



OMAHA NEBRASKA
AMA 857 - IMAA 284

TAILSPIN NEWSLETTER

January 2013 Issue

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A Word from the President



Well folks, we've gotten the elections out of the way for another 12 months. The current officers, including myself, offered to stay in place and guide the club for another year. That's with exception of Nelson Carpenter who stepped down to allow for some "new energy" with Jim Henley as a club officer.

Now that the new year has begun, it is also time to pay your yearly dues. Please send your dues to Dean Copeland whose address can be found at the top or bottom of the newsletter. You don't need to fill out the form if you are simply renewing. Thanks for your support of the club and its fine flying facility.

See you at the next meeting!

Thanks

~ Rick Miller

Vice-President's Corner

Here we are at the start of a new year. I am looking forward to working with the club's membership this coming year. We are working on the event calendar to get next year's events lined up. If you can, try to support the club at the SAS Museum show on January 26. From what our new AMA AVP Ed Paasch, has indicated, all the clubs have been invited back for a third



(forth?) year. So get your airplanes ready for another static display.

Come out and fly!

~ Jim Henley

Next Meeting:

7:00 PM Tuesday January 2nd 2013

Location: Natural Resources Center, Chalco Hills Recreation Area, 8901 S. 154th St.

(Bring something for Show N' Tell!)



2013

HAPPY ★ NEW ★ YEAR

Treasurer's Report



A copy of the December 2012 Treasurer's Report will be passed out at the January 8th meeting.

With 2013 just around the corner and flying season only 4 to 5 months away how about getting a jump on everyone else and send in your dues. We will be giving out \$25.00 gift cards to Hobby Town for show and tell each month; for each S&T item you will receive 4 tickets and at the end of the meeting there will be a drawing for the winner. But more than that showing off your projects is both good for the soul and in many cases new ideas may be beneficial to others. Not only seeing your new projects when finished but during construction as well, they will also qualify for the drawing. So here's hoping that you all get those much needed items for all your new projects.

MERRY CHRISTMAS AND HAPPY NEW YEAR !

Thank You!

~ Dean Copeland

December 2012 Meeting Notes



Attendance: 6 Member

Upcoming Events:

January: January 26, 2013 – SAC Museum Aviation Expo.

- Indoor Air Show and Chili Cook-Off. (\$10 Landing Fee for flying this year, details below.)

- RC community can display airplanes, helicopters, etc.
- Tables for RC and other aviation displays.

Other Events: See the website for details on club and area events (<http://www.weflyrc.org/events.htm>).

Treasurer Report:

Dean Copeland was not present at the meeting to give the treasurer's report.

Old Business:

Gift Certification for Show-N-Tell: A motion was made and seconded to start the drawing for a *Hobby Town* \$25 Gift Certificate. A drawing will be held at every club meeting during the winter months for those who bring a show and tell item. It is a good way to fund your winter project.

Porta Potty: The Porta Potty has been retrieved from the field for the winter.

Table/Stand: Several airplane table/stands at the field will need some TLC and maintenance next Spring.

Club Officers: Elections for club officers will take place at the December meeting. Please be sure to attend to vote or to nominate someone or perhaps yourself.

Events for 2013: We will continue with events we held during 2012.

Days for Major Events: A motion was made and seconded that major events will occur on one day only. They will be scheduled for Saturday's with Sunday as the rain out day.

Event Suggestions: The following ideas were discussed further as alternatives for additional events.

Suggestion 1: There was discussion about adding a new event in 2013 like an IMAA Fun Fly but consider allowing planes of all sizes.

Suggestion 2: Events for Community Involvement: Extend an invitation to first responders from surrounding communities to on an open house with the Western Flyers. Also open to the public. Encourage first responders to bring equipment and vehicles for the local community to see while enjoying a free RC air show and perhaps learning how to fly. Club would provide food and drinks.

Suggestion 3: Participate in a parade or two displaying RC planes and our club banner. Maybe give out little balsa gliders to children if we can get them cheap.

