

**JAYHAWK MODEL MASTERS NEWSLETTER**

132 Florida Street Lawrence, Kansas 66044

**PRESIDENT/TREASURER**  
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913/843-8623

**VICE PRESIDENT**  
Dave Plamann  
913/842-1837

**SECRETARY/EDITOR**  
Tom Puckett  
913/841-5889



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Darrel Cordle  
913/749-4146

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913/843-7395

Chuck Hardman  
913/843-0733

Bill McCollum  
913/843-1315

**A . M . A . CHARTER #2013**

**ISSUE DATE: January 5, 1990**

**NEXT MEETING: January 20, 1990; ALL-SEASONS MOTEL; 8:30 a.m.**

**MEETING MINUTES  
DECEMBER 16, 1989**

Richard Ballard called the meeting to order. The Treasurer's Report showed a balance of \$940.56. Richard stated that the Club had sent a fruit basket and flowers to the Corps of Engineers for the Holidays.

The subscription to Model Aviation for the Lawrence High School and Public Library has expired. Richard asked for a vote for renewal of subscription. Bill Elkins made a motion for renewal, and Larry Wise seconded it. The motion carried.

A letter from the Corps regarding clean-up at the Lake (see attached letter) was sent to Richard.

Dave Plamann brought up that he plans to attend Fun Flies in the area to bring their prizes to Lawrence. If anyone is interested in participating with Dave, give him a call. Larry Wise suggested checking ACE equipment for calibration. Ron Griffin brought up the Club going on a C-130 Tanker (see article on page 4). Brett Bennett brought up the article in Model

Aviation concerning NiCad batteries (see article on page 6).

The drawing for the Door Prize (ACE Digi-pace was won by Bill Elkins. Door prizes were discussed, and it was decided to continue with them for a while.

We would like to welcome New Member Gary Heiserman. The meeting was adjourned.

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**A T T E N T I O N !**

**I'm sure most of us do not think about paying dues until Spring when we start flying. Please think about your dues now! Please make it a point to fill out the enclosed dues form and send it to Richard today. Thanks.**

**FOX .74 TEST  
PG. 5**

1990 TENTATIVE MEETING DATES

January 20  
February 17  
March 17  
April 21  
May 19  
June 16  
July 21  
August 18  
September 15  
October 20  
November 17  
December 15

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**WILL SHOW AT JANUARY MEETING**  
Note - ACE R/C battery tape

We have the new ACE R/C video tape "Battery Basics" available for loan from the club "tape library." Contact Bill Elkins (842-3925) if you would like to borrow it for viewing.

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**JANUARY RAFFLE PRIZE**

The January 20th meeting Door Prize Raffle will be for an ACE R/C "Voltmaster" ESV (Expanded Scale Voltmeter). Tickets will be sold during the meeting at 50 cents each (or 3 for a dollar!). Get yours early by being there for breakfast by 8:30 a.m. and get lucky!

See ya there!

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**FOR SALE:** Thunder Tiger Sweet Stik (looks like a low-wing Big Stik). Requires 30 to 40 size engine. Assembled, but needs covering. Would make a good Fun-Fly airplane. Price negotiable. Contact Dave Plamann.

**FOR SALE:** SIG Kougat. Assembled and covered. Requires 40 to 50 size engine. Good plane for intermediate skill development. \$75.00 Contact Tom Puckett.

PIG PEN POST-SCRIPT

The Lawrence-to-Topeka flight turned out to be a very valuable learning experience in several areas. We now have a better understanding of battery, engine, prop, and airframe performance. Some of the lessons learned are applicable to everyday use and we want to share these with you.

Transmitter batteries

Two transmitters were used during the flight. Both were on the same frequency and were trimmed to fly the plane the same. The radios were a Futaba FGK-7 and FGK-6. Preliminary testing indicated that the FGK-7 could operate no longer than two hours at most before the voltage reached a dangerously low level. (See chart.)

During discharge testing the built-in meter was checked for accuracy and found to be slightly optimistic. If it were used as an indication of remaining battery power you would be in trouble about 15 minutes before the needle reached the red zone. (Flyaway or crash.) Once this was learned, it could be used to monitor battery condition during the flight as long as no decision was based on the red danger zone!

