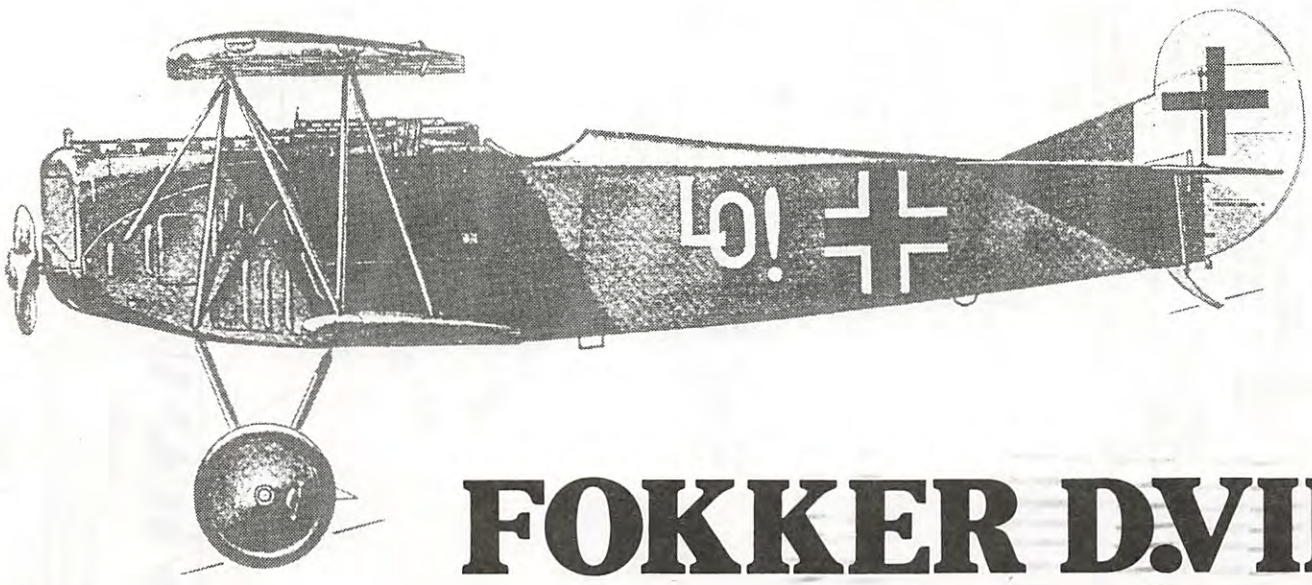
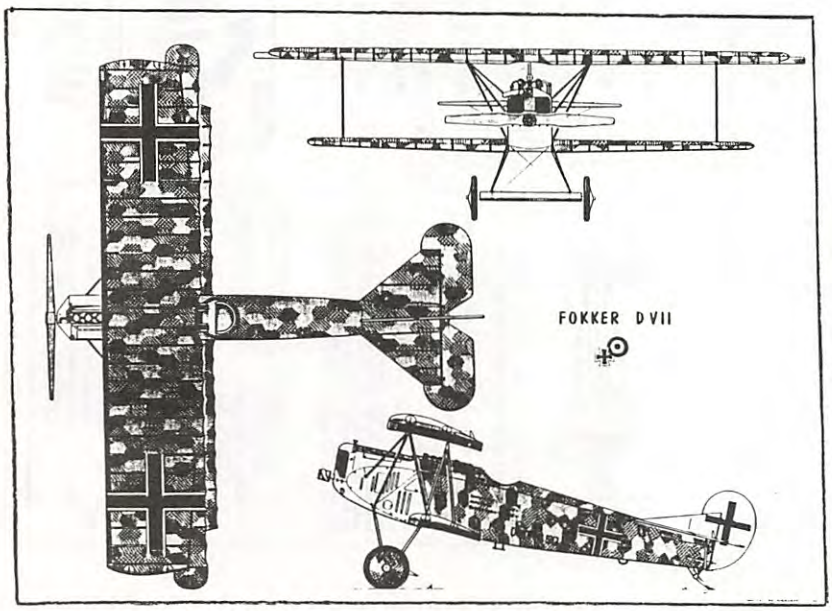
Crosswinds

※ 101



FOKKER D.VII

CROSSWINDS
RUSS BROWN
4909 N. SEDGEWICK
LYNDHURST, OH 44124



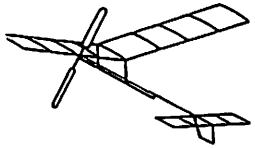
THE CLEVELAND FREE FLIGHT SOCIETY

A.M.A. sanctioned Indoor Contest

SUNDAY, April 7, 2002 Kent State University 8:00 a.m. to 4:30 p.m.

Flying Site - KSU Field House, Summit Road (near Dix Stadium)

SCHEDULE of EVENTS



8:00 a.m. — Building opens

8:15-10:30 a.m. 1. *Standard Class Catapult Glider*. AMA Rules

8:30 a.m. to 4:00 p.m.

2. *EZB* - - Scoring is the longest of five officials. 30 seconds minimum. Two attempts/flight.

3. *Limited Penny Plane*

4. *Mini-Stick* - - Best flight of 5 officials. 20 second minimum. 2 attempts/Flight.

9:00 a.m. to 3:00 p.m.

5. *Seven Gram Bostonian* - A.M.A. rules.

9:30 a.m to 4:00 p.m.

6. *Jetco R.O.G.* - Club Rules - prop must be 5½"max. May be cut down and have pitch altered.

10:00 a.m.

F.A.C. EVENTS

to

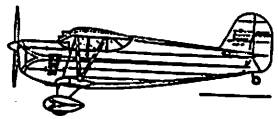
7. *W.W.II Peanut Combat* - Flown at 12:01 p.m.

4:00 p.m.

8. *Hi-Wing Peanut* (Experimental, Lacey,Fike etc.)

9. *Hi-Wing Peanut* (Production types).

10. *Peanut Scale* (all others except pioneer models).



11. *W.W.I Peanut Biplane Combat* - 4:05 p.m.

12. *Golden Age Scale*

13. *Dime Scale*

15. *W.W.II No-Cal Combat*. Flown at 4:25 p.m. Minimum weight - 6.2 grams without motor.

16. *No-Cal Profile Scale* (3 flight total) Minimum weight - 6.2 grams without motor.

17. *Pioneer Scale* - Bonus points added to the flight points . This event for all models (any size) of aircraft produced before 1914.

For Your Information

1. All events are JSO combined.
2. Steering of Models: as per A.M.A. rulebook.
3. Entry Fees: - *Open* - $25.00 - *Junior* $3.00 (includes AMA Lic.)
4. VERY IMPORTANT - You must provide your own table and chair.
5. KSU Fieldhouse is a non-smoking facillity. Also, please wear athletic type shoes. Ample free parking outside the fieldhouse.

A Science Olympiad event will be scheduled if this activity does not conflict with regional or state S.O. competitions. S.O. flyers are encouraged to fly in any of the events at this contest.

AWARDS There will be a Contest Grand Champion based on the following criteria: 3 points for a first place
2 points for a second place
1 point for a third place

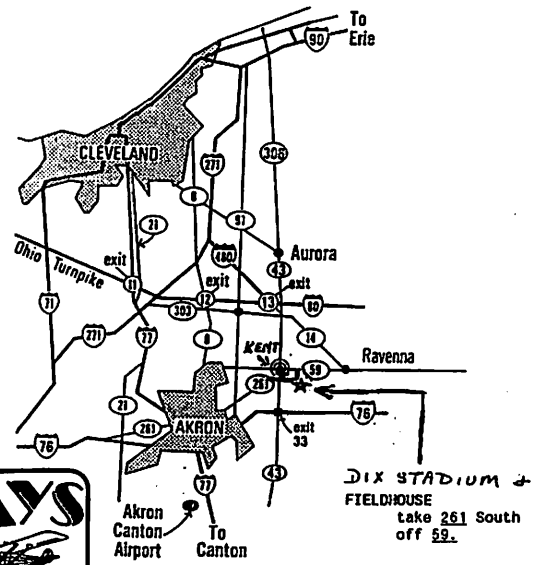
Highest total determines the winner. There will be a special merchandise award for the Grand Champ.

