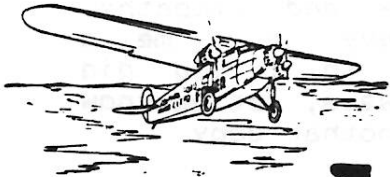


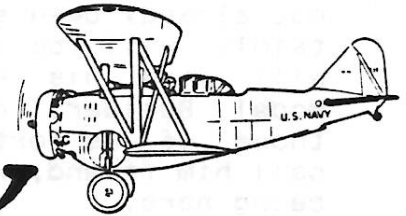
F4B-1 Shipboard-Fighter - 1929



First Transoceanic Aircraft - 1913



Commander Byrd's Fokker



First Retractable Gear - FF-1

MAX - FAX

THE NEWSLETTER OF THE D. C. MAXECUTERS
MAY/JUNE 1990

MEMBERSHIP

Dues for membership in the D.C. MAXECUTERS is \$10 per year for residents of the USA, Canada, & Mexico, and \$11 for all other countries. Your mailing label indicates the last year and month for your current membership. A red X next to the label is a reminder that your current membership has ended. Send a check, payable to the D.C. MAXECUTERS, to the Treasurer.

MEETINGS

The D.C. MAXECUTERS hold meetings on the first Wednesday of every month at the College Park Airport.

PRESIDENT

Bert Phillips
1709 Crofton Parkway
Crofton MD 21114

SECRETARY

Ernie Greene
8103 Falstaff Rd.
McLean Va 22102

TREASURER

Allan Schanzle
2008 Spur Hill Dr.
Gaithersburg MD 20879

UPCOMING EVENTS

- July 13,14,15 : FAC NATS, Geneseo NY
- September 8 : MAXECUTER's Summer Fun Fly, Comsat
- Sunday Evenings: Comsat, followed by a meal at the local Choke 'N Puke

CLUB NEWS

ALLAN SCHANZLE

TAPS

Tom Schmitt

We are saddened to note that three Maxecuters have found the permanent thermal in the heavens which relentlessly seeks out all of us. Pres Baustian, Gene Handler and Walt Mooney will no longer be flying with us and we will miss them.

Pres was a gentle and caring man who took much pleasure from flying and just simply being with us. He was an extremely talented artist with a career as an engineer for the Naval Air Systems Command until his retirement.

Gene was a prodigious collector and builder of models, both aircraft and railroads. Although a relative newcomer to our Club he enjoyed the companionship of our

flying sessions. He was formally a hydrodynamicist with the Naval Air Systems Command.

What can we say about Walt, the Professor of Peanuts, that has not already been said or most certainly will be said? All of us will miss his Peanut parade in Model Builder, but most of all those of us fortunate enough to call him friend, will miss him just being here.

THE EDITOR SCREWS UP, ROYALLY

Boy, did I ever mess up the last issue. When Lindsey Smith sent in the plan for the Macchi M16, he included text that should have been included with the plan. Thanks to my carelessness, I misplaced the text and simply forgot Lindsey had sent it along. So we've included it in this issue. Sorry, Lindsey.

THE P. O. SCREWS UP, ROYALLY

The Post Office must be taking lessons from the editor, because they did a real number on the last issue. At least two of you who paid your dues did not get the last issue. The friendly folks who want a 20% raise in rates managed to rip

two copies in half. Of course, they returned to me the half that didn't have the address, so I have no idea who failed to receive the newsletter. When this was brought to the attention of the P. O., they had lots of sorrow and sympathy, but refused to even give me a replacement stamp. So, if you did not get the last issue, let me know and I'll forward another copy.

THIS ISSUE

Our feature plan for this issue is an interesting and different aircraft by Al Flesher, a model of an American Aerolights Eagle XL. In addition, you'll find the completion of both articles initiated in the last issue. Pat Daily has supplied us with a rather extensive write-up of the results of the first MAXECUTER "Judging School". This event cropped out of an inquire I made some time ago about the judging of FAC scale. If you check the rules, you will find that "Construction and Details" are allotted 0 to 30 points. I asked the simple question, "What would it take to get a "0" in this or the Color and Markings area"? I saw a few raised eyebrows, and heard a lot of silence. So read Pat's article. I agree with his assessment.

PAX RIVER RESULTS 3/10/90

7 GRAM BOSTONIAN

| CONTESTANT | AIRCRAFT | TOTAL BEST TWO FLIGHTS | PLACE |
|----------------|------------------|------------------------|-------|
| Jim Pollard | Pacific Ace | 210 | 2 |
| Doug Buchanan | Boston Wheeler | 150 | - |
| Jerry Paisley | Pumpkin (Pup) | 143 | - |
| Dan Driscoll | Pacific Ace | 167 | - |
| Tom Hallman | Boston Beancraft | 234 | [1] |
| Bud Carson | Boston Bumblebee | 72 | - |
| Ross Summers | Bostard | 105 | - |
| Scott Paisley | 1 | 157 | - |
| Randy Kleinert | Original | 200 | 3 |
| Pat Daily | Pacific Ace | 174 | - |
| Norm Reece | Peck Pup | 56 | - |
| Bill Clark | Boston Bronco | 5 | - |
| Mike Moscow | Bassackwards | 74 | - |

FARQUHAR HIGH SCHOOL

BOSTONIAN

| NAME | AIRCRAFT | BEST TIME (SEC) |
|--------------------|--------------------|-----------------|
| 1. KLEINERT, RANDY | ORIGINAL | 76 |
| 2. BUCHANAN, DOUG | BOSTON WHEELER | 73 |
| 3. PAISLEY, JERRY | ???????? | 65 |
| 4. PAISLEY, SCOTT | BASS ACKWARDS | 56 |
| 5. DAILY, PAT | ARISTOCRAT | 55 |
| 6. DAILY, PAT | PACIFIC ACE | 46 |
| 7. BUCHANAN, DOUG | BACK BAKE BELLANCA | 43 |
| 8. CERESA, BILL | De HALIBUT MOTH | 38 |
| 9. CERESA, BILL | BOSTON BEAN CRAFT | 30 |
| 10. PHILLIPS, BERT | TBA | 15 |

PAX RIVER RESULTS 3/10/90

FAC RUBBER SCALE

| CONTESTANT | AIRCRAFT | STATIC | BONUS | FLIGHT | TOTAL | PLACE |
|-----------------|------------------|--------|-------|--------|-------|-------|
| Paul Spreiregen | Fairchild 24 | 47 | 0 | 57 | 104 | -- |
| Mark Houck | Nieuport 12 | 46 | 15 | 49 | 110 | 3 |
| John Houck | Sperry Messenger | 55 | 15 | 52 | 122 | 2 |
| Pat Daily | Albatros DIII | 56 | 15 | 45 | 116 | -- |
| Pat Daily | Corben Super Ace | 57 | 0 | 76 | 125 | [1] |
| Jim Pollard | PT-19 | 48 | 10 | 31 | 89 | -- |
| Doug Buchanan | Aeronca Defender | 41 | 0 | 54 | 95 | -- |
| Bill Bell | Martin T4M-1 | 56 | 15 | 17 | 88 | -- |
| Bill Bell | Bellanca CF | 57 | 0 | 19 | 76 | -- |
| Marv Yoder | Albatros DV | 51 | 15 | 26 | 92 | -- |
| John Houck | Farman Motoaviet | 48 | 5 | 23 | 76 | -- |

FAC POWER SCALE

| CONTESTANT | AIRCRAFT | STATIC | BONUS | FLIGHT | TOTAL | PLACE |
|-----------------|-------------------|--------|-------|--------|-------|-------|
| Paul Spreiregen | Piper Cub J4 | 42 | 0 | 20 | 62 | 3 |
| Terry Pittman | Pilatus TurboPort | 47 | 0 | 20 | 67 | 2 |
| Bud Carson | Bebe Jodel | 47 | 10 | 35 | 92 | [1] |

COCONUT SCALE

| CONTESTANT | AIRCRAFT | STATIC | FLIGHT | TOTAL | PLACE |
|---------------|---------------------|--------|--------|-------|-------|
| John Houck | Supermarine Sparrow | 21 | 62 | 83 | -- |
| Bud Carson | Wright Air Sedan | 28 | 107 | 135 | [1] |
| Pat Daily | Curtiss Robin | 25 | 107 | 132 | 2 |
| John Houck | Aeronca C-3 | 21 | 62 | 83 | -- |
| Bert Phillips | Taylorcraft | 22 | 74 | 102 | 3 |

