



FLIGHT LINES

The Monthly Newsmagazine of The Spirits of St. Louis R/C Flying Club, Inc.

Building Time Is Here

Stuff

By Gary Pyles, President

Incredibly, within the last week, we've seen temperatures from the 60s to the teens. We have been fortunate this winter with many days suitable for flying. Some of the days even felt like early spring. But, as I write this, I look out my window, see the snow falling, look at the thermometer and the temperature's 18°. A cruel reminder that winter is still with us and the shirt-sleeve weather is still months away. This is the perfect time to work on those aircraft projects that have been sitting in your closet all year long. Or maybe it's time to pull out that Nitro engine that's been sitting in the garage for 10 years and give it a good cleaning. In any case, spring is just around the corner, and good flying weather will be here soon. Get ready for a great year of events and flying at our field.

At our last membership meeting we had four impressive technical presentations. Tom Foster and his modified T-Rex 700E, Bob Gizzie with a collection of great electronics from HobbyKing.com, Jeff Bohrer with the scratch-built fiberglass fuselage and internal workings of an F11F Tiger, and Paul Geders PowerPoint presentation on how to properly clean a glow engine. The business portion of the meeting finished in about 35 minutes. The technical presentations ran until it was time for us to leave the building, just before 9 PM. During this time, in addition to watching the presentations, I was looking at the reactions of the membership as the presentations were being made. What I saw was a group that was thoroughly interested in every one of the presentations. Jeff won the \$20 in Mark Twain Hobby Center gift cards, but everyone in attendance was a winner because of the quality of information presented by these members.

If you haven't been to a membership meeting lately, come to the next one and bring your current project or some interesting RC part that you found in your garage. You could be the next technical presentation winner.

MEETING MINUTES:

January 11, 2012

By Walt Wilson

Members signed in: 32 members and guests were present.

Announcements:

Spirits' Awards: Certificates of recognition for their accomplishments in 2011 were awarded to:

Dave Brown and Gary Graul, for their hard work in repairing cracks in the runway and pits, refurbishing the starting tables, and field maintenance in general.

Tom Foster, for running two money-making helicopter Fun-Flys, and being one of the organizers for the

Open House, which also provided income for the club.

Tom Foster was voted "Member of The Year", by the Board Of Directors, for going above and beyond in running the installation of the new pavilion roof and his many other contributions to the Spirits.

New Member Prospect:

Bob Stephens 314-680-5300

Bob was welcomed to the club if he chooses to join.

Ages On Applications: It was noted that the inclusion of members' ages on applications is for club statistical use only and any information included on the applications will not be sold or revealed outside of the club. Rosters are never published on our web site or the internet.

Secretary's Report: *Walt Wilson, Secretary.* Paul Geders noted that the 2.4 Ghz antenna location discussion last month was primarily about transmitters, not receivers as noted in the minutes. The minutes were accepted as published in last month's Flight Lines.

Treasurer's Report: *Bill Lindewirth, Treasurer.* The Treasurer's Report was accepted as presented.

Field Report: *Gary Graul, Field Chairman,* was out of town. The field is in good condition and has seen frequent use with the recent warm weather. It was noted that some members are still allowing spilled fuel to get on the asphalt, even though concrete pads have been installed to hold the planes while refueling and starting engines. *Always keep your engine over the concrete pads when fueling and use a 'catch bottle' for overflow.*

Membership Report: We had 87 paid-up members at meeting time. At press time, we have 99 members. We are 21 members ahead of last year at this time.

Safety Report: *Duane Youngman, Safety Chairman,* was not present. Typically, on electric-powered aircraft, it is necessary to remove a hatch or cover and plug in the battery, then replace the hatch while the motor is "armed" and capable of running. Many accidents, some with serious injuries, have happened when a motor started unexpectedly when the battery was plugged-in. It was noted that "Arming Switches" are now available from <http://SmartRC.com> so batteries can be plugged-in in advance and the system is not powered-up until activated by adding a jumper plug. Flyers of electric-powered aircraft are encouraged to make use of these "Arming Switches". (Continued on the next page)

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Activities Report: Tom Foster, Contest/Event Chairman. The activities Schedule for 2012 was approved as shown on the back page of this newsletter.

