

CLUB ROSTER. The Club Roster is used for the newsletter and other club business so it is important that you keep us informed about changes to your mailing address, telephone number and e-mail account. When the newsletters are returned or rejected it takes considerable effort to track you down. Send roster changes to Don Manchester, (480) 854-8396 or dmanchesterm@aol.com. If you received the newsletter by mail and would like to get it faster through e-mail, send Don your e-mail address.

SUNSHINE COMMITTEE. The Sunshine Committee consists of Don Manchester (854-8396 dmanchesterm@aol.com) and Gene Coleman (982-4338 gene505@juno.com). We have had some recent incidents where we learned too late about members being ill or hospitalized and we want to remedy this, but we need your help. If you know of someone who is seriously ill, hospitalized, has a serious family medical problem or worse, make an extra effort to let either Don or Gene know so they can arrange for an appropriate card.

CLUB HATS. All of the Club hats have been sold. We will order more if there is enough demand for them. Let Don or John know if you are in favor of getting more.

AMA INSURANCE. Everyone knows that our club is insured by the AMA and that all members and guests must be AMA members. **There is one exception**, an individual without AMA insurance can be given a **one time familiarization flight** on a buddy box with a club member instructor. **But, and this is important, the airplane must belong to the club member and not to the student. In other words, your AMA insurance is not valid if you use the student's airplane for the buddy flight.**

GUESTS AND VISITORS. EVA is private facility and not open to the public. Members can bring guests and they can use our facility providing they have AMA insurance coverage. The Club sponsor must insure that their guests are instructed about safety rules and proper flight and ground procedures. They must claim a frequency using the sponsor's club badge. AMA cards or other identification are not acceptable and the sponsor must accompany their guest at all times. Contact a Club officer if you have any questions about our guest policy. #

Minutes of the General Membership Meeting Held May 1, 2002

Compiled by *Gene Coleman*

The East Valley Aviators met at the Palmas Del Sol club house for their meeting. 26 members were in attendance.

Discussion was held on the non competitive fun fly we will have in November at the field. Members were asked to come up with ideas that will make the day a memorable one. Bring your ideas to the October meeting.

President John Pomroy gave a short informational speech on the future of our flying field. He stated that it looked pretty good for at least 5 more years and maybe more. Taken into consideration was the fact that the state leased land to a commercial venture for motorcycles just 1 mile south of our field.

Next a video was shown, put together by Diane Conrad, wife of Mike Conrad. She came out to the field one fine day and video graphed some of us while we were hard at work slaving over our machines. A big thank you goes out to Diane and Mike for the wonderful job she did on the video. It was thoroughly enjoyed by all those present.

Steve Porter mentioned that planes were getting "hits" on the west end of the runway and it didn't seem to matter what frequency you were on. It might be wise to start range checking your radios to prevent the loss of your plane.

A short Q and A was held on the membership cap and it was decided to let it stand right where it is at the moment and further

discussion can take place at our business meeting in December.

President John Pomroy gave a very useful and informational talk on batteries, their types and make up and how to extend their life. Examples of Nimh (nickel metal hydride), Nicd (Nickel Cadmium) and charge equipment was shown and discussed. It was very instructional indeed.

In the “show and tell” department we had three beautiful aircraft that were shown and talked about by their owners. First Gordon Briggs had a WACO YKS6 that he beautifully built from plans. Gordon has built many “scratch built” airplanes as



could be seen in his beautiful plane. Second was Doug Sharpe’s World Model’s Clipped Wing Cub ARF. This plane flies on a Magnum .52 4 stroke



and for the money, you can’t beat it. Lastly Olen Trenary presented his “scratch built” Senior Kadet. Many modifications were incorporated into the building and I think we all have to agree that Olen is one of the best builders in

the club. It sports a Saito 100 engine under the home made cowl. I have seen all three fly since the meeting. They all fly exceptionally well and look great in the air..

The meeting was adjourned about 8:30 PM after the door prize and raffle prizes were raffled off to lucky winners. #

Modern R/C Battery Systems

Part 2

Submitted By *John Pomroy*

In part 1 of our discussion (May 2002 issue) on battery technology we reviewed some basic definitions to help us interpret the various battery choices available and provided some guidelines for sizing batteries for your next plane. We also covered how to monitor your batteries effectively to prevent in-flight failures. Now I’ll try to provide some additional information via frequently asked questions format relating to airborne battery selection and care.

Q. What are the pros and cons of using a 5 cell versus a 4 cell Rx pack?

A. The five cell pack will give you quicker servo movement and about a 20% increase in servo output torque. These are both good things! You’ll probably think your plane flies better. Down side is 25% increase in battery weight due to the extra cell and, of course, they about 25% more expensive. Some radio systems that run on a 6.0V Rx battery exhibit ‘servo jitter’ at the beginning of their first flight when the pack has a full charge. This is due the high initial voltage (> 7.2V) the pack puts out with a

fresh charge which is a little more than the electronics are designed to handle. The jittering won't hurt anything and will go away after a few minutes when the pack voltage flattens out to about 6.7V.