PEANUT SCALE MASS LAUNCH

| CONTESTANT | AIRCRAFT | ROUND ELIMINATED | | | | | | PLACE |
|-----------------|----------------|------------------|---|---|---|---|---|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | |
| Dave Rees | Contestor | - | X | - | - | - | - | - |
| Doug Buchanan | Lacey M-10 | - | - | - | X | - | - | 2 |
| Pat Berg | Piper J-5 | X | - | - | - | - | - | - |
| John Houck | Supermarine Sp | X | - | - | - | - | - | - |
| Pat Daily | Renard R-17 | X | - | - | - | - | - | - |
| Jim Pollard | Aristocrat | X | - | - | - | - | - | - |
| Terry Pittman | Heath Super Pa | X | - | - | - | - | - | - |
| Marv Yoder | Wittman Tailw | - | X | - | - | - | - | - |
| Bert Phillips | Monocoupe | X | - | - | - | - | - | - |
| Kevin Sharbonda | Lacey | - | - | X | - | - | - | 3 |
| Claude | Jodel | - | X | - | - | - | - | - |
| Richard Gillis | Citabria | X | - | - | - | - | - | - |
| Don Srull | Fred | - | - | - | - | - | - | [1] |

NO-CAL

| CONTESTANT | AIRCRAFT | BEST FLIGHT | PLACE |
|---------------|---------------------|-------------|-------|
| Pat Berg | Farman 190 | 42 | -- |
| Claude Powell | Farman 190 | 60 | -- |
| Bill Clarke | OV-10 | 143 | [1] |
| John Krouse | Spirit of St. Louis | 74 | 2 |
| John Krouse | Solar Challenger | 67 | -- |
| Frank Rowsome | Ercoupe | 72 | 3 |
| Joe Dziewit | Piper J-3 | 61 | -- |

OLD TIME SCALE MASS LAUNCH
(LAST ONE DOWN WINS)

| CONTESTANT | AIRCRAFT | PLACE |
|-----------------|--------------|-------|
| Dan Driscoll | Comet Funk B | 2 |
| Doug Buchanan | Taylorcraft | 3 |
| Claude Powell | Aeroneer | - |
| Paul Spreiregen | Fairchild 24 | - |
| Mark Houck | Allied Sport | - |
| Pat Berg | Curtis Robin | - |
| Scott Paisley | Taylorcraft | [1] |
| Bert Phillips | Taylorcraft | - |

BOGUS BOSTONIAN

| CONTESTANT | AIRCRAFT | BEST FLIGHT | PLACE |
|-----------------|-------------------|-------------|-------|
| Doug Buchanan | Back Bay Bellanca | 48 | - |
| Pat Berg | Rearwin Speedster | 30 | - |
| Allan Schanzle | General Skyfarer | 68 | - |
| Pat Daily | Aristocrat | 68 | 3 |
| Paul Spreiregen | Boston Found | 47 | - |
| Jerry Paisley | Interstate Cadet | -- | - |
| Kevin Sharbonda | Waterman Racer | -- | - |
| Bert Phillips | BD-4 | 36 | - |
| Bud Carson | Corben Cabin | 81 | 2 |
| Bill Ceresa | Dehalibut Moth | 87 | [1] |
| Frank Rowsome | Staggerwing Beech | 61 | - |
| Richard Gillis | Found | 46 | - |

PENNYPLANE

| CONTESTANT | AIRCRAFT | BEST FLIGHT | PLACE |
|----------------|---------------|-------------|-------|
| Jim Pollard | Original | 4:57 | - |
| Frank Rowsome | IMS PP | 6:15 | 2 |
| Randy Kleinert | Original | 8:15 | [1] |
| Glen Simpers | 2 cents worth | 5:20 | 3 |
| Bill Clarke | PP III G1 | 0:22 | - |

NAVY SCALE

| CONTESTANT | AIRCRAFT | ROUND ELIMINATED | | | | | | PLACE |
|-----------------|----------------|------------------|---|---|---|---|---|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | |
| Doug Buchanan | Skyraider | - | X | - | - | - | - | - |
| Dan Driscoll | Loening Kitten | X | - | - | - | - | - | - |
| Mike Moscow | Curtiss SOC-3 | - | X | - | - | - | - | - |
| Mark Houck | XF13C-1 | X | - | - | - | - | - | - |
| Randy Kleinert | Hellcat | - | - | X | - | - | - | 3 |
| Kevin Sharbonda | Buffalo | - | - | - | X | - | - | 2 |
| Bill Bell | Boeing F4B-4 | X | - | - | - | - | - | - |
| Pat Daily | Boeing F2B | - | - | - | - | - | - | [1] |
| Pat Berg | F4F-3 | X | - | - | - | - | - | - |

WW-I

| CONTESTANT | AIRCRAFT | ROUND ELIMINATED | | | | | | PLACE |
|-----------------|----------------|------------------|---|---|---|---|---|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | |
| Dave Rees | Martinsyde S1 | X | - | - | - | - | - | - |
| Jim Pollard | Avro 504 | X | - | - | - | - | - | - |
| Mark Houck | Nieuport 12 | - | - | - | X | - | - | 2 |
| Kevin Sharbonda | SE-5 | - | - | - | - | - | - | [1] |
| Bill Bell | Fokker D-VII | - | X | - | - | - | - | - |
| Pat Daily | Albatros D-III | X | - | - | - | - | - | - |
| Pat Berg | SE-5A | X | - | - | - | - | - | - |
| Terry Pittman | Martinsyde S1 | - | X | - | - | - | - | - |
| John Houck | Hanriot HD-1 | - | - | - | - | - | - | 3 |

MILITARY GOLDEN AGE

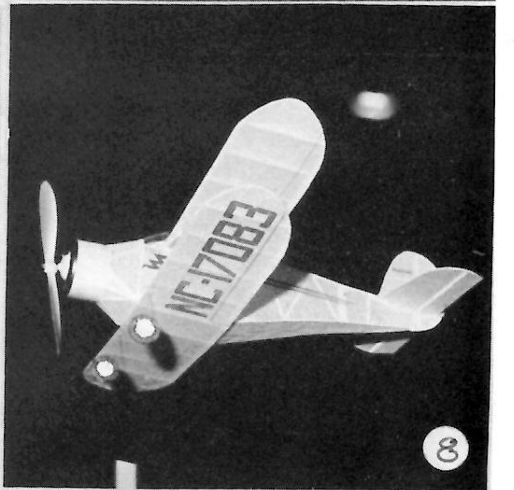
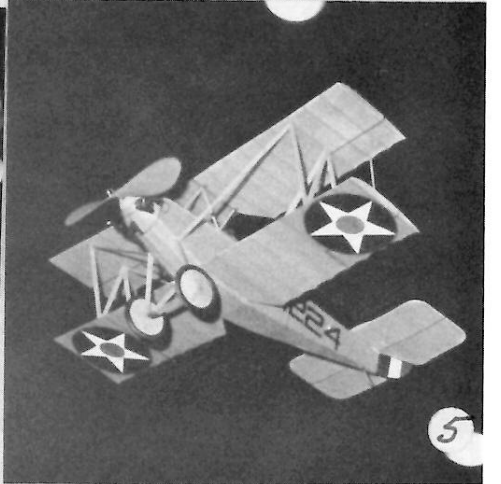
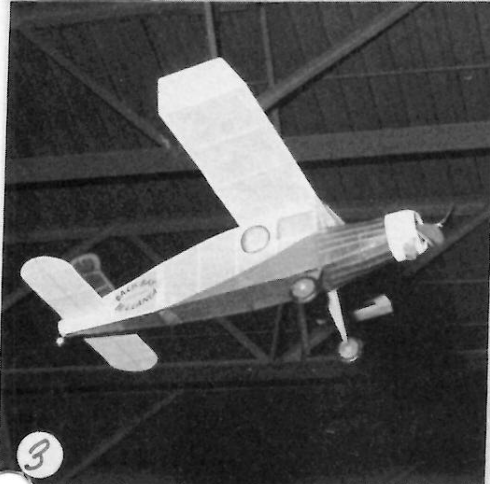
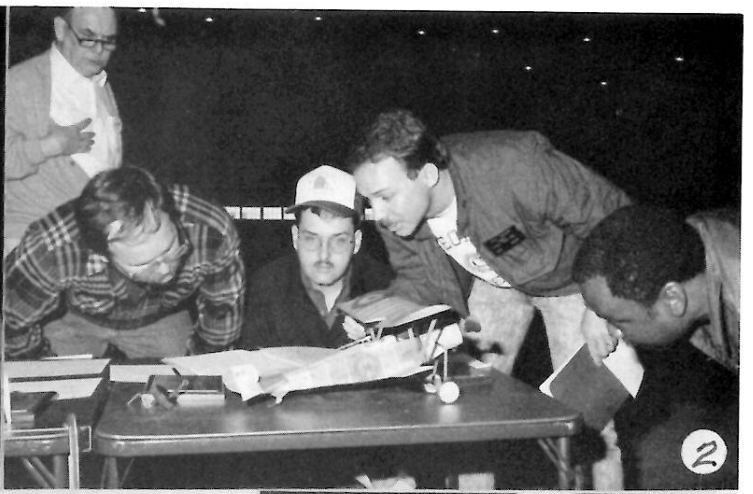
| CONTESTANT | AIRCRAFT | ROUND ELIMINATED | | | | | | PLACE |
|-------------|----------------|------------------|---|---|---|---|---|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | |
| Jim Pollard | RAF Tiger Moth | - | X | - | - | - | - | 2 |
| John Houck | Sperry Messen | - | - | - | - | - | - | [1] |
| Bill Bell | Martin T4M-1 | X | - | - | - | - | - | 3 |

