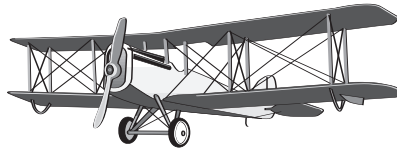


# REPLICA

SEPTEMBER  
OCTOBER  
2004

Newsletter of the National Association of Scale Aeromodelers [NASA]

## PRESIDENT'S NOTES



### NASA'S SCALE RESOURCE GUIDE 2004-05

Soon the new guide will be published and we will be either sending it to you by mail or delivering it to you at a NASA function like the Nationals or a trade show. Gary has had his hands full with the new guide and his wife has been doing a great in helping track all of the companies that have went out of business or moved and the forwarding address has expired.

The new one is all computerized and will be printed on 8½ by 11" format with a spiral binder. It will not be available on the net or NASA's website, but for those of you who have been looking for it, after all this time it's sort-of "in the mail". If not it's definitely getting there!

Have seen the new copy and it looks great. Gary has went the "extra mile" making sure that the content of the booklet is up-to-date, as well as complete as possible. Almost all of the companies have websites now and that's an added bonus for all of the membership on the net. Also be sure to include your e-mail address this January when you re-new your membership.

### FAI SCALE WORLD CHAMPIONSHIPS - POLAND 2004

The 2004 Scale World Championships were held at Deblin, Poland. The Polish Air Force hosted the week long event, where 26 countries participated in both F4C (RC) as well as F4B (CL) class. Sometimes these two classes are called "World Scale" or "Museum Scale" and both terms could be correctly applied.

Kits and ARF's need not apply to these two classes. Most of the builders either build from plans or scratch build the models themselves from scale drawings. The gestation period for a new F4 scale model can be as long as 4-5 years, depending on the complexity of the subject. Although we have seen the models built in as little as two years, sometimes less for those who are retired.

The base at Deblin is the training center for all of the Polish Air Force as well as the home base for the Polish Air Show Team. The base began operations in 1927 and continues today serving the country as well as

hosting several aero-modeling championships.

The Polish Aero Club, Air Force Academy, Eaglet's Aero Club as well as a host of workers, organizers and sponsors helped to make this one of the most memorable World Championships in the history of the event.

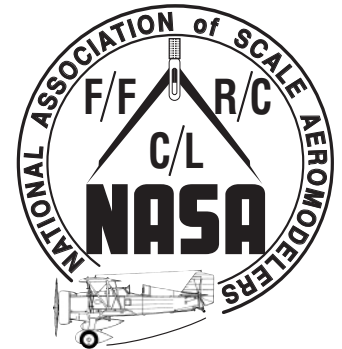
The parties, banquets, air shows, as well as almost all of the organization were superior to anything I've personally seen at a WC. The event as a total package, was 180 degrees of the recent 2002 World Championships.

Some of the different aircraft seen at this year's championships included the following: Antares Bucker Jungmeister, the DH Vampire 2 seater MkT-35 trainer, CAC 25 WinJeel (a two seat trainer from Australia) by Noel Whitehead. The Austrian team brought their familiar Halberstadt C.I.IV (a two-seater biplane from WWI) as well as the Zlin 526 AFS Akrobat and another ½rd scale Bucker 133 Jungmeister. Canada only had one competitor, Jan Stastny, who flew his Fokker D-VII in F4B painted in Udet's color scheme.

The country of Belarus also brought a F4B only team to compete with familiar models including a AIR-1 which is incredibly detailed as well as a very old model. They also brought a Brovchek W-01 which sort of looks like a Piper Tomahawk and a L410M Turbolet twin civil aircraft.

The Czech Republic always brings a full team to the World Champs and this year was no different in the RC class, although they only had one competitor in F4B. The past WC winner Vladimir Kusy was present with his Miles Magister MkII. The F4C team consisted of two new models as well as the familiar Avro 504K by Petr Tax. The new models were not expected to finish well but at least in the case of team manager, Pavel Fenc he always finishes very well. This year his new airplane was a Antonov An-2, I'm guessing at about ½th scale in a civil Czech color scheme. It's my understanding that the model will have parachute jumpers next year at the European Championships when the 15 kg weight limit will be in effect. The model flew beautifully and characteristically *sloooooow*. It was interesting to see the Polish Air Force fly their An-2s at the field during the week then to observe the model fly also.