Flight training Program: Gary Pyles, Chief Instructor, is updating guidelines for flight training instructors. He noted that Introductory Instructors must be registered with the AMA for sufficient insurance coverage of themselves and students. Introductory flights, such as with the Boy Scouts and at Open House, will be with club-owned, or instructors' own planes, and will be one flight only for each student. Ongoing instruction is to be with student-owned planes, fuel, and other supplies.

AMA Registered Introductory Instructors Needed: The Spirits will pay the \$5.00 fee to AMA for members who volunteer to be Introductory Instructors. This will include those who give ground instruction as well as flight instruction. This provides AMA insurance coverage for both the instructors and non-AMA member students, for up to 60 days of instruction, if proper paperwork is filed. If you have any desire to help others learn to fly, this is a great opportunity to do it safely.

OLD BUSINESS: P-39 Airacobra To Be Auctioned At February Meeting:



WALT WILSON PHOTOS

The last plane built by the late John Rawlings will be auctioned at the February meeting, with all proceeds going to the Spirits' training program. The minimum starting bid will be \$50.00 with additional bids to be in \$5.00 increments. Full payment, by cash or check, is due at the end of the auction. The Airacobra was extensively described, on page 6 of last month's Flight Lines. The wingspan is 63-1/4". The January Flight Lines and color photos are available on our web site at:

<http://www.spiritsofstl.com/newsletter/newsletter.html>

The engine, spinner, and prop shown in the photos are not included in the auction or donation to the club.

NEW BUSINESS: None Presented.

Meeting Activity: Four members brought items to show and discuss. See the photos for details.

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Tom Foster's T-Rex helicopter was crashed by a guest aerobatic pilot at the Open House. After purchasing more than \$500.00 worth of replacement parts, Tom modified it to lighten it and improve aerobatic performance.



Bob Gizzie discussed the Orange 9-channel 2.4 Ghz receiver he purchased from HobbyKing.com for \$23.00. He also has a 6-channel Orange Receiver, that sells for \$6.00 and works beautifully. It can be improved by the addition of a satellite receiver, for another \$12.00, but has presented no problems without it. Both receivers work with a Spektrum transmitter. Similar receivers are available for Futaba transmitters. He also showed electric retracts, available for \$7.00 each!

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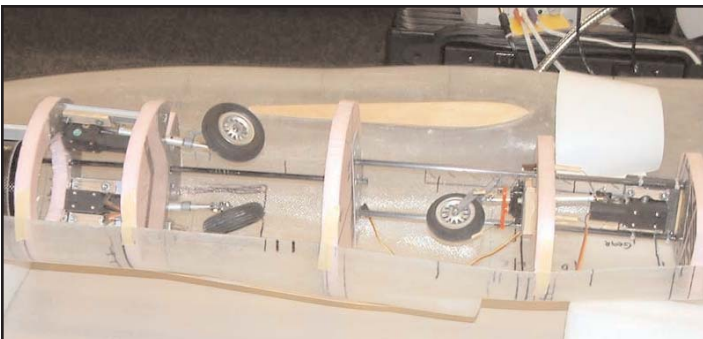
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Bob Gizzie's complete radio system with the Orange 9-channel receiver.



Jeff Bohrer shows the port side of the fiberglass fuselage he designed and formed for his scratch-built Grumman F11F Tiger electric ducted fan jet.



Layout of formers and retracted landing gear in the F11F

Best Presentation: Jeff Bohrer was awarded the \$20.00 Mark Twain Hobby Center gift card for giving the best presentation, as voted by the members present.

Meeting was adjourned at 8:50 P.M.