By using two transmitters and fast field charger, unlimited flight time is possible.

Flight Pack Battery

The flight was made using an SR Batteries 1200 ma pack. This pack tested at slightly over 1400 ma capacity. During 1:45 minute flight, the voltage came off peak charge but most likely would have continued to power the aircraft radio for several more hours.

Since then I have built a new pack using Sanyo 1700-SCR cells. This pack tests at well over 1800 ma and is the same size and weight as the 1200 SR pack. In theory it should operate the three-channel flight pack for more than 8 hours if necessary!

Engine

The flight was made using a well broken-in (read worn-out) O.S. FP-20 engine. Pre-

flight tests indicated a 4 min./oz. fuel burn rate. This would allow slightly over two hours flight time on the 34 ozs. of fuel available. The front bushing on this engine was well worn and allowed a lot of fuel blow-by which reduced fuel economy quite a bit. Engine failures during the flight has been traced to poor fuel suction due to engine wear.

The engine has now been replaced with an O.S. FSR.25 ABC with very little time on it. We also added a Perry pump running on crankcase pressure to insure consistent engine runs as long as fuel is available.

We have gained almost 2,000 RPM with the same prop which made full-load take-offs much less exciting! A 27 minute test flight resulted in using only 4 oz. of fuel which will now allow 3.8 hours of flight time. Better performance with almost double the fuel economy seems to make a good case for a high-performance engine in this application.

#### Props

Early on it was decided to use a plastic/nylon prop for better flywheel effect at low RPM. Testing indicated the

Graupner 10/4 gave the best performance and cruise speed with the FP-20 engine. We are now experimenting with a 10/5 Graupner on the .25 FSR which should provide the same cruise speed at a lower RPM (resulting in even better fuel economy). If this prop provides sufficient power for take-off at maximum weight, we may stretch flight time to 4 hours or more!

#### Aircraft

The Comet Clipper proved to be an ideal aircraft in that it is very stable, is able to carry the extra weight of fuel and batteries, and also flies slow enough to keep up with en-route. Once trimmed out and flying, very little pilot input is needed, which helps a lot while flying from the back of a pick-up truck.