New Business:

Club Officers Elections:

Members present elected the following people as club officers for 2013 effective January:

President: **Rick Miller**
Vice-President: **Jim Henley**
Treasurer: **Dean Copeland**
Secretary: **Rick Johnson**

Club Events for 2013:

2013 Event Dates: The event dates on the website need to be updated for 2013 on the website. It was agreed that the dates would be basically the same each month, but revised for the 2013 calendar to conform with Saturday and Sunday dates. **Nelson Carpenter** volunteered to update the calendar and pass on to **Joe Halamek**, webmaster.

Don Neil Scale Event: There was discussion about the date for the 2013 event. **Jim Henley** is going to contact the *Lincoln Sky Knights* to see if they are going to host the event at their field. It was mentioned that a link to the NASA Event maneuvers should be added to our website.

Unauthorized use of Mead Field: Everyone is being asked to watch for unauthorized non-members using the field; especially one individual flying turbine planes. Discussions regarding turbines and regulations ensued. Aside from membership requirement to use Mead Field, special AMA licensing is needed to fly turbine aircraft.

Safety Issue: From a safety point, pilots with gas or turbines should ensure a fire extinguisher is available while starting or running engines in the pit area as well as during the aircraft's flight.

Continued....

SAS Museum Aviation Expo on January 26, 2013: Ed Paasch was present to discuss the details of the show and RC Club involvement.

- 1.) A SAS Museum Sponsored Chili Cook-Off has been added this year. Club members can participate. Get your recipes ready.
- 2.) Unload your planes for display or for the indoor air show using Door 23.
- 3.) Indoor flying: If you plan to fly indoor in the restoration hangar, this year there will be a \$10 landing fee. This money will go to the museum to offset the cost of the lunch that they provide to the exhibitors and the RC pilots. Clubs will not receive any of the funds collected.

Western Flyers SAS Event Preparations:

Club Banner: We need to have a banner created for the event. It will help identify our club versus the other clubs exhibiting. Motion was made and seconded to have one made for our club for this event and other events we may attend or sponsor. **Jim Henley** will look into prices for a 3x5 or 4x5 size banner. The cost will be discussed further at next meeting.

Representation: Last year the Western Flyers exhibit table was represented but not by enough members. Please try to assist Bob Burt at the event this year.

Club Flyers: We need to create and print some club flyers for the SAC event.

Old Magazines: Bringing club magazines to give free to event attendees.

Ed Paasch: Ed briefed that this area/state is part of *AMA District 9*, and that there is a website devoted to just *AMA District 9*. Do a word search for "AMA District IX" on the internet.

Show and Tell:

Tim Peters: Tim brought in a *Sig Herr Aqua Star seaplane* that he bought at one of **Bud Kilnoski's** yard sales. He plans to take off the floats on the wings and add wheels for flight. Tim thinks it will use a .40 size nitro motor.

Nelson Carpenter: Nelson demonstrated an application on his smartphone that measures sound in decibels. The app is called "*Sound Meter*". This app can be used to test the sound levels of our engines to confirm we are within the decibel levels set by the AMA. Although the app used on the smartphone needs to be checked against a genuine sound meter to see if it is within tolerance levels.

Rick Johnson: Rick brought in a *Dynam Peak* biplane sold by *Nitroplanes* and some other online vendors. It is a receiver ready ARF that is made of foam. It is a great flyer and capable of 3D flight. It comes with everything but a receiver and a battery. It was very easy to assemble and cost \$140 including shipping.

Specifications:

Wingspan: 42" Length: 44.5"
ESC: 50 Amp Brushless Motor:
BM3720A-KV650 Weight: 45.9 oz.
Battery: 14.8V 2200mah 25C Lipo

The meeting adjourned.

That's it!

~ Rick Johnson

Rumors, Gossip and other Signs of Decay



Since indoor flying season is here, I decided to try the new *1SQ Heli-Max Quad Copter*. This bird has two flight rates with many choices in between all done by the transmitter with the low rate 75% of the high. While overall operation is simple, the *1SQ* does not seem to respond to a rate change quickly. Meaning that after you change the rates it may be a minute into the flight before it seems the rate has changed. Construction is typical and seems durable. The best thing is the USB battery charger. It is fast and very easy to use. So I would give this a solid 9 on a scale of 10. The instruction book is okay, not highly detailed.



