U S U A FLYING CLUB 1 NEWSLETTER

April 1988

FROM THE LEFT SEAT

by Paul McCLung

My initial feeling was that I would have to beg off this month's column on account of "writer's block", but there are a few thoughts percolating that I can pass along.

First, it looks like Spring has finally sprung, and it's time to think about the new flying season. What shape's the field in? Are people out flying yet? Stuff like that. Well, people aren't out flying yet, and it's probably because the field isn't in great shape yet. There's been a fair amount of rain, the runways are soft and there are some ruts and trash around that make ground handling not the best. We're planning a work day in April and I hope a lot of you will come out to refurbish this most important asset to our Club's activities. The field needs grading, seeding and rolling. Some work needs to be done to help promote drainage away from the hangars. There is the regular need for housecleaning. The population at Whitman Strip is ever-increasing. So is the trash. A number of you have expressed an interest in getting some of this work done. Please call me so that we can get as much planned as possible. If we can get the necessary arrangements made, with a decent turnout on the work day, we'll set Whitman Strip up for an entire season of happy flying.

The Club's new patches are promised for early April, in fact, for the sixth of April. But as with such promises, I can't absolutely guarantee that I'll have them in time for the meeting. If I show up at the meeting without them, and the maintenance of your image at work simply demands that you have one as early as possible, let me know after the meeting and I'll get one to you in the mail as soon as I have them.

USUA has acquired a number of manufacturer's videos which it is making available to USUA clubs at no charge. I'm trying to get one of them in time for the April meeting. Again, no guarantees, but if I'm successful, we'll have some ultralight footage to entertain us when the business is done.

Fly Safely!

* * * * *

ADVISORIES

Please welcome new members George Andrews, of Great Falls, Va., and Jerry Sieger.

This is the last public call for dues. If you have not paid your 1988 dues (a princely $15.00), this is the last copy of the newsletter you will receive. Check your mailing label. If a dollar sign appears by your name, we think you haven't paid up. Not to say that mistakes haven't been made, but, please, get those dues mailed in or telephone us to bewail our mistake. If you just need a few months off from the burden of reading the NEWSLETTER, by all means don't pay for a month or two. When you finally do pay, you will start getting it again.

Your attention is called to the schedule. There are three things

(ADVISORIES, cont.)
there of interest to the flying membership: two marvelous cross-country opportunities and a work day for "Spring cleaning" at Whitman Strip. The cross-countries are: the EAA 186 Luncheon flight to Sky Bryce, Va. and the EAA 186 Spring Fly-in at Winchester. There is a column devoted to the Winchester affair later in this newsletter, so no more on that here. The Sky Bryce flight is worthy of consideration by experienced cross-country pilots. It involves a fairly long flight over two mountain ranges with a refueling at Luray Caverns Airport. There's a nice restaurant at Sky Bryce and there will doubtless be some pilots from EAA 186 to share it with.

The Spring Cleaning day at Whitman Strip will be dedicated to whatever improvements we can arrange for by then as well as general clean-up of accumulated trash. Those of us who are taking advantage of Whitman Strip know that it is a "do-it-yourself" airport. So plan to get out and "do it"!

WINCHESTER FLY-IN

by Rob Brooke

The first scheduled event of the Club's year will transpire on the last day of April, and it is a major event. The twice-yearly EAA 186 Fly-ins at Winchester Municipal Airport provide our club pilots with a great outlet for aeronautical enthusiasm.

First, the flight to Winchester from Whitman Strip is a fine way to inaugurate the flying season. Forty-seven miles one way, it is within easy range of any ultralight. If the weather is good, a number of Club pilots will be making the trip, which makes it a good tag-along trip for inexperienced pilots. It includes good sight-seeing and a mild mountain crossing through the Route 50 gap in the Blue Ridge mountains. Emergency landing opportunities abound, so the trip should not be daunting for anyone.