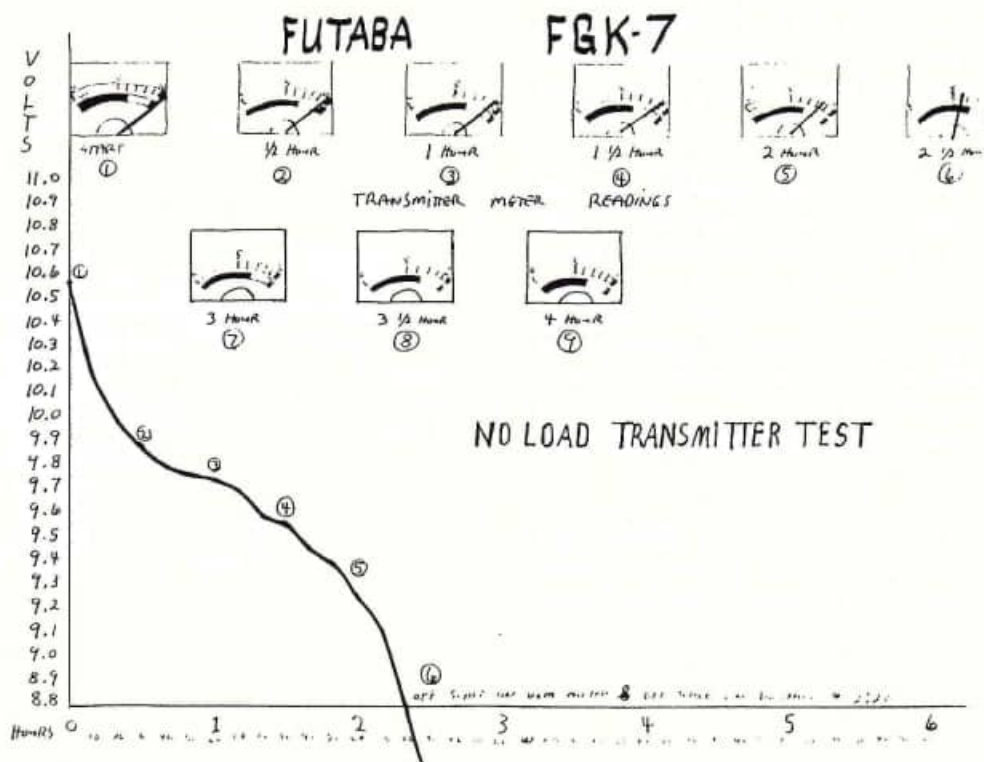
#### Conclusion

We feel the present set-up will be good for 4 hours (100 miles) or more given ideal wind conditions.

Plans are now to try a duration flight at our field before attempting another cross-country flight. Come on out and help fly it, but you better bring your lunch!

FLY SAFE!

RLB



## C-130 TANKER REFUELING FLIGHT

Ron Griffin brought up during the December meeting the possibility of the club being able to go on a refueling mission aboard a C-130 Tanker. If approved, we will be able to roam the airplane and watch the pilot and boom operator refuel jet aircraft in flight. On previous missions, the spectators have been able to fly the refueling boom after they have refueled the aircraft. They can also talk to the pilots and visit the cockpit during flight. If interested, send a postcard or call Ron Griffin with your name, address, social security number, and date of birth because you will have to pass a security check.

Ron Griffin  
Rural Route 2, Box 252A  
Lawrence, Kansas 66046  
913/843-7943

Sounds like it could be informative as well as fun for the Club.

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### WATCH THAT WEIGHT!!!

You hear so much about building light, well, what about this! Two hunters flew deep into Canada for elk hunting. Their pilot, seeing they had bagged six elk, told them the plane could carry only four out. "But the plane that carried us out last year was exactly like this one," the hunters protested! "The horsepower was the same, the weather was similar, and we had six elk then."

Hearing this, the pilot reluctantly agreed to try. They loaded up and took off, but sure enough, there was insufficient power to climb out of the valley with all that weight and they crashed. As they stumbled from the wreckage, one hunter asked the other if he knew where they were. "Not sure," said the second, "but I think we are about two miles from where we crashed last year."

(The above was borrowed from the ARCS Fly Paper (Greater Pittsburgh Aero Radio Control Society of Pittsburgh, Pennsylvania).

## KCRC SWAP & SHOP

Date: January 13, 1990 (Saturday)  
Time: 8:00 a.m. - 5:00 p.m.  
Place: Blue Springs Civic Center - 1/4 mile south of I-70 between Woods Chapel Road and Hwy. 7 in Blue Springs, Missouri.  
Admission: \$2.00  
Terms: Table Space = \$10.00 for 1/2 table, \$20.00 for full table.  
Concessions: Stand open from 8:00 a.m. till CLOSE. Coffee, doughnuts, hot dogs, soft drinks, ETC.

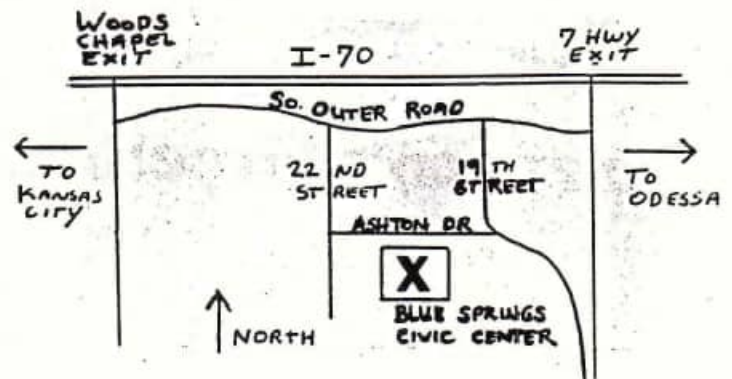
New format this year should result in a better situation for sellers (and buyers). KCRC is not going to ask for a percentage of your profits this year. Instead, they plan to make their money only off of table rental. Sales reporting to KCRC will not be used this year as in the past. This only leaves the state of Missouri tax agents to deal with, so you can let your conscience be your guide!

