



## AMOS January 2015 Newsletter

### AMOS Board Meeting Minutes – December 1, 2014 - 7:00PM

New Members - Visitors and/or Guests Rene Green, Mike Dunbar and Bob Calvert

#### Unfinished Business:

##### Rocket Discussion:

Steve passed out a letter with questions about rockets that was received from Marty Jacobson. This prompted a civil 35 minute discussion on the use of rockets. Some of the comments are as follows: John Kinne- There are 2 classes of “C” rockets that go to a height of 1000 ft to 2000 ft. Mike Dunbar and Rene Green- Asked about the rocket not being under a control of a pilot. Rene wanted the issue back before the membership. Felt our Charter should be specific. Jim Irey passed around a sample rocket he got from Perry at Hobbytown to show the Board. It had details on the rocket on the side of the box. Doug Keller- Discussed the possibility of using the “U” control pad for rockets. Jim Hill asked about size of rockets. Felt if there was a conflict between rockets and planes it should be resolved in favor of planes. John Sorenson-The Red Barons allow rockets. Tracy Trammell- Asked how do we control the size of rockets? John Sorenson said the safety officer or members should police this same as following our rules for flying planes. Marvin Pass- said the club voted for rockets at the last general meeting and we should have a 6 month wait and see. Dean Crump- Felt we moved to quickly about rocket use and alienated some members.

- A motion was made by Jim Hill and 2nd by Mike Haston for the Board to bring back up at the Next General Meeting for the membership to revisit. Motion carried. Steve wanted proxy votes allowed and limit discussion to 30 minutes.
- Member Relocation – Letter to Jim Irey. A letter was received by Jim Irey from Wayde Jensen requesting refund of dues for 2015 just paid as he is relocating to Canada. He did not have a problem with the field improvement fee. A motion was made by Jim Irey to take to General Membership recommending refunding the \$110 annual fee. 2nd by Dean Crump...Motion carried.

#### New Business

##### Committee Reports

- Nominating (Bob Rives) Activity was finished at last General Meeting. Bob was absent but he was thanked for a job well done.
- 2015 Budget (Gloria Irey) Passed out a proposed budget for 2015. Per Steve this will be taken up by the General Membership. She is projecting a \$10,000 cash balance at the end of the year.
- Audit (Bob Calvert) Bob passed out the audit report. He praised Gloria for her great job on finances. Discussed using dual signatures on checks, including an e-mail ok for the expenditure. Also recommended a committee be set up to provide for a list of Club assets and also questioned what we will do with the new member field improvement fee once the loans are paid off.

## Board Reports

- **President – Steve Snider** Nothing to report **John Sorenson** thanked him for his leadership this year. All agreed. Steve thanked the board for their help.
- **VP – Tracy Trammell** Questioned “special funds” on the audit report.
- **Secretary – Marvin Bennett** Thanked **Kathleen Rives** for an excellent job of providing the minutes of the November General Meeting in his absence. A list of 2015 Board Members voted in is included in those minutes.
- **Treasurer – Gloria Ire** Passed out the treasures report. Shows a Cash balance of \$5006 at the end of November.
- **Safety/Training – John Sorenson** Training and safety going well.
- **Membership – Jim Ire** We are now up to 213 members
- **Committee Chairperson – Jim Hill** There are 29 paid to date for the Xmas dinner. We usually have about mid 50 attend.
- **Newsletter – Basil Yousif** Absent
- **Field Marshall – Dean Crump** Did spray last Friday for weeds
- **Past President – Doug Keller.** Don’t forget “TOYS FOR TOTS” at the December General Meeting.

## New business

John Sorenson spelled out his program for next year. He wishes to redo the loans including money for rebuilding the runways and provide for a lockable container. He made a motion to present this to the General Membership and it was 2nd by Mike Haston. Motion approved.

## AMOS General Meeting Minutes – December 9, 2014 at 6:00 PM

Welcome – Last meeting of 2014 – Appreciation to the 2014 Board by Steve . Doug Keller thanked Steve for his leadership during 2014.

New Members and Guests Richard Carey {New member} and Bill Inman {Guest}

### Unfinished Business

• **Rockets - Further discussion and re-vote if a Motion is made.** A motion was made by Doug Keller to allow class “C” and smaller rockets for 3 months starting in January and bring back to the club if necessary. 2nd by John Sorenson. See attached list of motions made during the meeting, including outcomes. (See Motions 1 , 2 & 2A )

• **2014 Audit Report – Bob Calvert – Gloria Ire** summarized the committees audit report for the general membership. (See Motion 3.) A copy of the audit report is to be attached to these minutes. Some of the changes recommended will require a constitutional amendment to comply and will be brought before the membership at the next meeting. John Sorenson said he would take up the issues in 2015. Steve Snider read the last paragraph of the report expressing commendation to Gloria Ire for her work with the audit committee and improvement of the accounting and budgeting process for an accurate representation of AMOS’s financial position.

