Holly Cloud Hoppers Official Newsletter

Silver Lining

http://cloudhoppers.rcclubs.com *Spring 2004*

Be safe, have fun and don't have too many rules!

From The Editor

By Scott Rhoades

Another flying season is underway. The grass is green. The trees have sprouted their leaves and I have a ton of things on my R/C wish list. The top two wishes are "don't crash" and "get a ton of flying in before old man winter comes again". Only time will tell if I've been living right and my wishes will be granted. So far, so good. *Knock on wood!*

In early April I came across a message on the Internet. A fella and his buddy were looking to visit various flying fields throughout the great state of Michigan. Immediately, I sent an e-mail invitation for them to visit the *HCH*. They accepted my invite and requested a visit date of April 24th. As hard as I tried, they didn't want to come a week earlier for the field prep party. Who could blame them? Mike and Troy are members of the **Kent Radio Aero-Modelers, KRAM,** located just southeast of Grand Rapids. Since they missed our work party, I guess they decided it was only proper to miss the KRAM work party too, to spend the better part of an afternoon flying at our humble field. Unfortunately, Mike and Troy never got to fully experience what I kept bragging about, that we've got the friendliest group modelers around because only three other *HCH* members came out that afternoon. Thought for sure with it being such a nice day more people would show, but it never happened. I tend to believe many of you had your priorities screwed up doing yard work. Troy easily passed the initiation of becoming a full-fledged *HCH* member by crashing on his first and only flight. He almost had me convinced he was either the best or luckiest pilot I've ever met. Troy went down in a spectacular fashion by getting too close to the trees at the east end of the field on the north side. The wing tip of his Shrike barely caught a branch, which swung the plane around in a 360 then kept flying. For a moment I thought he was going to put it on the runway like nothing happened but the Shrike is one fast airplane with a landing speed equal to the top speed of a good trainer. Coupling the speed with the fact that the plane was now missing a wing tip and one of the twin vertical stabs, made it very unstable. So the plane piled up just before the end of the runway. Until Troy crashed, I was about to kick him and Mike both out on their arses for breaking the number one rule for visitors, **Don't fly better than us**! Mike still kept pushing his luck and he knew the rule but since he's a fellow newsletter editor and hockey comrade, I assumed from personal experience that he couldn't have all his faculties about him so I cut him some slack. It was nice flying and shooting the bull with these guys. They were very friendly and we, in turn, were extended an invitation to fly at their field sometime. Here is their web page, if other members are interested. http://kram.corpcomp.com, just e-mail Mike at mhofert6875@chartermi.net.

Just in case you have not read your last couple issues of Model Aviation or you missed the AMA safety committee's recent warning about the hazards of Lithium batteries, I'm going to discuss that issue now. Lithium batteries, more specifically *Lithium Polymer* or Li-Po (not to be confused with *Liposuction,* a fat vacuuming procedure done by plastic surgeons) have been known to erupt into an intense ball of flame creating a massive mushroom cloud if you look at the pack cross-eyed. Ok, saying I paraphrased the AMA warning would be bit of an understatement, so I used some artistic licensing for drama to get your attention. The truth is, these batteries have the potential to be dangerous personally and have resulted in the loss of property for modelers. So, if you have an interest in this new technology, be sure to completely understand the hazards involved and proceed with caution.

Events for 2004

- ***Fun Fly -*** June 19th 10:00 am
- ***Inter Club Fun Fly–*** May 16th
  Skymasters Field Lake Orion, MI
- ***Crossroads Village -*** July 10th & 11th
  11:00 am to 5:30 pm each day
- ***Open House -*** August 7th 12:00 noon
- ***Last Bash Potluck -*** Sept. 25th 4:00 pm
- ***Chili Fly-In -*** Jan 1st (2005) 11:00 am

From the President

By Ed Kincer

Good news, the weather is good enough for flying. Bad news, the weather is good enough for the grass to grow. Several members have commented that the field looks the best it ever has for early spring, so we might expect the grass to grow faster than it ever has. As in the past, each of us should try to work on mowing detail at least once this summer.

To aid our grass mowing details, we have a new weed wacker that should be more dependable and easier to use than our old unit. We'll store it in the large shed. A 1-gallon container of fuel mix can be found in the small shed. Since the engine is 2-cycle, make sure you use fuel with a 40:1 gasoline/oil mixture.

A 3-man crew can mow and trim the grass quickly. One guy on the small tractor working in the parking area and the flight line, one on the large tractor doing the runway and one on the weed wacker. Note, if you have not yet used the large Ford tractor, see Ken, Frank or Chuck for safe operating instructions before using it for the first time.