Next you will see a picture of my 1/10 scale crawler *SCX10* with a 70's Ford Bronco body. This is my first attempt at painting a Lexan body, and it came out well. I have added a light bar to the roof, it has front lights and tail lights all function. If you look close it has an operational scale winch. Approximately 3/4 lbs of wheel weights are in each tire, giving this truck excellent traction on rough rock terrain. I crawled last



weekend, it did well. Future plans include going from 1.9 tires to 2.2 increasing the height about 3/4", then add functioning headlights (*I love lights!*). Finally some aluminum upgrades. This constant ability to change things is what is making this so much fun for me. Oh yes, I am building a 1/10 scale trailer too!



Wishing Everyone a Happy Holiday Season!

Happy Trails!

~ Bob Boumstein

2013

HAPPY NEW YEAR

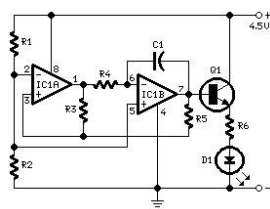
AUTOPILOT IN RC AIRPLANE

Installment 2 of 3

by Tim Peters



In the last installment I explained the installation and configuration of the DIYDRONES APM autopilot. The *Great Plains Stick-60 ARF* holds the R/C receiver, servos, and APM autopilot; all electronics get power from the 2000 MaH airborne battery pack and everything is controlled by the aircraft on-off switch. The APM has to be calibrated prior to each flight. The airplane wing is left off for this procedure so that the APM indicator lights can be seen. (Otherwise the APM would be hidden by the wing, I should mention that the APM should be located close to the CG of the aircraft.) The transmitter is turned on first, making sure that the three-way APM switch is set to 'Normal' mode. When the airplane is switched on, the APM unit does its calibration. The fuselage needs to be level and undisturbed while that is going on. During the calibration the APM establishes its bank, pitch, and yaw positions relative to the fuselage -- this is why the fuselage needs to be level. The nose gear on the Stick 60 is a little short, I have been known to prop up the nose-wheel with something like a screwdriver so that the fuselage sits level. This is even more critical with a tail-dragger; the tail needs to be propped up so that the airplane sits level during the startup. The APM also calibrates the barometric pressure (*altitude*) sensor and the GPS during power-up. You can monitor the APM calibration by watching its



indicator lights. One set of LEDs blink during the bank/pitch/yaw setup. When the LEDs no longer blink, that portion of the startup is complete. Another indicator flashes while the APM locates GPS satellites in outer space; it

can take several minutes for that fix to be made. Once it switches from blinking to a steady state, the APM unit has finished its initializing and is ready.

Upon completion, the ailerons plug into a Y-cable harness to the APM and the wing is attached to the fuselage. After APM calibration, (*but before engine start*) I put the three-way switch into 'Stabilize' and check the APM function by tilting and pitching the aircraft. This checks that the control surfaces respond correctly. It is one final test that the APM is functioning properly. The three-way transmitter switch is put back into 'Normal' mode, the engine is started and the plane is taxied for flight. After takeoff, the plane climbs to a safe altitude and I put the three-way switch into 'Stabilize' mode. This checks to see that level-flight stabilization is working ok. Once I'm satisfied with that, the three-way is put back into 'Normal'. To start the

mission, the three-way is set to 'Auto' mode and the airplane begins flying to the first waypoint. (Note that the airplane is airborne at this point; I usually start missions at around 100-200 feet altitude.) As a reminder, the airplane can be switched back to 'Normal' mode at any time. (I am not 100% certain how doing so affects the current mission; my experience has been that if you switch from 'Auto' to 'Normal' and back into the 'Auto' mode the APM will resume the mission where it left off. If the mission was interrupted while flying between waypoint #2 and waypoint #3, when restarted the airplane will head toward waypoint #3.)

