



AERONAUT

The Newsletter for the Association of
Experimental Rocketry of the Pacific
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The First Commish's Corner

By William Walby

First a few thoughts and kudos from July's Aeronaut launch: Well we ended up having a really great launch despite the nagging winds during the morning and early afternoon on Saturday. Saturday night was just about perfect, as was Sunday. Lots of great flights and some spectacular (but sad) crashes. Seems that operator error and recovery electronics are the biggest contributors to our failures.

The raffle was quite a success and there were some really nice prizes. Thanks go to the sponsors: LOC Precision, PML, BlackSky, G-Whiz Partners, Mojave Desert High Power, Walston, Vaughn Bros., Washington Aerospace and Black Rock Technologies. THANK YOU!!!! Make sure the next time you buy from them to include a note thanking them for their support.

I'd like to thank EVERYONE who helped out with setup and teardown, those who volunteered for range duty, and especially to the Porta-potty haulers- Scott Knoll and Bob & Debbie Keffer!! Thanks also to Carol & Tom Hooper, who came all the way from Lancaster to run the Raffle and T-shirt sales, and she still managed to do her Level 1 certification! Without the volunteers we would not have a launch.

The "Pius Morozumi Mudroc Award" goes to Professor Bob Twiggs who managed to find one of the few muddy spots and got himself stuck but good. It took a while but he was rescued and ended up having a great time.

As always we need to thank Karl Baumann for providing our AP. Stop by at a launch and thank him personally for his support.

If I've forgotten anything I apologize. Special thanks go to the current BOD and to Pius for their help and assistance.

News and other items:

First are some new regulations from the BLM about open fires on the Playa. As of 12 July 1999 no campfires are allowed anywhere except in a 'developed recreation site'.

The Rangehead campground is NOT a developed site. So please leave your firewood at home. There are some other specific rules pertaining to welding and explosive use that does not directly impact us. If you want to see a copy of the new Fire Restrictions just ask and I'll show them to you.

The BLM work party is scheduled for the Thursday prior to the Blackrock Launches (9 Sept) and we would still like more volunteers to join us. I'm still not sure what we'll be doing but this is a great way to give something back to the Playa. Let me know if you would like to join us and I'll give you details when they become finalized.

It has been brought to my attention that some of you may not be aware of some specialized equipment that Aeropac has for use by its members. We have a complete set of 98mm Aerotech motor cases that any member can use. The club charges a \$25 fee for their use to help defray the cost of replacement should a case be lost or destroyed. We have 2 complete sets of Hypertek ground support equipment. If you want to fly your Hypertek motors just let the Launch Director know a few weeks in advance so we can make sure that there is plenty of gas in the tanks. Although not Aeropac property, we have available at most launches a Walston retrieval receiver and have been assigned a set of frequencies. So if you want to track your rocket you only need to purchase a transmitter. When ordering just let them know you want your TX on one of the Aeropac frequencies. Then let one of the BOD know in advance that you'll need tracking for the launch. We just purchased a new dedicated 'away cell' launch controller from Black Rock Technologies and have 1500 ft of cable. So if you are flying something big that needs greater safe distances, we can do it all from the dedicated controller.

Well that's it for now. Remember, Aeropac board and members meeting on the 29th and Blackrock XI and Blackrock EX2, Sept 11-13. See you there!

Aeronaut 99

By Tom Rouse

Well, Aeropac members, "How's your summer going?" Things here are in full swing. Its the time of year that everything happens at the same time, and with the economy in overdrive, its even harder to accomplish that ever elusive, time off. Running a business is like launching a rocket. You can plan like heck and still have something unexpected go wrong. No matter what you might plan for, another weird item always seems to pop up. Today, my superintendent jumped on my tractor to do some final grading. I warned him, "John, don't hit anything again!" (He ALWAYS manages to ding something) I gave him the benefit of the doubt, brought it to his attention and guess what? Yes, he hit something; Does anyone in the club know how to replace a City street light?