PHOTO PAGES

1. Al Flesher, seen here with his magnificent electric powered PBV, is the designer of this months plan.

PAX RIVER 3/10/90

2. The judges hard at work with Mark Houck's Nieuport 12; a skeptical Bud Carson looks on!
3. Doug Buchanan's BOGUS BOSTONIAN the Back Bay Bellanca heads roofward.
4. Kevin Sharbonda back in action took a third in PEANUT with his Lacey.
5. A pretty Sperry Messenger by John Houck picked up a 2nd place in FAC.
6. John winds the Messenger with his wife holding.
7. Bud Carson with his electric powered Jodel won a 1st place in POWER.
8. How is this for a nifty BOGUS BOSTONIAN; Frank Rowsome's Beechcraft.
9. Earl Stahl visited to savor the indoor flying at Pax River; here helping Terry Pittman with his PEANUT Heath Parasol. Now if we can only get Earl on the builder and winder end again.
10. Terry here with his electric powered Pilatus TurboPorter.
11. Bud Carson again with his beautiful winning COCONUT Wright Air Sedan.
12. Bashful Marv Yoder with his pretty Albatros DV.
13. Mark Houck winds his Nieuport 12 for a 2nd place in WWI; dad holds.
14. Len Berg, one of the Pax River regulars, winds his PEANUT Piper J-5.
15. Dave Rees came for R&R and did not fly too much. Dave built this great Martinsyde Elephant while recuperating from a fractured back.
16. Pat Daily winding OLLIE for the PEANUT event; Scott Paisley holding.
17. Al Lidberg's latest plan, a 40" JUMBO Focke Wulf TA 152H-1. Send Al \$6.00 PP to 614 E. Fordham Dr., Tempe, Arizona 85283 and get yours.
18. Last but not least, Rich Henshel's terrific CO2 powered P40 from the Guillow kit. We can hardly wait to see it fly Rich!





Lindsey Smith

The version of the rules for the "Peanut" class used in the National Competition by the British SMAE, or BMFA as it now calls itself, gives bonus points for both multi wings and seaplane designs. The points are cumulative, so a biplane seaplane gets 18 bonus points, a triplane seaplane would get a whopping 24 points, (Curtiss Wasp here I come!). Hence my last four peanuts have all been antique water aircraft viz Curtiss CR3, Voisin Canard (Thanks Don Srull), Martin MS1, and finally this machine. The Martin was too heavy so I determined this time to build light and looked around for a suitable subject that would be reasonably sturdy. There is a picture of this aircraft in the Putnam book United States Navy Aircraft Since 1911. The Navy acquired three in 1922 and so the photo appears in the appendix dealing with foreign aircraft purchased or tried out by the Navy. Unfortunately, there is no 3-view and several appeals to acquaintances failed to turn one up except for one of the land based version in two forms, both of which varied in detail from the float version.

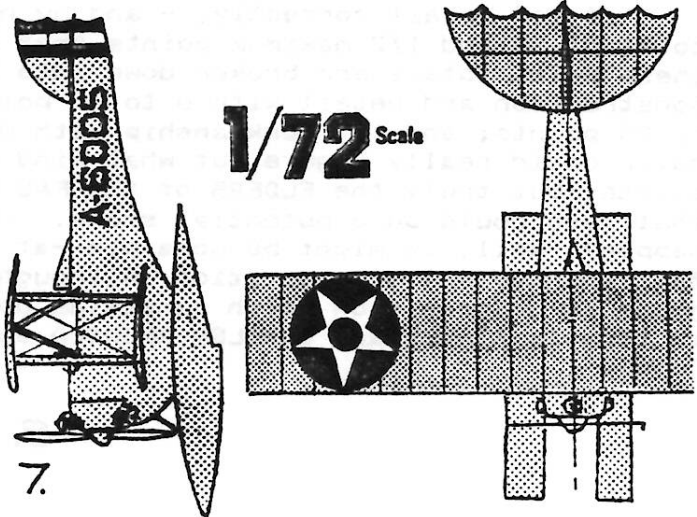
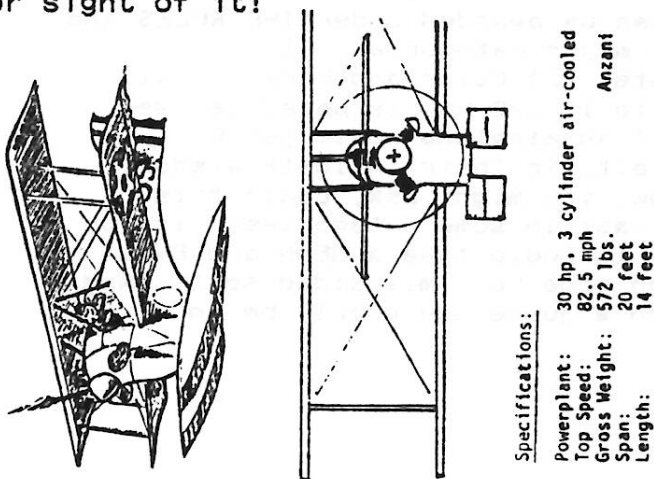
I finally found a Vac-U-Form 1/72 scale kit of the beast which contained a rather dodgy 3-view on which this design is based, but if anyone out there has something better I should be very grateful for sight of it!

The model is fairly straightforward stick and tissue construction throughout, only those lower fuselage longerons being slightly out of the ordinary, 1/20 balsa will take those curves but is not too happy about holding them!

I had to raise the thrust line of the engine to get enough blade area and the resultant torque effect means that the model requires about 1/8 right rudder to fly left in anything but a tight corkscrew, hence the side thrust.

Inevitably the weight of my model has crept up from about 15 grams to just over 20 in flying trim. Its best flight at this year's nationals, where it came in 4th, was 31 seconds with a static score of 56 which put it first in Scale. If I could have gotten it to take off it might have made 3rd with the extra twenty points for two R.O.G.'s. The first two places had best flights of 81 and 51 seconds respectively plus R.O.G. points, so they were out of reach.

The SMAE has just accepted the 9 inch fuselage variation in Peanut and I have scaled up the plane to this size, which gives an extra 1/2 inch of rubber space which might just do the trick to put it in contention. Otherwise it will be a Curtiss Wasp for next season!



PROJECT
M E A T H E A D

(MAXECUTER EXPERIMENTAL ADVANCED TECHNOLOGY for HANDLING
VALUATION of AIRCRAFT DESIGNS)

by CAPT Pat Daily USN

"Rules! FAC rules!" " How do you judge for FAC Scale events?" " A normal plane can't win in FAC Scale anymore, I'll have to build a weird or unusual plane to get enough bonus points to even have a chance!" " Nobody gets low scores--they are all bunched up near the top end of the scale--i.e. all are 45 to 62 points." " How many of you guys out there have ever judged an FAC Scale event anyhow?" ---- I've heard these and similar comments for several years now--ever since Don Srull decided to begin experimenting with canards and other exotic configurations and power systems. Are these comments really true or are they part of a sinister plot hatched by the "Others" to discredit and demoralize the small band of TRUE BELIEVERS that spend countless hours and vast sums of money so they can hide away in secret workshops developing their latest and highly classified new FAC Scale project.