Once at Winchester Airport, the wise ultralight pilot will use his knowledge of the special ultralight takeoff and landing patterns which are made clear by the chart and rules which are included with this issue of the NEWSLETTER. Once on the ground, the other attractive aspects of this destination become apparent.

This fly-in attracts a lot of interesting aircraft and pilots. The EAA shelters a lot of flying interests: home-builts, antiques, warbirds, classics as well as a number of interesting GA aircraft. Some representative aircraft in all those categories are usually to be found at this fly-in. There are, in addition, souvenir booths, a pancake breakfast and presentations on safety, home-building, RC modelling or other topics of interest.

Now to the specifics of USUA #1's participation. Since I am still planeless, I very cagily volunteered to be "Tour Director" for this event. Here's the schedule:

April 30 - Takeoff from Whitman Strip for Winchester, 9:30 AM sharp.

Buy-your-own lunch at Fly-in.

Free flying during the afternoon and evening around Winchester.

Cookout supper at the Airport at the ultralight camping area.

May 1 - Pancake breakfast provided by EAA 186. Eye-opener coffee at the ultralight campsite.

Free flying during the morning at Winchester.

Takeoff for return flight to Whitman Strip after lunch.

Those who can take advantage of the entire weekend should make campout preparations in advance. I will be at Whitman Strip by 8:30 AM on

(WINCHESTER FLY-IN, cont.)
April 30 with my doughty VW bus. I will be able to transport all your paraphernalia with no difficulty. Should this turn into a mass migration, a McClung vehicle will also be making the trip, so even more transport will be available. I will be bringing two tents, one a two-person backpack tent, the other a fairly sizable igloo-type which will sleep four. I will also bring along a gas can or two for fuel mixing. I will be prepared to transport your spare 2-cycle oil, tie-downs and whatever other flight necessities you need in Winchester.

As for meals, lunch on Saturday and Sunday can be had at booths at the Fly-in. Breakfast on Sunday is available at a Pancake Breakfast provided by EAA 186. I will have both a propane 2-burner stove and a charcoal grill. For those who are making the weekend and campout, I will provide Saturday evening's meal, the cost to be shared among those who partake. I will also have a cooler or coolers well enough stocked to make the after-dinner hangar talk free-flowing, cost also to be shared. Should anyone wish to make alternative plans for lunch and breakfast, there will be enough cook-power to handle it and we'll make arrangement to transport and store your grub.

Because of the logistics involved in an affair like this, it is important that you make plans in advance to join us. In order that I be able to plan a universally acceptable cuisine, do the shopping and arrange for the necessary equipment, I need to know who is coming. I will likely be on the phone to some of you who I know from years past are interested in such trips. But whether you hear from me or not, if you plan to be there for the weekend, I have to hear from you not later than a week before the takeoff, that is, by April 24.

Call me at home, (301)279-2816. I'll try to answer all your questions and try to find out what you want for supper on Saturday, April 30. I will start running a list of people who want to go as soon as you can let me know, so don't wait until April 24 to make up your mind. Call now!

I have flown to this fly-in at least four times. Last spring was the first time I camped out and spent the whole weekend. Of the four, it was the most fun. However, don't feel you have to spend the whole weekend. If you can't, you can't. But if you can make the flight up Saturday, there will probably be a couple of other like-minded folks who will join you for an afternoon flight back to Whitman Strip (or wherever). Or fly up Sunday morning, see the sights and join the "tent-bunch" for the flight back Sunday afternoon.

GETTING THERE

by Rob Brooke

Last month, we considered the magnetic compass and its abilities to get us started in the right direction and to keep us flying in a straight line. Now let us talk about the last of the "position-fixing" instruments, the altimeter.

Like the compass, an altimeter only does one thing. A compass always points in a fixed direction; an altimeter always tells you how high it is, relative to how high it said it was when you took off. That information can be used in a couple of ways that are important to you as a cross-country pilot. The first is for navigation: it allows you to relate your position above the ground with where you have decided you ought to be. The second is for performance: it helps you discover things about the way your ultra-light flies and what to do to make it fly better.