...continued on page 2



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...Continued from page 1

The Swiss Team continues to dominate the F4C class and what is scary in that they seem to be getting better as a team, not just one individual. Andreas Luthi with his "Antares" Bucker Jungmeister finished 1st with the individual as well as the Swiss finishing 1st as a team. The other two team members seem to be working on copying Andreas's practice style. What do they do? It's simple - take a very good model and practice with it or another similar model, almost on a daily basis, working on the same flight routine over and over and over. They work together, analyze the flights and correct mistakes. Andreas has been flying very same routine, same maneuvers, same order for the past two World Championships. Other winning modelers here in the USA, fly the same routines with their competition and practice models also, like Terry Nitsch, Jeff Foley and Kent Walters.

Max Schilt has been practicing with Andreas now for the past 3 years or so and his flying has improved a great deal. The same airplane which finished lower in the class in 2000 now is in the top 5 placing. Max flies an unusual Swiss aircraft the K + W C3603, a twin tailed Swiss fighter, with main gear that retract straight back into the wing. Max built the two cylinder engine that powers the model as well as constructed the model from measurements taken and scale drawings of the full size aircraft.

Hans Ammann flew his new Jenny (looks exactly like the old one), just larger. With a wingspan of close to 9' the model still weighs less than 26 lbs. Again his maneuvers were rock solid and for the most part, very realistic.

One item that stirred up some controversy was the fact that in the past, several models have been trying to fly non-aerobatic routines with aerobatic aircraft. There has been seen in the past a Fokker E-III, Avro 504K, as well as the Morane A1 (the first airplane to do 500 consecutive loops) as well as others flying as non-aerobatic.

It was announced at the team managers meeting that any aerobatic aircraft flying maneuvers for (non-aerobatic) only would receive -0- for those maneuvers. This was announced 3 times and still a few teams tried the non-aerobatic routines. Some with aerobatic aircraft also ran out of time before the flight ended, which further decreased their scores. The language barrier can be attributed to this in several cases and possibly a team manager not attending the first meeting before competition.

Beginning next year, all aircraft either aerobatic or non-aerobatic will receive 17min. to fly their routine, but if the aerobatic aircraft chooses to fly non-aerobatic routines, they will be downgraded severely in the revised realism portion of the routine. This will be equally in place for F4C as well as F4B.

Also at the end of the competition there was a protest about the winner's airplane being over weight by 25 grams (I think that's right). Everyone had flown the 2nd round in the rain. I do mean rain, folks! It rained for two days and the F4C models flew right through it without stopping for anything. Nobody seemed to have any radio problems and it also seemed that the Europeans were ready for the rain with custom built shields for their radio equipment in some cases. Others just used clear trash bags to cover their radios and flew on. The Bucker Jungmeister of Andreas Luthi was view in violation of the weight limit at the end of the competition and was disqualified for the last round of flight, but with his first two flight scores he still won. (The flight score is taken from the best two flights of three).

The model has been right on the weight limit for the past three championships it attended and this was no surprise to those who had weighed the model before or seen it compete. Every country tries to find an edge and the 2nd and 3rd place teams were no different. There is national pride on the line as well as the important team standings for the Championships. There was a weight limit problem in Canada 2002 which was corrected, there wasn't a problem in Austria in 2003.

Our F4C team finished 11th overall with Al Kretz finishing 23rd with his SBD Dauntless built from plans by Jerry Bates as the highest placing USA team member. Manny Sousa competing in his first World Championships

with his Culver Cadet built from plans finished 30th overall and put in some very nice flights. Our 3rd team member Charlie Baker crashed on his 2nd flight, which demolished his Rawdon T-1, finishing 43rd.

Our F4B team finished in the medals, with Bronze medals being awarded to Charlie Bauer, Chuck Snyder and Dale Campbell. Charlie Bauer brought his electric powered J-3 Cub, while Chuck Snyder had a new HS-129 tank destroyer on the lines, and Dale Campbell brought his new enlarged Spacewalker II to compete with. Mechanical problems plagued the team during the week. But they still managed to finish 3rd for the Bronze Metals.

