

Servo Chatter

March 2004 - Issue # 103

Official newsletter of the SCCMAS "Tomcats"

AMA club charter #110

Editor: Chris Luvara

<http://www.sccmas.org>



Next Meeting: Friday, March 26th, 2004 @ 7:30pm

Location: Hayes Elementary School, Poston Drive in San Jose. See page 3 for map.

Future Meeting dates: May 20th

Meeting Program: *GUEST SPEAKER:* Greg Pisanich (info on page 5) will present an overview of three Autonomous UAV projects and platforms he has supported at NASA Ames. Raffle prizes will include the usual - a radio, an engine, a kit, glues, and lots of other neat stuff! Bring your latest creation for show and tell and receive a free raffle ticket. Coffee and Donuts during the break.

Cover Photo: Zak West hovers and makes a little smoke (Photo by Chris Luvara)

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From the Editor

by Chris Luvara



I am going to keep my blurb short this month so I can fit in the winners of the helpers raffle.

I actually have a backup of content this month which I will be sharing in future issues. This issue will be quite large because of the amount of content I did receive. Please keep sending it in. I want to thank Bahman Dara for his better article he contributed.

Fly Safe,

Chris

So without further ado, here are the Helpers raffle winners:

2003 SCCMAS Helpers Raffle Winners

If you have not obtained your prize, please contact Mike Luvara so that we can arrange getting it to you. Thanks again to all that helped at events in 2003!

Brian Patterson	Radio
Wayne Wilson	Engine
Bob Pairman	Dremel Tool
Bob Rich	Jacket
Steve Smith	Polo Shirt
George	Kit
Jim Shadwick	Fuel Line
Jim Dunne	Power Panel
Jake Eu	Plugs
Pat Rose	Plane Hanger
Fred Celsi	Electric Pump
John Ribble	Ni-starter
Jim Thompson	Fuel
Lynsel Miller	T-shirt
Pat Rose	T-shirt

Send submissions to:

Servo Chatter

1365 Buchanan Dr.
Santa Clara, CA 95051-3950
408-246-3857
servochatter@sccmas.org



Flyin Fast - VP News

by Michael Luvara



The flying season for 2004 has been exceptional as of late. 80 degree weather, mild breeze and high field usage has been an exciting occurrence! Our first event of the year (Flea Market) was an astounding success and it could have not been put on if it weren't for the help of those who graciously donated their time. At the last meeting (January), we held our annual helper's raffle where those who helped at an event are entered in to the raffle for each time they volunteered. Below is a list of the winners and if you have not yet received your prize, please contact me at (408) 292-1212 or email mike@sccmas.org

Like all, I look forward to a great contest season. Rich Groen has been doing an excellent job setting up and coordinating this year's events. Thanks Rich

For those that have not yet renewed for 2004, this will be your last issue. Renewals were due on February 1st, 2004. If you require another renewal form, please email or call me and we can get one out to you.

We recently learned of the passing of member Ed Rose on March 11th, 2004. We offer our condolences to the family. Ed had been learning to fly with the assistance of John Ribble.

IMPORTANT NOTICE TO SCCMAS MEMBERSHIP

Recently (January 2003) Mr. Joe Hunt was terminated as a member of the SCCMAS. The termination included his membership, any flying activities at the SCCMAS and his presence was limited to spectatorship only and not to go beyond the spectator area in the pits. Since that time Mr. Hunt has continued to disregard these restrictions. Hence forth Mr. Joe Hunt has been put on notice that he no longer is permitted on the SCCMAS permitted area which includes the entire 43 acre area, adjoining roads, restrooms, parking area and of course any flying area. The notice is being published in order to inform all members of the SCCMAS of the actions of the Governing Board and to report any activity of Mr. Joe Hunt that violates these latest additions to his restrictions.

Many have asked why we do not inform the membership of incidents and related actions. We feel that in the majority of situations, the business is between the SCCMAS and the member/individual, and not public. If the situation becomes disruptive, and results in an impact to the members, we then will make an announcement to the general membership, as has been performed here. Upon the SCCMAS receiving a complaint, a board member verbally discusses it with the member and follows up with any related individuals on the matter. If the actions do not result in corrective action and we must further intervene, then a special board meeting may be called and the incidents further discussed with the involved parties. Sometimes, the situation reaches a point where we

(Continued on VP News page 5, top right column)

From the Secretary's Building Board



by Rich Luvara

Club Meeting Notes January 28th, 2004
Members Present: 56

New Members:

- Dale Barnett
- John & Austin Green
- Mike Hutchings
- Ken Hicks

New Solos :

- Ken Kightly

Show and Tell

Paul Hasselbach - Senior Telemester powered by an OS .91 FS, changed the gear, added flaps and made his own fiber-glass cowl with the help of Paul Steiner.