Now a word about the Fun Flies. That's right, plural, as in more than one Fun Fly this year. We will have our club's Fun Fly on Saturday, June 19th. In addition, the *HCH* Fun Fly Team will participate in friendly competition with other SE Michigan clubs in an Inter-Club Fun Fly. The first Inter-Club meet is on Sunday, May 16th at Skymasters field on Scripps Rd in Auburn Hills. Expect more Inter-Club meets throughout the summer, perhaps even at our field.

Details for our club fun fly will be available soon and will be posted at the field and on the web. Expect the events to be very similar to last year.

We still need more *HCH* pilots to participate at Skymasters. Each pilot will fly one or two events similar to the events held at our own fun fly. You can see a full list of events on the web or posted at the field. Events have been selected so that pilots of all skill levels can participate. Contact Ed Kincer or Jim Shipman and let them know if you can fly with the team.

Happy flying (and mowing)!

Classifieds

Free Cannon Copier

The club currently has a Canon copier, model # 1520. The copier was given to the club several years ago but was used very little. It is now no longer used at all. It is available to any club member at no charge or to others that a member may be aware of. Also be aware that it is in poor condition in terms of copy quality and ability to feed paper properly. However, with some work it could probably once again serve a useful purpose. We have made a quick check on EBay and found no call for it there so if there is no interest within the club, we will be disposing of it.

Contact Club Seceteray/Treasurer, Larry Pittman At 810-750-0047 If you are interested.

For Sale Stihl weed trimmer.

This is the weed trimmer that has been retired from use at the field. Not much was known at the time of printing about this trimmer other than it's a Stihl, which is a very good brand name.

Runs but needs some work, hard to start. The price is **$35** and if you are interested please contact Ed Kincer or Larry Pittman.

Club logo Shirts and Hats

These Items can still be ordered with either the Extra 300 or Hoppy logo. Time is running out to get items before the Crossroads village event and the club open house. You can use the order from in the Winter 04 newsletter or Contact Scott Rhoades. See editor info page 5.

Fuel Facts

By Don Nix

Don Nix, founder and former owner of *Powermaster fuel,* has graciously granted permission for me to reprint this and four other articles written by him. In his series of articles Mr. Nix expertly dispels myths and provides straight facts about glow fuel. Mr. Nix also invited club members to contact him at FLYERDON@aol.com with any questions about glow fuel that he says… *" answer to the best of my ability."* If you do have a question for Mr. Nix please wait until you've read ALL the articles in the series. This is the first article of the series.

What's the Oil Content?

Fact (A) - It's quite likely that no other single facet of modeling generates as many myths, misconceptions, misunderstandings, errors (and more than a few lies), or as much outlandish goofiness as model fuel, one of our absolutely necessary, non-optional items for powered flight.

Fact (B) - Of all the above, the one fact that rouses the most questions – and without doubt the most wrong answers - is the ongoing nonsense about the amount of oil required in model fuel.

Myth: Model Glow Fuel *must* contain XX% oil to operate properly, perform well and protect the engine.

Fact: There is no such fixed number or at least not a valid one.

Why not? Think about it: In order for this to be true, all oils used in model fuel - *all of them* - would have to be identical in every characteristic. Does anyone honestly believe they are? I doubt it.

While lubricants compounded for full-size engines - automotive, recreational vehicle or aircraft - are rarely, if ever, suitable for use in model engines (for many reasons), nevertheless, there are a number of base lubricants that are available for our highly specialized use. However, most of these must be modified slightly or extensively by the use of a variety of additives and modifiers.

While Klotz model oils are perhaps the most well-known to the average user, and are quite good, they are by no means the only lubricants available to model fuel blenders, and there are currently a number in use. Each has its own "personality" - its own set of technical specifications and characteristics.

At this point, we should point out that we're speaking of the so-called "synthetic oils" popularly used in modern model fuels. Castor oil, the oil of choice, and, indeed, the *only* suitable model engine oil for many years, is more of a common and known factor. Assuming a good grade, if a fuel uses only castor as its lubricant, then we *could* give you a fixed percentage, at least for the various engine groups and types.

However, few model fuels intended for R/C use today contain only castor oil as the lubricant. For the purposes of this discussion, we will only deal with fuels containing either straight synthetics, or a blend of castor and synthetics.

So, what does all that mean?

Let's draw a little picture here: Suppose at some point in your life, you become concerned about living a long and healthy life, so you decide to consult a doctor for advice as to how to accomplish this. When you come to the subject of food, you say, "Well, tell me, Doctor, if I wanna still be healthy and virile at 90, how do I eat?" The good doctor replies, "M'boy, if you will eat two pounds of food a day, you'll be fine!"