Making cross-country flights in our part of the country confronts us with three things which make information about altitude important: 1. the height of terrain, particularly mountains; 2. con-

(GETTING THERE, cont.)
trolled airspace, where not flying at the appropriate altitude can make you not just illegal, but downright dangerous; 3. large stretches of terrain inimical to safe landings, should your engine fail.

Since you don't fly blind, it is not so important for you to know you're at a safe altitude above radio towers and other tall objects along your route. You'll always be able to see and avoid such momentary projections. You don't need an altimeter for that. Mountains are another story, however. You cannot rely on flying comfortably over a mountain ridge simply by eyeballing it and clearing the treetops. Any wind blowing at an angle to a ridgeline can cause some large-scale turbulence, which can have a startling effect on your plane's ability to do what you ask of it. Wind blowing across a ridge can produce two forms of turbulence, rotor and wave, which result in large masses of air moving downward faster than your plane's ability to climb. In our sprightly ultralights, when we go to full throttle, we're used to going up like a monkey on a string. Imagine your feeling of helplessness if, in 1000 fpm of sink, you cob the throttle, and still, the ground keeps coming up at you.

If the ridge is steep, the wind strong and at right-angles to the ridge, a rotor can be so strong that all flight stability can be lost if you fly into it. You don't really want to get flipped on your back a few hundred feet above a forested ridge. Your chartwork told you the height of the ridge you intend to cross. You should plan to clear the ridge by 1000' on a mild day, more if it's blowing. Your altimeter will tell you all you need to know for a climb to that altitude well before nearing the ridge.

The airspace in which we fly also abounds with areas where safety and legality require that you know your altitude. The outer rings of TCA's and ARSA's have floors above which an ultralight may not legally (nor safely) fly. Many attractive cross-country flights will dictate a route planned through areas covered by these outer rings. Your altimeter will provide the margin of safety and legality. You could, of course, fly along at 500' AGL, knowing you'd be well below the floor of a TCA. But 500' is not a safe altitude to fly. I would not feel safe flying at 500'over the Potomac River or over some wide stretch of forest. I don't feel comfortable flying at 500' <u>anywhere</u> except in a pattern for landing. No, it's better to be up closer to the floor of the TCA for safety's sake, and the only way to know where that is is with your altimeter.

The other arbitrary altitude which the cross-country pilot needs to know is <u>pattern</u> altitude. Many of your cross-country flights are going to bring you to airports with active traffic patterns. Knowing where you are with respect to the pattern is easy with your altimeter.

The last kind of altitude which may be important to you on your cross-country flight is "safe" altitude. Ordinarily, when over long stretches of open farm country, I choose to fly around 2000'. There's plenty of safety, the view is great and I doubt I am disturbing anyone on the ground. If it's summertime, it's nice and cool; if it's spring or fall, it's not too cold. You don't really need an altimeter for that. You can get the feel of that altitude just by seat of the pants. But if your are going someplace where safety requires substantially higher altitudes (we've already talked about mountains), you need your altimeter. When I crossed the Chesapeake Bay awhile back, I figured I needed 6000' at mid-Bay in order to be able to glide to shore and still have 1000' left to look for a field and set up a landing, engine off. How high is 6000'? What's it look like over

(GETTING THERE, cont.)
water? Only your altimeter knows for sure.

Altimeters always have some means of setting the needle's reading to compensate for variations in atmospheric pressure. I use the adjustment in two ways. If I'm going to be flying locally, I set the altimeter to 0' on the ground. Then my altimeter reads altitude AGL, and I don't have to do any mental arithmetic to get pattern altitude, etc. But if I'm going cross-country, I set the altimeter to field altitude on the ground (at Whitman Strip, that's 225'). Now the altimeter reads altitude MSL. I will have to do mental arithmetic to figure out altitudes AGL for mountains and patterns, but that's easy. Important MSL altitudes like TCA's, etc., can be read without computation.