#### Standings Top Ten F4C Individual standings

	<u>Aircraft</u>	<u>Static</u>	<u>Total</u>
1. Andreas Luthi (SUI)	Jungmeister	1767.0	3488.00
2. Max Merckenschlager (GER)	Grumman F7F	1687.	3295.75
3. Hans Ammann (SUI)	Curtiss Jenny	1558.5	3191.00
4. Pavel Fencel (CZE)	Antonov An-2	1708.	3184.75
5. W. Niederstrasser (AUT)	Jungmeister	1564.5	3153.
6. Humphrey Le Grice (RSA)	FW 190	1662.	3099.0
7. David Law (AUS)	Vampire MkT35	1575.	3057.50
8. Gerard Ruffen (NED)	Beech T-45	1483.5	3056.50
9. Max Schilt (SUI)	K+W C3603	1450.5	3043.50
10. Hansjorg Hofbauer (AUT)	Halberstadt C.I.IV	1692.0	3035.00
23. Al Kretz (USA)	SBD Dauntless	1554.0	2818.
30. Manny Sousa (USA)	Culver Cadet	1341.	2684.0
43. Charlie Baker (USA)	Rawdon T-1	1470	2260.75

- **There were only 5 biplanes in the top 10 this year, fewer than in past years.**
- **There were two twin models in the top 10 this year.**
- **There was one jet in the top 10.**
- **There were 7 military aircraft in the top 10.**
- **Most common engine used was the Laser 4-stroke from Great Britain**
- **The largest Medal count was a tie, it went to both Switzerland and Poland, one in F4C and the other in F4B class.**

#### Team Scores through 3rd place

Gold- Switzerland	score 9722.50
Silver-Czech Republic	score 9183.75
Bronze- Austria	score 9047.25

#### Standings Top Ten F4B standings

	<u>Aircraft</u>	<u>Static</u>	<u>Total</u>
1. Marian Kazirod (POL)	Fairey Battle	1779.0	3398.0
2. Piotr Zawada (POL)	Miles M14 Magister	1584.5	3205.25
3. V. Tshubатов (RUS)	YAK- 52	1790.5	3184.25
4. Alfred Funk (GER)	ME-109E 4/7	1484.5	3051.75
5. Vladimir Kusy (CZE)	Miles Magister MKII	1489.5	3044.
6. Vladimir Bulatnikov (RUS)	AIR-1 Yakovlev	1648.5	2967.25
7. A. Tchoutchouline (RUS)	SU-12	1617.5	2942.5
8. Boguslaw Malota (POL)	Douglas Skyraider	1582.5	2930.0
9. Dale Campbell (USA)	SpacewalkerII	1258.5	2519.25
10. Chuck Snyder (USA)	Henschel 129	1469.5	2269.0
17. Charlie Bauer (USA)	J-3 Cub	987.0	1214.25

#### Team Scores through 3rd place

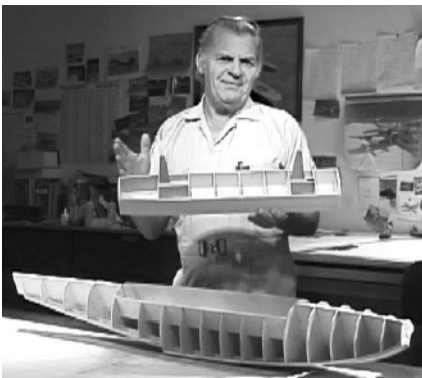
Gold- Poland	Score 9533.25
Silver- Russia	Score 9094.00
Bronze USA	Score 6002.50

Fair Skies & Tail Winds,

Stan Alexander

## VIDEO REVIEW – DAVE PLATT'S "ADVANCED BUILDING TECHNIQUES - VOL. 1 - KINGFISHER"

Having covered basic scale building in his earlier "Black Art" series tapes that are popular world wide, Dave turns to more complicated techniques. The opening shot of his "Val", fresh from a 1st place win in Designer Scale at the 2002 Nats and he reveals one factor in its success – the wing loading is 28-29 oz. per sq. ft. – very low when you consider that 60 and 70 oz. models have been regularly flown there.



The rest of the tape centers around the Vought Kingfisher, an example of which is displayed on the U.S.S. North Carolina Battleship Memorial. Having a full-scale prototype to measure and photograph is the first step to an exceptionally accurate model. By contacting the Museum ahead of time, Dave got their helpful permission to come and document the aircraft in a quiet time of day. They supplied a tall step ladder for better access. This aid is not always available so when you take a trip to cover a subject take along a ladder for the top of the wings, etc.

Back in the workshop with his scale data collection, he begins designing. Many scale builders are reluctant to try drafting an original project, but even if you missed Mechanical Drawing 101, set your mind to it and give it a try. Have some good french curves and follow along as Dave demonstrates, first lofting the many formers in the main float.