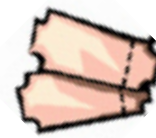
Alain Laederach - Extremely small Hummingbird electric powered helicopter. Uses a 6 cell NiMH pack, uses a 4 channel radio. Alain says he hovers while watching TV in his living room.

Tim Jones - Showed a nifty little servo tester created for cars, that he found online, only costs \$24.00. Great for setting up servos on the bench. Also brought a rebuilt World Models P-51 that he acquired. Powered by a Mecoa .61. While he admitted it was a good experience to rebuild it, he almost could have bought a new kit and had less hassle.

Ken Hicks - scratch built flat foam airplanes. - an F-14 Tomcat and F-18 Hornet. Made out of Blue Foam commonly found at Home Depot. Electric powered.



Dumb Thumb
Winner: Tim Jones



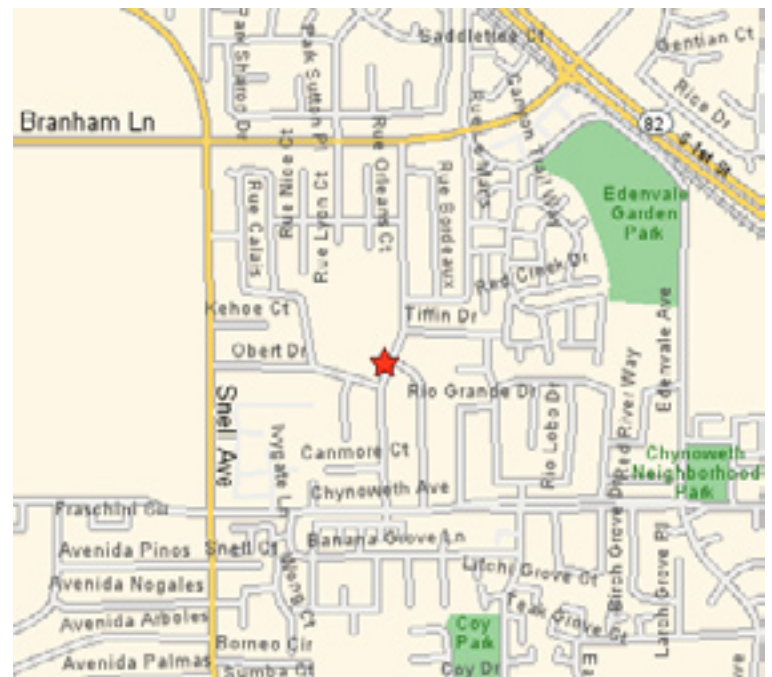
Raffle

Bervin Britt	Kit
Vern Bollesen	Engine Video
Bob House	Fuel
Ivan Cifuentes	Radio Screws
Austin Green	Fuel
Murl Culp	Throw Guage
Babe Caltabiano	Screws
John Ribble	Screws
Jim Thompson	Screws
Mike Hutchins	Screws
Greg Uhelendorf	Screws
Howard Sosbee	Screws
Jim Shadwick	Screws
Dick Gardner	Screws
Ken Kightly	Tubes

This month, we have to thank D&J Hobbies, RC Blimp Productions and RCAT Systems for their help with our raffle. Without contributions from sources like this, our raffle would in no way be possible. Please support all of our local hobby shops that are listed on the back cover of the newsletter. Remember, the local shops are the ones that donate to our club. The mailorder ones do not.

MEETING LOCATION MAP

Hayes Elementary School, 5035 Poston Drive, San Jose, 95136



Treasurer's Report



by Jim Patrick



The TOMCATS has 291 current members. If you are not paid up, please send in your renewal. You may call me at 408.356.0817 for further information. Send your dues, and a copy of AMA and your renewal form to;

SCCMAS
16345 West LaChiquita Ave.
Los Gatos, CA 95032-4610

SCCMAS Profit & Loss 3/12/04

Income

Apparel sales	53.50
Donations	450.00
Food sales	43.00
Membership dues	24,985.50
Raffle	426.89
Vending machine	215.00