1st through 3rd - All events except mass-launch. W.W.I & II Peanut and No-Cal Combat 1st place award only but 2nd and 3rd place points for Grand Champion will count.
2nd place - minimum of 5 entries in the event.
2nd and 3rd place - minimum of 7 entries in the event.

CONTEST DIRECTORS

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  - collectors
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  - scale modellers

We publish two Journals; membership includes a year of one or both: members contribute at least the indicated minimum, with anything over that as a tax-deductible contribution. Since we are a service organization, our expenses go beyond publication and mailing costs, so the more the better! Gifts of books or other saleable materials are also tax-deductible.

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CROSSWINDS QUARTERLY

THE JOURNAL OF THE CLEVELAND FREE FLIGHT SOCIETY

ISSUE NO. 101

EDITOR: DENNIS O. NORMAN
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CLEVELAND, OHIO 44102 USA
TELEPHONE: (216) 631-7887

EDITORIAL COMMENT:

In the year since we graced you with our effort on the Spad XIII as a rubber powered free flight topic, I have discovered a way to print detailed camouflage and marking schemes on Japanese tissue using a color copier. The prototype Spad XIII was initially going to be marked using an airbrushed background and my technique for photocopying surface detail, but with the discovery that I could print both color and surface detail using a color copier, the Spad prototype became my first effort at using this technique. This all occurred after Issue No. 97 had gone to press so that you may be unaware of my successful use of a color copier to print the markings for the Spad.

Actually I printed full markings for two Spad XIII subjects. One, a Spad XIII flown by Capt. Eddy Rickenbacker, the other, a Spad flown by Capt. Armand de Torenne. Both men were ace pilots and both marking schemes were warmly received by modelers at shows held in Dayton, Columbus, and Toledo, Ohio in the spring of 2000. The prototype was also applauded at the FAC Non-Nats held in Geneseo, New York in the summer of 2000.

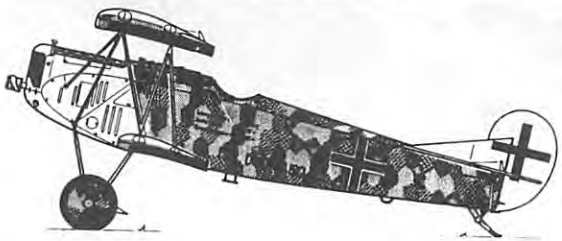
In addition to the Spad XIII schemes, I also printed some German lozenge patterns for upper and lower surfaces. With the immense popularity of the Fokker D.VII, I found it irresistible to make a full color presentation of the D.VII flown by Georg von Hantelmann of Jasta 15. Lt. Kurt Wüsthoff borrowed von Hantelmann's D.VII on June 17, 1918 and found himself on the losing side of a battle with SE5a's of 24 Squadron RAF. Wüsthoff became a prisoner of war and von Hantelmann's Fokker D.VII became one of the most photographed and documented of its type. As noted by English writer Dave Roberts in the 1997 Albatros Productions, Ltd. "Anthology 1 Fokker D.VII:"

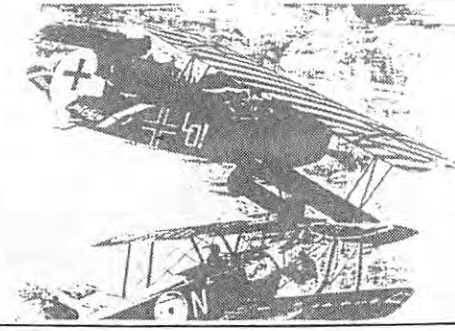
> "The gaudy red and blue fuselage, emblazoned with a large Jolly Roger, epitomizes the dashing devil-may-care attitude which romanticists attribute to WWI fighter pilots."

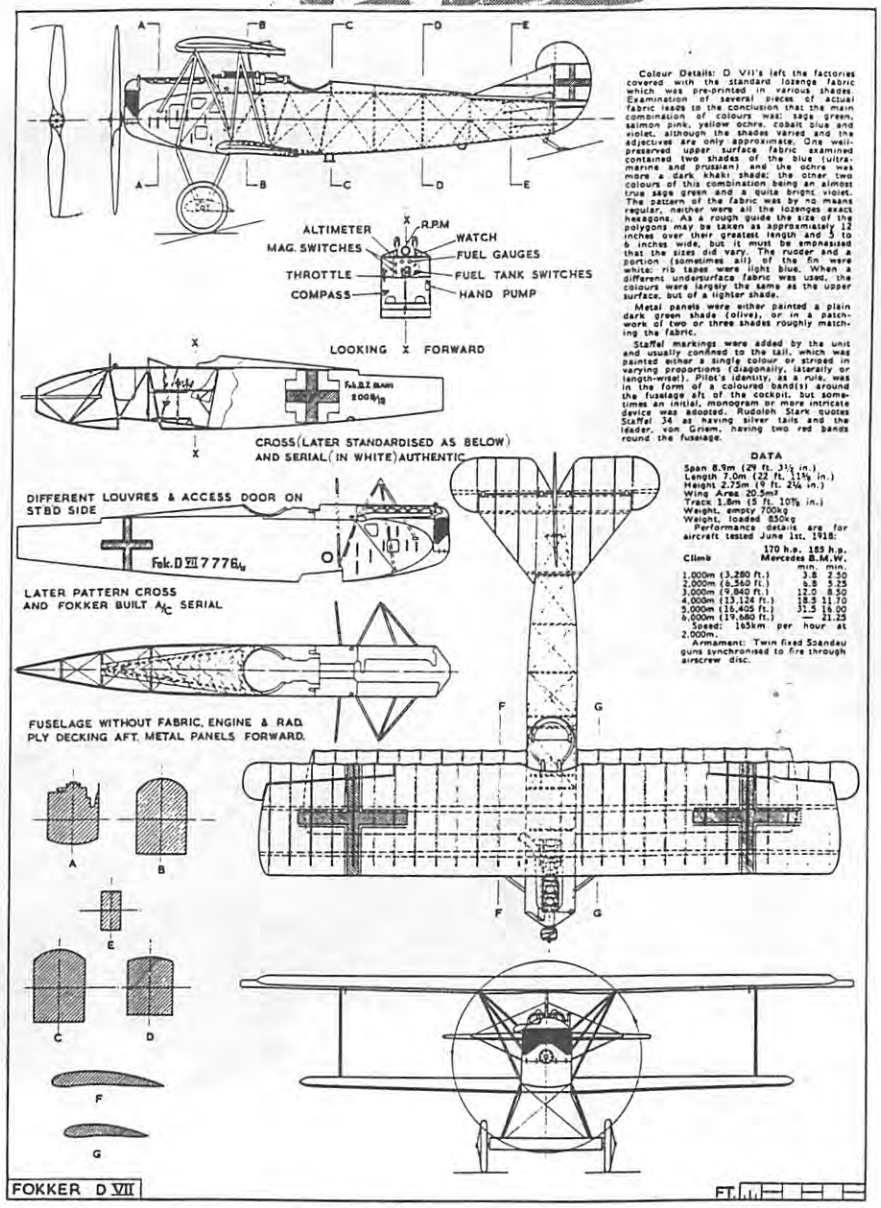
There was nothing romantic about Wüsthoff's combat, however, as it reportedly left him with "a painful, embarrassing injury" and, of course, captivity for the duration.