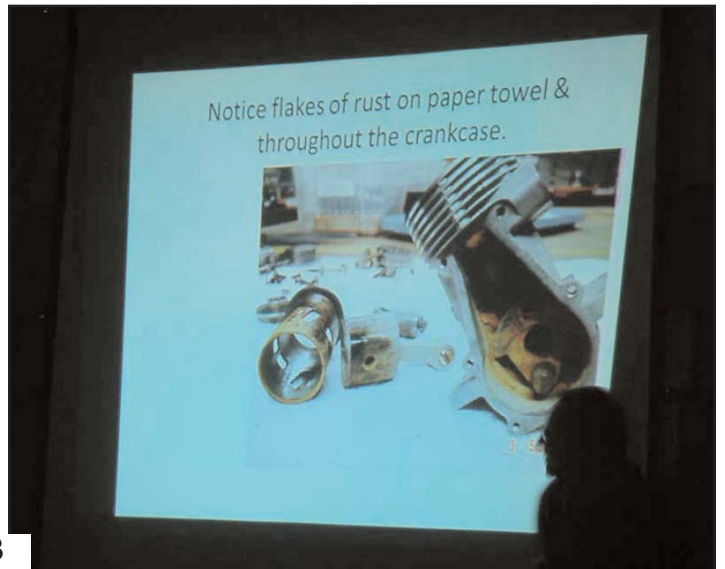
MEMBERSHIP RENEWALS

By Ralph Doyle, Membership Chairman.

Dues: It is important that the remaining members who plan to renew for 2012 get their dues in to our Membership Chairman as soon as possible. It has been noted that a number of last year's members have not renewed their AMA membership for 2012. **Anyone who does not have AMA membership for 2012 is not to fly at our field until they get it. They are not covered by AMA insurance and put themselves and the club at risk.**



(Above and below) Paul Geders gave a presentation on the restoration of a very rusty Fox .50. The presentation is included in this newsletter, starting on page 4

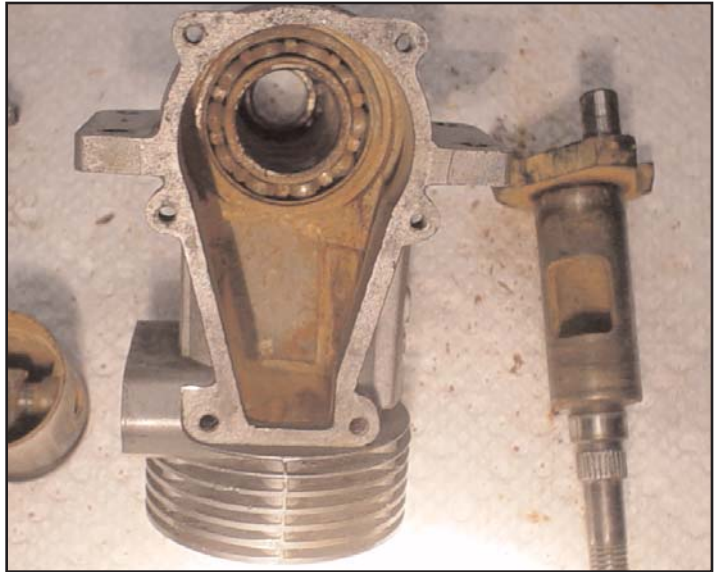


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Engine Cleaning 101:

By Paul Geders

Babe Raab had a Fox .50 that hadn't been properly cleaned out and oiled when last run. He asked me to see if I could salvage it for him. I used the following procedure. Before soaking in acetone, look for any "O" rings, or other rubber parts, and remove them. On this engine there were none. After soaking in acetone for several hours, then removing the head and back plate, the following corrosion was revealed. Acetone removes all the oil residues and leaves you with the real corrosion condition. The head button was leaking as evidenced by the amount of residue between the head and crankcase.



All steel parts are rusted. Obviously, the bearings need to be replaced.



Wow! Notice flakes of rust on paper towel & throughout the crankcase.



Some of the wire brushes used to clean it up. To get most of the rust off the steel parts, I used a bench grinder with a 7" stiff wire brush wheel. A drill press was used with some of the smaller drill type brushes to clean bore of crankshaft, carburetor barrel, etc.



The crankcase had to be heated to get the sleeve out. The piston ring was seized on one side of the piston ring groove.