Total Income **26,173.89**

Expense

Supplies	25.94
Bank Service Charges	0.00
Bay Alarm	135.00
Club Meeting expenses	136.51
Computer supplies	81.19
Contributions	318.00
Dues and Subscriptions	170.00
Equipment Rental	229.79
Food	11.18
Garbage service	499.74
Insurance	80.00
Licenses and Permits	165.00
Miscellaneous	12.43
Office Supplies	249.09
Postage and Delivery	751.34
Printing and Reproduction	332.43
Raffle supplies	724.20
Repairs and Maintenance	
-Building Repairs	42.92
-Field repairs	16.08
-Janitorial Exp	50.00
<i>Total Repairs and Maintenance</i>	<i>109.00</i>
Sanitation service	409.21
Telephone	274.08
Utilities	
-Gas and Electric	102.03
-Water	705.55
<i>Total Utilities</i>	<i>807.58</i>

Total Expense 5,521.71

Net Income **20,652.18**

Contest Corner

by Rich Groen



Well our season has begun, and we have started off with a bang. Saturday March 13th was the first flea market of the year and we had a new record of vendors. A total of 45 vendors showed up to sell their goods. That is a big increase of the last record of 39. I want to mention a special thanks to the helpers, because often it will take many calls to get enough people to show up to help, and this time I made 5 phone calls and got 4 people to help. We all have many things going on, it is nice to not have to spend hours on the phone. So a very big Thank you to George Black, Dan Petroff, Steve Culp, Greg Uhlendorf, and Bob Rich. We were actually able to BBQ thanks to a new grill donated by Steve Smith... Thanks Steve !

The InterClub Fun-Fly is also coming this month on March 27th. I hope you are practicing all your weird skills... they will be tested at the Fun-Fly. I have put out a challenge to all other clubs in the bay area that we "SCCMAS" are taking the trophy back this year. I hope many of you will join us to beat the wings off the other clubs. I will be making calls soon for help in the shack again. Hopefully you will be able to help as the others did, it sure makes a difference.

One other note... there has been a scheduling change. The Club T-34 Race on September 25th will be cancelled. Unfortunately we had a late change in the Triangle series races and they have moved their championship race to our scheduled date. We will still be hosting a T34 race on May 1st for the Triangle series, and any club member is welcome to race in that event. So tune up your skills... the challenge is coming soon.



The SCCMAS once again hosted a group of kids from Union Middle School. They are pictured here along with their teacher on March 9th. (photo by Kevin Hicks)

GUEST SPEAKER INFORMATION: Autonomous Unmanned Aerial Vehicle development at NASA Ames



Originally an outgrowth of Radio Control Aircraft, Unmanned Aerial Vehicles (UAVs) have proven their worth for military surveillance and commercial monitoring applications. These vehicles continue to evolve, growing both larger (Predator, Global Hawk), and smaller (Micro Air Vehicles), and including new capabilities and sensors.

At NASA Ames, there are several groups who are working on a new generation of UAVs that are autonomous. Within their limited programming, these aircraft are capable of controlling their flight and making decisions entirely on their own. We are actively working to enhance the autonomy of these aircraft and the applications that these aircraft can support.

Greg Pisanich (Newbie AMA Member 750898) will present an overview of three Autonomous UAV projects and platforms he has supported at NASA Ames: the Autonomous Cargo Amphibious Testbed (ACAT), BEES for Mars, and a new project, TASM, that will be used to investigate new algorithms using neural network control algorithms. All of these projects have been developed out of Radio Control Technology.



Greg has promised to bring at least one of these aircraft to the presentation for static review (and critique of our building methods). He'll also discuss a possible opportunity at Ames for a modeler/builder to support this research.

Greg Pisanich is a Technical Area Liaison with the QSS Group Inc. within the Neural Engineering Group at the NASA Ames Research Center. Over the last 15 years, Greg has supported work within several areas at Ames, to include Aviation Human Factors, Flight Simulation, Robotic Simulation and Unmanned Aerial Vehicles. Greg holds Bachelor and Master's degrees in Aeronautical Science from Embry Riddle Aeronautical University and a Master's in Computer Engineering from Santa Clara University. In his copious spare time, he is learning to build and fly a Hobbistar 60.

(Continued from VP News page 2)

must react decisively in order to assure our core values and assets are protected. In this case, the member may have their membership suspended or revoked. Membership revoking is extremely rare and has only occurred a few times in the 20 year history of the SCCMAS. The SCCMAS's goal is to provide a safe, convenient flying site for any person willing to comply with the SCCMAS and County Park regulations and help you enjoy your hobby.