At the start of this chapter, I mentioned the use of the altimeter to discover some important information about the performance of your airplane. The next chapter will feature the airspeed indicator. Since the airspeed indicator alone does not play such a large role in cross-country navigation, we will mostly explore how the airspeed indicator and altimeter can be used together to provide you with this magic knowledge. Knowing how your airplane behaves <u>does</u> play an important part in successful cross-country pilotage.

CAN'T FLY WITHOUT AIRSPACE!

An Editorial

Imagine this scenario. It's sometime in April, 1991. You've been keeping your ultralight at Whitman Strip for about three years, been putting in time building hangars, keeping the airport a pleasant place to be and fly. Your plane has been hangared the whole time, has been fastidiously maintained and is a wonderful part of your life. Most of your flying has been: around the patch; short cross-countries to T.I.Martin or Orange County, with an annual mind-blower to Winchester or Luray Caverns. You tend to fly around 2000' AGL and would rather give up beer than fly close to a TCA.

It's the first really warm flyable day of what has been a miserable spring, and anyway, you've burnt a little extra time getting the bird in really tip-top shape for the flying season. You roll her out with a touch of pride in how she looks, gas up, preflight and crank the engine. Just the right amount of choke, she starts first pull and the CHT starts working its way up into takeoff country. Choke off, and she settles down to a nice purr.

One of the folks who so often stop their cars to watch when ultralights are flying at Whitman Strip climbs the fence and strolls over as you struggle into helmet, gloves and earplugs.

"Mighty nice looking plane you got there", he says as he gets close enough to be heard, "I sure hope you don't plan to take off."

"Take off? Sure I plan to take off! I don't wear a helmet just to run the engine up!", you shout over the sound of the engine.

"Well", says he, opening his wallet to display a card on which the letters "FAA" are discernible, "unless you have a Mode C transponder in working order on that ultralight, the instant your wheels leave the ground, you will be in violation of the FAR's and subject to an alarmingly high fine. The fact that you will have willfully violated this FAR after this, my warning, may result in the confiscation of your ultralight and the nailing of your foot to the floor!"

It's the truth, if you haven't already heard it. On February 12, 1988, the FAA issued an NPRM for a regulation change which will surround every TCA, ARSA or TRSA by a zone 40 nautical miles in radius

(CAN'T FLY, cont.)
(that's 46 statute miles) extending from the surface to higher than anyone can fly, within which only the birds won't have to have Mode C transponders.

If enacted, this regulation will wipe out legal ultralight flight in our neck of the woods. The result will be one of the following: 1. ultralight flying will simply wither and die; 2. ultralight flying will wither but a few souls will spring for the $1500 for a battery-powered Mode C transponder and the steady diet of batteries it will consume; 3. a new breed of scofflaw ultralight pilot will arise. They will continue to fly in defiance of the law, but always looking over their shoulders, and always worrying about phone calls from stern-voiced strangers which come on days immediately following flying days.

As a matter of fact, the folks in category #2 who add transponders to their ultralights will simply become scofflaws of another sort. Not many modern ultralights can afford the weight penalty imposed by a Mode C transponder and still remain FAR 103-legal. Which law shall you elect to break in order to continue to fly, the new transponder regulation, or FAR 103. You know, if you want to get technical, if your plane is not FAR 103-legal, you violate so many regulations that the mind boggles: no N-numbers, no pilots license, no nothing legal about what you're doing.

It is unknown at this time what the fate of this regulation will be. As is often usual with the FAA, there was an unconscionably short time between the NPRM and the closure of acceptance of comment. In this case, the NPRM was put forward on February 12 and the comment period ended on March 28.