Well, I'm not sure, but don't count out the plot theory just yet! Thanks to one of our more outspoken and sometimes controversial Maxecuters, namely Allan Schanzle, a small number of us gathered for "Choir Practice" last Sunday morn at the home of Ernie Greene, as is our wont to do since we are all so deeply involved with the mysticisms and supernatural aspects of the miracle of flight. Anyway, Herr DOKTOR Schanzle, in his characteristic Teutonic fashion, decided we should TEST the FAC Scale Judging System by implementing the seldom used and TOP SECRET MAXECUTER analysis system referred to as PROJECT MEATHEAD. Now stop right here! TEST! You must be thinking that nobody in their right mind would dare to test something as sacred and holy as the "FAC SCALE RULES". Why, it's unheard of! Personally, I became concerned that Schanzle must either be MAD or a DEEP COVER AGENT that had recently been activated by the "OTHERS" to wreak havoc and dissent in the loyal ranks of the FAC. Surely, I thought, Lyn Reichel will demand Schanzle's instant Courts Martial and certain Excommunication from the FAC. May Hung help us all!

The good Doktor suggested that each of us, the ardent TRUE BELIEVERS, bring to "Choir Practice" one of FAC Scale jobs with our documentation and that we would have a discussion of those most holy of all documents--the FAC RULES--and then practice judging each others airplanes. With much fanfare and heated discussion we proceeded to go through THE RULES line by line and syllable by syllable until at last, we felt ready to judge the 7 aircraft that were assembled for PROJECT MEATHEAD.

If you recall correctly, - and by now you probably don't--there are a total of 62 and 1/2 maximum points that can be awarded under THE RULES and these point totals are broken down into 3 major categories: (1) Construction and Detail with 0 to 30 points; (2) Color and Markings with 0 to 20 points; and (3) Workmanship with 0 to 12 1/2 points possible. We never could really figure out what kind of an airplane would get 0 points--but truly the ELDERS of the FAC felt, in their infinite wisdom, that zero could be a potential score. How, you might ask, could this happen? Well, it might be possible--at least in some categories-- if you fail to have ANY documentation. Although, it would take a MEAN and EVIL judge to enforce such harsh penalties upon some poor misguided soul. And in today's KINDER and GENTLER AMERICA such a judge could only be an "OTHER".

After we judged the planes involved in PROJECT MEATHEAD, we recorded how each of 9 judges rated the aircraft. The accompanying table lists the results for each aircraft by category and by judge with average and ranges of total points summarized to the right. What, you ask did all this falderol accomplish besides wasting several precious hours that should have been spent at the building board? Let this poor servant of the FAC try to summarize, or at least surmise, our results.

In general, the judges tended to rate reasonably good scale models fairly high--note the Thrush, Albatross, Davis, Potez and P-40. The Aeronca was in fact a Bostonian Pacific Ace with no documentation that assumed the title of "Aeronca". The Fairchild was an Earl Stahl model with plans only and no details except a two-tone paint job. The judges had problems with the Aeronca and the Fairchild. This was evidenced by a wide range of points in both cases--i.e. confusion in the judges minds about how you handle a poorly documented aircraft or a minimally detailed one. On the other hand, the judges tended to judge their own aircraft a bit harshly--note the Aeronca, Albatross, Fairchild and P-40.

In only one case did a judge give the maximum of 30 points in the construction category to an aircraft--see the Thrush; only in three cases did markings get a perfect score--see Thrush, Albatross and Davis; and none were perfect in workmanship. It should be noted also that "THE RULES" specifically indicate that there is either 25 or less or 30 period in the construction category--i.e. no scores between 25 and 30 for details and construction are allowed. Please note that several judges ignored this and awarded scores of 26, 27, etc. in this category.

Of the 7 aircraft, the clear winner was the largest, the Thrush, but with only a 2.2 point advantage over the next 4 aircraft which were lumped very closely together. The P-40 was the smallest and, in a way, the most difficult subject to model well. The range of scores for the four in this group--the P-40, the Albatross, the Davis and the Potez were quite high when compared to the Thrush.

A rather detailed discussion followed the judging exercise and it was the consensus that the judges would probably rate the Aeronca and Fairchild lower if given an opportunity to do it again. They all felt the Davis and the P-40 would be rated higher given a second chance and that the Albatross and Potez should be a bit lower. The Thrush was right on!

The subject of documentation was discussed. In several cases there was an abundance of documentation that was somewhat conflicting in nature and caused some confusion in the judges mind. For example, when a 3-view disagrees with building plans, the modeler needs to point this out to the judge and explain which one he relied on for building and for detailing and so forth. I should point out that the judges in this exercise varied from those with little experience to a lot of experience in judging FAC SCALE.

The bottom line for all of you TRUE BELIEVERS is that when you judge--BE RUTHLESS--all aircraft should not be ranked highly--that is what is meant by 0 to 62 and 1/2 points. For a well done normal aircraft like a Davis to be competitive with high bonus jobs of questionable effort, the judges must be willing to differentiate by using the whole range of scores available to them. This statement brings to mind the so-called "40 POINT RULE" that is frequently invoked for mass launch contests. I think judges subliminally (my that's a big word!) think that any moderate effort in building a "MASS LAUNCH JOB" should automatically merit 40 points or more. LET'S GET RID OF THE 40 POINT RULE. JUDGES, BE MAN ENOUGH TO USE YOUR DISCRETION TO ELIMINATE THOSE VERY FEW AIRCRAFT THAT OBVIOUSLY DON'T FALL INTO THE SPIRIT OF THE EVENT! There! I've said it, the unpardonable sin--but fellas, I swear by Hung that I'm really not an "OTHER".

PROJECT MEATHEAD RESULTS

| AIRCRAFT | JUDGE | CONST POINTS | MARKING POINTS | WKMNSHP POINTS | TOTAL POINTS | AVERAGE POINTS | POINT RANGE |
|---|-------|-----------------|-------------------|-------------------|-----------------|-------------------|----------------|
| AERONCA | 1 | 1 | 0 | 1 | 2 | 12.4 | 2-26 |
| | 2 | 3 | 1 | 6 | 10 | | |
| | 3 | 10 | 2 | 9 | 21 | | |
| | 4 | 10 | 5 | 1 | 16 | | |
| | 5 | 0 | 2 | 2 | 4 | | |
| | 6 | 5 | 2 | 2 | 9 | | |
| | 7 | 1 | 15 | 10 | 26 | | |
| | 8 | NA | NA | NA | 20 | | |
| | 9 * | NA | NA | NA | 4 | | |
| NOTE: NO DOCUMENTATION | | | | | | | |
| MISTEL THRUSH | 1 | 27 | 18 | 10 | 55 | 56.1 | 53-61 |
| | 2 | 27 | 19 | 12 | 58 | | |
| | 3 | 28 | 16 | 10 | 54 | | |
| | 4 | 27 | 20 | 10 | 57 | | |
| | 5 * | 30 | 19 | 12 | 61 | | |
| | 6 | 25 | 19 | 12 | 56 | | |
| | 7 | NA | NA | NA | 55 | | |
| | 8 | NA | NA | NA | 53 | | |
| NOTE: LARGEST AIRCRAFT-30 IN SPAN | | | | | | | |
| POTEZ | 1 | 25 | 19 | 8 | 52 | 52.0 | 45-57 |
| | 2 * | 25 | 18 | 10 | 53 | | |
| | 3 | 25 | 17 | 11 | 53 | | |
| | 4 | 26 | 16 | 10 | 52 | | |
| | 5 | 28 | 19 | 10 | 57 | | |
| | 6 | 20 | 18 | 10 | 48 | | |
| | 7 | 28 | 17 | 10 | 55 | | |
| | 8 | NA | NA | NA | 45 | | |
| | 9 | NA | NA | NA | 53 | | |
| FAIRCHILD | 1 | 24 | 11 | 5 | 40 | 36.4 | 29-48 |
| | 2 | 20 | 13 | 6 | 39 | | |
| | 3 | 22 | 16 | 10 | 48 | | |
| | 4 | 15 | 10 | 5 | 30 | | |
| | 5 | 20 | 16 | 9 | 45 | | |
| | 6 | 15 | 10 | 9 | 34 | | |
| | 7 | 12 | 15 | 6 | 33 | | |
| | 8 | NA | NA | NA | 30 | | |
| | 9 * | NA | NA | NA | 29 | | |
| NOTE: PLANS ONLY-NO DETAILS ON AIRCRAFT | | | | | | | |
| ALBATROSS | 1 | 25 | 18 | 11 | 54 | 53.8 | 46-60 |
| | 2 | 27 | 17 | 11 | 55 | | |
| | 3 | 26 | 18 | 12 | 56 | | |
| | 4 | 25 | 15 | 9 | 49 | | |
| | 5 | 29 | 20 | 11 | 60 | | |
| | 6 | 27 | 19 | 12 | 58 | | |
| | 7 * | 20 | 17 | 9 | 46 | | |
| | 8 | NA | NA | NA | 50 | | |
| | 9 | NA | NA | NA | 56 | | |
| DAVIS | 1 | 28 | 19 | 11 | 58 | 53.7 | 47-58 |
| | 2 * | 27 | 18 | 11 | 56 | | |
| | 3 | 28 | 18 | 12 | 58 | | |
| | 4 | 25 | 15 | 7 | 47 | | |
| | 5 | 29 | 20 | 10 | 59 | | |
| | 6 | 20 | 18 | 10 | 48 | | |
| | 7 | 27 | 17 | 8 | 52 | | |
| | 8 | NA | NA | NA | 50 | | |
| | 9 | NA | NA | NA | 55 | | |
| P-40 | 1 | 27 | 19 | 11 | 57 | 53.0 | 45-59 |
| | 2 | 28 | 16 | 11 | 55 | | |
| | 3 | 28 | 19 | 12 | 59 | | |
| | 4 | 27 | 17 | 9 | 53 | | |
| | 5 | 28 | 18 | 11 | 57 | | |
| | 6 * | 20 | 15 | 10 | 45 | | |
| | 7 | 23 | 18 | 9 | 50 | | |
| | 8 | NA | NA | NA | 45 | | |
| | 9 | NA | NA | NA | 56 | | |
| NOTE: SMALLEST AIRCRAFT -16 IN SPAN | | | | | | | |

* DENOTES BUILDER OF AIRCRAFT BEING JUDGED

Frank Luke, Jr.