Until next issue,
Michael

Safety

by ??????

Our club is looking for someone to take over the position of SAFETY OFFICER. Interested parties please apply.

Field Scenes



Training

by Mike French



It is my belief that one training session of each flight student at SCCMAS should be dedicated to the introduction of basic aerobatics. I usually give that session just prior to the session concerning emergency procedures such as overcoming unusual attitudes or disorientation. I would guess that there is no better way to teach recovery than to study the process of placing the aircraft with intent into those attitudes for which recovery is necessary.... namely aerobatics. Attached is the handout I give to all my students prior to the aerobatic training session. It is designed to supplement the training syllabus that Jim Patrick assembled. Perhaps this list should be presented to the club members for their comment. I have no doubt that there are additional maneuvers that I have omitted by oversight for which others feel impassioned to correct. I welcome comment from the club membership to see if we can agree upon a standard set of aerobatic maneuvers that all instructors should present to their students prior to qualifying them to take the check flight. Attached is the document I am submitting for this month's Servo Chatter for comment. Mike French

<p>$\frac{1}{2}$ Cuban Eight</p>	
<p>Hammerhead Stall</p>	
<p>Immelman Maneuver</p>	
<p>Inverted Flight With the objective of flying the entire pattern in the inverted state</p>	
<p>Loop</p>	
<p>Outside Loop</p>	
<p>Double Roll</p>	<p style="text-align: center;">© Constant Altitude</p>
<p>Slow Flight Back side of the Power Curve Flight</p>	

2004 Contest and Fly-In Schedule

NCRCS - Northern California R/C Society

March	20	Newbie Day @ SAM, Sacramento, CA.
	27	Interclub Fun-Fly @ SCCMAS, Morgan Hill, CA.
	27	Challenge Fun-Fly @ Woodland-Davis, Woodland, CA.
	28	IMAC Practice Day @ Oakdale, CA.
April	3	T-34 (Triangle Series) and Dominator 1500's Pylon Races @ FRM, Fresno, CA.
	3	Open Combat – Battle of Britain @ EBRC, Livermore, CA.
	4	Warbird Races @ SAM, Sacramento, CA.
	17	Warbird Races @ SCCMAS, Morgan Hill, CA.
	17	Fun Fly @ LFE, Livermore, CA.
	17-18	Pattern @ Riverside, CA.
	17-18	IMAC @ Wavemasters, Hollister, CA.
	17-18	Open House @ Woodland-Davis, Woodland, CA.
	23-24-25	Giant Scale Fly-In @ Salinas Area Modelers, Salinas, CA.
	24	Pancake Breakfast and Fun Fly @ EBRC, Livermore, CA.
	24-25	Pattern @ BARCS, Richmond, CA.
	24-25	Gold Coast Jet/Fan Fly @ Red Barons, Sacramento, CA.
	30-1-2	Vertical Challenge Helicopter Fly-In @ FRM, Fresno, CA.
May	1	T-34 Pylon Races – Triangle Series @ SCCMAS, Morgan Hill, CA.
	1-2	49'er Scale Masters Qualifier @ Woodland-Davis, Woodland, CA.
	1-2	IMAC @ Tucson, AZ.
	1-2	MAC @ Medford, OR.
	8	Collecto @ Woodland-Davis, Woodland, CA.
	13-14-15-16	Scale Helicopter Contest @ Bayside R/C, Fremont, CA.
	15-16	Pattern @ Wavemasters, Hollister, CA.
	15-16	IMAA Giant Scale Fly-In @ FRM, Fresno, CA.
	15-16	IMAC @ Riverside, CA.
	15-16	Float Fly @ Woodland-Davis, Woodland, CA.
	16	Warbird Races @ Red Barons, Sacramento, CA.
	16	Fun Scale Only @ SACRATS, Union City, CA.
	16	4th Annual Memorial Fun Fly @ Delta Valley Modelers, Stockton, CA.
	19-23	Float Fly-In @ Camp Far West hosted by Red Barons, CA.
	22	Swap Meet @ FRM, Fresno, CA.
	22-23	Pattern @ Las Vegas, NV.
	23	Electric Fly-In @ SAM, Sacramento, CA.
	23	MAC Clinic for Basic/Sportsman @ LFE, Livermore, CA.
	28-29-30-31	IMAA West Coast Festival @ Castle Airport, Atwater, CA.
	29-30	Pattern @ FRM, Fresno, CA.
June	4-6	Dan Sullivan All Scale Contest @ Ukiah, CA.
	4-6	Madera Giant Scale Pylon Races @ Porterville, CA.
	11-13	12th Annual NorCal Regional Float Fly @ NorCal R/C Unlimited Flyers, Red Bluff, CA.
	12	Electric Fly-In @ SCCMAS, Morgan Hill, CA.
	12	Pattern @ SAM, Sacramento, CA.
	12-13	IMAC @ NBRC, Skaggs Island, CA.
	12-13	IMAC @ Prado, Chino, CA.
	13	Warbird Races @ Red Barons, Sacramento, CA.
	13	All Scale Contest @ Vaca Valley R/C, Vacaville, CA.
	26	Junkyard War @ SCCMAS, Morgan Hill, CA.
	27	Bee Fly-In @ Delta Valley Modelers, Stockton, CA.
July	10-11	IMAC @ EBRC, Livermore, CA.
	10-11	South Bay Scale Masters Qualifier @ SACRATS, Union City, CA.
	10-11	Annual Invitational Air Show @ SCCMAS, Morgan Hill, CA.
	11	100 Lap Race @ Vaca Valley R/C, Vacaville, CA.
	15-16-17-18	IMAC Nationals @ Muncie, IA.
	17	Day on the Hill Slope Soaring Fun Fly @ DVRC, Pittsburg, CA.