It is not possible to provide a set of markings as part of this issue of Crosswinds, but a detailed, full color, set of markings is available from Air Ace Models (published separately by your editor) at a cost of $20.00 post paid.

CROSSWINDS readers with the dreaded RED X at issue renewal code No. 101 or lower can avoid the chop to address label by sending $ 12 or more to Russ Brown at 4909 N. Sedgewick, Lyndhurst,OH,44124. Thank you.







1/72nd DRAWINGS BY P. L. GRAY, AVAILABLE WITH 1/48 DYELINE AS PLAN PACK 2691 PRICE 27p INCLUDING POSTAGE AND V.A.T. FROM PLANS SERVICE



WORLD WAR 1

Fokker D-VII

Norman Witcomb describes his approach to modelling a specific 'Ace-maker' of Jasta 40

SO MUCH HAS been written about the Fokker D VII that it has remained one of the best-known fighters of the First World War and a favourite with several generations of aircraft modellers. The writer makes no excuses for going over well-trodden ground and offering for examination yet another example of this historic machine reproduced in 1/72nd scale.

If any warplane could be said to be an Ace maker, then the Fokker D VII has a strong claim for this distinction gained in the combats of the first aerial war. It appeared at a time when the German Air Service was heavily outnumbered over the Western Front and the tide of battle had turned against Imperial Germany. It was not so much that the Fokker D VII had any particular advantage over its opponents. It was not the fastest machine over the front or the most manoeuvrable but what it did do was to retain control when other machines lost theirs. The D VII could hang on its propeller at altitude and remain a stable gun platform. Because of this, novice pilots could escape from mistakes that lesser machines would not forgive. And in the hands of an experienced pilot the D VII was a formidable weapon. It was noted that after the Fokker D VII entered front line service with the Jastas, the scoring rate of experienced pilots often trebled and many competent fliers became high-scoring aces.

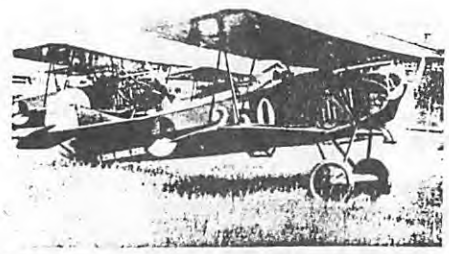
Following custom, the elite units were the first to receive delivery of the desirable biplane fighter that would replace the ageing Albatri and Triplanes that had seen long service and flew against superior allied equipment. One of the first units to put the Fokker D VII into action was the Richthofen Geschwader who re-equipped in May 1918. Another elite unit was Jasta Boelcke, Js 2, whose pilots soon ran up impressive scores flying the new machine. By mid-summer 1918 most of the front-line units of the German Air Service had their complement of Fokker D VII's and some of the less illustrious staffels also received their share. Ordered in large quantities, the Fokker D VII was built in the factories of the Albatros Werke, and the Ostdeutsche Albatros Werke as well as the parent Fokker Werke.

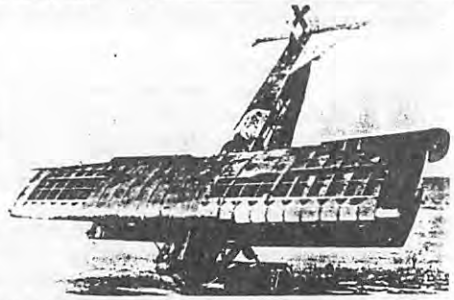
The summer and autumn of 1918 saw some of the heaviest air fighting of the First World War and the Fokker D VII epitomised the German opposition to allied mastery of the skies.

Because the Germans were heavily outnumbered along the Front they had to use what forces they had with maximum efficiency and this was achieved by grouping their units into Circuses of large formations which would be switched to whatever section of the Front needed temporary control of the air. Allied reports of clouds of German fighters were usually in fact the sorties of an entire Geschwader composed of four or five staffels.

Over a thousand allied aircraft fell to the guns of the Fokker D VII during the hot summer months of 1918. When the French and Americans began their offensive in the late summer of 1918, the German fighter Geschwaders were switched from the British Front in Flanders to the south and caused great havoc amongst the less experienced allied units operating in that sector.

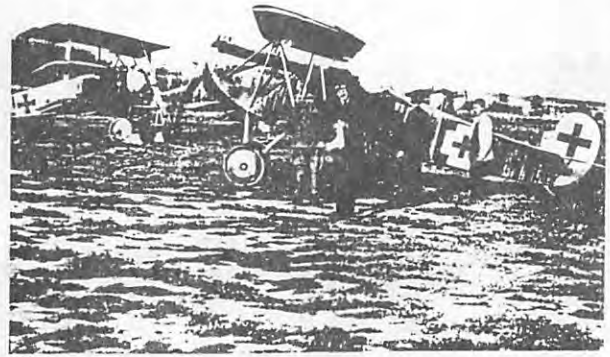
Among the fighter units left to oppose the British squadrons was Jasta 40 led by Leutnant Carl Degelow, one of the last German fighter aces to be awarded the Order of the Pour le Merite. Jasta 40 received Fokker D VIIs in July 1918 and soon began to add to its victory roster. By October 1918 it had scored over 54 victories, its leader, Lt Degelow having scored 22 to bring his total to 30. There were many other fliers who became aces in a similar manner.





Below right, an unlucky D-VII, apparently souvenir hunters have torn national insignia, off the wing and fuselage. We wonder what became of all those crosses removed from German aircraft, as most captured machines suffered this fate. Ribs and plywood skinning of leading edge shown clearly here.

Above left, a D VII used after the war by the Dutch Army Air Service. Originally the Dutch Army received a number of 120 Fokkers smuggled out of Germany by Anthony Fokker but later batches were built in Holland. They were subject to considerable modifications and various power plants were fitted.



This machine has Austrian Swarziose machine guns and appears to have an Austro-Daimler engine. Aircraft behind the DR1 Triplane are Oeffag C-11s. Note the streaky olive early scheme on the D VII, and there is little doubt that the man in the foreground is Anthony Fokker himself.

The model of the Fokker D VII the writer decided to portray was that flown by Carl Degelow as it was less well-known than some of the other aces' machines which have been well covered in the past. It was thought that the simple attraction of Degelow's personal markings, a silver stag with golden antlers on a black fuselage, showed the personality of the Fokker design to its best advantage. The D VII carried as varied a decor as could be imagined and the German units took full advantage of the practice. It should be mentioned that it was the style to mark unit identification on the horizontal stabilisers and the metal part of the cowling either by identifying colours or stripes. Personal markings were in the form of bands or heraldic devices on the fuselage just behind the cockpit. There were virtually hundreds of options. For example, Jasta 6 carried black and white stripes on its D VIIs in a diagonal over the metal panels of the cowl and on the wheel covers and horizontal stabilisers; very similar to that used on the D VIII with which it re-equipped in August.

Many of the staffel markings which were used in World War II by the Luftwaffe were first seen in late 1918 on the Fokker D VII. It became the practice late in 1918 to identify the staffel leader's machine by geometric bands or chevrons in white on the top wing and practically all units employed this system.

It is worth mentioning that the Commanding Officer of Jagdgruppe 6 which was made up of Jastas 7, 20, 40 and 50 in October 1918 was Hauptmann Erhard Milch who later became the Head of the Luftwaffe in World War II.