As construction proceeds he remarked, "balsa wood does not do compound curves but can be persuaded to do them". He then showed the kinks necessary to bend and coax a 6" wide sheet into place. My opinion is that planking in strips, often suggested, should be avoided if at all possible---too many seams and edges: to match and smooth.

Dave continues to use "E-glass" weave fiberglass for covering, advertised as "drapable" by it's supplier, Fibre Glast. Also, as in previous tapes, he makes some parts from G-10 fiberglass sheet. FTE now carries this material in .015, .020, .030, .040 and .125 thicknesses.

I particularly liked his presentation on the uses of RTV silicone rubber, not well known to modelers, in making the crescent shaped do-hickeys that support the flap shrouds. There are 28 of them and while they could be made individually by hand, you might be contemplating stamp collecting by the time you finished. Dave makes one left and one right and sets them in a mold box, pours the liquid rubber over them. When set up, the patterns are pulled out of the Dow Corning 3110 silicon and the cavities filled with fiberglass resin. Next time you pick some set-up resin out of a 1 oz. medicine cup, look at how well the oz. and dram markings are reproduced, it will give you an idea of how fine a reproduction is possible. Incidentally the 3110 is mixed 10 to 1 by weight, requiring a sensitive scale. Micro Mark has an RTV mixed 1 to 1 by volume that I have use with good results.

There are 3 more tapes to follow and since he deliberately chose the Kingfisher because of the difficulty it presented, we are going to get more good stuff. Seeing the finished model at Toledo this year, the reporter for the English magazine Aviation Modeler International commented in print, "Dave Platt's absolutely brilliant Vought OS2U Kingfisher seemed more like a shrunken full size rather than a model."

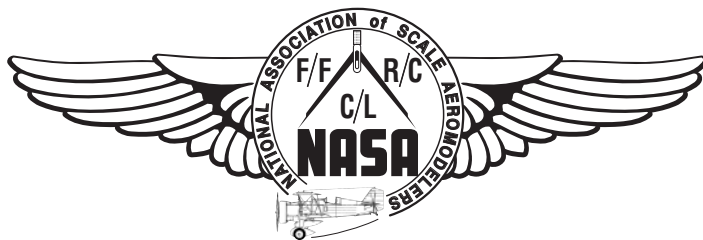
Dave's web site, [www.daveplattmodels.com](http://www.daveplattmodels.com) has more. Tape is also available on DVD. Give him a call at (321) 724-2144, eastern time.

Claude Mccullough

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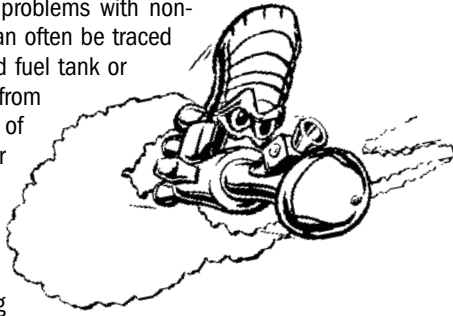
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# Engine Idle: SETTING A SLOW, RELIABLE IDLE

To start with, many idle problems with non-pump equipped engines can often be traced to an improperly positioned fuel tank or a fuel tank that is too far from the engine. The centerline of the fuel tank should never be any higher than the centerline of the fuel jet and preferably 1/4 to 3/8 inches below. This helps decrease the siphoning action with a full tank of fuel.



The make of the glow plug also plays an important role. Any older design, cross-flow scavenged (ported) two-stroke engine should use an idle bar glow plug. Most of the newer Schnuerle ported two-stroke engines do not require an idle bar plug, but if idle problems are experienced, an idle bar plug should be used. If you aren't sure whether the engine is cross-flow or Schnuerle ported, just look into the exhaust. If there is a baffle on the far side of the piston, the engine is cross-flow ported. If there is no baffle, it is Schnuerle ported. Some engines do have better idle characteristics than others due to differences in porting, timing, compression ratio, etc.

When it comes to the actual adjustment, there are two basic methods. The first is to start with the fuel tank half full and the idle speed set in the 2,500-2,700 rpm range. This is where a good tachometer comes in handy and is something every toolbox should contain, not just for setting idle speed but for proper richening of the top end as well. Then, use the "pinch test" (i.e. pinch the fuel line). If the engine dies immediately, the idle mixture is too lean and needs to be opened in 1/8-inch increments. If the engine speeds up and the idle improves, the mixture is too rich and the adjustment should be turned in or leaned.