- July
- 17-18 Pattern @ Gardnerville, NV.
 - 17-18 SAM Electric Fun Fly @ Salinas Area Modelers, Salinas, CA.
 - 19-20-21-22 Pattern Nationals @ Muncie, IA.
 - 24 Open Combat – Mount Diablo Face Off 1 @ EBRC, Livermore, CA.
 - 25 Warbird Races @ SAM, Sacramento, CA.
 - 31-1 Wings of Victory @ Woodland-Davis, Woodland, CA.
- August
- 7 T-34 (Triangle Series) and Dominator 1500's Pylon Races @ FRM, Fresno, CA.
 - 7 Flea Market @ SCCMAS, Morgan Hill, CA.**
 - 14 Giant Scale Fly-In @ SCCMAS, Morgan Hill, CA.**
 - 14-15 Pattern @ SAM, Sacramento, CA.
 - 14-15 Pattern @ Whittier, CA.
 - 14-15 IMAC @ Woodland-Davis, Woodland, CA.
 - 14-15 IMAC @ San Diego, CA.
 - 21 President's Fly-In and Flea Market @ Red Barons, Sacramento, CA.
 - 28 Warbird Scale Fly-In @ FRM, Fresno, CA.
 - 27-28-29 8th Annual Bayside/Century Heli Jamboree @ Bayside R/C, Fremont, CA.
- September
- 3-4-5-6 IMAA Mini Festival @ Salinas Area Modelers, Salinas, CA.
 - 4-5 IMAC @ Riverside, CA.
 - 5 Warbird Races @ Red Barons, Sacramento, CA.
 - 11 Flea Market @ Bayside R/C, Fremont, CA.
 - 11-12 IMAC @ Oakdale, CA.
 - 12 Fun-Fly @ Vaca Valley R/C, Vacaville, CA.
 - 16-17-18-19 Full Scale Racing @ Reno, NV.
 - 18-19 Pattern @ Wavemasters, Hollister, CA.
 - 18-19 Jet Fly-In @ FRM, Fresno, CA.
 - 18-19 IMAC @ Whittier, CA.
 - 19 Family Fun Day @ Bayside R/C, Fremont, CA.
 - 26 Airshow @ EBRC, Livermore, CA.
 - 26 Fun-Fly @ Woodland-Davis, Woodland, CA.
- October
- 1 Night Fly @ Red Barons, Sacramento, CA.
 - 2 .025 and Small Electric Nats Fun Fly @ Red Barons, Sacramento, CA.
 - 2-3 IMAC Southwest Championships @ Las Vegas, NV.
 - 9 Electric Fun-Fly @ Half Moon Bay, CA.
 - 9 Open Combat – Mount Diablo Face Off 2 @ EBRC, Livermore, CA.
 - 9-10 Warbird Races @ SAM, Sacramento, CA.
 - 9-10 Jet Fly-In @ Woodland-Davis, Woodland, CA.
 - 10 Devil Mountain Electric Fun-Fly @ DVRC, Pittsburg, CA.
 - 16-17 T-34 Races Championship - Triangle Series @ Madera, CA.
 - 21-22-23-24 IMAC – Tucson Shootout @ Tucson, AZ.
 - 23 Open Fun Fly @ SCCMAS, Morgan Hill, CA.**
 - 30 Annual Auction @ Bayside – Holy Spirit Church, Fremont, CA.
- November
- 6 Pattern @ SCCMAS, Morgan Hill, CA.
 - 6 Toys-for-Tots @ Woodland-Davis, Woodland, CA.
 - 7 Trainer Race and Toys-for-Tots @ Red Barons, Sacramento, CA.
 - 13-14 Pattern @ Prado, CA.
 - 20 Annual Auction and Club Fundraiser @ DVRC, Pittsburg, CA.
 - 21 Toys for Children's Home @ Delta Valley Modelers, Stockton, CA.
- December
- 4 Toys-for-Tots @ BARCS, Richmond, CA.
 - 4 Flea Market @ SCCMAS, Morgan Hill, CA.**
 - 5 Toys-for-Tots @ DVRC, Pittsburg, CA.
 - 11 Toys-for-Tots @ EBRC, Livermore, CA.
 - 12 Toys-for-Tots @ SCCMAS, Morgan Hill, CA.**