The modeller wishing to build a model of the Fokker D VII is well served by the kit manufacturers in a number of large flying scales or in 1/48 by Aurora, Artiplast and Merit in plastic and to a smaller plastic scale of 1/72 by Revell Renwal and Fuji. The kit the writer chose for his purpose was the Revell 1/72nd for its crispness and accuracy. As mentioned in a previous article on the Hannover (*Scale Models*, March 1973) it is essential to also provide oneself with a good and accurate plan, either to correct errors in the kit or to add the detail which makes all the difference to achieve a worthwhile collection piece.

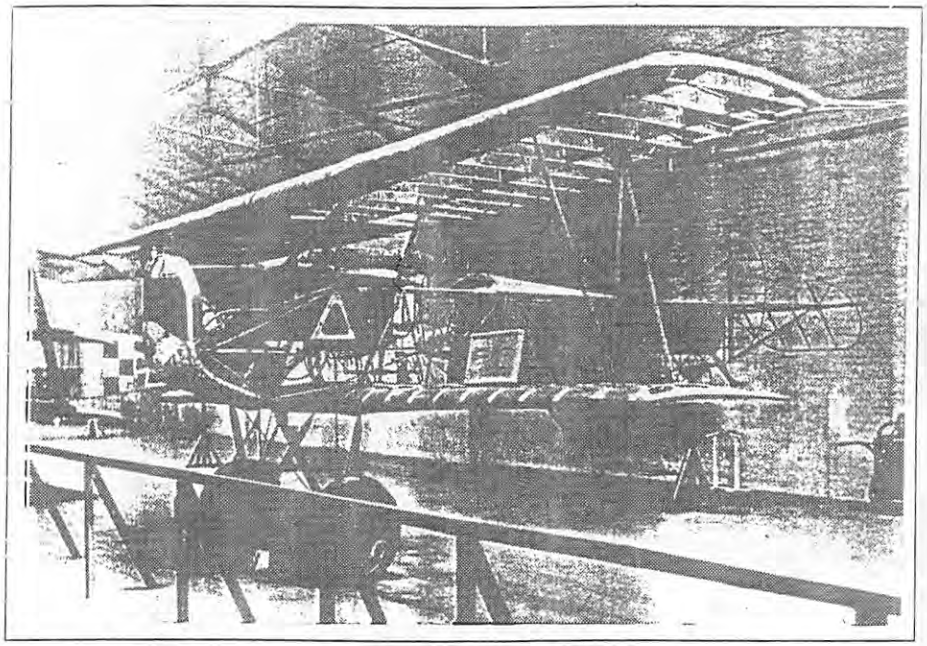
Working in a small scale it is essential to capture the personality of the machine being portrayed and therefore one has to discard many of the kit parts and make more typical components to achieve creditability. Most obvious is the need for thinner struts and so micro-





Above, Karl Degelow of Jasta 40, in front of his stag-decorated D VII, note telescopic gun sight, which is possibly a captured British Aldis which was well regarded by German pilots. Lt. Windisch of Jasta 66 also had a leaping stag emblem on his machine. At left are O.A.W. built D VII machines taken at the end of the war, Albatros DVa is in foreground. Identity of Jasta is not known. Colour schemes of the two foremost Fokkers appear to be four-colour lozenge fabric with white tail and nose cowls on the first. Black stripes are applied over lozenge fabric on fuselage. The third machine appears to have black and white stripes on its fuselage. Variation of rudder insignia is of interest, though by no means uncommon.

(All photos via Harry Woodman.)



rod was used to make all the D VII's centre-section, interplane and landing gear struts. Many kit wheels miss the correct scale reproduction of the original and so special care was taken to achieve the right wheel and cover appearance. A hollow axle was also made to simulate the real thing. The exhaust stack should be drilled out and another propeller hub plate made and drilled as well as a hollow prop shaft. It always looks better if the flying control surfaces are articulated and control horns made from stretched sprue or plastic card together with stretched sprue control wires and rigging. The Fokker D VII does not require too much rigging; one of the great advantages of the prototype. Lifting handles at the rear of the fuselage and the pilot's port side step can also be made from stretched sprue which should be fine and look scale.

Because the writer likes to get carried away in his work, and also because of the fact that it is easy to look into an open cockpit it was decided to fully detail the interior of the model. This was done with the aid of the plan which shows the position of the instruments, throttle quadrant and priming pump; also the mounting of the Spandau machine guns. It was fairly easy to clean up the visible interior parts of the fuselage and paint them a greyish tone of the four colour lozenge camouflage pattern. Over this, dark grey stretched sprue simulates the welded metal tube frame structure. An aluminium bucket seat is made up from plastic card and rudder bar and pedals and a control stick is also fashioned from stretched sprue and painted. It should be mentioned that this interior is fixed into position before the joining of the fuselage halves. You can't make it later! Degelow's machine carried a cap-

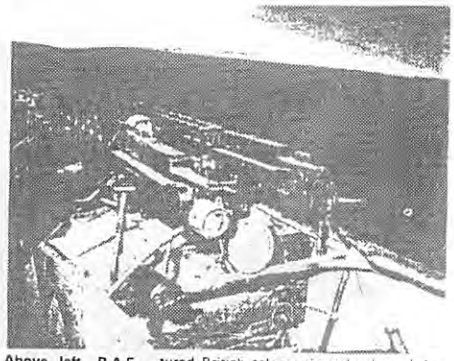


Above, Fokker D VII F 1450/10 of Jasta 18 piloted by Lt. Hans Schultze which was brought down on June 6th, 1918 by Lt. C. H. R. Lagesse of 29 Squadron, flying a SE5a, near Hazebrouck. Seen here on display at the Agricultural Hall, Islington, with other enemy aircraft (note Stapenhorst's Fokker Triplane at left). This Fokker D VII was the subject of a technological report at the time including its colour scheme which was: 'Upper surface of top wing and front of fuselage is deep vermillion; remainder of fuselage, white. Horizontal tail surfaces black with white central stripe. All other surfaces in lozenge fabric.' Credit: Flight International.

Right, is the author's 1/72nd model in Jasta 40 markings, which placed well in I.P.M.S. Nats.







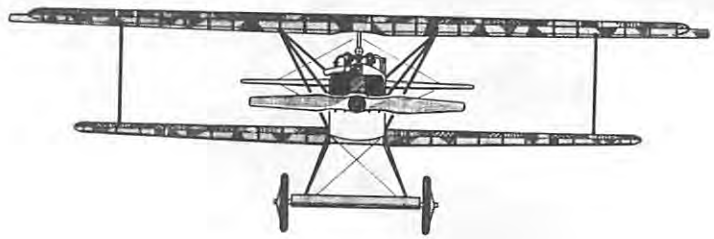
Above left, R.A.F. Museum Fokker D VII 'OAW 8417/18' in spurious red finish is nevertheless a fine restoration; note polished metal nose cowls. At right, the D VII restored by Jean Salis now in the Musée de l'Air, Paris. At left, Ernest Udet and his well-known D VII. Upper surface of wing has red and white stripes. The tailplane and fuselage was red, tail markings are in white, as is the message 'but not you!!' on the elevators. Streamers on latter are black and white.

tured British telescopic sight through its windscreen.

Finishing the painting of the D VII was the usual chore of handpainting the four colour lozenge camouflage scheme on the flying surfaces and then lining on the blue rib tapes by drafting pen using Pelikan Plaka paint mixed to a free running consistency. The metal panels and struts were field grey and the fuselage Humbrol railway black. The leaping stag, Degelow's personal marking, was handpainted on some transfer sheet and then applied to the fuselage side.