My guess is your response would be something like, "well, what *kind* of food, Doc? After all, no two are exactly alike, is that two pounds of lettuce or two pounds of pork chops?" If he replied, "It doesn't matter. Just as long as you eat that two pounds every day, you'll probably outlive your kids." My bet is that you'd run, not walk, out of that quack's office!

Why, then do we blindly follow someone's Word From On High when they say (in words engraved on stone tablets), ***Thou shalt use no fuel that does not contain XX% oil."*** It makes absolutely no sense to me, nor do I think it will to you, if you just stop to think about it. All foods are different; so are oils.

If that's true, why do the instructions with my engine specify a fixed percentage of oil? Simple - to protect themselves. All engine

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manufacturers have been burned (figuratively and literally) in recent years by "bargain priced" fuels containing either inferior oils, or insufficient amounts of oils. Every one that I've talked to will admit off the record that they know that fuels containing *good* oils won't need as much as their instructions say. But they also say they know they have no control over that, so they are going to print a high number, in hopes that amount of even a cheap oil will be sufficient. Frequently, it isn't.

So why not just put a lot of oil - at least 20% or more - in fuel and not worry about it? A lot of reasons, all good ones. For example:

1. Too much oil - any more than is necessary - makes the engine run really crappy. Think about it: methanol burns; oil doesn't - or at least it *shouldn't.* (Some do, but that will be dealt with in another installment.) Common sense would tell us that the less oil (nonburnable) we can safely use (to an irreducible minimum point, of course), the more methanol (burnable) we will have in our combustion chamber. More burnable ingredients = more power. One well-known magazine writer, with more than 50 years engine experience, tells me that in his experience, for every 1% oil removed from model fuel, the effect is about the same as adding 1% nitromethane. And it costs a lot less!

2. By the same logic, the less oil we use (to the predetermined minimum, of course), the less the oil is going to be dousing the glow plug element, and we should be able to achieve a lower, smoother idle.

3. Next to nitromethane, oil is the most expensive ingredient in model fuel. By not using an unnecessary amount of oil, especially if it's just to satisfy some Great Guru's edict, the manufacturer can keep the cost of the fuel down, which puts a smile on all modelers' faces. Remember that even an additional 25 cents in manufacturing cost translates to an additional dollar or more at the retail level.

So, what is the right amount?

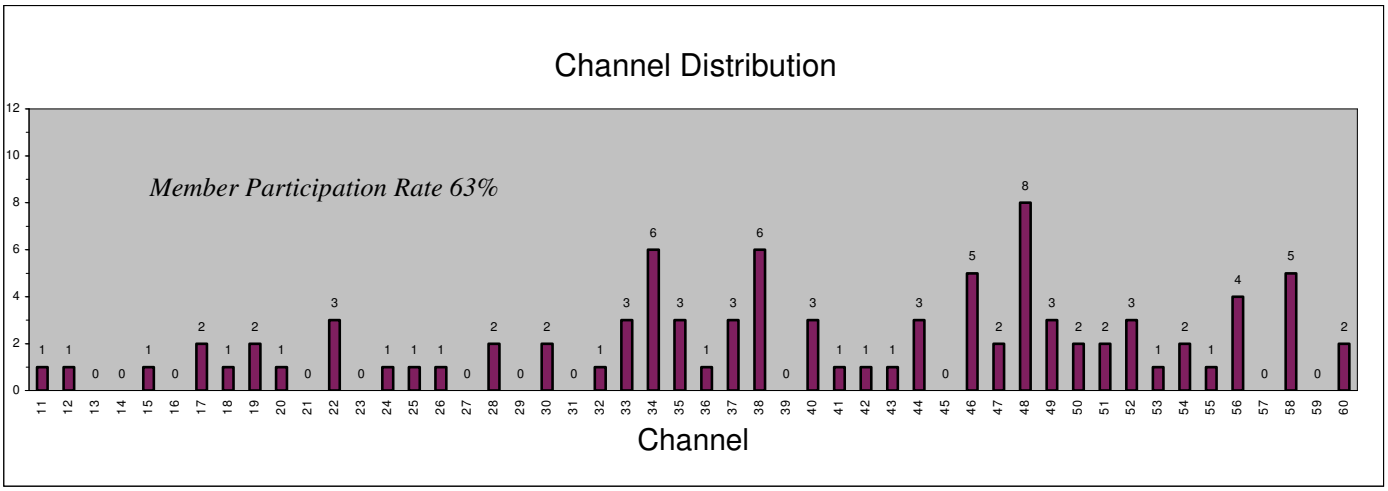
It all depends on, what kind of oils, in what combinations, with what additives, etc. And for what use? Sport airplanes, Racing, Helicopters, Boats, Cars, Ducted Fan? What size engines? (As engine size increases, they need progressively less oil. Why? Simple mathematics. Surface area of the combustion chamber increases at about half the rate as the displacement increases.) Most people know that the big T.O.C. and Unlimited racing engines use oil in the 4% to 5% range.