Building a Battery Pack

by Bahman Dara

I was doing a routine battery check on one of my transmitters. Despite the fact that it was only a couple of years old, the battery would not hold the charge for very long even after being cycled a couple of times. Suspecting a faulty cell, it was time to change the pack. Since I am also into electric park flyers I decided that instead of NiCds, it is time to switch to a better kind of battery, NiMH (Nickel Metal Hydride). These batteries have much better capacity than NiCd for the same size. There are many sources for NiMH and a quick search on the web can point you to them. You can also go to Fry's or your local hobby store and pick up a variety with and without solder tabs and with different capacities. The source I really like is a guy named Dave who sells his batteries on eBay. His eBay handle is Spooflanky and he typically sells 2200 AA NiMHs at \$26 for a pack of 16. I have had a very positive experience buying from him. However, as I said, there are many sources so go with the one that fits you best. I do not particularly care about cells with tabs on them and use regular cells. You can of course just buy a replacement pack. As a reference a TX NiCd rated at 1100mAh for JR from Horizon Hobby is priced at \$74.95

Tools - You need to be able to solder and need:

- A soldering gun with around 35-40 Watts of power.
- Hot Glue Gun
- Solder - I use a silver solder from Radio Shack and recommend using silver solder instead of regular.
- Heat Shrink tubing of various sizes (Fry's as well as stores like Sheldon carry a good selection)
- Wire stripper
- Electrical insulation tape
- Exacto Knife
- Heat Gun
- Thin sheet of zinc (sold under the K&S brand, I buy mine from Sheldon's)
- Sharp scissors that can be used to cut thin metal.



To replace the transmitter pack, first you need to remove the battery from the unit. There are many different types of connectors depend-

ing on your radio manufacturer and even between different models from the same manufacturer. Be careful when you are disconnecting. If the plug is not a oneway type of plug make sure you note it's polarity (which socket is positive - typically red - and which is negative). Strip the outer shrinkwrap until you expose the points where the wire to the plug is soldered to the battery or tab. Use your soldering iron to release the wire.



Putting your batteries together

In this example we are building a flat 8 cell pack. Batteries should go in the order you see in the photograph. Hold them flat and use your glue gun to glue the individual cells together. Once the glue is set, turn the pack over and apply glue to the other side. This ensures that the pack stays nicely together when you are soldering the terminals.

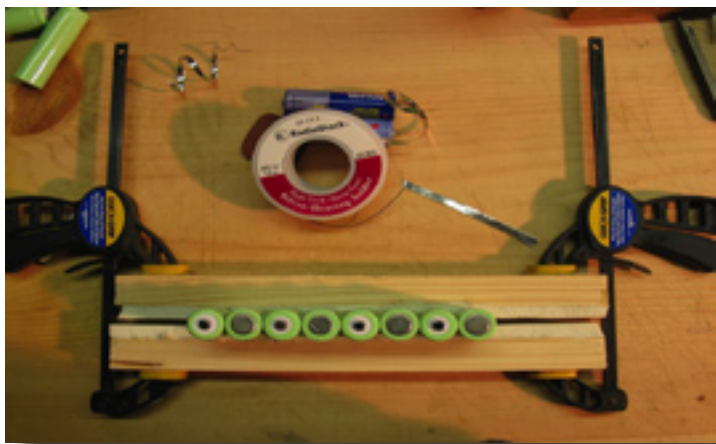
You can strip wire and use the copper for the soldering across terminals. However, after building some flight packs for electrics using this technique I discovered that thin sheets of zinc from K&S work really well. Simply use a pair of large scissors and cut strips about 1/8 wide. You need to straighten these out after cutting. Be careful when you do this as there may be some sharp edges or pointed slivers that may cut your skin.