If the engine is cowed in and the fuel line to the carburetor is not easily accessible, with a tricycle gear ship, lower the tail. If the engine dies immediately, the mixture is too lean. If the idle improves, the mixture is too rich. Remember to always make any idle mixture adjustments in 1/8-turn increments—not one or two turns at a time.

With a tail-dragger, make the mixture adjustments with the tail raised to a level position, being careful not to go so high as to have the propeller hit the ground. Then, lower the tail following the same procedure as with the tricycle gear model.

For the final check, accelerate the engine to full throttle. If it slows and sags and has a weak sound, the mixture is too lean and needs richening. If the engine sputters and spits out a lot of smoke, the mixture is too rich and should be leaned.

After a satisfactory idle and acceleration have been established, you can try lowering the idle speed to the point where the engine will remain idle for a prolonged period with good acceleration to full throttle. Again, the idle speed should be set with a tachometer and not by ear.

Many cases of an engine dying at idle are simply because of pilots who try to idle the engine too slow. It is nice to watch an engine tick over at 1,800 rpm, but an idle speed in the 2,200-2,500 rpm range is more practical and reliable.

Also remember, the heavier the propeller and the larger the diameter, the better the flywheel action. Increased flywheel action is always beneficial to a slow and reliable idle.

Jim Bronowski  
Riverside CA

# 21 WAYS TO KILL YOUR CLUB

THE FOLLOWING LIST WAS OBTAINED FROM A LEADING NATIONAL COMMUNITY SERVICE ORGANIZATION. WE CAN ALL LEARN FROM IT.

1. Don't attend meetings, but if you do, arrive late.
2. Be sure to leave before the meeting is over and make sure everyone hears you leave.
3. Sit in the back so you can talk with other members during the meeting.
4. Never have anything to say at meetings; wait until you get outside, then always be negative.
5. After meetings, find fault with club officers and fellow members.
6. Hold back your annual dues as long as possible, or better yet, don't pay at all.
7. Never accept an office or serve on a committee. It is much easier to criticize than to do.
8. When everything else fails, abuse the club's officers.
9. Don't bother enlisting new members; let the others do it all.
10. At meetings, agree to everything, then go home and do nothing.
11. Don't tell the club how its policy can help you, but if it doesn't help you, tell everyone else it's useless.
12. Do nothing more than what's necessary, but when other members roll up their sleeves and willingly use their ability to help matters along, complain that the club is being run by a clique or dictator.
13. Talk cooperation but never cooperate.
14. Get all that the club has to give but give nothing in return.
15. Threaten to leave the club if something isn't the way you want it.
16. If you're asked to help, always say you don't have time.
17. Never read any mailings or seek information. You might find out what's going on.
18. If appointed to a position, never devote any time to it. Let someone else do it all.
19. Overlook your own shortcomings and concentrate on what they are not doing.
20. Repeat all the unpleasant things about your club to anyone who will listen.
21. Always criticize club officers whenever the opportunity arises.

## Basic Radio Control Definitions

<b>Blind Nut:</b>	Judge at a scale contest.
<b>Engine:</b>	Device designed to make noise. It will suddenly stop making this noise when beyond glide-in distance.
<b>Fuel Tank:</b>	Plastic bottle, designed to leak when placed in totally inaccessible locations.
<b>Wing:</b>	Device that, due to its airfoil, allows air to flow faster over the top, thereby giving you the opportunity to pour excess funding into the resulting low-pressure area.

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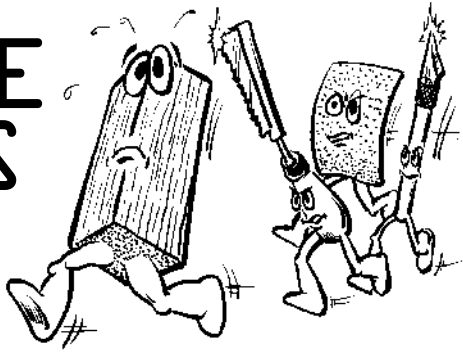
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# SCALE TIPS



## PROTECTING HINGES

Petroleum jelly often has been used on pinned hinges to prevent epoxy glue from sticking to the hinge joint; however, it is difficult to get just the right amount on the hinge and to make sure the hinge is completely coated.