However, the AOPA, the EAA and the general aviation press has been so vociferous (and, for a change, totally united) in universal condemnation of the proposed regulation that the date for comment has been extended to May 12, 1988. It is mortally important to your continued practise of this sport of ours, that you call, wire or write your U.S. Congressman, your two U.S. Senators <u>and</u> the FAA, expressing your serious displeasure with the law. It is important that you contact your U.S. legislators, for it was their doing that gave the impetus to the FAA. Public Law 100-202 and Public Law 100-223, enacted by congress. Both of these are riders attached to money bills, and provide mandate for the FAA to get idiotic about transponders. Whoever the congressmen and senators were who voted for it, they probably didn't even see or understand the riders on the way by.

The address to send your comment to the FAA is:

Federal Aviation Administration
Office of the Chief Counsel
Attn: Rules Docket(AGC-204)
Docket Number 25531
800 Independence Avenue
Washington, DC 20591

Say whatever you want, but stress the inappropriateness of extending positive control to include such huge areas when positive control in the TCA's, ARSA's, etc. is more than the FAA can handle. It is the view of AOPA that the FAA is doing a worse job of control now than in the past. Loading up the controllers even more by the extension of the positive control area to the proposed 92-mile circle will simply add insult to injury.

We have all done some worrying and arguing about USUA's proposal for ultralight regulation change. Some of us are diehard libertarians who see <u>any</u> form of regulation or control as threat. Others feel that a little regulation that we help shape is better than the surprise that Big-Brother may throw at us. Whatever your view about that tempest in a teapot, you should **<u>really</u>** worry about this one and get

(CAN'T FLY, cont.)
yourself off your butt and do something. It is no jab or thrust at ultralight aviation to get your ultralight hackles up about. It very simply presages the death of sport aviation.

Check your sectional chart. Get out a compass or divider and scribe a 92-mile diameter circle around every TCA, ARSA and TRSA in the Washington-Baltimore area. Try and find a place to fly. Cry a lot.

NEW PLANE

by Rob Brooke

Well, March has been a little better than February, but not a whole lot. If your memory serves you correctly, you'll remember the cold rainy weekends that seemed to dominate the month.

In addition, I had to suffer through some minor nose surgery which, while not life-threatening, gave me some really uncomfortable days when airplane-building was the farthest thing from my mind. So scratch a couple of weekends when I didn't even know if the weather was good or not.

But some stuff got done. I have gotten the wings attached to the fuselage and have added all the stuff needed for the wing-fold mechanism. So now the airplane sits in its garage with its wings folded. As well as getting the folding mechanism done, I got the wings rigged in flight attitude and the lift struts finished to proper length. That was a time-consuming procedure. It involved cobbling up supports out of light lumber to support the wings at their tips while I crawled around under and in front of the wings with a 4' spirit level getting the wings level and in line prior to drilling an all-important hole in the attachment tab for each wing. Through this hole goes the clevis pin which holds the wing in position (along with the permanently fastened universal toward the rear of the wing which allows it to be folded).

After drilling the two holes, there remained only to slip in the clevis pins and then raise the wood supports to provide one inch of dihedral at each outboard rib. Once this adjustment was made, I could rig the lift struts in position, cut to length and rivet the steel tang in the end of the strut, thus defining its exact length with the wing held in position by the wooden supports. Sounds simple? It took me the best part of a day to get it right.

After getting the wing set-up right, I then had to install a mechanism toward the rear of the fuselage tube to support the wings in their folded position. For this purpose, a large gusset is riveted to the wing spar near the outboard end whose position must be located on the fuselage tube when the wing is folded. This must be done with the wing folded and raised to its exact folded position. To do this properly, the wing should be supported by blocks to hold it in its exact folded position while the location of the support mechanism is established on the fuselage tube. Well, I didn't do it that way. I swung the wing back, rested it on the ground and marked the location of the mechanism from the back edge of the aforementioned gusset. I then drilled the holes for the support mechanism in the fuselage tube and installed it. OK, now it was time to raise the wings and rivet on the matching part of the support to the wing gussets. Guess what? Half the rivets missed the gussets. Lots of swearing and raving later, I resolve to fix the problem by drilling out all the rivets that hold the gussets and by moving the gussets inboard 3/4" or so to get the rivets enough metal to grab. What a pain. I could have relocated the mechanism in the fuselage, but that would have weakened the fuselage and left a large unsightly hole. I must take the blame for this screw-up. Marking that location properly requires that the wing be raised to

(NEW PLANE, cont.)
its folded position. But, by golly, I sure would have appreciated a warning in the instruction manual about the peril lurking in wait. That screw-up could have been prevented so easily.