(CONTINUED)

Reluctantly accepting this proviso, Luke took off on the night of Sept. 16th, at 6:45 and turned toward Verdun. His comrades on the field knew where to watch, and at exactly 7:10 the first bloody flame appeared in the sky and they knew that Luke had carried out one third of his apparently unfulfillable promise. Eleven minutes later a second flame to the right of the first one lighted the skies momentarily and the watching war birds knew that Luke had produced this second installment of his deadly contract. Fifteen minutes later the third red emblem of death appeared against the black horizon. With hearts beating fast the First Pursuant Group waited now with straining ears for the hum of Luke's motors. Soon the faint drumming of the Spad's pistons reverberated above the field and Luke, his ship hit in several places by shells of the American Anti-Aircraft Artillery lighted as lightly and smoothly as a bird.

The efforts of Luke and the hundreds of thousands of other brave men on the days of Sept. 16th and 17th were not in vain, and the St. Michel's push was pronounced successful. Yet this Arizona cowboy did not feel that his work was done. On Sept. 18th, two more balloons were added to his record, one of which he accounted for at a distance of only 90 feet from the ground. As the hot belch of the burning blimp scorched his face, Luke glanced skyward to see a fellow pilot pursued by a formation of eight Fokkers. Stabbing at the belly of the lowest Boche, Luke sent him diving in flames toward the ground. With a turn he was on the tail of a second, and his tracer bullets sent that one too, hurtling to the earth. But Luke himself had not escaped unharmed. His plane was seriously hit, and pausing long enough to note that the plane which he had first come to protect was no longer in sight, he turned his nose toward the home field and left his pursuers far behind.

Upon returning to headquarters he found confirmations had arrived from general headquarters which pronounced him the chief ace of the Army Air forces. Yet this news was accompanied by information which took from him all its joy. He learned that the pilot friend whom he had risked his life to protect had fallen.

It is strange to think that this greatest of killers should be so deeply shaken by the death of a single man. Friendship being what it is, such however was the case, and Luke's superiors thought it best to send him on leave to Paris; that among the gay crowds he might forget, and return to his cruel but necessary work with a steadier nerve and a keener heart.

Such measures were soon found unavailing, for Luke was back at the front before his leave was over. On the very day of his return yet another friend flew into the skies and did not return. In his sorrow Luke forgot all discipline. Seeking solace in the clean air which he apparently could not find on the grave packed earth, Luke went on an unauthorized flight, during which he relieved his feelings by blowing up his eleventh balloon.

Upon being reprimanded and grounded by his superior Luke again took off. While he was in the air his commander telephoned instructions to the next flying field to place him under arrest, with the intention of bringing him back by motorcycle for immediate court martial. Yet to men such as Luke even Army rules are light bonds. Notified of his arrest, Luke walked silently to his plane, although darkness was already approaching, and with a shout to the amazed officer took off; his comrades never saw him again, dead or alive.

Fifteen minutes after his Spad's wheels left the ground, Luke accounted for his first balloon. Turning in a westerly direction he sped to his second victim. On the way, a flight of German planes dove on him and Luke, from the blood spattering on his instrument board, must have realized that he had been wounded. Was there a pilot in France that day, who severely wounded, under arrest, and awaiting disgrace, would have continued his flight? Yes, there was one, Luke! Diving in a clever simulation of death, he escaped the Fokkers. His plane, now skimming the tree tops could not gain altitude. Reaching the balloon, he lunged from beneath, and with twin machine guns spitting fiery death Luke wreaked his vengeance on the monster drachen. Banking sharply he turned toward the town of Nuielly and with a single swoop accounted for his third balloon.

As he wheeled away from the scene of ruin he had produced, it must have come to him that his last victory had been won, for the gallant Spad beneath him could go but little further. It was for that reason, we believe, that Luke made no attempt to reach the friendly landing fields far behind his rudder. Soon his motor coughed for the last time, and his prop revolved no more. Going into a deceptively gentle glide, Luke floated over a small village, the streets of which were filled with German troops.

But if Luke's Air Broncho had lost its power, his guns had not. As he planed slowly to the ground Luke's twin Luis guns spat death to six fleeing Germans. At last his wheels touched ground. Getting out of his cockpit he found himself surrounded by hundreds of gray clad enemies. Though generous cries of "Surrender" filled the air, evidently they did not reach this hero's ears. Without a word he drew his automatic from his holster and shot coolly at the mass until his ammunition was exhausted. For a moment, then, his hand rested as if in an affectionate caress on the fuselage of his tiny plane. Outlined in the dusk his frame made a perfect target. A dull crack from the woods before him was heard. Upright, he remained for a split second, then dead on his feet, Luke slumped slowly to the ground.

Glorious as was his death, no official word of it reached the A. E. F., till Jan. 3, 1919. When the full story of his last combat became known, from German war records, the Congress of the United States in full session, rated Frank Luke, Jr., the highest award in its power—the Congressional Medal. No other flier before or since has so been honored. That is fitting, no pilot, living or dead so deserved it, as this Arizona miner, America's Second Ace.

10" SCALE CONTEST

| NAME | AIRPLANE | TIME |
|---------------|---------------------|------|
| Al Flesher | American Aerolights | 0:39 |
| Jerry Paisley | Howard | 0:26 |
| Bert Phillips | Minicoupe | 0:23 |
| Bert Phillips | Couger | 0:24 |
| Doug Buchanan | Cub | 0:29 |



One of the first autogiros built for the British Air Ministry, 1926.

A Pioneer Makes Good

The Story of the Successful Development of the Autogiro by Cierva and the Application of it to Commercial Use by Harold Pitcairn

By Orville H. Kneen

CHAPTER II

WE left young Juan de la Cierva, you remember, nervously waiting for an equally nervous pilot to test his No. 3 machine. It had a queer 5-bladed rotor and a complicated rig whereby the pilot could change the angle of incidence. This, he hoped, would finally correct the crazy, drunken leaning to one side that had made all his previous designs useless.

The pilot taxied slowly across the field, his machine wobbling but not quite turning over as previously. He opened her up a bit and the contraption seemed almost ready to hop, as did the inventor. But his practiced eye noted that same habit of wanting to lean on something. Not so much as before—but rigid advancing blades *still* had too much lift. Changing angle of incidence was no great help, if any. But he felt he was on the right track. He worked twice as hard. *Nine times* he remodeled that stubborn machine. At every test it showed some signs of intelligence. But it needed something—a new idea.

Luckily, about this time the government showed interest, to the tune of some real money—\$34,000 worth—for wind-tunnel

experiments. Scores of tricky little whirligigs, mounted on ball bearings, were put through their paces in tunnel winds that attained 45 miles an hour.

Cierva measured the lift of his rotor when inclined. It proved greater than for fixed wings of equal area. Head resistance was lower than for fixed wings of equal lift, proving his figures okay! So he put his nose to the drawing-board again and drew pictures of a new ship, with five-bladed rotor braced to the axis by steel wires. This time, to keep his ship from leaning over, he built an extra large elevator in two parts, each part to be operated by itself. He then trundled the new machine out for a test—the proof of all theories.

After all his testing and figuring, the blankety-blank thing *still* tried to lean over! And gyroscopic action was bad. The thing would not be controlled. It had no ambition to get up in the world. But it seemed better than previous ones.