Cut the strip to short pieces that fits the terminals. Now use your soldering iron to place a dab of solder on all the battery terminals. I use a very simple jig for this purpose, two strips of wood with foam glued on them, held together with clamps. The next step is to solder the tabs to the terminals. You need to start with one pair and then work your way across the pack. Once the top terminals are completed, turn the pack over and solder the terminals on the other side.



(Warning: take care to make sure you are soldering the correct set of terminals. Failure to do so will result in creating a closed circuit, shorting a series of batteries together which may result in an explosion.) (continued on page 10)



sion.) Now solder the leads for the connector to the two remaining terminals. At this point the main work on your pack is completed. Now take a piece of electrical tape and wrap it around the batteries covering the terminals and generally tidying the wiring etc. When you are happy with that place the pack inside an appropriate size shrink tube and shrink to final shape. It is a good idea to either use a small piece of card with the date, size etc and insert it inside before you shrink the tube or use a sharpie to write the information on the pack before installation. Small scissors can be used to cut off the excess of the shrink tubing after it has been heated. Your pack is now done and ready for installation. If your system uses a square pack in a 4x4 configuration the process is quite similar with the following variations.



- 1- Solder pairs of batteries together.
- 2- Straighten them to the long configuration.
- 3- When all 4 pairs are done, put them together two pairs at a time and glue them together using the hot glue gun. You need to make sure that the bent terminal connectors all point outwards.
- 4- Add the terminal wires.
- 5- Use some thick cardboard to create end caps for the pack and place them at both ends.
- 6- Wrap electrical tape as appropriate.



7- Use shrink tube to finish the pack as described earlier.

I also use the same techniques for creating 5 Cell (6 Volts) flight packs.

You should check the voltage on individual cells before soldering them together and also check voltage during each step to ensure all joints are good and you are getting the expected output. Do not keep the iron on the battery too long, overheating batteries can damage them and may result in battery explosions.

If you have any comments and questions, please contact me at bahman@mac.com



Presented by the Santa Clara County Model Aircraft Skypark

Warbird RACE

April 17th

Classes:

- Stock 40/60
- Unlimited

Sign in/tech at 7:30
Racing starts at 9:00
Entry fee: \$15.00 per class

For more info/rules:
(408) 292-1212
mike@sccmas.org

www.sccmas.org

SCCMAS presents
Saturday June 26th.
A test of creative building
and flight !!!

Junkyard Airplane Wars

The field will be open for regular member flying, except for flight challenges from 12:30pm—2:30pm. Should be great entertainment to stay and watch !!!!

5 People Maximum per Team
\$ 20.00 / Team
Check-In @ 7:30am
Meeting @ 8:30am
Construction @ 9:00am

Object ???
Build an airplane in a limited time, with limited materials, within limits... That can compete in various challenges unknown... !!!



- Rules... ?
1. Must be able to take off and land unassisted, taxiing not necessary, will need landing gear.
 2. All aircraft airframe and flight surfaces materials will be provided.
 3. Motor will be 2 stroke .25 or less. (no open exhaust)
 4. Motor may be pre-mounted, mount cannot extend more than 3" beyond rear case.
 5. Plane must pass a reasonable safety inspection by event CD before any flights.
 6. No Foam... Depron, EPP, all wood other than motor mount must come from club supply.
 7. Event CD may disallow items a team brings that discourage spirit and challenge of event.

The Club will provide the following supplies....
All Wood, Misc. scrap parts from junkyard, Fuel tank, Surprise bag of parts.

Each Team should bring...
Any tools desired, Motor, Mount, Prop, Fuel, Radio gear, Covering material, Extra glue, wheels, wire, any miscellaneous hardware desired.

The Santa Clara County Model Aircraft Skypark "Tomcats" Presents an Inter-Club Fun-Fly Challenge

Can your club be No. 1?