Although this model was made to 1/72nd scale there is no difference in procedure if working in 1/48th scale. Many modellers find the larger scales easier to work with, but the writer is fascinated by the petite appeal of 1/72nd. After all, the challenge is the thing

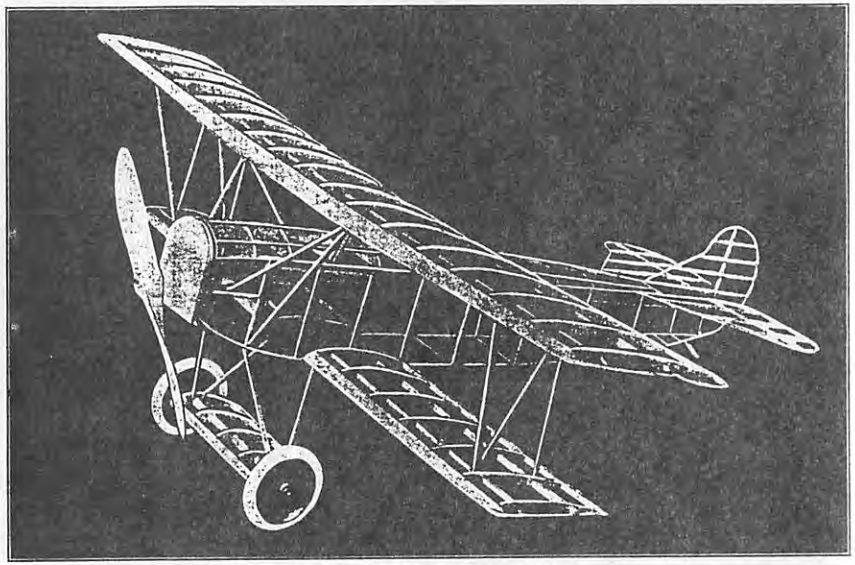
In this issue of Crosswinds, we depart from our usual format to give you an overview of 69 years of interpretations of the Fokker D.VII as a rubber powered subject. Although not in pristine chronological order, you will have the opportunity of comparing 11 efforts. We begin with an excerpt from the book, Complete Model Aircraft Manual, by Edwin T. Hamilton, which was published in 1933 by Quinn and Boden Co., Inc., Rahway, New Jersey. The book is 578 pages long, with additional appendices and sets forth an impressive array of information on model aircraft construction and presents numerous examples ranging from solid models to detailed rubber powered types. It is now a rare "collector's item," but one that is well worth having. We begin our consideration of rubber powered Fokker D.VIIs by presenting 5 pages (full size) of Chapter 53, which devotes a total of 18 pages to the construction of this model.



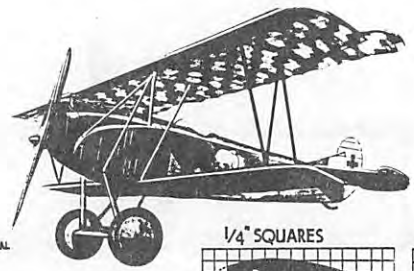


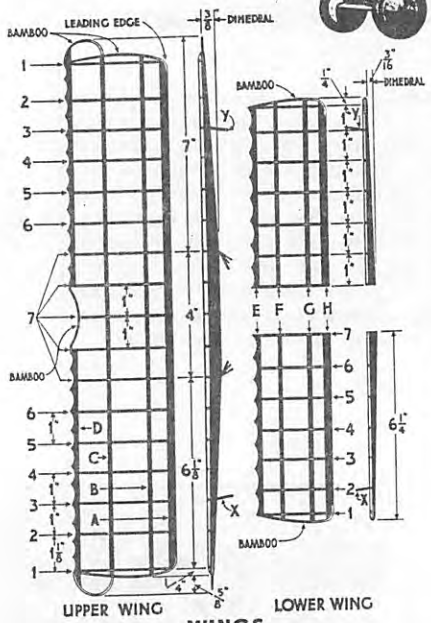


D.VII, *Jasta* 15/JGII, flown by Georg von Hantelmann.
Wings and underneath tailplane lozenge camouflage.