So he rebuilt it—four times—and studied it a thousand times. One night he was at the theatre. His mind wandered from the play, as he thought about one little rubber-driven model which had shown



Mr. Harold Pitcairn with the Collier Trophy awarded to him, after landing his autogiro on the White House lawn.

up well in the wind-tunnel.

Suddenly there flashed into his brain an explanation. Perhaps the flexibility of the blades, made of rattan (or bamboo), as they met the oncoming air, enabled them to adjust themselves automatically. His aircraft—if he ever got it up in the air—would have to ride the whirls and eddies, whereas fixed-wing planes cut through them. His craft must ride them slowly, like a bird, and his rotor should be constantly adjusting itself to the currents, like the wings and tail of a bird.



The autogiro proves of great help in locating and fighting forest fires

of the contraption. However it no longer had bad gyroscopic habits. The articulated blades stopped that far better than one scheme he had tried, crudely, of having the pilot tilt the entire rotor structure to right or left.

Would he ever be able to lick that tendency to imitate a cow at the end of a rope. He perspired, rebuilt the machine just fifteen times, and found the answer at last. He stuck a pair of flip-

CALCULATIONS seemed to prove this theory correct. Long weeks of work produced four long, thin blades of laminated hardwood, mounted on a hub supported by a spider, or pylon, rising from the fuselage. It was a queer-looking rig. But it worked better!

When not turning, the rotor blades hung down almost to the ground. But at around 100 revolutions per minute they swung almost straight out, like the outswinging pail of water on the end of a rope.

The pilot swore he could feel their lifting power. The machine would tremble, as if ready to leap into the air. Cierva tried out combinations of two, three, four and five blades. And finally he evolved a scheme of "articulating" the blade fasteners so that the connection of each blade to the hub should be non-rigid. This should enable each blade to freely adjust itself to the load, and to gusts of wind.

Being hinged besides, the fastening was really a universal joint, cables between the blades keeping them from running into each other. But now the blades acted much like a bird's wing, able to wriggle, flop, rise or fall as load and air currents required. As a blade advanced it could be seen to rise at its tip, reducing the angle of incidence and resulting lift. Retreating blades did the opposite.

That, the young inventor believed, should at last balance the machine. Perhaps he uttered the Spanish for Hot Dog! The machine should now be perfect, at least as far as leaning over was concerned.

But it wasn't. The pilot did not seem to have enough control

pers out from the fuselage, on either side. Really two small ailerons, on arms. They gripped the air—theoretically.

Would the machine actually fly—or hop—or at least stand straight with the rotor turning? He thought so.

But his heart thumped harder, when it was ready for test, than when his big bomber had been trundled out for its trials, over three years previously. On January 9, 1923, all was ready. The strange bird, perhaps more full of "bugs" than a real one, was taken to the Getafe Airdrome, near Madrid, where there was plenty of room. Now for the proof of the pudding!



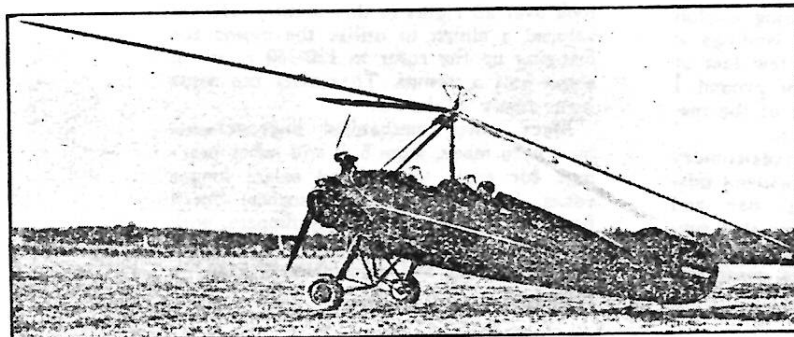
Harold Pitcairn explaining the operation of the machine to Orville Wright at Langley Field, Va., May, 1929.

PROBABLY no one except the inventor expected the thing to get off the ground. Even he may have had his doubts. So many, many designs had failed, laying down weakly, savagely splintering their long arms on the ground.

The pilot was one of Spain's best—Lieut. Alejandro Gomez Spencer. His strange steed embodied a lot of time and labor and money. He handled it with care. Several men, pulling on a long rope wound around the hub, brought the four-bladed rotor up to speed. The motor, not connected with the rotor, but driving a tractor propeller in the usual way, warmed up cheerfully and loudly.

The pilot waved to the anxious inventor. He taxied slowly to increase the speed of the rotor. The machine taxied easily, did not lean weakly. He "gave her the gun."

The whirling vanes took the load. There were cheers as the wheels lifted a few inches. The machine hopped, skipped and jumped across the field. Then, with sudden resolution, the pilot opened the



One of the late models, the Pitcairn T.A.-18.

throttle and lowered the tail as the wheels left the ground. Up she went! She was in the air! Several yards above the ground, on an even keel, the whirling windmill sailed slowly across the field.

No longer did it lean weakly from side to side. It rode the air waves smoothly, easily, for some two hundred yards, before the pilot set her down lightly.

History had been made. It could go higher, the inventor knew. This was no helicopter. Its whirling rotor driven by the air only, it could attain altitude with ease. To prove it, a flight was made at an altitude of eighty feet; around the field it flew, several times, until it had covered two and a half miles in its first official flight.

Plenty of cheering then! All the world loves the successful inventor. When, years later, I stood on a field at Bryn Athyn, near Philadelphia, it was to see one of the first flying windmills brought to the United States. The smiling, cheerful, energetic inventor, son of a wealthy and prominent family, would say little about himself, but was delighted to show me his brain-child and to demonstrate it. As I watched the amazing stunts it was put through, Cierva told me of that first official flight at the Cuatro Vientos Airdrome.

Thus three solid years of hard sledding had ended in partial success. Cierva had solved his toughest problems. His machine would fly. Now to cure it of its minor "bugs." He went back to the drafting board.

HE built model after model, machine after machine—some fifty in all! The four-bladed rotor proved best. In 1924 he made his first public flight, amidst wild enthusiasm. Twenty-one years after those first unnoticed flights of the Wright brothers, people now began to realize the importance of flying—and especially, *safe flying* at any desired speed.

A machine built for the Spanish government was so easily controlled that it landed on a mark one yard square. And a landing was made on the deck of a vessel. Later this machine was flown in France. By this time Cierva had evolved a name. The rotor being revolved by the air only, he called his invention "Autogiro"—meaning "self-rotating." The blades never stop rotating in flight, because the air compels them to rotate.

By October, 1925, Cierva had his Autogiro so that it could rise to 1,000 feet, then descend slowly at an angle never before achieved by aircraft—about 60 degrees with the ground. In a slight breeze the pilot found that he could come straight down, about as slowly as a parachute. Spectators, especially aviators, nearly lose their lower jaws when they see that amazing exploit the first time. As I saw such landings at Bryn Athyn often, with but a few feet of run after the wheels struck the ground, I realized that it was the weight of the machine that kept the rotor turning.

By September, 1927, a cross-country flight of fifty miles was made without mishap. Cierva was computing size and strength of every part. He knew that centrifugal forces, pulling radially when the rotor turns, lessen flying stresses, permitting light blades.

The British Air Ministry, designing its first machine, had to learn anew the lesson of flexibility in blades. Its engineers insisted upon stiffer and more rigid blades. Two hundred feet up two blades gave way with a loud crack. Down, down the machine came. The force of the hard landing, made partly on a wooden structure, tipped the machine over and drove the undercarriage clear through the fuselage.

But the pilot stepped out with nothing worse than bruises. Thus was safety proved. Several Autogiros were ordered—with *flexible* wings. And by now the young inventor was so confident that he began to fly his machines himself, though he had never become a pilot. He made no flights of distance, till suddenly he resolved to make a real trip.

So on September 18, 1928, with a French editor as passenger, he took off from England, heading out across the English Channel. It was rather nervy for the Channel was rough, as was the air. A landing would have been fatal. At nearly a hundred miles an hour—top speed had been increasing—they whirled above the white-caps.

The machine seemed to smooth out the air bumps. Soon they were across. Cierva picked up a railroad and followed it to historic Le Bourget field, near Paris. It was not long after Lindbergh's famous flight. Tens of thousands raised their voices and eyes to the sky as the pilot cut his motor, several thousand feet up, and floated down "like a maple leaf drifting leisurely earthward."

Two days later an American reporter was "taken for a ride," and a surprising one. Taxiing over the field, they felt a jar. They took off and made a few turns. The landing was anything but gentle. The reporter heard something crack. The left wing snapped off as the wheel sank down. Two blades were clipped off. A third dangled. The fourth dug itself in and supported the ship. The prop was clipped.