## Board Reports

- **President – Steve Snider – Resignation as 2015 Past President** This was accepted by the membership in view of the hardship it would cause to commute from the San Jose area where Steve has moved to.
- **Vice President – Tracy Trammell** Thanked the group for letting her serve during 2014.
- **Secretary – Marvin Bennett** Thanked **Kathleen Rives** for her handling the chore of Secretary during the November General meeting . Her minutes were very complete.

- **Treasurer – Gloria Irej – Treasurer’s Report and Projected Cash Flow Analysis** The report as of the end of November showed funds available of \$5252.45 with about \$7200 in the checking account as of today. Our outstanding loan balance with interest is \$13505. Steve then said both Secretary and Treasurer’s reports were accepted.
- **Membership – Jim Irej** There are 213 members in the club with approximately 100 renewed for 2015. Jim received a letter from Wade Jensen regarding his move to Canada and request for reimbursement of years dues less field improvement fee. (See Motion 4)
- **Safety/Training – John Sorenson - Training** Training has still been going on on Wednesday afternoon because of requests. Safety has not been an issue.
- **Committee Chairman – Jim Hill** Jim’s report is under unfinished business.
- **Field Marshall – Dean Crump** His last meeting as field Marshall ,but is going to continue the spraying.
- **Past President – Doug Keller** Thanked the members for bringing the toys for the “TOYS FOR TOTS’ drive. Gave a summary of the organization .

**John Sorenson – President 2015 his officers are as follows:**

Vice President - Mike Haston  
 Secretary -Marvin Bennett  
 Safety Officer - Fred Quartier  
 Treasurer - Gloria Irej  
 Membership - Jim Irej  
 Contest Coordinator & Public Relations - Richard Cross  
 Field Marshall John Kinne  
 Newsletter Editor - Basil Yousif  
 President’s appointment of Doug Keller as 2015 Past President – Membership approved  
 President and Board Proposed Plans for 2015 (See Motion 6)

John is proposing the following:

1. Refurbish the Field
2. Resurface the Road 3. Obtain lockable Storage

Vice President Mike Haston read a list of the Fly Ins & Calendar proposed for 2015 and are as follows:

- 4/18-Rotors over Roseville (NEW-Helicopter Fun Fly)**
- 4/25-RC Country Swap**
- 5/13- to 5/17-Float Fly**
- 6/13- Warbirds over Roseville**
- 7/11- Club Appreciation Day**
- 8/29-Electric Fun Fly**
- 9/12-Presidents Fun Fly**
- 9-26-Thunder Valley Rally of Giants**
- 10/10- Jet Fun Fly**
- 12/19-Christmas Dinner (See Motion 5 for club approval)**

John Sorenson Had a consultant(Nate Watts) present to give a summary of Ballpark costs for some of his proposals(\$40,000). John appointed Randy Sizemore chairman of a committee to look into costs for this work. This can then be brought to the board and then to the membership.

## AMOS Christmas Dinner

Saturday, December 20th found us at Turkey Creek for our annual Christmas dinner. As usual the service was excellent as was the food. Below are some pictures at the dinner. Those of us there had a very good time. By John Sorenson



## Freeze and Fly January 1st 2015 - Happy New Year!!

This was a regular day at the flying field with a low turnout but it was fun and the weather was 59 degrees with wind at 0-5mph.



Randy Allen

Basil Yousif

John Sorenson

## Everything You wanted to Know about Batteries but were afraid to ask:

### Newer technology R/C Batteries:

**Li-Ion (Lithium-Ion) Voltages - Same as Li-po**

**Li-Po (Lithium-Polymer) Voltages - 1S - 3.7v , 2S - 7.2v , 3S - 11.1v, 4S - 14.8v**

**Life - lithium iron phosphate (LiFePO4) battery, it is a [lithium-ion battery](#), which uses [LiFePO4](#) as a [cathode](#) material. Sizes - 2S - 6.6v, 3S - 9.9v, 4S - 13.2 v**

### Best Uses:

**Li-Ion** - These have 1/2 the energy of Li-po batteries. They are popular in Cell Phones, PDA's etc. There are some R/C applications but more often it's better to use LiFE or Li-po batteries to power your R/C models. They lack high amp burst if you use them for motors and there voltage is high for receiver / ignition / TX packs.