A very cool way is to melt the petroleum jelly in a small dish such as a dessert dish (an oven safe type, of course). Use only enough to melt to a depth of about 1/6 of an inch. Fold the hinge and dip the pinned end into the melted jelly.

Remove and touch the hinge to a paper towel to remove excess. In a couple seconds, the petroleum jelly cools and has penetrated the hinge. You now have a completely coated hinge joint that epoxy will not stick to.

*Gene Davis*

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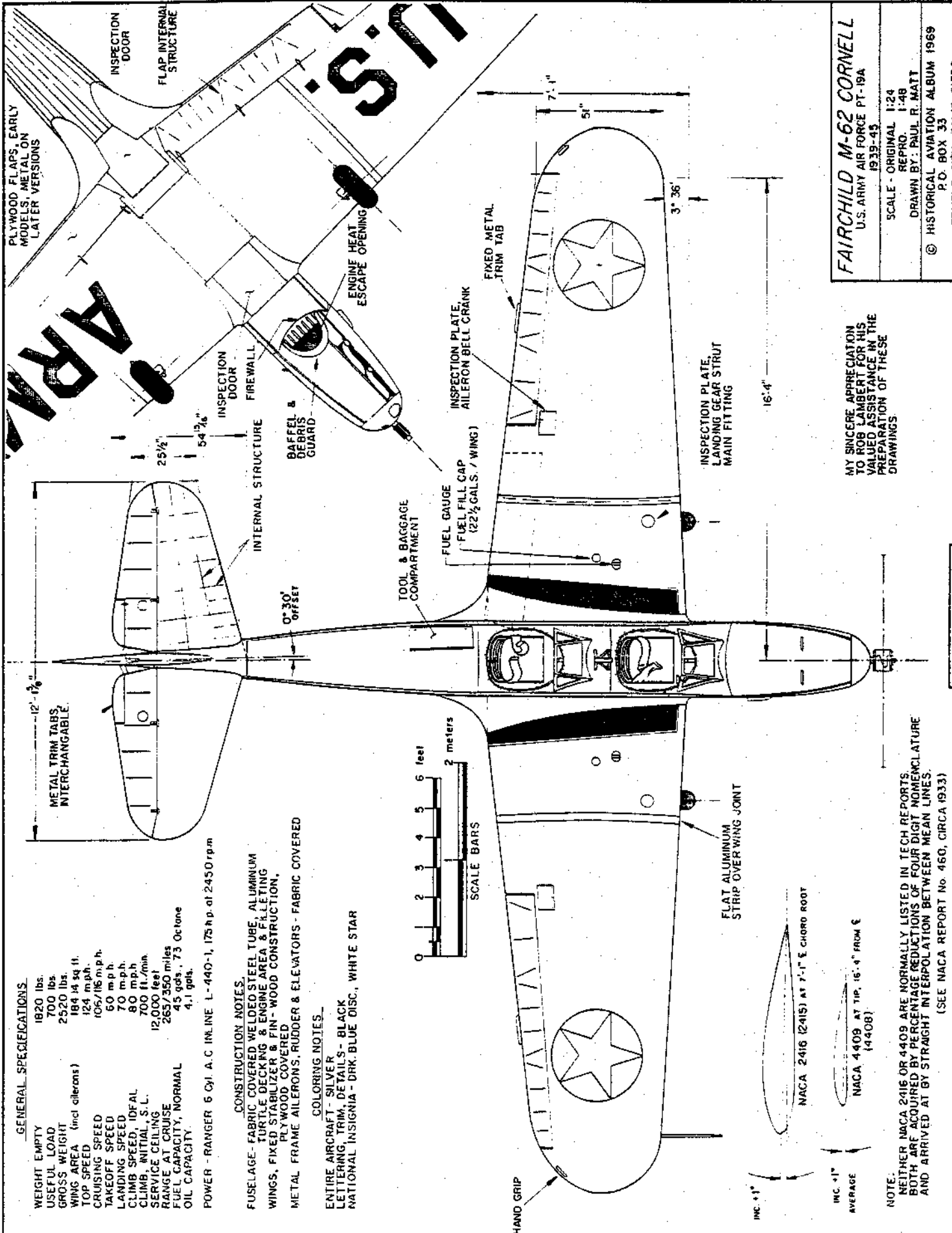
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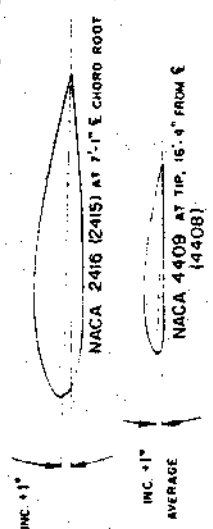
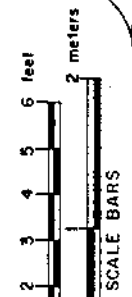
POWER - RANGER 6 Cyl. A.C. INLINE L-440-1, 175 hp. at 2450 rpm