The bulkhead which closes off the after part of the cage (just behind the pilot) has now been covered and all the patches which reinforce locations where holes must be cut in it applied. It has been doped and now needs only painting. Then the holes for control cables, seat belts, aileron torque tube and all engine controls/wiring can be cut and all that stuff rigged. I have added behind that cloth bulkhead a light aluminum plate which will support, on the pilot's side of the bulkhead, a sight gauge for the fuel tank - just a piece of fuel line on elbows that runs up the bulkhead in line with the tank and joined to the tank by fuel line into fittings, top and bottom. It will show the level of the fuel in the tank and be visible over my left shoulder.

I have temporarily mounted the small over-the-ankles fiberglass fairing onto the forward end of the front cage. That damned fairing has been the bane of my existence. It just doesn't fit very well. In the process of trying to get it to fit, I have discovered some small inaccuracies in the welding of the forward cage. In any event, I have had to fracture some of the joints in the fairing to get it onto the cage and I am still confronting the fact that the right rudder pedal hits the fairing without a whole lot of travel, maybe not enough for full right rudder excursion. When I get the rudder attached and cabled up, I will make the determination whether I have a problem or not. If there is not enough rudder travel, my only recourse will be to cut the outboard end off the right pedal to give me the clearance I need.

This has been the first time with the kit where I have felt the engineering by Kolb to have been inadequate. In every other case where I have had difficulty, I have brought the problem on myself or the problem could have been traced to a lamentable instruction manual. But this time, the parts simply don't fit well. Accidents of welding alignment or variations in fiberglass lay-up might make this more or less of a problem on other kits. Mine has been a pain! It's going to come out all right, but at the cost of a lot of fiberglass reinforcing and patching, and probably a shortened right rudder pedal.

But it's rolling again. I've gotten the paint from Stits, almost all the instruments are on hand and I have a trailer on order from a trailer company in Gaithersburg. The trailer people are not giving me as nice a price as they estimated, but I will pay it in order to avoid the hassle of constructing it myself. I had to do the design myself or pay even more money. I had some hours of work computing the center of gravity of the airplane and laying out all the trailer dimensions so the right amount of weight would rest on the hitch. I think I've got a good design but I won't know for sure until I get everything aboard and strapped down. At least it will be light weight and relatively low on wind resistance (just the folded airplane). That old "Wonder Bread" trailer I kept my former airplane in was such a barn door, I was in third gear most of the time on the highway.

Next steps: finish off the bulkhead and rig cables and stuff; patch up the fairing and remove it for painting and instrument installation; prime the fuselage tube so it can be painted when covering is complete; give the gas tank a "wet run" with gasoline (to check for leaks before covering the cage); get serious about covering the wings and ailerons; figure out where/how I'm going to do the final painting with Stits UV protect and Aerothane. If that sounds like a lot, it is!