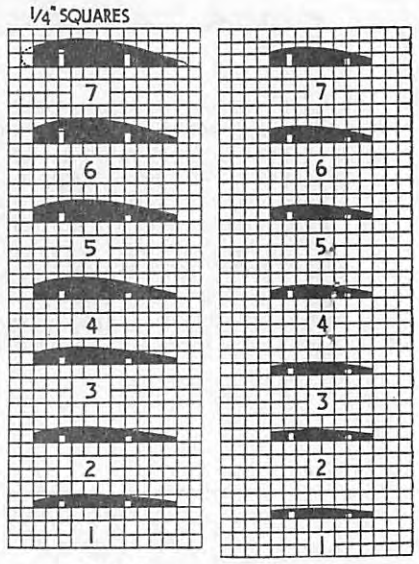
GERMAN FOKKER D-7 SKELETON





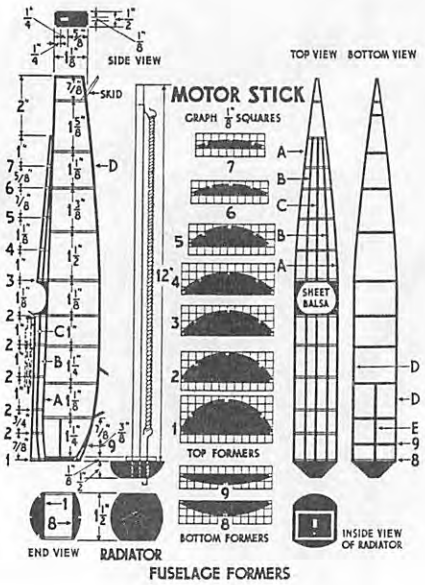
WINGS

GERMAN FOKKER D-7 PLAN 3



WING RIBS

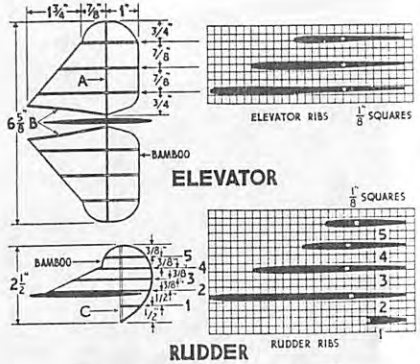
GERMAN FOKKER D-7 PLAN 4



FUSELAGE FORMERS

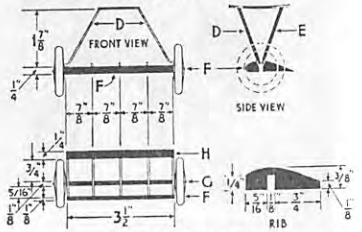
FUSELAGE

GERMAN FOKKER D-7 PLAN 1



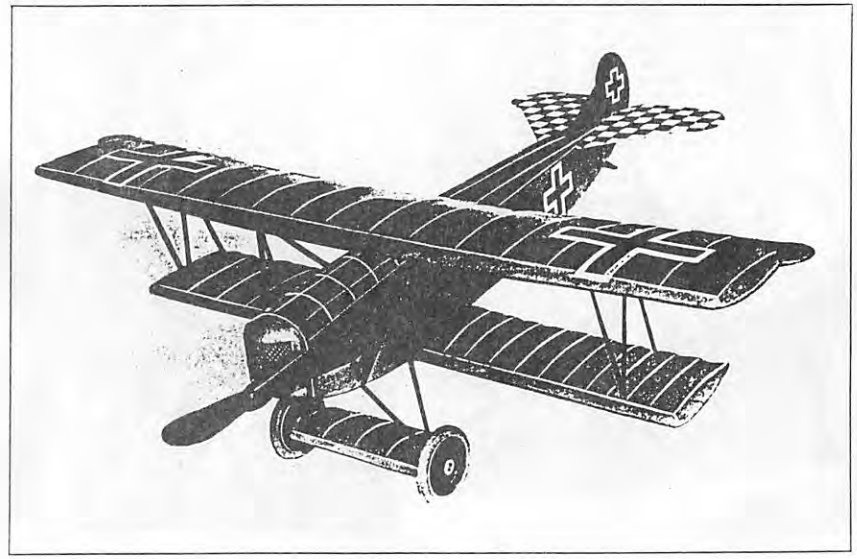
ELEVATOR

RUDDER

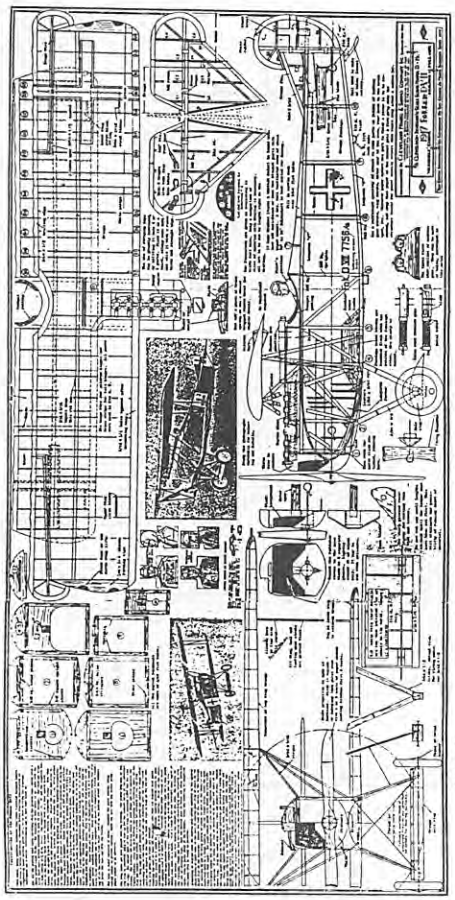


LANDING GEAR

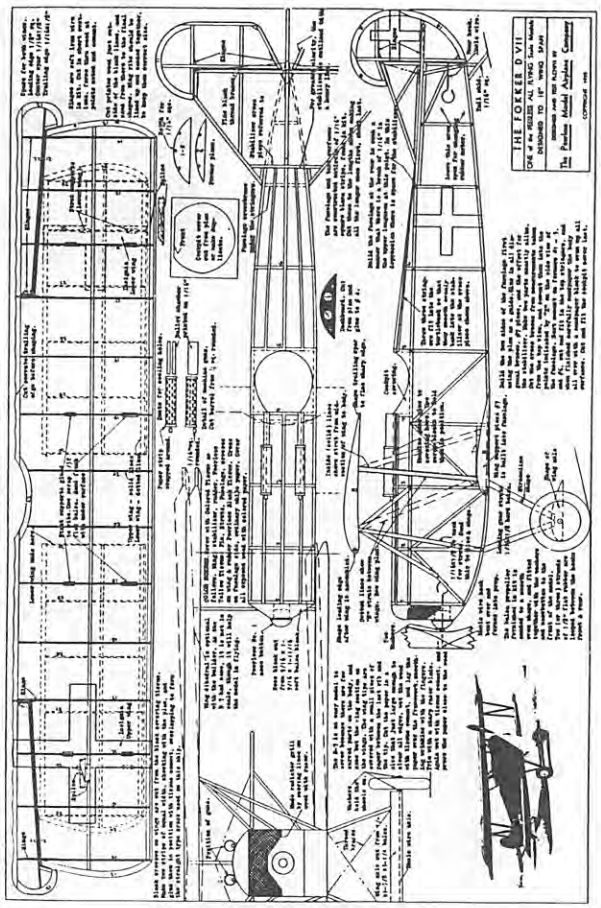
GERMAN FOKKER D-7 PLAN 2



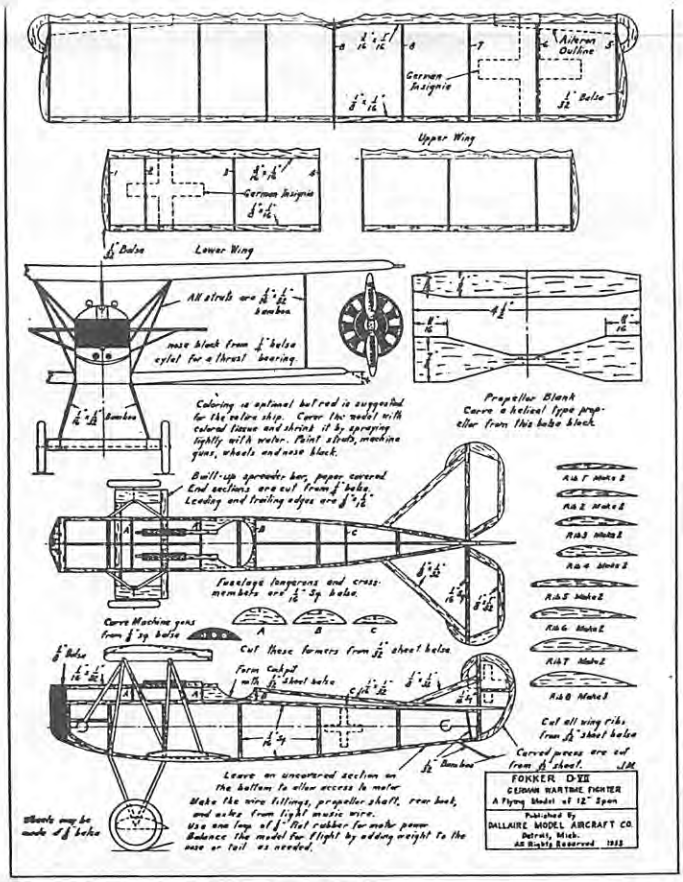
GERMAN FOKKER D-7



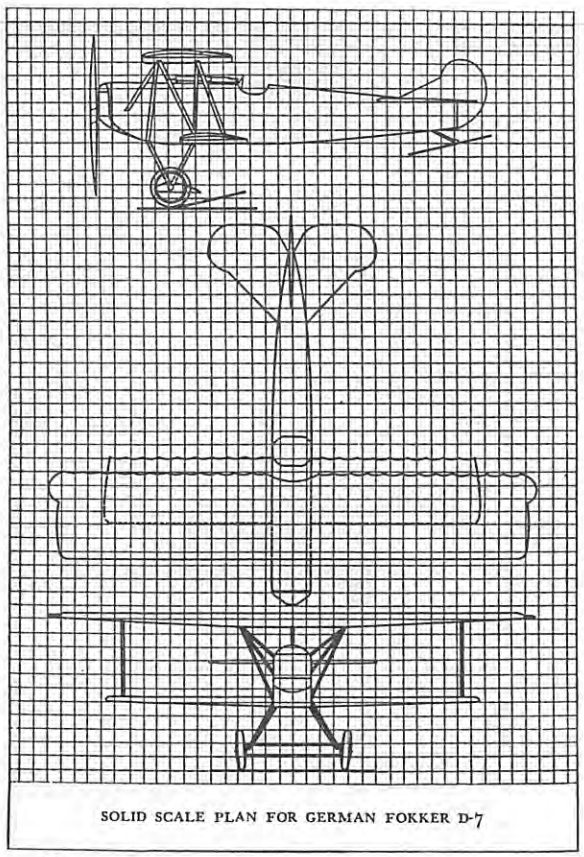
Above
Showing the complexity for which it was famous, this early plan of a Fokker D.VII by Cleveland Model and Supply Co., Inc. is a builder's delight but a flyer's nightmare.