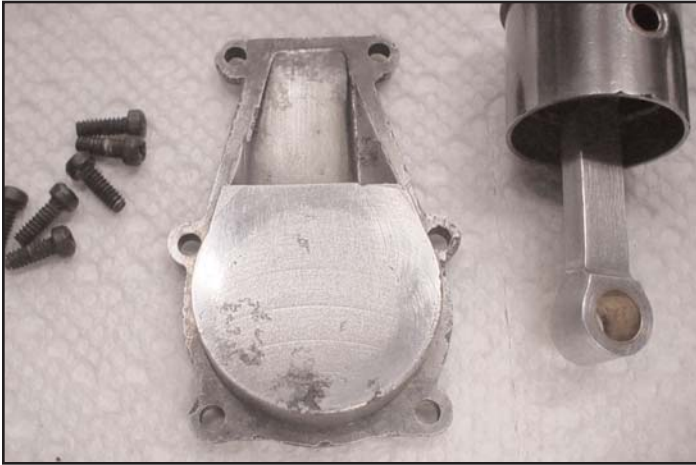


The carb barrel was frozen and had to be heated to disassemble. All parts were cleaned and reassembled, then flow checked.

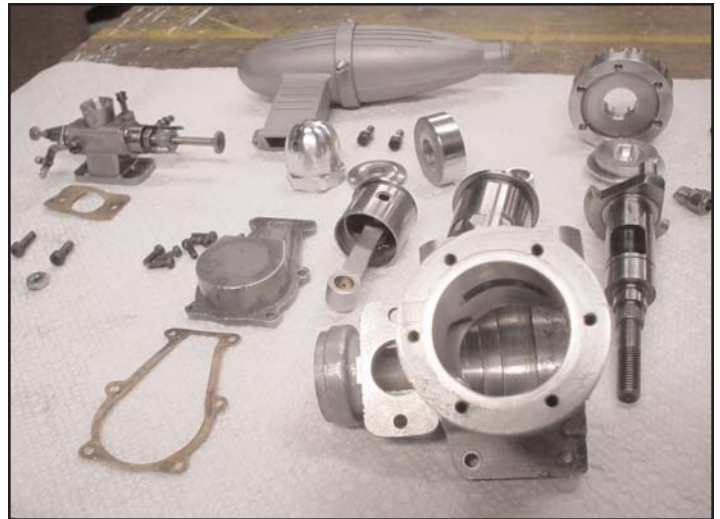
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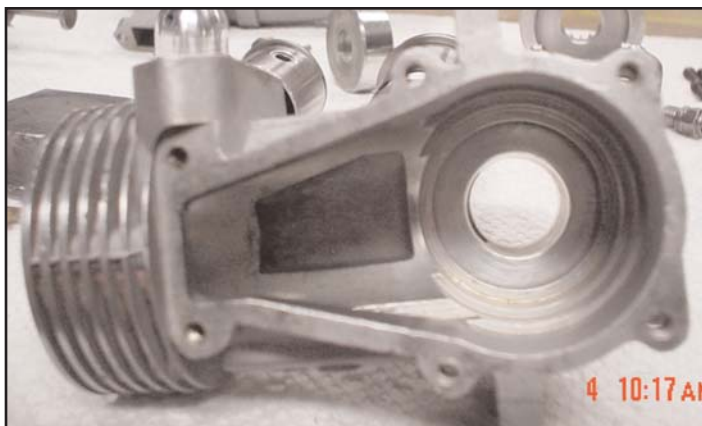
The back plate/cover had some material eaten away as well as the bottom edge of the piston.



All threads were cleaned and re-tapped and the screws and glow plug were cleaned up. The engine is ready for reassembly when bearings are received.



After rust removal and polishing. 600 wet-n-dry sandpaper with ATF was used to polish the sleeve inside and out, and the crankshaft. I used a 3" cloth buffing wheel and jewelers rouge on both steel and aluminum parts.



PAUL GEDERS PHOTOS



Additional cleaning and polishing materials. Automatic Transmission Fluid is in the Marvel Oil can. Brillo pads are used to polish aluminum initially, followed by Blue Magic Metal Polish Cream. Soft Scrub is used with water and a toothbrush on the outside of the engine before disassembly. I also used a buffing wheel and jewelers rouge

(Left) The crankcase is a little cleaner and ready for new bearings.