It's your club against other local clubs in a Fun Fly challenge. The rules are simple. Bring at least 5 members to represent your club, have fun competing in the crazy and wacky events we pose to pilots, and when the battle is over, the club with the highest average score wins! Any soloed pilot of any skill level can compete with just about any type of airplane. From trainers to Cap 21's, we've seen them all with an equal chance of winning! Trophies will be awarded to the top 5 individual finishers and the club with top honors will take home their own trophy for bragging rights.

When: Saturday, March 27th

Where: Tomcats field (see map below)

Time: Check-in 8:00 am -Flying starts at 9:00.

Entry fee: \$5.00 (per person)

For more info, contact:

Contest Director: Michael Luvara

Phone: (408) 292-1212

Email: mike@sccmas.org

www.sccmas.org

Past Winners

1999 - SCCMAS
2000 - Fresno R/C
2001 - SCCMAS
2002 - Bayside R/C
2003 -Bayside R/C
2004 -???????????

Open to any club.
Just bring 5 or more
pilots to qualify for the
"Bragging Rights"

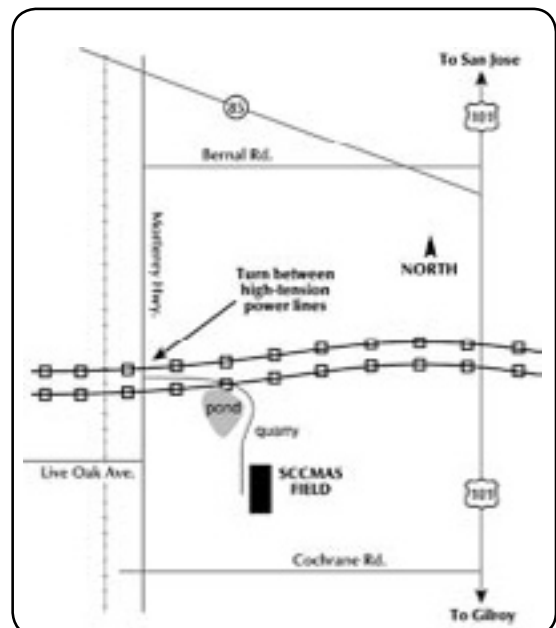
AMA required

Some typical events that you might see on March 22nd....

Spot landing, Limbo, Timed events, Cracker whistle, Glow plug in a spoon, God is my co-pilot, mirror-taxi, drag strip, and many other neat surprises! You might be asking "What are all of these events?" -Come and find out!



SCCMAS field map



Fun Scale SACRC



Fun Scale!

May 16, 2004 at SACRC field

Registration starts at 730AM—Pilot's Meeting at 9AM

Flying commences at 9:15AM



From 880, take Alvarado Niles Rd. exit, West
(Alvarado turns into Smith). Turn right (North) on Union City Blvd.
Turn left (West) on Bettencourt, turn left on Whipple (stop sign). Follow signs to Union
City Sanitary District, then the gate to SACRC field.

Entry Fee \$15

Contact Jeff Whitney 510-537-0141 bmxdad505@aol.com

Current Governing Board Members of the S.C.C.M.A.S. "Tomcats"

General Manager	Brian Nelson	408-463-0604	<i>nelson711@aol.com</i>
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Webmaster	Steve Snell	831-438-7624	<i>webmaster@sccmas.org</i>
Field Weather & Information (AUTOMATED)		408-776-0101	
On site Field Telephone		408-776-6844	
SCCMAS Business Office		408-292-1212	
SCCMAS WWW address:		<i>http://www.sccmas.org</i>	

AMA Intro Pilots (These pilots can fly-non AMA members, certain restrictions apply.)

Reggie Dell Aquila Jim Patrick Jack Sunzeri

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NOTE: D&J and Hobby World both give 10% discounts if club members show their club card.



Reggie side-slips his Hangar 9 Cessna (Photo by Chris Luvara)

The Servo Chatter is published bi-monthly by the SCCMAS "Tomcats" radio control club located in Morgan Hill, CA. For info E-mail: servochatter@sccmas.org. Views expressed in the Servo Chatter are those of the writers. They do not necessarily represent the views of the club, its members, or officers. The SCCMAS is a non profit organization. The Servo Chatter welcomes all letters and comments. Permission is granted to reproduce anything printed in Servo Chatter as long as the source and author are credited.



Servo Chatter c/o SCCMAS
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Santa Clara, CA 95051-3950

**THIS IS WILL BE YOUR LAST ISSUE IF YOU HAVE
NOT YET RENEWED!**



*Next meeting: Friday, March 26th, 2004 @ 7:30pm
Location: Hayes Elementary
(see page 3 for a map)*