**Li-Po** - These batteries are great for powering Electric Motors. They have a great burst of power and can hold the high current draw through the duty cycle then slowly reduce in voltage at the end of the cycle. The downside is they can catch fire if they are discharged or charged incorrectly, generating excessive heat, or get a impact from a crash.

They are not the best option for powering the Receiver/ Servos of fuel powered models, although there are some good low C / amp versions if the higher voltage is acceptable.

**LiFE** - These make great Receiver , Ignition and Transmitter R/C battery packs. They are a little heavier than Li-po's but are much safer and can be charged inside your model. For most applications you don't need a regulator. The 2 cell is 6.6volts. These are also available in higher mah and C rates for larger models with high drain servos.

They give a steady voltage through the entire duty cycle until they near the end then they drop sharply. It's a good idea to be able to check how much your model is drawing each flight.

### Managing Li-po's and Life Batteries with the model:

Your charger will read out the voltage and give a error if there's something wrong while charging but the voltage reading won't help with knowing how much the battery can deliver.

It's better to see how much mah (Capacity) is being depleted every session by looking at the mah reading on the charger after charging. For a Servo /Receiver pack I use 100-200mah per flight on a .50 size Helicopter and 30 - 50mah per flight on a .40 - .60 size plane.

Now you can judge how many times you can fly the particular model before needing a charge.

### Spotting bad batteries or components:

If after charging the battery the mah value is very high it could be a indicator of a bad battery or flight pack component. I had a bad servo that would cause the battery to drain 600 mah in one flight. A battery that is going bad and can't keep up with the demand will also drain faster. Swap components and find the bad part. Try cycling and balancing the battery to save it.

**Charging Lipo or Life Batteries:** To set the charging amps on the charger use calc - mah x .001 = amps. If a battery is 2200mah you can charge it at 2.2amps.

Setting to charge at lower amps will increase the charge time but also increase the battery life. Charging the batteries at high amps is better done outdoors because the battery releases toxic/explosive Hydrogen Fluoride gasses if the cells get too hot.

**Battery Memory:** This is a problem with Nicad, NiMH, Lipo and Li-Ion batteries. Unless your discharging them down with a Motor. When the battery gets a repetitive charge to say a fraction of it's capacity it doesn't hold up through the delivery cycle after it passes that level of charge. So a 2500 mah battery only being charged 500 mah every time might have higher discharge rate below 2000mah causing it not to deliver the full 2000mah because the voltage will be driven too low. Cycling the battery brings the battery back to a standard power cycle. LiFE batteries don't suffer from this problem. In many occasions when I needed most of the battery it just stayed steady and delivered. Even after multiple 11 minute top of charges in the previous flying sessions. That's why my old NiMH 2500mah packs seemed to have so much less capacity. It was a hassle to cycle them.

### **Balance Charging:**

Older Li-po batteries didn't have separate connections to each cell so they couldn't be individually charged to the same voltage. While charging a few caught fire when one of the cells went bad. The charger would try to charge the remaining good cells to the full voltage and Kaboom! A balance connection to each cell was developed and installed on all batteries. Chargers were built with balance port output to top off cells to equal voltages or give a error message and stop if a cell was bad. The menu for most the new chargers is the same and they now offer regular and balance charging along with storage charging. You can view the voltage of each cell while charging. It's a good idea to always use the Balance charge option.

### **Discharge or "C" rating on Life and Lipo batteries:**

This value is written on the battery along with the capacity in Mah. It is how fast the battery can be discharged safely without burning up. A battery with a discharge rating of 10C means you could safely discharge it at a rate 10 times more than the capacity of the pack, a 15C pack = 15 times more, a 20C pack = 20 times more, and so on.

On a 20C rating on a 2000 mAh battery:  $20 \times 2000 = 40,000$  milliamps or 40 amps. Time wise, a 40 amp draw on this pack would exhaust it in about 3 minutes but that's the max current draw you could put on the battery. The higher the C rating the more amps the battery can deliver.

Life and Li-po batteries can hold their charge for months if they're lightly drained. This makes them a huge advancement for fuel powered models to power the Receiver / Servos, ignition or a Transmitter that don't use too much power per flight.

### **Puffy Batteries:**

Lipo and Life batteries get puffy because the internal components are creating Hydrogen gas. This is an indicator of a problem with the layers of materials in the battery reacting with each other. Never pop the battery if the gas mixes with moisture it can create Hydrofluoric Acid which can cause a chemical burn. Some folks with Zit complex might not resist the temptation!

The battery can fail anytime. They get puffy because of excessive heat, improper charging, a manufacturing defect or an impact from a crash. Some work fine for many cycles.

Balance charging them is important. If they don't balance charge there's no good.

One guy put the battery in a refrigerator for a month and it returned to normal.