Ever worked half a day and have someone tell you your shirt is inside out? How about jumping in the shower after everyone has left for the day, only to figure out your daughter stole your razor. Tell the laborer to clean up only to find out he scrapped that special order trim you need so bad! Sub-contractors whining about how busy they are and giving you a bid double the norm, and tell you how lucky you are that they would even consider doing the job. Why is it that your labrador always shows up in a new pair of work boots? How about selling a house to a lawyer! Well, you can get an idea of the way my summer has been so far. I can't wait to see all the smiling faces on the playa where nothing ever goes wrong!

Speaking of smiling faces and "things that go wrong", remember Aeronaut in July? It was one heck of a destruction derby. I love to see a ballistic core sampler. It ALWAYS brings a smile to my face! And we had plenty. The one guy who has been creeping up on us, is Chris Harwell. He had the guts to launch a two stage Saturday AM when the winds were the highest. And it worked perfect.

I have a feeling Karl and Pius will be getting his L3 application and write up soon. Brian and Don Millhollan were at it again, launching all sorts of rockets. Mike Markert came out to have a good time, and secondly to launch rockets. Who is Paul Amos? Shoot, he launched more flights than anyone else! We should give him an award. Congratulations to Stan Speegle who dusted off the Hypertech equipment and took his Screaming Banana" for a ride on a Aerotech K240 Hybrid. Eric Kleinschmidt launched one and had a good flight. Rob Briody and his son, Scott, had some fun with his G-Whiz computer airstarting two G64s at burnout of a J350. It went great. Good job boys. One of the best flights of the launch was from Tom Potter. He launched a NorthStar with an Aerotech K550. Beautiful and he separated it into two sections for dual chute recovery. Really sweet. Well, the three winners of the core sampling contest consisted of Pius Morozumi/William Walbys rocket (imagine that!), Ken Biba and Scott Knoll. I helped Ken "excavate" his rocket for an hour before we recovered what was left. It was kind-a fun. Gold medal to Ken!

It was my daughters 14th birthday on Sunday so I took off early to get to Tahoe for her dinner party. From what I understand everyone chipped in and cleaned up real well. Many thanks to the ones who helped out. I think the reason she wanted to leave was so she could drive on the playa!

Hey, I saw a lot of folks cleaning motor tubes like Neanderthals. The trick is to buy a long drill bit (18-24" long, and about 1/4" dia). Put it into a cordless drill. Stuff a rag into the casing with cleaner put the bit into the rag and let it rip. The bit catches and the rag spins like heck and BUFFS the inside of the casing like new. All in 20 seconds. DON'T FORGET.

Drive safe and show up to Black Rock September 11,12 and 13.



Half Of The Aeronaut Flight Line (J. Coker)

The Economy of Aerotech 76mm Reloadable System

by Gordon Hom

This article really isn't about the 76mm casings – it's about the reload kits available for the 76mm system. There are so far 4 different lengths of 76mm casings for a K560, L850, L1120, and M1315. The M1315, which I will refer to as the "Baby-baby M" is the one that is heavily advertised on the back cover of recent (well, recent when they arrive) HPR magazines as an inexpensive Level 3 motor of choice.

To offer a wider perspective, let's compare the newer 76mm system to the older 98mm system. There are 5 different lengths of 98mm casings for two K reloads, two L reloads, four M reloads, and one N reload. In other words, there's currently a lot more of a selection in the older 98mm system. But there is, as always, big trade-offs in terms of cost. (Also there are the newly introduced hybrid turbos, but I'll not get into them here. They may be cheaper per reload, but there are many peripheral hidden costs in terms of additional equipment).

Now let's compare prices between 98mm and 76mm. For a cost reference point, let's use the 98mm full M, the M1939. Actual cost for us (quoted from the Mojave Desert High Power price list) is \$440. There's the "Baby M" the 98mm M1419 for \$90 less at \$350.

I don't have a price list for the 76mm "Baby-baby M", but realistically estimate cost to be about \$250. The 76mm "Baby-baby M" is a \$100 to \$190 less than the 98mm M reloads. The price range is also consistently cheaper across the spectrum for 76mm reloads in K and L

Now I'd like to turn the discussion towards the club (or group) usage of the casings (98mm and/or 76mm). My qualifications for this discussion come from having worked at two film schools. Imagine students (who may or may not know what they are doing) checking out a \$40,000 camera and coming back into a \$80,000 edit suite to bang away on? Who ultimately becomes responsible for the cost of repairs or replacement of such expensive gear? Who retains possession and upkeep of the equipment?