Results/Analysis:

After reassembly, I ran the engine using Omega 15% castor oil-based fuel. Temperature was 51 degrees. I started with the largest diameter and highest pitch prop that would normally be used with an engine of this displacement and worked my way down in size. All props were Master Airscrew.

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These are the maximum RPM's observed, and usually dropped to about 50 to 100 less when stabilized.

Dia./Pitch	R.P.M.	Difference
11 X 7.5	11,434	----
11 X 6	12,148	714
10 X 7	13,721	1,573
10 X 6	14,137	416
9 X 8	14,429	292



WALT WILSON PHOTO

Inspection, after running, revealed a bad piston ring which attributes to low compression. The corrosion put "pock marks" in the piston ring. Low compression also affected the transition from idle to full throttle. The engine would load up and quit if the throttle was transitioned too fast. A new piston ring (part. no. 50145, from Fox, at \$7.15 plus postage.) was installed and top RPM's went from 14,137 to 15,030 with improved throttle response. The carburetor is set, but a typical Fox wobbly high end needle valve does not make it easy to get a steady setting. Possibly installing an insert in the carb, to choke it down, may further improve transitions from idle to full throttle.

Carburetor Notes From Fayetteville, NC R/C Club: We feel the engine is actually a bit over-carbureted with the MKX-C carburetor when using the most practical size propellers for most applications, a 10-7 or 11-6. This can result in an overly rich mid-range and slow, slobbery, throttle response. I feel the slightly smaller MKX-B size carb is a better choice for the .50 in most applications. The mid-range is much better, and there is no rpm loss except when trying to spin smaller props that are really not practical for the .50 anyway.

Fox .50BB Specifications:

Bore: .906
Stroke: .790
Disp: .501
Weight: 12oz. (without muffler)
RPM: 14,500 with 10-6

Introduced in the mid-80's, the Fox .50BB came about by increasing the bore of the .45 to equal that of the Eagle .60. The .50 even uses the same ring as the .60 although the piston is different. This was generally a good engine and one of our favorites, the only real problem being related to the design of the head button. It was designed during a period of time when Duke was obsessed with making his engines run well on FAI (no-nitro) fuel. The design of the head button, with its extra-wide squish band and small combustion chamber, reflects this and the compression was often too high for friendly operation on typical nitro sport fuels. Earlier engines in particular tended to run hot, could be finicky to adjust and would sometimes flameout during throttle transitions. Some engines would detonate severely making a noticeable "rattling" noise that was often mistaken for airframe vibration. There were three head button versions, that we know of, and the severity of problems will depend upon the version you have, nitro content, prop. size and the elevation of your flying site.

The Last Word

By Walt Wilson

I want to thank Paul for his great article on cleaning and repairing the Fox .50. Hopefully, most of us will be careful to run our engines dry of fuel, then add Automatic Transmission Fluid (ATF), or another suitable after-run oil, after each flying session. Fuels containing castor oil will usually leave oil deposits in the engine, even when run dry. Over an extended period of time, the oil may congeal and cause the engine to turn stiffly or lock up, even with the addition of after-run oil. A few drops of acetone, or lacquer thinner, in the carburetor and exhaust stack will usually free the engine up. If the engine turns freely, it'll usually run as well as before without a major tear-down. The castor oil deposits provide a share of protection from corrosion, but to be safe, always run 'em dry then oil them up. It's a shame to ruin a good engine for lack of care!

Be sure to attend the February meeting and offer a bid on the P-39 Airacobra pictured on page 2. All proceeds from this auction will be donated to the Spirits' training program to purchase equipment and supplies. It's a worthwhile cause. Many of you readers were introduced to Radio-Controlled flight and trained to fly by Spirits' instructors. You can attest to the quality of instruction and the dedication of their efforts on your behalf.

Real winter weather is here! Time to go to the 'Man Cave'!

Gotta go build!



SPIRITS OF ST. LOUIS R/C FLYING CLUB, INC. MEMBERSHIP APPLICATION



FOR YEAR _____
(PLEASE FILL IN YEAR ABOVE)

PLEASE PRINT CLEARLY!