If you read the last installment, you know that I had problems while flying in 'Auto' mode. The airplane would begin heading toward the first waypoint, but the engine throttle decreased to the point where the airplane could not maintain safe altitude. After a while I bailed out to 'Normal' mode and re-took control. I increased the throttle to get back to a safe altitude and tried another attempt. Same result. After several aborted attempts at flying in 'Auto' mode I could not figure out what was wrong, and gave up for that day. Back home I researched the diydrones.com web site and solicited some advice. I looked at a lot of APM parameters (*there are a LOT of parameters*) and made some adjustments to the ones that seemed like they might help. (Again, this means hooking the laptop to the APM, changing the parameters on the laptop and uploading the new settings to the APM.)

This went on for several trips to the Western Flyers' Mead flying field with the same results---and I was getting really discouraged. After about four trips to the field and maybe ten flights, the airplane continued to do the same thing in 'Auto'. After the last flight, I landed and just stared (*frustrated*) at the plane. I was thinking: "It's like instead of giving it power to achieve the proper altitude, the APM is doing the exact opposite--reducing the power." I had also been planning to change some of the APM logging settings. They could be changed to retrieve more information on what the APM is doing with the throttle settings while the mission was underway. Maybe reviewing the extra logging would give the answer. And then the ***BIG LIGHTBULB*** lit above my head. (You know that ***BIG LIGHTBULB*** that appears over the cartoon character's head when he ***FINALLY*** gets it? *That's the one.*) Remember during the initial settings of the APM I had to check the channels to make sure the controls moved in the right directions? It is easy to tilt the airplane to check the directions of the ailerons, rudder and elevator. BUT--There is no way to check the throttle direction. After all, how would you check it? Start the motor and run real fast with the airplane to see if the throttle reduces? Slow down the running pace and see if the throttle increases? I don't think so...not even on the best day I ever had. :) However, the APM was trying to tell me that the throttle was reversed! When I was blaming it for reducing the throttle during 'Auto' mode, it actually sensed that it needed to increase



Cont.

AUTOPILOT Cont.

the throttle---BUT THE DIRECTION WAS REVERSED! The poor APM was trying like crazy to increase the throttle but the direction was reversed and result is that it was reducing the throttle. I pulled out the laptop, brought up the configuration, reversed the throttle servo direction for the APM (*not the transmitter*) and uploaded the new setting to the APM. (*I was really, really glad I had not left the laptop at home that day!*) The next flight was way better and life was good. The APM was now flying the missions successfully and maintaining altitude/airspeed. It's been working great ever since.

Flying missions are a lot of fun. Sometimes I set the waypoints a little farther than I am comfortable with. That adds to the excitement...is it going to turn to the next waypoint or fly away? Sometimes it goes a little past a waypoint and then turns back to it..sort of like "oops...almost forgot to turn".



That's pretty much all for my APM article. I'll close this installment with some things that hopefully you'll find interesting.

The APM contains some memory that it uses to hold parameters and missions. This same memory is also used to record flight information; those are the 'logs' that have been mentioned. The logs can be limited or verbose; you download them to your computer and use notepad to review. The logs contain information for the duration of the flight. Every few seconds it records one or more lines of data showing the current latitude, longitude, altitude, airspeed and heading. It also shows where the next waypoint is, how far it is, and what headings (*yaw, pitch, roll*) and throttle settings are being commanded in order to travel to the waypoint. It shows what the current flight mode is (*any change in the position of the three-way switch is logged*). There are other logs that are less readable, but can be uploaded into Google Maps. The result is a Google map showing the flight path of the airplane over the region. You can set the altitudes for each waypoint.



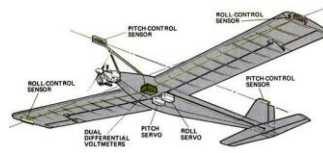
The APM software is also aware of the ground terrain, so it 'knows' whether a waypoint is at the top of a hill and adjusts the altitude accordingly. There are 'Auto takeoff' and 'Auto land' modes..I hope to try an Auto takeoff in the near future. There's also a 'Return to Launch' mode, which would be useful to program with a failsafe. That way if you lost control of the aircraft (*like a transmitter failure*) the APM returns the aircraft to the launch point and circles there until you regain control or ran out of fuel.

The APM and Mission Planner software also interface with telemetry devices. I don't fully understand it, but I think you to replay the telemetry logs into the mission planner so that (*using the Mission Planner HUD screen*) you can watch a recording of mission that you flew.