Q. What do voltage regulators that go in your plane do?

A. Voltage regulators that go in your plane are intended to be used with a five cell (i.e. 6V) battery pack. They go between your switch and Rx. What they do is convert the output voltage from your battery, which changes over time as it is depleted, to a constant voltage to your Rx and servos. These devices are usually set to output about 5.6V to 5.8V. This is desirable for a couple reasons. First, it will eliminate the servo jitter issue sometimes observed with a freshly charged five cell pack. The second reason is it will make your plane 'feel' the same every time you fly it since all servos are getting a constant voltage throughout each flight. If you fly a particular airplane a lot (on either 4 or 5 cell pack) you may have noticed the plane is a little more responsive on the first flight of the day versus the third or fourth. It's not your imagination; what's happening is your servos are moving faster with a freshly charged battery putting out +7V (for a 5 cell pack) and then it drops down (albeit slowly) over subsequent flights. For those that want their planes to respond the same on every flight such as a pattern or IMAC aerobatic competitor this is a very desirable characteristic.

Q. What is a NiMH battery?

A. NiMH is short for Nickel Metal Hydride. It's a relatively new type of battery (i.e. new chemistry) to the RC market. It's very similar to a NiCd type battery in terms of charge and discharge characteristics but can hold roughly twice the charge of a NiCd for the same size cell. They are also about 50% more expensive than a NiCd pack. You can use the same charger you use for your NiCd and can use the same voltmeter to check them. The only downside is you can't fast charge them as quickly as NiCds. However, if you need to trim a few ounces off your latest project you can switch to a NiMH battery if your not planning on fast charging them at the field.

Q. What is a Duralite battery?

A. A Duralite battery is the brand name of a new type of battery that's been around for a few years. They use Lithium-Metal chemistry to storage electrical energy. They are the lightest battery ever made for RC applications to date. They weigh about 1/4 what a NiCd weighs. They are also very expensive and require a special charger. At this time, only one company manufactured them a few years ago and they have since dropped the production line. Unless that manufacturer (or another) decides to restart production, they will disappear from the hobby scene due to lack of supply. This is unfortunate; these are great batteries.

Q. What does it mean to 'fast charge' a battery?

A. Charge rate is defined in terms of a factor divided into the battery's rated capacity. If we call the rated capacity "C", then we can define a charge rate as C divided by some number of your choosing. For example, the charge rate of the wall charger that came with the radio is 50mah and the battery you got for both the Tx and Rx was a 500mah pack. This means your charger has a charge rate of C/10 (i.e. 500/50) and is typically referred to as a 'trickle' charger. 'Fast' charging is typically defined as 1xC to 3xC. For example, a 500mah NiCd battery 'fast' charged at 2xC would give a charge rate of 1000mah (i.e. 2x500mah).

Q. Are there other types of batteries coming out soon?

A. Lithium-Ion batteries are the latest rung on the battery technology ladder. These batteries have been common in cell phones and lap top computers for years. This technology is currently being adapted to RC use. They are comparable in weight and power to the Duralites discussed earlier but have other issues associated with safety and special charging requirements. As you might expect, they are also expensive because they are newest technology. At this time, I'm only aware of two companies offering these systems for RC use. Check out their web sites: www.bktsi.com/powerflite/powerflite.htm and <http://www.duralitebatteries.com> to learn more. #

Using Sig Koverall

Submitted by *Jon Thompson & Gordon Briggs*

Have you ever wanted to cover a model with something other than monocoque but didn't know how? I believe this is the case for many of us, especially when we are building a model of an older aircraft – like a biplane from the 30's that were originally covered in fabric. The following is a brief summary of applying Sig Koverall as summarized by Jon and Stan in the February club meeting and is very similar to the process of covering a full size aircraft. Jon's .40 size Concept Fleet Biplane was built and covered in 1981 and still looks great.

Required Materials:

1. Sig Koverall (Dacron fabric) – Hobbytown price = \$7.65 for a 48" x 72" piece of fabric, weight = 1.25 oz per ft².
2. Sig Stix-it (heat activated sealer) – Hobbytown price = \$7.65 for a pint container. Enough material to cover a ¼ scale model easily.
3. Sig Clear Nitrate Dope
4. Sig Butyrate Dope – Color coats
5. Miscellaneous – brush (or air brush), 600 grit sandpaper (or 3M Scotchbrite), 1100 grit sandpaper, CA, and some sharp razor blades.

(The directions are provided on each Sig item above)

Caution: Care is needed when dealing with chemicals and vapors, please do not use around a heat source or an open flame.