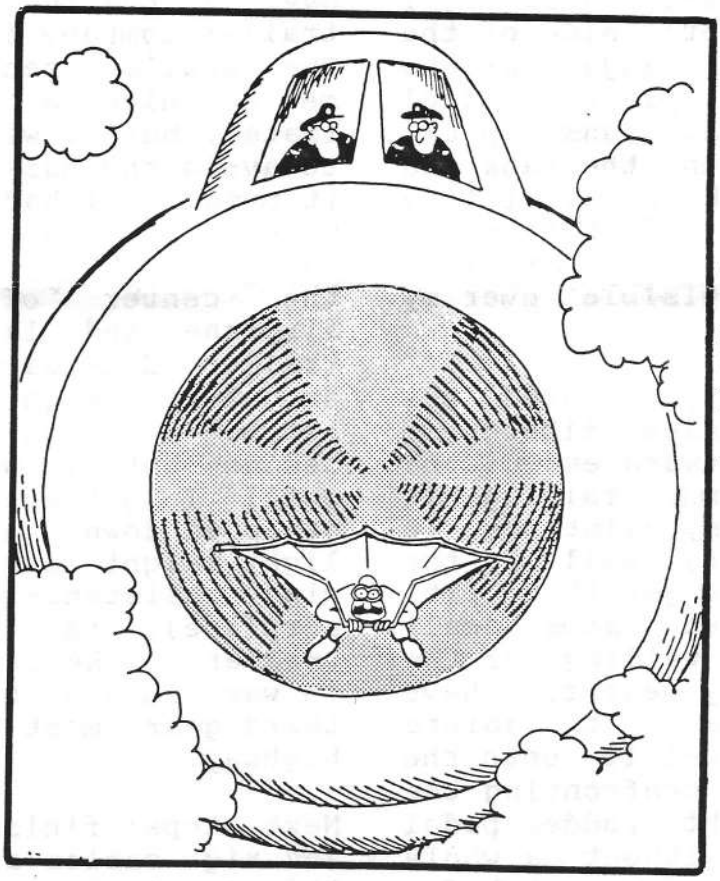
FLIGHT PLAN

Apr 7 - Club Meeting, 7:30 PM.

Apr 23 - Work day at Whitman Strip.
Rain date is April 24.

Apr 24 - EAA 186 Luncheon flight,
Sky Bryce, Va.

Apr 30/May 1 - EAA 186 Spring Fly-
in, Winchester Municipal Airport.



* * * GENERAL INFORMATION * * *

The United States Ultralight Association's Flying Club #1 is a non-profit, educational club dedicated to the sport of recreational ultralight flying.

Meetings are held at 7:30 P.M. on the first Thursday of each month in the auditorium of the Springfield Operations Center of the Washington Gas Light Company, unless stated otherwise in the newsletter. To reach the WGL Center, take the Edsall Road West exit from I-395; turn left at the second light (Industrial Road); continue until the "Y" in the road; bear right and continue until you reach the WGL Center at 6801 Industrial Road on the left.

1988 CHAPTER OFFICERS

PRESIDENT	Paul McClung	703/860-2919
VICE PRESIDENT	Tom Simmons	703/548-7420
SECRETARY	Rob Brooke	301/279-2816
TREASURER	Steve Osten	703/644-5514
NEWSLETTER EDITOR	Rob Brooke	301/279-2816

* * * * * *

*** Members are encouraged to submit items for inclusion in this newsletter. Articles and non-commercial classified ads will be run, space available, free of charge for current members. Commercial ad rates are: full page - $20.00; 1/2 page - $10.00; 1/4 page - $5.50; business card - $3.00.

* * * * * *

MEMBERSHIP APPLICATION Mail to: Rob Brooke USUA Flying Club 1
Dues: $15.00 1809 McAuliffe Drive, Rockville,Md 20851

NAME: _____ DUES INCLUDED: _____

ADDRESS: _____

PHONE H: (___)___-____ W: (___)___-____

UL'S OWNED: _____ USUF#:_____

USUA#: _____ EXAMINER? __ 2-PL?__ EAA#: _____ AOPA#: _____

FAA RATING: _____ DEALER: _____

INTERESTS: _____

_____

Robert B. Chapman
Rt. 1, Box 51AA (Lenah Road)
Aldie, Va. 22001

Robert Brooke, Editor
1809 McAuliffe Drive
Rockville, Md. 20851

THE NEWSLETTER

USUA
FLYING CLUB
#1