Check <http://www.diydrones.com> for other neat stuff. My next project is to use an electric plane (*the BIXLER 2 from HobbyKing*) with the APM. I may work up the courage to try the 'Auto-Land' function with that airplane. I also think it would be really interesting to participate one of the local R/C cross-country events with the APM.



I suspect that even at the slowest cruise speeds it might be difficult for a vehicle to keep up with the plane since it wants to fly in a direct line from waypoint to waypoint. Although you could set it up to circle several times at each waypoint and wait for you to catch up with it! Consider this... if you were brave enough, you could let the plane fly 'as the crow flies' and not according to the roads. This takes me back to the beginning of this article. I think it's really amazing how **Maynard Hill** and his team designed and flew a R/C plane from the northeast US coast across the Atlantic Ocean to Ireland in 2003. (*They used a diesel motor for fuel economy.*) So many things could have gone



wrong--and did as several aircraft failed to reach Ireland.

Note that all of my APM drone flying adheres to *Academy of Model Aeronautics* guidelines. I have no commercial interests in this -- doing so requires special licensing. Rest assured that my drone flying will never intentionally harm anyone or anything. Thanks for reading. So if you see me flying my *Bixler 2* hands-off and it seems like it's really 'well trimmed out' and it's flying better than I normally fly with my hands-on...well maybe it has---- a 'mind of its own'!



Hope you enjoyed reading this! Questions, comments, suggestions---please email me, **Tim Peters** at: tpeters99@cox.net.

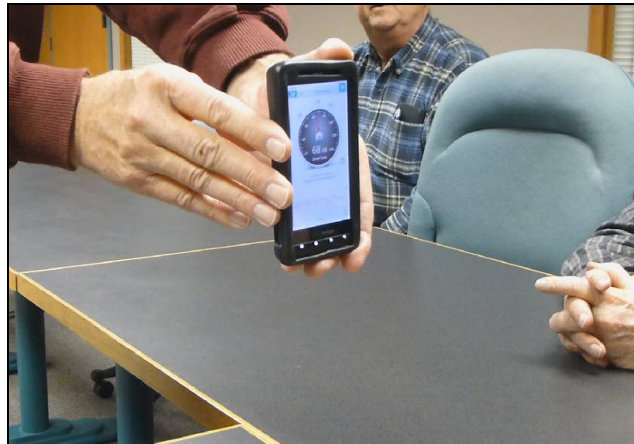
2013

HAPPY ★ NEW ★ YEAR

December Show n' Tell



Tim Peters brought his *Sig Herr Aqua Star* seaplane. Tim has recently decided to use this airplane as the platform for his autopilot drone activities.



Nelson Carpenter displays the screen of his smartphone with the sound meter application. It was quite loud in the meeting with a reading of 76 decibels. (Not really...)



Rick Johnson showed us his *Dynam Peak* biplane that was all foam by Nitroplanes. Sharp!



Flight Maneuvers

<http://nasascale.org/maneuvers.htm>

Website: <http://www.weflyrc.org/>

STRATEGIC AIR & SPACE MUSEUM

Indoor Air Show and Chili Bomb
Saturday, January 26, 2013 from 10AM to 4PM

The SAS Museum is hosting its annual Indoor Air Show, which will be free of charge for all RC pilots staffing club information tables or exhibiting static displays.

All day flying permits will be available in the Restoration Hangar for \$10. Setup will begin at 7AM, and the event will run from 10AM to 4PM. Call Ed Paasch at (402) 321-3781 with questions.





~ 2013 Western R/C Flyers Event Schedule ~

2013 Tuesday Night Fun-Flys at Mead, Every Tuesday evening May 7th through September 1st!
(Weather Permitting)

January 2013

- **Tuesday, Jan 2nd** - Club Meeting 7pm, NRC, Natural Resources Center, 8901 S. 154th St.
(Downstairs meeting room – north end bldg)
- **Saturday, Jan 26th** - SAS Museum Indoor Airshow and Chili Bomb. Multi-club event.