Below
One of the major threats to Cleveland Models in the mid 1930s was The Peerless Model Aircraft Co. The accuracy and simplicity of the Peerless design gave flyers a real chance to build a successful flying model

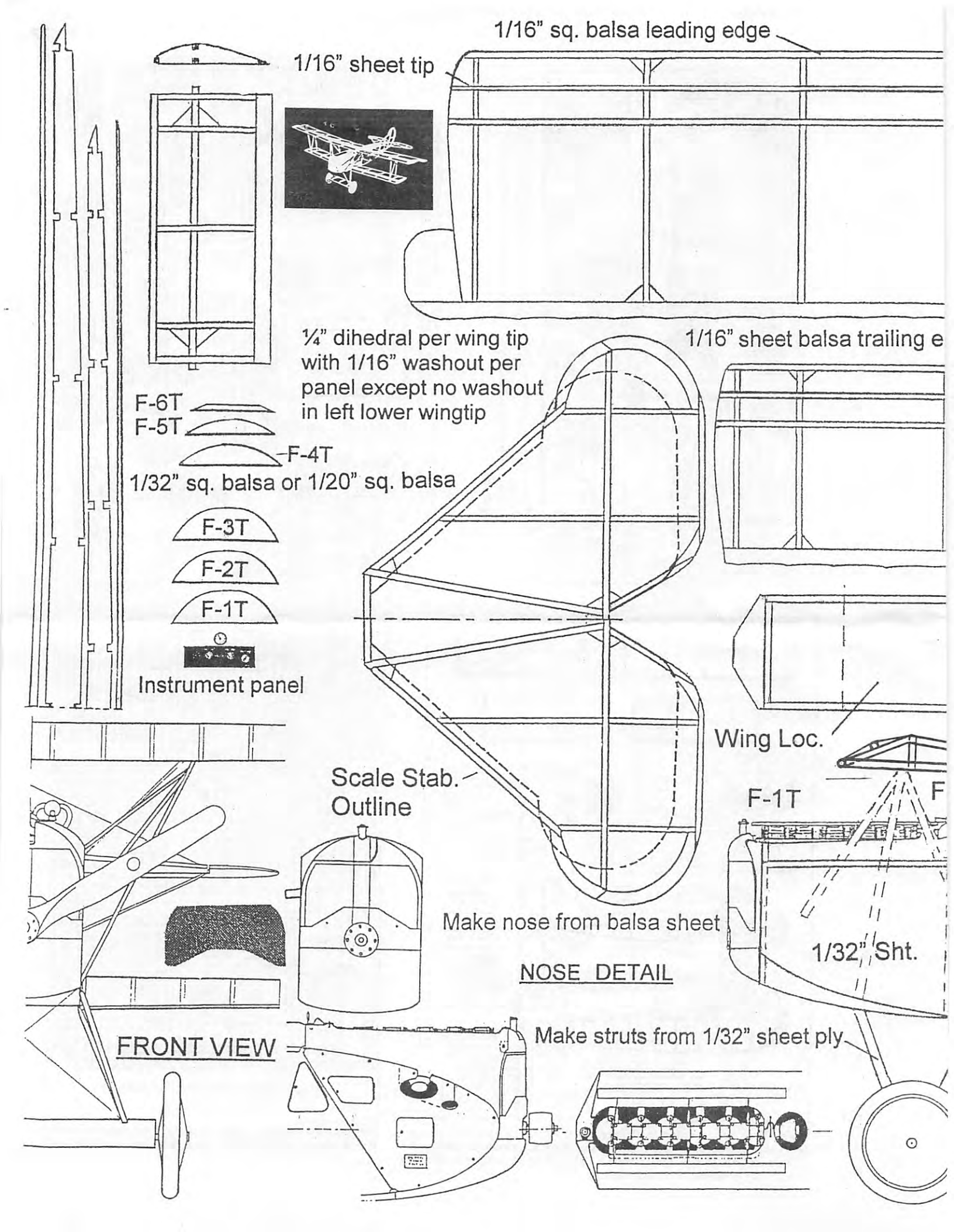


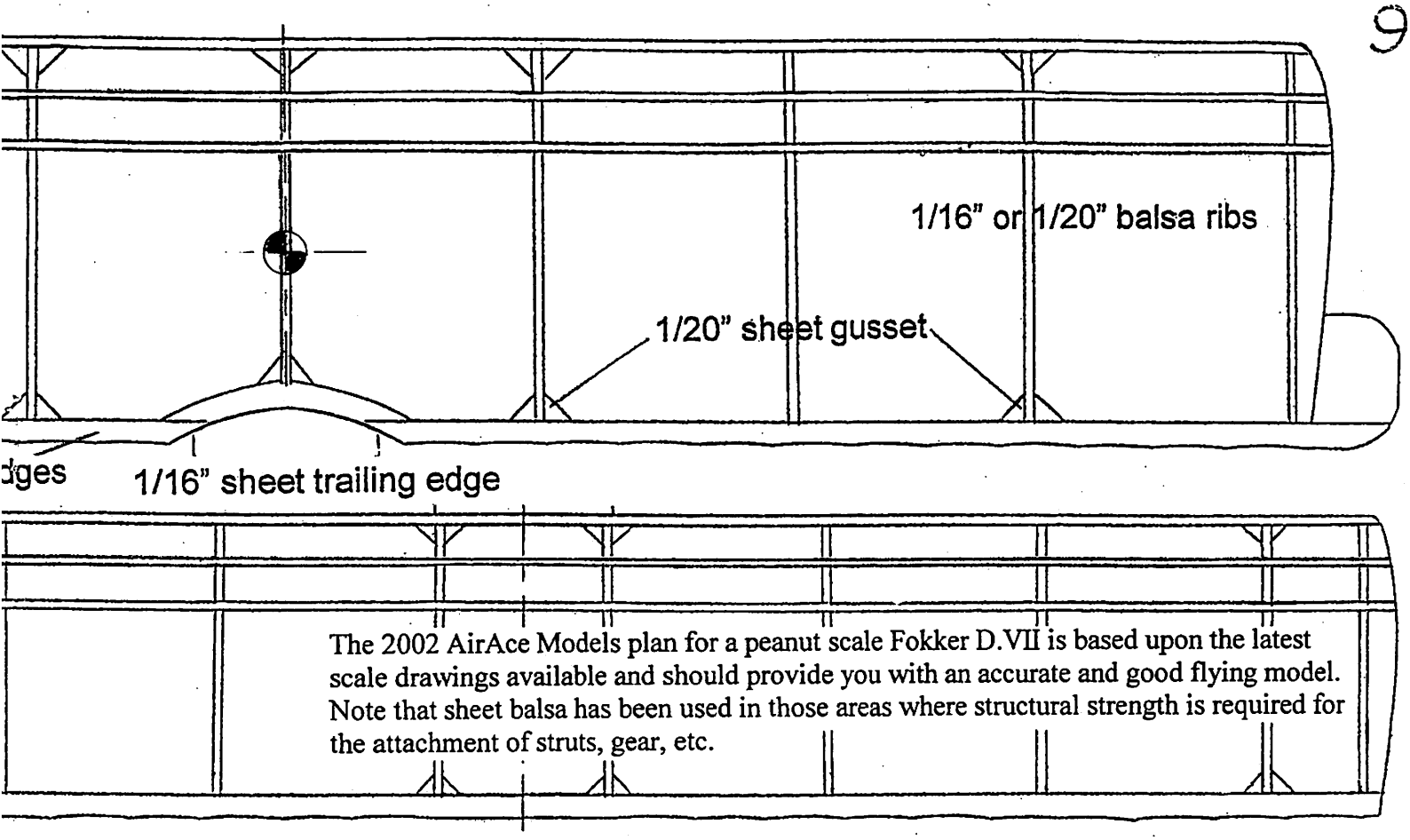
A surprisingly accurate effort by Dallaire Model Aircraft Co., this 1933 plan is just under peanut scale size with a 12' span, but it can, of course, be enlarged to whatever size you like. The structure is light and would probably be suitable for an indoor as well as an outdoor subject.