Hope he didn't poison his food!

If they get so puffy they look like they're going to give birth to a baby battery get rid of them!!

### **Disposal of Life, Li-Ion and Lipo batteries**

Materials are non toxic but they need to be completely discharged before disposal to reduce the fire hazard in the waste. Immerse the battery in a mix of 1/2 cup salt and 1/2 gallon of water for two weeks. Afterwards you can throw them away in the house trash.

## Older style R/C Batteries:

NiCad (Nickel-Cadmium)

NiMH (Nickel-Metal-Hydride)

**Similarities:** Each cell is 1.2volt so 4 cell is 4.8 v and 6 cell is 6 v and 8 cell is 9.6 v and so on. they also come in larger size cell configurations for different uses. But most are - AA size

## Differences:

**NiCad** - Toxic material must be disposed of in a battery recycling container - Winco foods has a recycle container near the entrance. These batteries are banned in some countries.

Cadmium is very toxic to the environment.

They drop in voltage very fast in the initial part of the delivery cycle around 1 volt, but have a good burst of energy while dropping. Their capacity is greatly reduced when they are recharged multiple times in the same day. The max capacity battery made is 2400mah.

**NiMH** - Non-Toxic - can be thrown away in the home trash. Voltage stays stable during the delivery cycle. Has a good max battery capacity at 5200 mah.

**Downside to both Nicad and NiMH** - they lose 4% of their charge per day of storage.

A complete overnight charge is needed before a day of use. If they are used regularly they can suffer from battery memory and need to be cycled unless they are used to power a motor.

**Low Voltage Limit on all batteries** - all batteries have a low voltage limit. They should not be drained lower than that voltage. Life and Lipo batteries will go bad if they go below their low cutoff voltage. Nicads and NiMH can be saved by repetitive cycling but can also go bad.

**Precautions** - 1) Always turn off power switch after use 2) Disconnect batteries after using 3) Regulators should be installed after the power switch - they use power to step down voltage.

4) Check low voltage alarms if you switch battery types 5) Charge before storage

Always charge the battery when you receive them before any type of use. They can drop to a low voltage from hot/cold conditions when being shipped or in storage.

All batteries will discharge over time in storage. Lipo Li-Ion and LiFE are just much slower.

## Low Cut off voltage per cell:

**Lipo and Li-Ion** - Low cutoff 3.0 volts - Damage below 2.5 volts-

Won't operate model below 3.3 volts - Store with a full or just below full charge at 3.8 volts

**LiFE** - Low Cutoff 2.7 volts - Damage below 2volts - Won't operate model below 3.0 volts -

Store with a full or just below full charge at 3.3 volts

**Nicad and NiMH** - Low Cutoff per cell - 1.1 volt Transmitter pack , 1.2 Receiver pack

A Battery checker like the **Hobbyking Cellmeter-7** is the way to go - it not just gives you the cell voltages but also tells you how much capacity (mah) is left in all R/C battery types:

[http://www.hobbyking.com/hobbyking/store/\\_\\_41637\\_\\_HobbyKing\\_8482\\_Cellmeter\\_7\\_Universal\\_Digital\\_Battery\\_Checker\\_Balancer.html?strSearch=cellmeter 7](http://www.hobbyking.com/hobbyking/store/__41637__HobbyKing_8482_Cellmeter_7_Universal_Digital_Battery_Checker_Balancer.html?strSearch=cellmeter 7)

## Jokes:

### "What do you want for Christmas" ?

One Christmas after much nagging from the wife about me never telling her what I want for Christmas, I finally sat her down and told her that if she really wanted to give me something I really wanted and would really be happy with, she could give me the Great Planes Revolver .70 kit. I told her that that is all I want and I reminded her every day until Christmas Eve that is what I wanted and it was the only thing that I had ever actually specifically asked for.

Well, Christmas came along and I opened my Christmas present..... a beautiful picture frame, hand made by her with a picture of the two of us. I wasn't disappointed though because it is the thought that counts anyway, so for Christmas I gave her a brand new Great Planes Revolver .70 kit.

### Blond Story

A noted psychiatrist was a guest at a blonde gathering, and his hostess naturally broached the subject in which the doctor was most at ease.

"Would you mind telling me, Doctor," she asked, "how you detect a mental deficiency in somebody who appears completely normal?"

"Nothing is easier," he replied. "You ask a simple question which anyone should answer with no trouble. If he hesitates, that puts you on the track."

"What sort of question?"

"Well, you might ask him, 'Captain Cook made three trips around the world and died during one of them. Which one?'

The blonde thought a moment, then said with a nervous laugh,

"You wouldn't happen to have another example would you?"

I must confess I don't know much about history."