Also, there will be no auction this year to allow more time to haggle and plot over the tables!

Sounds like a major improvement on an already high-point of the year's events put on by KCRC. Plan to attend this year!

For more information call:

Bob Williams  
(816) 524-7158



## FOX EAGLE-4 .74 TEST

At long last the wait is over! FOX EAGLE-4 engines are being shipped now, and according to Fox, the AMA coupon orders are being filled first!

Tom Puckett received his engine on 12-15-89, and on 12-17-89 we had it bolted to my test stand and ran what may have been the first tests outside the Fox factory. The results of these tests leave little doubt that the long wait was worth it!

The weather was a little on the cold side, so we didn't spend a lot of time hovering over a hot needle valve setting! The tests were run in short order, and I would expect the engine to only get stronger with more carb adjusting and break-in time. Outside air temperature was only at 20+, degrees so we expected to have problems getting the new Fox started the first time. We needn't have worried!

The only problem we had was that my Sullivan starter wouldn't turn the sucker over! This engine HAS GOT SOME COMPRESSION! One or two hand-flip starts were the order of the day after the first cold start-up.

It was interesting to note that the new Fox Eagle-4 was also 3 oz. lighter than the Super Tiger .61. Weights w/mufflers are as follows:

Super Tiger S-61 = 24 oz.

FOX EAGLE-4 .74 = 21 oz.

(Almost a 1/4 lb. lighter than the Super Tiger!)

As a comparison check we ran the almost new Super Tiger S-61 with the same props. The results follow:

As you can see, the new Fox Eagle-4 (with no break-in time) is easily turning 200-700 more RPM than the Super Tiger S-61 engine. It is also lighter by almost a quarter of a pound which can only result in better performance in the air.

As stated before, we think this new Fox will only get stronger and more user friendly with better weather and more break-in time.

Ya should a bought one for 80 bucks (with 6 free glow plugs) last year!!

FLY SAFE!

RLB

PROP SIZE & MAKE	S.T. S-61 ENGINE	FOX .74 ENGINE	RPM DIFFERENCE
11-7 Master Airscrew	12,100	12,600	+500
11-7 1/2 JZ	11,700	12,400	+700
11-8 Top Flight	11,000	11,200*	+200*
11 1/2-7 1/2 Deci-Ban	11,100	11,500	+400
12-6 Rev-Up	11,400	11,900	+500
12-6 Grish Tornado	11,500	12,100	+600

(\* = We think we errored on this one due to cold fingers and brains!)



**UNDERSTANDING NICAD'S STORY**  
**January 1990 Model Aviation (Page 158)**

Perhaps one of the best articles I have ever seen in print concerning NiCad batteries was hidden on page 158 of the January 1990 Model Aviation magazine. I would have missed it, except that Brett Bennett brought it to everyone's attention at the December 16 meeting.

I suggest you find this story and read it carefully. Then read it again! If you ever have a battery related crash after following the recommended procedures, you just haven't been living right!

I must admit I do not totally agree with what is said about "trickle-charging." I think "Dr. Chan" is correct concerning "fast charging" but I'm not so sure about "trickle charging." At any rate, it's

nice to be able to go flying at any time knowing your batteries haven't "self-discharged" to a dangerously low level just setting around. "Trickle charging" allows this, whether good or bad.

Again, find the story on page 158 and read it. It's the best I've seen so far!