February 2013

- **Tuesday, Feb 5th** - Club Meeting 7pm, NRC, Natural Resources Center, Chalco Hills Recreation Area, 8901 S. 154th St.
(CAP meeting room, basement, far left of entrance)

March 2013

- **Tuesday, Mar 5th** - Club Meeting 7pm, NRC, Natural Resources Center, 8901 S. 154th St.
(Downstairs meeting room – north end bldg)

April 2013

- **Tuesday, Apr 2nd** - Club Meeting 7pm, NRC, Natural Resources Center, 8901 S. 154th St.
(Downstairs meeting room – north end bldg)

May 2013

- **Tuesday, May 7th** - Club Meeting 7pm, at MEAD FIELD, bring a plane, open flying & food.
- **Saturday, May 18th** – Old Timers Fun Fly with Glider Fly - Starts at 9:00am with flying until 3:00pm.

June 2013

- **Sunday, Jun 2nd** – Annual Spring Club Fun Fly at Mead Field starting at 10:00am. Open flying.
- **Tuesday, Jun 4th** - Club Meeting 7pm, MEAD FIELD, bring a plane, open flying & food.
- **Saturday, June 15th** – Old Timers Fun Fly with Glider Fly - Starts at 9:00am with flying until 3:00pm.

July 2013

- **Tuesday, Jul 2nd** - Club Meeting 7pm, MEAD FIELD bring a plane, open flying.
- **Saturday, Jul 20th** - Old-Timers Fun Fly with Glider Fly - Starts at 9:00am with flying until 3:00pm.

August 2013

- **Tuesday, Aug 6th** - Club Meeting 7pm, MEAD FIELD a plane, open flying.
- **Saturday and Sunday, Aug 10th** – Bud Hall Large Aircraft Fun Fly. Aircraft restricted to IMAA criteria.. However, IMAA membership NOT required. Criteria 80" wingspan monoplane, 60" wingspan biplane, or a true ¼ scale aircraft. Landing fee \$10.00 provides lunch both days and flying. Rain date Aug 11th.
- **Saturday, Aug 17th** – Old Timers Fun Fly with Glider Fly - Starts at 9:00am with flying until 3:00pm.
- **Saturday, Aug 24th** - Don Neill Scale Contest. Multi-club Fun event hosted at Mead Field. Various classes. Rain date 26th.

September 2013

- **Sunday Sep 1st** – The 5th Annual Fall Fun Fly and Swap Meet. Swap meet setup after 9am. Open flying 10am through 3pm.
- **Tuesday, Sep 3rd** - Club Meeting 7pm, MEAD FIELD - bring a plane, open flying.
- **Saturday, Sep 21st** – Old Timers Fun Fly with Glider Fly – Starts at 9:00am with flying until 3:00pm.

October 2013

- **Tuesday, Oct 1st** - Club Meeting 7pm, NRC, Natural Resources Center, Chalco Hills Recreation Area, 8901 S. 154th St.
- **Saturday, Oct 5th** – Old Timers Fun Fly with Glider Fly – Starts at 9:00am with flying until 3:00pm.

November 2013

- **Tuesday, Nov 5th** - Club Meeting 7pm, NRC, Natural Resources Center, Chalco Hills Recreation Area, 8901 S. 154th St.
- Nominations taken for 2014 Officers

December 2013

- **Tuesday, Dec 3rd** - Club Meeting 7pm, NRC, Natural Resources Center, Chalco Hills Recreation Area, 8901 S. 154th St.
- 2014 Officer elections



Tailspin Newsletter
Western RC Flyers
Omaha, Nebraska

TO:

Western R/C Flyers Inc. 2013 Membership Application

Please print clearly!

Name: _____

Address: _____ Zip Code: _____

Evening Phone: _____ Day Phone: _____

Email: _____

AMA Number: _____ IMAA Number: _____

Dues Paid: \$ _____

2013 Dues: \$35 (Renewals must be paid by **April 1**) New/Renewal: ___ New ___ Renewal ___ (Check One)

Sign Here: _____ Date _____

Subject to approval. AMA membership is required

Make Checks Payable to: Western R/C Flyers

Print this form and send check to WR/CF Treasurer:
Dean Copeland 15668 Fountain Hills Dr.. Omaha, Nebraska 68118