**CONSTRUCTION NOTES**

FUSELAGE - FABRIC COVERED WELDED STEEL TUBE, ALUMINUM  
 TURTLE DECKING & ENGINE AREA & FLEETING,  
 WINGS, FIXED STABILIZER & FIN - WOOD CONSTRUCTION,  
 PLYWOOD COVERED  
 METAL FRAME AILERONS, RUDDER & ELEVATORS - FABRIC COVERED

**COLORING NOTES**

ENTIRE AIRCRAFT - SILVER  
 LETTERING, TRIM, DETAILS - BLACK  
 NATIONAL INSIGNIA - DRK. BLUE DISC., WHITE STAR

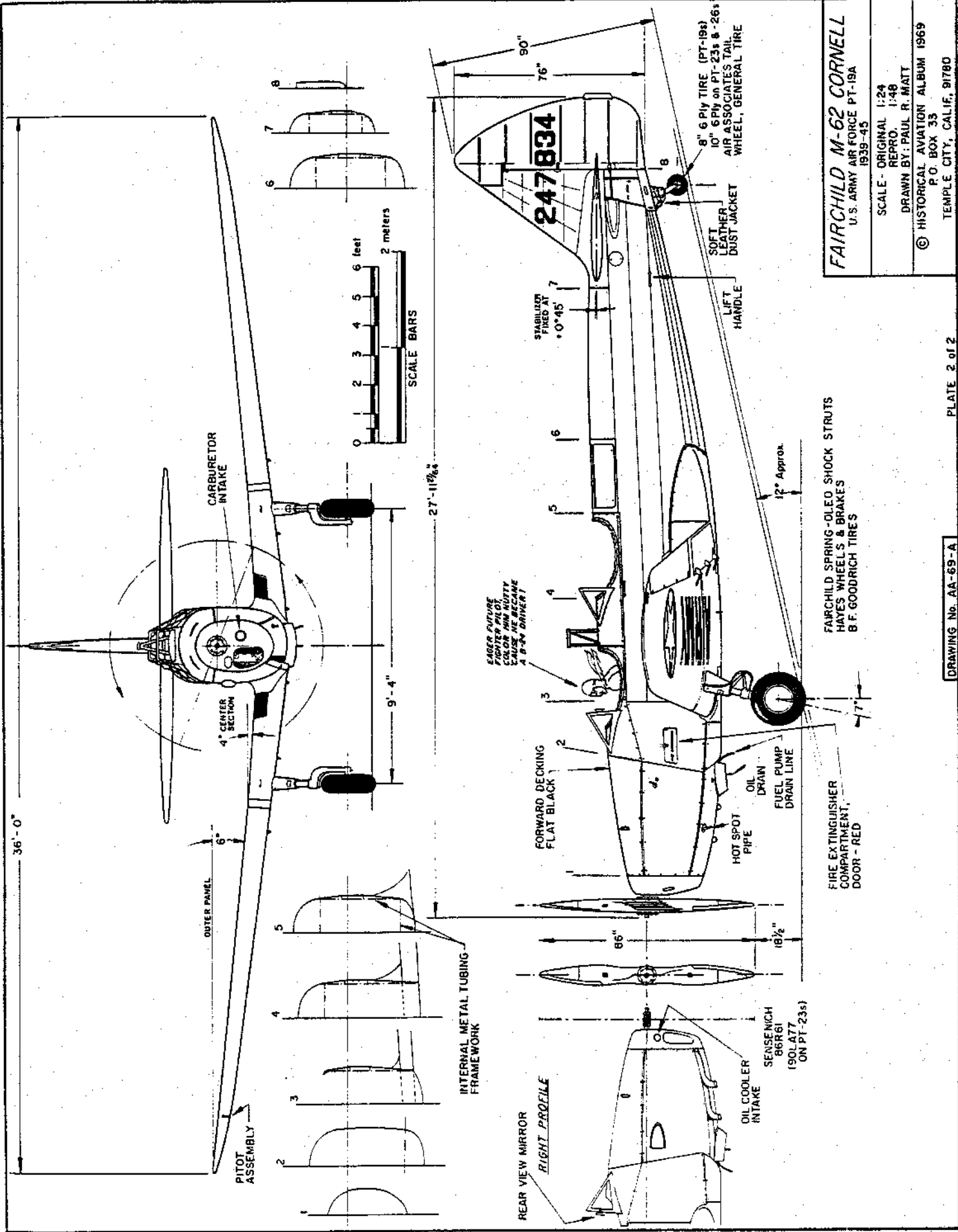


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 NEITHER NACA 2416 OR 4409 ARE NORMALLY LISTED IN TECH REPORTS,  
 BOTH ARE ACQUIRED BY PERCENTAGE REDUCTIONS OF FOUR DIGIT NOMENCLATURE  
 AND ARRIVED AT BY STRAIGHT INTERPOLATION BETWEEN MEAN LINES.  
 (SEE NACA REPORT No. 460, CIRCA 1933)

**FAIRCHILD M-62 CORNELL**  
 U.S. ARMY AIR FORCE PT-19A  
 1939-45

SCALE - ORIGINAL 1:24  
 REPRO. 1:48  
 DRAWN BY: PAUL R. MATT  
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 TEMPLE CITY, CALIF. 91780

MY SINCERE APPRECIATION  
 TO ROB LAIBERT FOR HIS  
 VALUED ASSISTANCE IN THE  
 PREPARATION OF THESE  
 DRAWINGS



**FAIRCHILD M-62 CORNELL**  
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FAIRCHILD SPRING-LOADED SHOCK STRUTS  