Name: _____

Address: _____

City: _____

State: _____ Zip: _____ Phone: _____

AMA No.: _____ Age: _____

Your e-mail address: _____

Additional Family Members:

Name: AMA #	Name: AMA #	Name: AMA #
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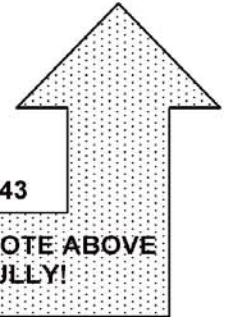
NOTE: ANY MEMBER WHO ALLOWS THEIR MEMBERSHIP TO LAPSE BEYOND THE END OF THE MARCH MEETING OF ANY YEAR SHALL BE CONSIDERED A NEW MEMBER WHEN RENEWING THEIR MEMBERSHIP. SOURCE: ARTICLE 7 SECTIONS 1 THRU 4, CLUB BYLAWS. DUES ARE PAYABLE NO LATER THAN THE JANUARY CLUB MEETING.

To become a new member or renew your membership, please do the following:

1. Fill in the above information, even if this is a renewal.
2. Photocopy this application with valid AMA license of each flying member in the spaces below.
3. Make out a check payable to SPIRITS OF ST. LOUIS R/C FLYING CLUB, INC. (**NO CASH PLEASE**)
4. Send completed application and check to the membership chairperson: →→→→→

Membership Chairperson

Ralph Doyle
2463 Wesington Dr.
Maryland Heights, MO 63043
314-878-7914



If you apply at a club meeting, be sure to have all three of the above items. Meetings are held on the second Wednesday of each month, 7:00 p.m., at the Bridgeton Trails County Library Branch, 3455 McKelvey Rd.

Note: New Members shall be introduced in person OR, by their sponsor, to the club before joining. This allows new members to join the club, even though their schedule doesn't allow them to attend club meetings. New members who join in August or September will pay \$10.00 each for August and/or September, and will also pay next year's dues and initiation fee at the same time. New members who join on/after October 1st pay only the annual membership amount and the initiation fee, but get the next year and the end of the current year included. Junior members pay no initiation fee and \$2.50 each for August and/or September!

MEMBERSHIP AGREEMENT:

I agree to abide by the SAFETY RULES and CONSTITUTION & BY-LAWS of the SPIRITS OF ST. LOUIS R/C FLYING CLUB, INC.

Signature Date: _____

Family Member Signature Date: _____

Membership rejected if not signed and dated, or AMA card NOT VALID FOR YEAR APPLIED FOR!

Spirits Web-site Address is: <http://spiritsofstl.com>

Place AMA card here when photocopying

Place AMA card here when photocopying

AMA "Introductory Membership" Program NOT VALID for membership to our club!

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2012 SPIRITS CONTEST AND EVENTS SCHEDULE

Date	Contest/Event	Contest/Event Director	Notes
April 28	Four-Star 40/Warbirds	Paul Geders	Field Open for General Flying Until 10:00 or 10:30 A.M.
May 5	Tailgate Swap Meet at Field	Steve O'Conner	
May 19	Scale Fly-In	Curt Milster	Field is Open for General Flying
June 9	Scout Day	Les Richman/ Steve Cross	Field is Open for General Flying
June 23	Helicopter Fun Fly	Tom Foster	All Day Event
July 21	Four-Star 40/Warbirds	Ralph Doyle	Field Open for General Flying Until 10:00 or 10:30 A.M.
Aug 4	Electric Fly-In	Bohrer Bros./ Chris Nenzel	Field Open for General Flying After 2:00 P.M.
September 8	Four-Star 40/Warbirds	Steve Cross	Field Open for General Flying Until 10:00 or 10:30 A.M.
September 12	Meeting at Field	Bill Lindewirth	Member Appreciation Dinner
September 22	Helicopter Fun Fly	Tom Foster	All Day Event
September 29	Open House	Committee	



FLIGHT LINES

Walt Wilson
3000 Persimmon Drive
St. Charles, MO 63301-0131

www.spiritsofstl.com

**Meeting is on
Wednesday,
February 8,
at 7:00 P.M.**