98mm closures cost about \$100 each, the full M casing alone about \$280. You can get the complete Dr. Rocket full M motor from Magnum for about \$400. The corresponding 76mm parts are \$50 to \$80 less, with the Dr. Rocket "Baby-baby M" motor from Magnum costing about \$320. Costly, but not beyond the means of one person to replace.

Who becomes fiscally responsible can vary from case to case depending upon the precautions taken during use. This issue needs clear communication and understanding prior to use between club and user.

Another issue that has come up is the test-fitting - i.e. members taking the casings out of the possession of the club and having them to test-fit. This often involves long periods of a member having possession of the casing during the rocket-building period. A bad idea, as the club can lose control of

the casings if they are passed around from person to person. The club can publish the dimensional specifications of the casings to cut down on requests for test-fittings. It might be better for the club to retain possession and designate test-fitting sessions every two months or so, or at club meetings. Have people bring the motor tubes, or if built, the entire rocket to test-fit at these sessions instead of taking the casings out. The club should certainly be in possession of its casings a week prior to a big launch.

On the top of the 76mm forward closure is a machined 1/4" screw hole. This is presumably to accept a 1/4" screw eye. As club property, it might be better just to fill-in this hole with epoxy to prevent its use as such. Why? Because you must remove the screw eye (or whatever) after you've finished with the casing, so that the next user can possibly attach his own device. In the critical turn-around time - out in the field, where the casing is pulled out, cleaned and prepped for the next person to use – this is one more pesky item to do. Also, damaged can occur at this hard point attachment preventing its next use – so don't count on this as a shock cord attachment.

I hope I've brought out some issues for discussion in using club property. The important underlying assumption here is consideration for your fellow member. It goes without saying that you return a clean casing in a timely manner for the next person to use. I've always thought that community property should be treated with greater respect than your own personal property because it reveals much about our inner character.

1999 Event Schedule

Aug 29	Member Meeting
Sep 11-12	Black Rock 11
Sep 13	Black Rock EX 2
Oct 2-3	Hayburner 9 (Paso Robles)
Dec 4	Member Meeting

NOTE: Haulers Needed for Black Rock 11

We need volunteers to haul two sets of potties and the equipment trailer to the launch site. You can haul one-way or both (from Sparks) and earn \$50 each way. If we do not get volunteers to haul the potties and trailer we will not have a launch. Please help out your fellow rocketeers. Contact Tom Rouse if you can haul one of these items. Call Tom @408-997-9586 or email dadio1@flashcom.net

As Seen At Aeronaut



Liftoff Of John Cokers Successful Level 3 Flight (*J. Coker*)



Pius With The Remains Of The ARLISS Project (*J. Coker*)

Member Meeting

The next Member Meeting will be held on August 29th from 1-3 PM at Portal in Santa Clara. Directions to Portal are as follows:

Take Freeway 280 to the DeAnza Blvd. exit in Cupertino. If going southbound on 280, turn right. If northbound on 280, turn left. At the 3rd or 4th light, turn right onto Stevens Creek Blvd. Travel about 3 blocks on Stevens Creek Blvd. and you will see a Good Earth Restaurant on the right hand side. Immediately past the restaurant turn right into the business park. We are in the first row of buildings on the left side

Mojave Desert High Power

Contact Karl Bauman for all your high power motor needs. Pre-order and your motors will be delivered at BlackRock. Call Karl today at: (805)728-9778 to get your order in time for the next launch.

Waiver Altitudes

Blackrock XI

11 & 12 Sept.	0800- 1600 hrs	70,000 ft MSL*
11 Sept.	2000-2300 hrs	8,000 ft MSL

Blackrock Exp2

13 Sept.	0800-1600 hrs	70,000 ft MSL*
13 Sept.	0800-1000 hrs	100,000 ft MSL*
13 Sept.	1200-1400 hrs	100,000 ft MSL*

* Note: These altitudes require specific approval.

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