 HAYES WHEELS & BRAKES  
 B.F. GOODRICH TIRES

FIRE EXTINGUISHER  
 COMPARTMENT,  
 DOOR - RED

EAGER FUTURE  
 COLOR MAN MURTY  
 LAUSE HE BECAME  
 A B-24 DRIVER

8" 6 PLY TIRE (PT-19)  
 10" 6 PLY ON PT-23s & 26s  
 AIR ASSOCIATES TAIL  
 WHEEL, GENERAL TIRE

SOFT  
 LEATHER  
 DUST JACKET  
 LIFT  
 HANDLE

FORWARD DECKING  
 FLAT BLACK

HOT SPOT  
 PIPE  
 OIL DRAW  
 FUEL PUMP  
 DRAIN LINE

REAR VIEW MIRROR  
 RIGHT PROFILE

OIL COOLER  
 INTAKE  
 SENSENICH  
 86R61  
 (90L A77  
 ON PT-23s)

INTERNAL METAL TUBING  
 FRAMEWORK

CARBURETOR  
 INTAKE

4" CENTER  
 SECTION

OUTER PANEL

PITOT  
 ASSEMBLY

SCALE BARS  
 0 1 2 3 4 5 6 feet  
 0 1 2 meters

36'-0"

27'-11 1/2"

9'-4"

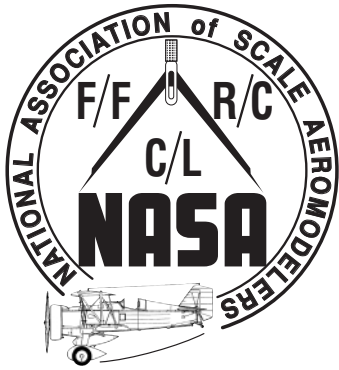
86"

18 1/2"

STABILIZER  
 FINED AT  
 +0°45'

90"  
 76"

247834



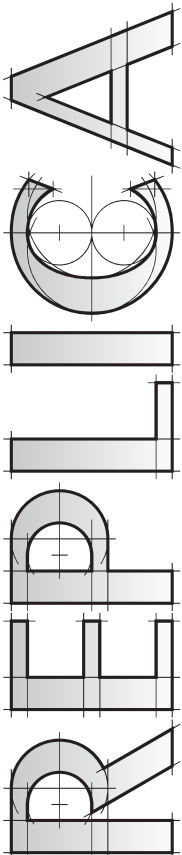
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- 2004 World Championships Report
- Dave Platt Video Review • Fairchild M-62 Cornell 3-view
- The Latest in Scale News.

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