The shaken reporter and the pilot climbed out. They learned that a cable on the landing gear had struck a stake and broken, weakening the left wheel. Cierva had guessed the trouble at once. The reporter telegraphed his story, pointing out that such a landing with a fixed wing plane "would surely have resulted in splinters and possible explosion." Neither Cierva nor the reporter was injured in the least. In a few days the machine was whirling again. Around the British Isles and the Continent it whirled, 3,000 miles without trouble.

LA TE in 1928, Harold Pitcairn brought an Autogiro to the United States and took over all rights in this country. He developed a clutch to utilize the motor for bringing up the rotor to 120-150 r.p.m. in about half a minute. Thereafter the rotor turns freely in the air.

Many other mechanical improvements have been made, from ball and roller bearings for rotor to enclosed cabin, longer vanes, long-travel shock absorber. Small fixed wings replace the early flippers, with dihedral and upturned tips to increase lateral stability and give effect of high fin area.

After twelve years of unremitting toil Cierva has produced at last a machine which attains an air-speed as great as one hundred miles an hour, while the landing speed is little or nothing: has produced a non-stalling machine, with controls always effective.

Recently a man jumped from a plane with a parachute; alongside was an Autogiro, in which the engine was stopped. Side by side the man and Autogiro floated earthward. The machine was last to reach the ground. Landings have been made on docks, even large lots, streets and highways, and take-offs also. Perhaps future villages will have community plots for commuters' landings and take-offs. Huge transports, aerial taxis, hovering bombers, ambulances, exploring craft, have all been built or are planned for the future.

Autogiros have sought jungle-covered Maya ruins, have flown from coast to coast, have been used for taking photographs, news gathering, army and navy tests, traffic study. Amelia Earhart flew one to 18,000 feet; W. T. Campbell, at Boston, to 22,000 feet. Windmill planes have delivered mail to steamers, found big game and lost flyers. On October 13, 1931, one was looped without difficulty.

Thomas A. Edison, near the end of his career as the world's greatest inventor, visited Newark Airport to see an Autogiro flown.

"Flexible! That's the trick," he said, feeling the blades. "That's the only way to avoid gyroscopic action."

James G. Ray, pilot, fluttered to a landing without forward roll. The aged inventor gasped.

"By gosh!" he exclaimed, "you have the so now that they'll do anything but chew tobacco!"

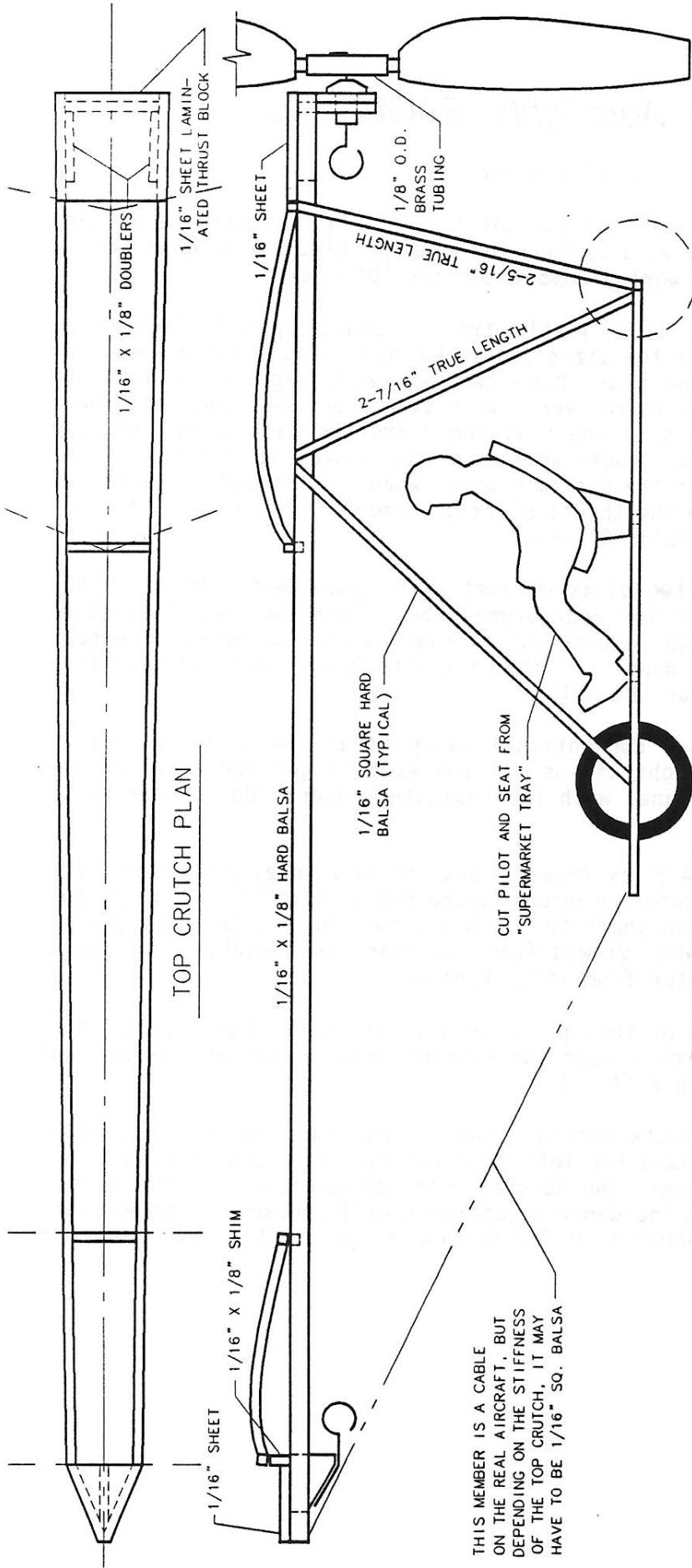
Always skeptical, he had the landing repeated. He was convinced.

"That's the answer!" he cried, with all the enthusiasm of the boy he had always been. "That's the answer! That's the kind of planes we've got to have."

Be that as it may, that young engineer has brought a new principle to aviation. As President Hoover said, when presenting the Collier Trophy to Mr. Pitcairn and his engineers:

"Its ability to rise and descend with safety almost vertically makes it a practical and decided step forward."

The Autogiro is the only plane that ever made a landing and a take-off on the White House lawn. Perhaps the day is not far distant when it will land and take off on every man's lawn.



TOP CRUTCH PLAN

THIS MEMBER IS A CABLE ON THE REAL AIRCRAFT, BUT DEPENDING ON THE STIFFNESS OF THE TOP CRUTCH, IT MAY HAVE TO BE 1/16" SQ. Balsa

RUBBER: FAI 0.042" X 0.060" X 20" LONG

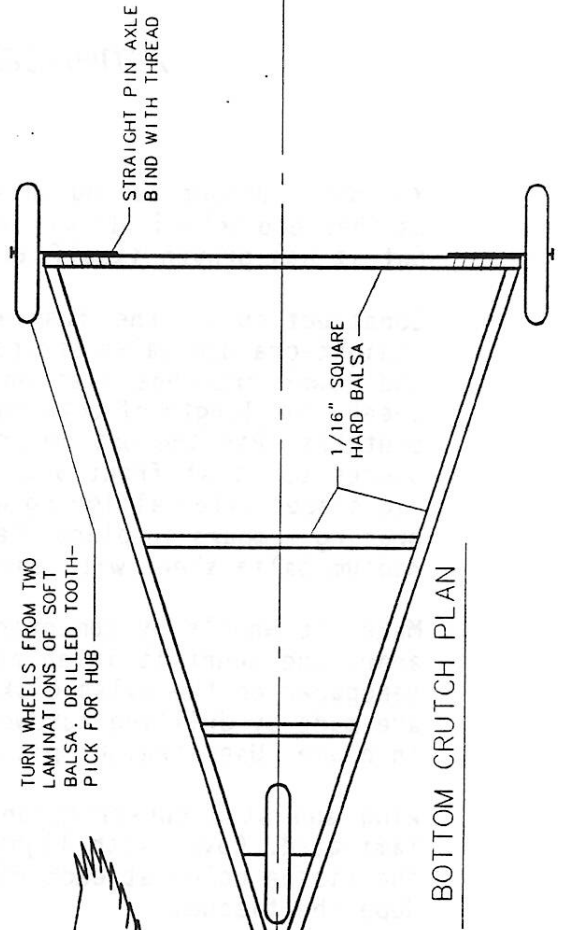
COLORS: TUBING - ALUMINUM

FLYING SURFACES - RED, YELLOW, GREEN ALTERNATING PANELS

PILOT - YOUR CHOICE



TURN WHEELS FROM TWO LAMINATIONS OF SOFT Balsa. DRILLED TOOTH-PICK FOR HUB



BOTTOM CRUTCH PLAN

American Aerolights EAGLE XL

Designed and drawn by AL FLESHER

American Aerolights EAGLE XL

by Al Flesher

You may remember seeing this little ultralight model flitting among the rafters at Sherwood School. It was born as a testbed for a larger electric powered model, but it has proven itself as a worthy competitor for 10" scale.