Process:

1. Sealing / Adhesive Layer (Sig Stix-it) - Once you are to the point of covering your model apply 1-2 coats of Sig Stix-it. The important thing is to cover the edges where the fabric will be attached, i.e. on the wing: wingtips, leading edge, and trailing edge. Lightly sand between coats with 600 grit sandpaper.

2. Applying the Fabric (Sig Koverall) – In the example that Jon and Gordon used in covering the wing - first cover the top of the wing using a covering iron. Koverall easily conforms around edges and round surfaces. Once done, apply Stix-it again around the edges so that there is adhesive for the fabric on the bottom of the wing to attach.

Hint: Use thin CA, once the top and bottom of wing are covered, to make a seam where the fabrics overlap - wipe excess immediately with a paper towel. (Nitrate dope tends to pull apart the fabric when it is curing – CA will prevent this from happening. It also prevents a “fuzzy” edge that woven cut fabrics seem to have (can be sanded much easier).

3. Encapsulating the Weave (Clear Nitrate Dope): Now that the fabric is attached to the balsa structure, the fabric weave needs to be filled to make the wing or fuselage airtight. This is done with Nitrate dope and is called “encapsulating the weave.” It is best to apply the Nitrate dope around an outside temperature of 60-65°F to prevent blushing. Jon's advice is to apply the first coat of Nitrate along the direction of the weave in the fabric. The second coat is perpendicular to the first following the cross-weave. These steps are then repeated again leaving a total of four coats of nitrate on the fabric – leave for 24 hours (lets the solvents evaporate from the Nitrate). If not done, the Butyrate coats can bubble since this gas will be trapped.

4. Sanding Nitrate (600 grit): Now that the Nitrate has set for 24 hours you can sand any rough spots or seams away. **WARNING:** You must be very gentle using 600 grit sandpaper as it will easily burn a hole through the fabric, especially the case with wing ribs. The ribs act like a knife since being hardened with Stix-it and clear Nitrate and can cut the fabric easily. Jon recommends, if you are worried about cutting a hole while sanding, to use 3M Scotchbrite which goes slower but will help you achieve the same results.

5. UV Protectant (Optional): Dacron fabric, such as Sig Koverall will eventually turn black if out in immediate sunlight. This step is optional because, in most case, our models do not spend huge amounts of time out in the sun as would a full size aircraft covered in fabric. Anyways, you can purchase this UV protectant from the Randolph series of products commonly used on full size aircraft at local airports such as Falcon Field in Mesa. The protectant also acts as a great filler / primer for the Butyrate colored (pigmented) coats which follow. After applying, let the model sit for 24 hours before going onto step 6.

6. Butyrate Dope (color): You may have heard several questions around Nitrate vs. Butyrate dopes.

The key to remember is Butyrate is always over Nitrate, not vice versa. Butyrate dope does not like to adhere to many things, but it loves Nitrate dope. Application can be done either with a brush or compressor / airbrush system. At this point, our wing has Sig Stix-it, Koverall, and 4 coats of Clear Nitrate Dope followed by a coat of Randolph UV Protectant. Apply color via the Butyrate dope you have chosen in two light coats with about 15 minutes of drying time in between. Once this is done let the two coats dry for about 24 hours. Butyrate naturally blushes, or looks flat, so you can use either a clear coat for shine or use a wax like Nu-Finish used for waxing cars.

Hint: When applying the trim colors, first lay down the trim tape, use the original base color butyrate, then apply the trim color. In most cases the dope will sneak under the trim tape, i.e. painting first in the base color. When the tape is peeled away you will then have a clean line where the tape was.

7. Wet Sand (1100 grit sandpaper): Final sanding between Butyrate coats should be done with 1100 sandpaper. Wet sanding is used to help achieve a very fine finish without removing too much material. Keep on painting / sanding until the desired finish is achieved (basic fabric finish on one end to a near automotive finish on the other).

Routine Maintenance: A fabric / dope finish tends to slightly oxidize over time – a dull appearance. A wax such as Nu-Finish wax can help periodically to maintain to great finish.

Covering Removal: According to Jon, Sig Koverall can be removed from an airframe very quickly without much hassle. One great attribute of this type of covering is the lack of pieces stuck to the balsa, as commonly happens with removing monocote. #

General Membership Meeting Schedule

The East Valley Aviators general membership meets 6 times each year on the first Wednesday of the month. Meetings are held in the months of January, February, March, May, October and December. An issue of the *Exhaust Systems* newsletter will be published the week before each of the meetings. We are still looking for a permanent meeting place. Until that time the meeting location will be published in the *Exhaust Systems*. We are always looking for input from all of our club members. If you have any, articles, pictures or classified ads (free to club members) you would like to see published please contact Doug Sharpe (480) 288-6300 or dougsharpe@worldnet.att.net. - Doug Sharpe #

Please support our local Hobby Shops. Thanks to D&D Hobbies and Hobby Town of Gilbert for their help in providing our raffle prizes. #



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