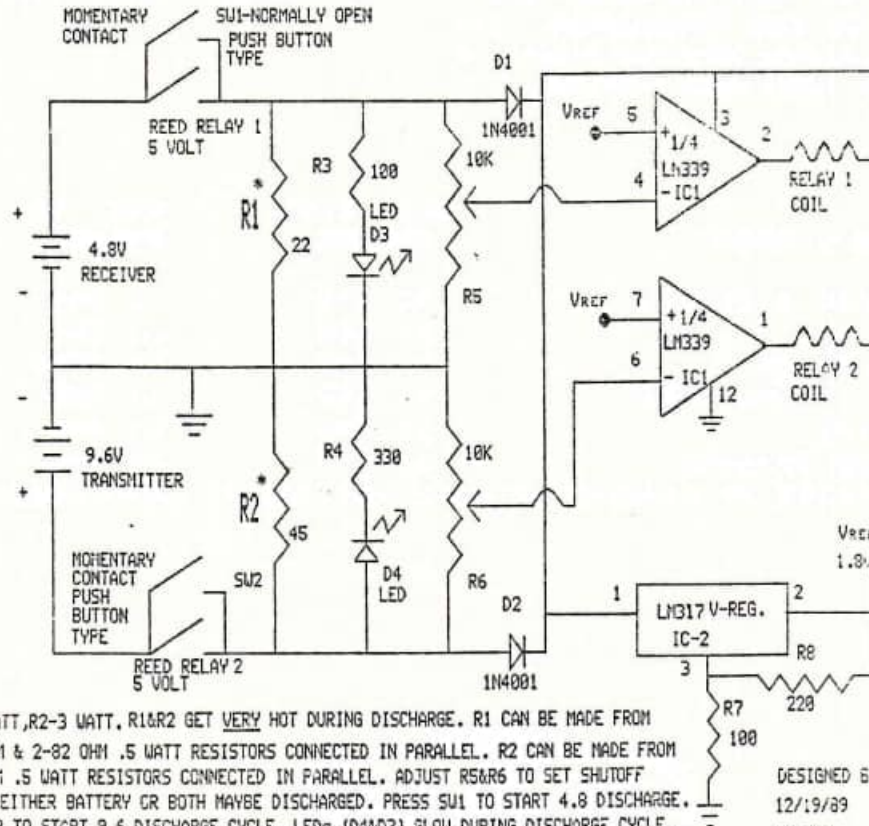
RLB

**'DUAL SIMPLE CYCLER' FOR NICADS**

Brett Bennett was inspired to design this 'Dual Simple Cyclier' for NiCads because of a comment made by 'Doc' Wise at the last meeting. It's easy to build and calibrate, with the aid of a digital voltmeter and variable bench supply, and all the parts are available from Radio Shack. Brett will be bringing the prototype to the January meeting.

**DUAL SIMPLE CYCLER**

By BRETT BENNETT



\*R1-2 WATT, R2-3 WATT, R1&R2 GET VERY HOT DURING DISCHARGE. R1 CAN BE MADE FROM 2-100 OHM & 2-82 OHM .5 WATT RESISTORS CONNECTED IN PARALLEL. R2 CAN BE MADE FROM 1-270 OHM .5 WATT RESISTORS CONNECTED IN PARALLEL. ADJUST R5&R6 TO SET SHUTOFF VOLTAGE. EITHER BATTERY OR BOTH MAYBE DISCHARGED. PRESS SW1 TO START 4.8 DISCHARGE. PRESS SW2 TO START 9.6 DISCHARGE CYCLE. LEDs (D4&D3) GLOW DURING DISCHARGE CYCLE. ALL PARTS AVAIL. AT RADIO SHACK. BATTERY CAPACITY APPROX = 3.75 x MINUTES. IN mAh. R5,R6 15 TURN POT. R3-R8 .25 OR .5 WATT. USE HEAVY WIRE BETWEEN BATTERY & LOAD RESISTOR.

DESIGNED BY E  
 12/19/89  
 TESTED  
 12/19/89



DEPARTMENT OF THE ARMY  
CLINTON PROJECT OFFICE, CORPS OF ENGINEERS  
ROUTE 1, BOX 120G  
LAWRENCE, KANSAS 66044

REPLY TO  
ATTENTION OF:

Richard Ballard  
Jayhawk Model Masters, Inc.  
134 Florida  
Lawrence, Kansas 66044

December 12, 1989

Dear Mr. Ballard,

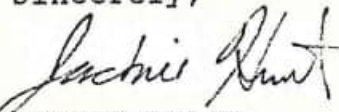
Clinton Lake receives nearly 1.5 million visitors each year. Evidence of heavy public use around the lake is left behind in the form of empty cups, cans, bottles, and other unsightly trash and debris.