Construction of the fuselage is a little tricky. Start by selecting hard, straight-grained balsa strips of the sizes indicated on the plan. Build the upper and lower crutches flat on the plan. Make two temporary jig pieces of 1/16" sheet, the length of both equal to the vertical distance between upper and lower crutches. Pin the bottom crutch to the building board and tack-cement the jig pieces to it at front and rear. Tack-cement the top crutch to the top of the jig pieces after alligning with the bottom crutch. When dry, cement the vertical bracing members in place. Make the thrust block by cementing two pieces of 1/16" medium balsa sheet with the grain 90° apart.

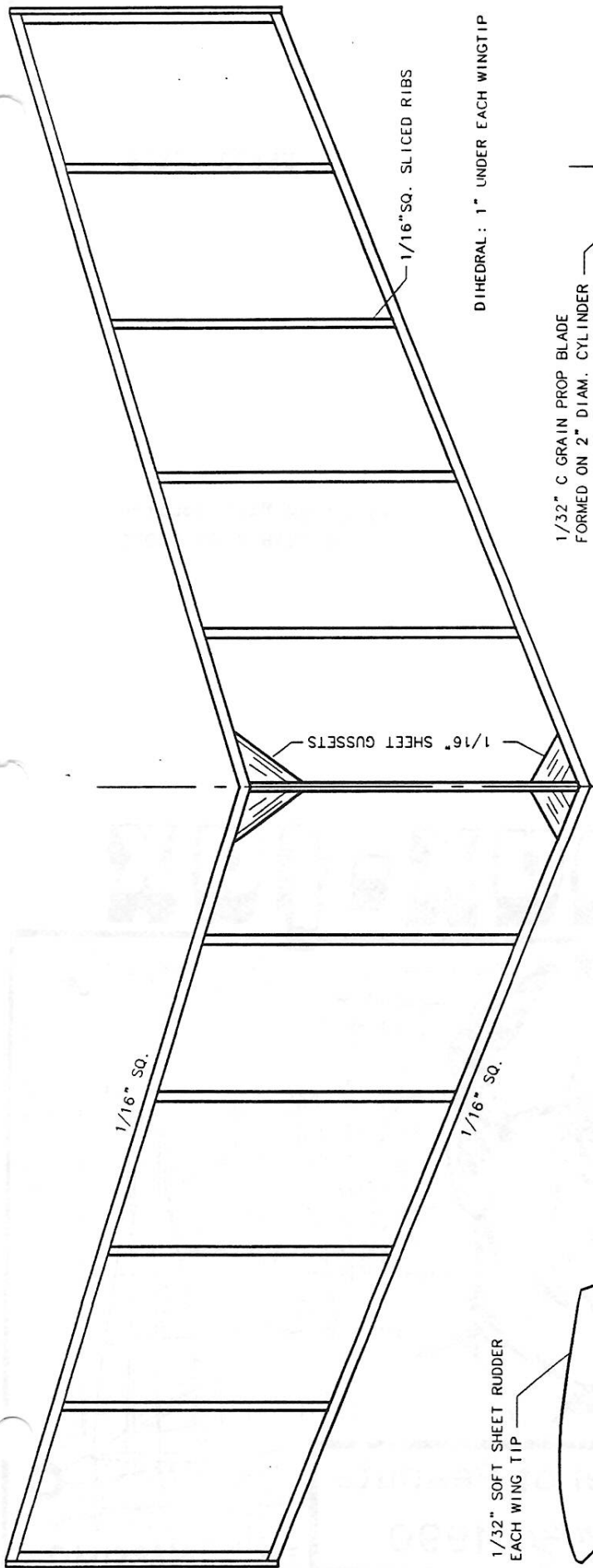
Make the wheels by cementing two disks of soft 1/16" sheet with the grain 90° apart and mount it in an arbor for your Dremel tool. Form the wheels by using sandpaper on the balsa disks while the tool is running on slow speed. The hubs are made by drilling hardwood dowel or toothpick with 0.032" bit and cementing in place. Use straight pins for the axles.

Wing and stab construction are conventional except that the stab outline is laminated. Cover with lightweight tissue. If you want to get fancy, alternate the tissue color at each rib panel with the indicated colors. Do not shrink or dope the tissue.

The prop blades are formed on a 2" cylinder. A plastic hair spray dispenser works well. Fit the hardwood dowel into the brass tubing hub so that it is a tight but adjustable fit. Solder the prop shaft to the brass hub. Notice that the pusher prop rotates anti-clockwise when viewed from the rear. This enables customary rotation while winding the motor from it's front end.

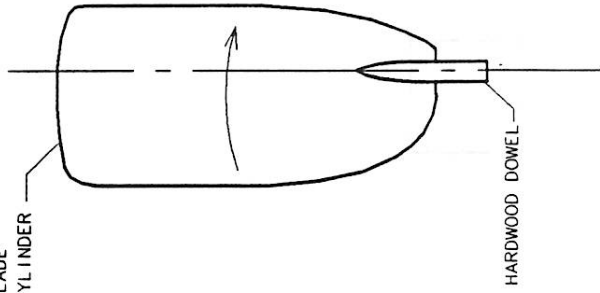
The pilot is a necessary part of this plane because of his visibility. Cut the profile pilot and his seat from a foam supermarket tray. Paint with enamel or acrylic colors and fasten with white glue.

You will find that torque effects dominate the flying characteristics of this model. Mine has the rudders fixed for left turn and the right stab has wash-in, but the model flies to the right. The CG should be approximately at the vertex of the wing leading edge. Stab incidence adjustments will probably be necessary, so hold it in place with a rubber band for initial flight tests. Have fun!

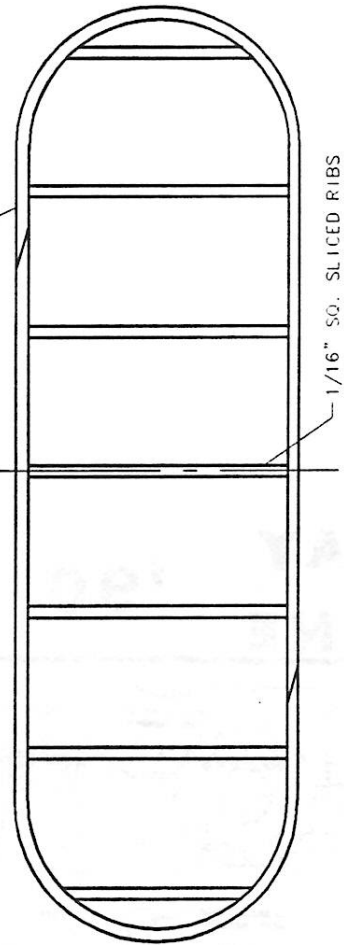


DIHEDRAL: 1" UNDER EACH WING TIP

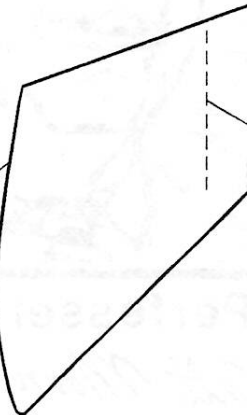
1/32" C GRAIN PROP BLADE
FORMED ON 2" DIAM. CYLINDER



ENTIRE PERIMETER OF STAB
1/16" LAMINATED Balsa
SPLICE AS SHOWN

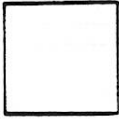


1/32" SOFT SHEET RUDDER
EACH WING TIP



SOFT COPPER WIRE ON
INSIDE OF RUDDER

DUES DUE



FIRST CLASS

2008 Spur Hill Dr.
Galatersburg MD 20879

MAY '90
JUNE

max-fax

DUBAK STRIPS ARE BASSWOOD
 USE CROSS HATCHED
 LANKED GEAR VORGE HATCHED
 BALLA WHEELS AND PAIRS
 FRONT COUPLER
 SIDE VIEW
 SCALE RIB SECTION SHOWN IS VERY THIN AT TRAILING EDGE, MODEL AIR IS THICKER
 SIDE VIEW HANDED WHEELS COLUP BORNWE 1 THESE PLANS WE A LARGER MODEL

The Perfesser of Peanuts
Walt Mooney, 1990

MASSIMO