Ducted fan and helicopter engines typically need more oil, 4-strokers less. It might be surprising to most airplane flyers to know that top competition model car engines use fuel with oil contents in the single digits, even though they are turning in the 40,000 - 50,000 rpm range, and have no fan in front to cool them! As matter of fact, they will hardly run on regular airplane fuel.

Next installment: **Synthetic or Castor oil, which is best?**

This article is reprinted with the express written consent of Don Nix for use in the HCH Silver lining newsletter.

Frequency Distribution



Battery Cycler Calibration

By Scott Rhoades

If you use a Hobbico Accu-Cycle, there is a very good chance that it is not calibrated correctly. I, personally, have recalibrated two units and NUMEROUS modelers on the Internet report the same trouble. What does this mean? Well, the unit will give you false milliamp hour (mAh) readings of your battery packs. (*Those not familiar with milliamps and cycling can find some good information on the web at sites such as www.rcbatteryclinic.com or www.radicalrc.com)* For those that own and rely on a battery cycler to determine battery capacity, I recommend reading the following, especially if you use the Accu-Cycle or Accu-Cycle plus.

The battery pack could very likely be discharging at a rate different than what the mAh is being calculated by the unit. In the case of my own Accu-Cycle unit, the actual discharge on the 250 setting was actually 280 mA. So the pack was being discharged at a higher rate, giving me a mAh capacity reading that was much lower than actual, falsely indicating that my packs were bad. The opposite can be true also. A pack that is only being discharged at 230 mA will indicate a pack has better mAh capacity than it actually does. Either way, this is not good.

So, how do you know if your battery cycler is giving you reliable mAh numbers? It just takes a multi-meter and a couple minutes. Here's how:

1) Get a multi-meter and set it to measure DC current.
2) Start with a fully charged transmitter battery and hook up the Accu-Cycle. Red lead to the red port, black lead to the black port on the transmitter side of the unit, of course.
3) Now connect the multi-meter in series with the battery. To do this, disconnect the black lead and put the red probe from the multi-meter into the black port. Now connect the black lead to the black probe, just hold or tape them together. The multi-meter is now connected in series.
4) Set the discharge rate switch to 250 mA and start discharging the battery. The actual discharge rate will show up on the multi-meter.

If the reading on your multi-meter is not exactly 250 mA you have problems. But don't despair. If you own the Hobbico Accu-Cycle or Accu-Cycle Plus, they can be calibrated. Here's how:

1) Open up the Accu-Cycle by removing the screws at the back of the unit, Locate the transmitter and receiver potentiometers (pots). These are the only two items on the circuit board that have a slot to accept a Philips screwdriver for adjustment. **Danger: use extreme caution. Electrical shock is possible working inside of one of these units because it is connected to 110v. If you cannot confidently work with 110v, DO NOT attempt service. Send it to the manufacturer!**
2) This is the tricky part, since you need to balance the disassembled unit so that you can reach the inner workings of the unit for adjustment on one side AND have your battery hooked up with the multi-meter connected in series as described on the other.
3) Now with battery and meter connected, use a Philips screwdriver and turn one of the pots. If the reading on the multi-meter doesn't change, you're adjusting the receiver pot, go to the other. As you turn it you will see the multi-meter numbers change. Just keep adjusting until you get exactly 250.
4) Now that you're done with the transmitter side, it is time to adjust the receiver side. Repeat all of the same steps except use a receiver battery and set the cell selector switch to one cell. This is done because of a potential drop across the multi-meter when it's connected in series and will keep the unit from going into charge mode.
5) You're done. Put the unit back together. Top off the charge of the batteries you used to calibrate with and now you will get true mAh readings at the end of a discharge.

Additional note: One Accu-Cycle Plus unit that I attempted to calibrate did not have enough adjustment in the pot for it to get to 250 mA. This may happen to you and there is not much that you can do, other than send it to Hobbico for adjustment. Everybody with a battery cycler should test their unit for reliable numbers using the top four steps. As for adjustment with other units, I cannot provide any insight.

2004 HCH Club Officers

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Holly Cloud Hoppers

Radio Control Flying Club

AMA Charter club #3117

HCH Member

Flying Field located on Mackey Rd. 1/4 mile south of Grange Hall near I-75 Holly, MI

GPS location N42 48.596 W83 34.342

Visitors always welcome!