I am requesting a representative from your organization to attend a 2:00 p.m., January 30, 1990, meeting to be held at the Clinton Lake Ranger Office, (see attached map for location).

The purpose of this meeting is to form a Clinton Lake Cleanup Committee. I would like for you and others to serve on this committee to exchange valuable information on ideas and resources to help make the 7th annual Cleanup a success. This is also an opportunity to keep the Jayhawk Model Masters informed on the "Take Pride in America" Clinton Lake Cleanup.

Whether you are interested in this committee or not, I would appreciate a response from your organization. My address is Route 1, Box 120 G, Lawrence, Kansas 66044, telephone (913) 843-7665. Please feel free to call me if you need further information.

Thank you for your time and response.

Sincerely,  
  
JACKIE HURST  
Park Ranger

DATE: 12-14-89

TO: Jackie Hurst, Clinton Lake Park Ranger

FROM: Richard L. Ballard, President, Jayhawk Model Masters

SUBJECT: Lake clean-up meeting



Dear Ms. Hurst

Thank you for including our organization in the planning stages of the 1990 Clinton Lake Clean-up. We are well aware of the problems you face with litter as we share this problem with you. Our club spends many hours each year picking up trash and litter in & around our lease area, road ditches, and public parking area. We also spend a sizable amount of money for trash removal services on an on-going basis.

It is our feeling that a very large percentage of this trash is not generated by our club but rather by the general public. Anything we can do on a large scale to help address this problem can only help us on a smaller scale at our flying field.

We are looking forward to attending your meeting on Jan. 30th.

Yours Truly

Richard L. Ballard

*Richard L. Ballard*

132 Florida

Lawrence KS

66044

**PLEASE PAY  
YOUR 1990 CLUB  
DUES NOW !!!!!**





JAYHAWK MODELMASTERS  
A.M.A. CLUB #2013  
1990 MEMBERSHIP APPLICATION



(PLEASE PRINT)  
YOU MUST BELONG TO A.M.A. BEFORE JOINING THE CLUB

FULL NAME-----  
ADDRESS-----  
CITY----- STATE----- ZIP CODE-----  
PHONE #-----  
A.M.A.#-----BIRTHDAY-----/-----/-----  
M D Y

I AGREE TO ABIDE BY CLUB SAFETY RULES AND DECISIONS OF ELECTED OFFICERS.

SIGNED-----

DUES=\$25.00 ANNUAL / \$37.50 FAMILY (CHILDREN UNDER 16) / \$5.00 NEWSLETTER ONLY / \$15.00 CLUB BOOSTER (Non-Flying Membership)

MAIL DUES TOO: JAYHAWK MODELMASTERS  
132 FLORIDA  
LAWRENCE KS.  
66044



NOTICE: LIABILITY INSURANCE IS REQUIRED TO FLY AT THE CLINTON LAKE R/C FIELD

JAYHAWK MODEL MASTERS INC.

1990 RELEASE AND WAIVER OF LIABILITY AGREEMENT

In consideration of my and/or my children, guests, or other persons participation in club or field activity, hereby, for myself, my heirs, my executors and or administrators, waive any and all rights and claims for damages I may have against the JAYHAWK MODEL MASTERS CLUB, and any individuals elected or appointed to act as representatives of the JAYHAWK MODEL MASTERS CLUB, the U.S.ARMY CORP OF ENGINEERS, or their representatives.

Also, none of the above are responsible for the loss of personal items nor any other form of aggravation in connection with club or field activities.

I recognize that there may be potential hazards in this activity.

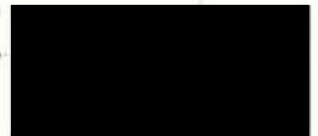
In filling out this form, I acknowledge I have read and fully understand my own liability and do accept the restrictions.

FULL NAME-----  
(PLEASE PRINT)

SIGNATURE-----

SIGNATURE OF PARENT OR GUARDIAN (IF UNDER 18)-----

DATE-----



LATE BREAKING NEWS: JAYHAWK MODEL MASTERS NEWSLETTER  
PUBLISHES FIRST TEST REPORT ON NEW FOX .74 ENGINE.