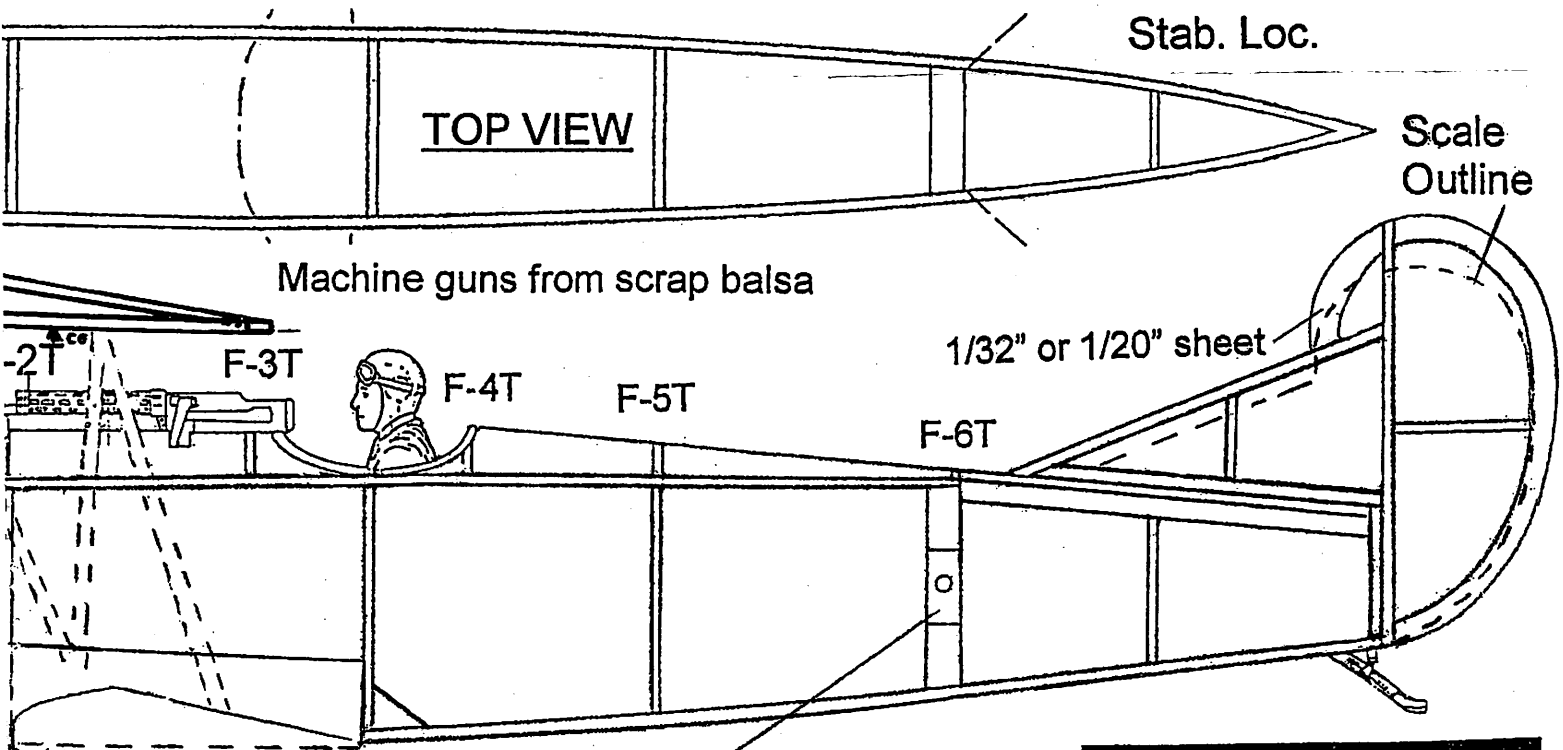
SOLID SCALE PLAN FOR GERMAN FOKKER D-7

For those of you wishing to take a break from flying scale subjects, Hamilton's solid scale plan of the Fokker D.VII is an excellent place to start.

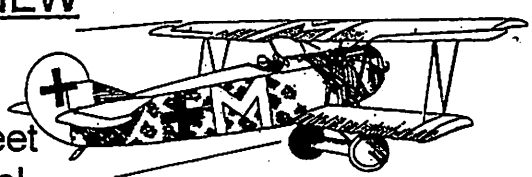

1/16" sq. balsa leading edge
1/16" sheet tip
¼" dihedral per wing tip
with 1/16" washout per
panel except no washout
in left lower wingtip
1/16" sheet balsa trailing e
F-6T
F-5T
F-4T
1/32" sq. balsa or 1/20" sq. balsa
F-3T
F-2T
F-1T
Instrument panel
Wing Loc.
Scale Stab.
Outline
F-1T
F
Make nose from balsa sheet
1/32" Sht.
NOSE DETAIL
FRONT VIEW
Make struts from 1/32" sheet ply



The 2002 AirAce Models plan for a peanut scale Fokker D.VII is based upon the latest scale drawings available and should provide you with an accurate and good flying model. Note that sheet balsa has been used in those areas where structural strength is required for the attachment of struts, gear, etc.



SIDE VIEW



Turn wheel from balsa sheet or foam using a Dremel tool

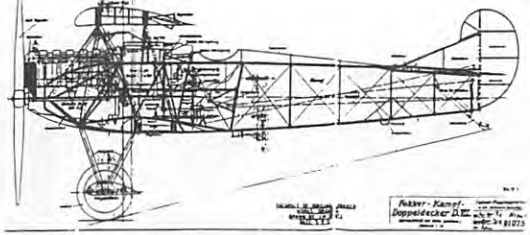
AIR ACE MODELS

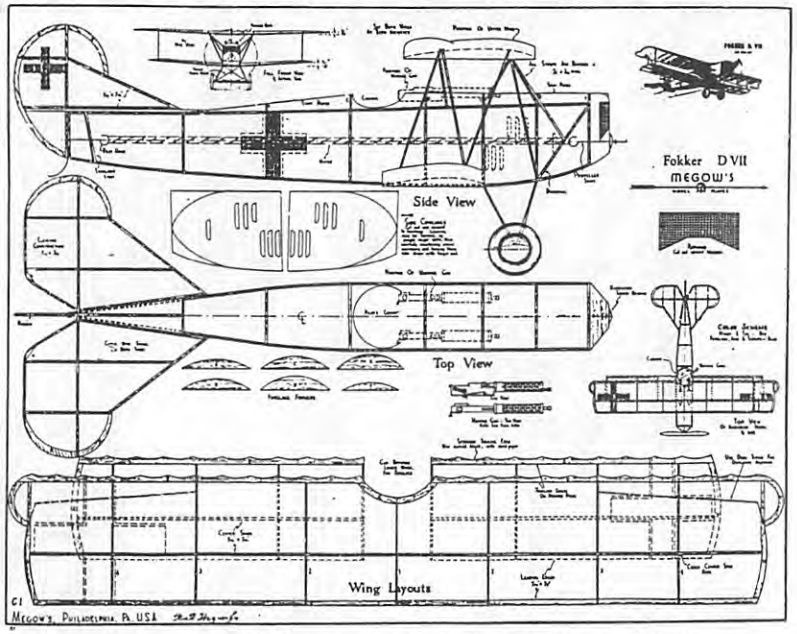
Rubber Powered P-Nut Scale

FOKKER D.VII

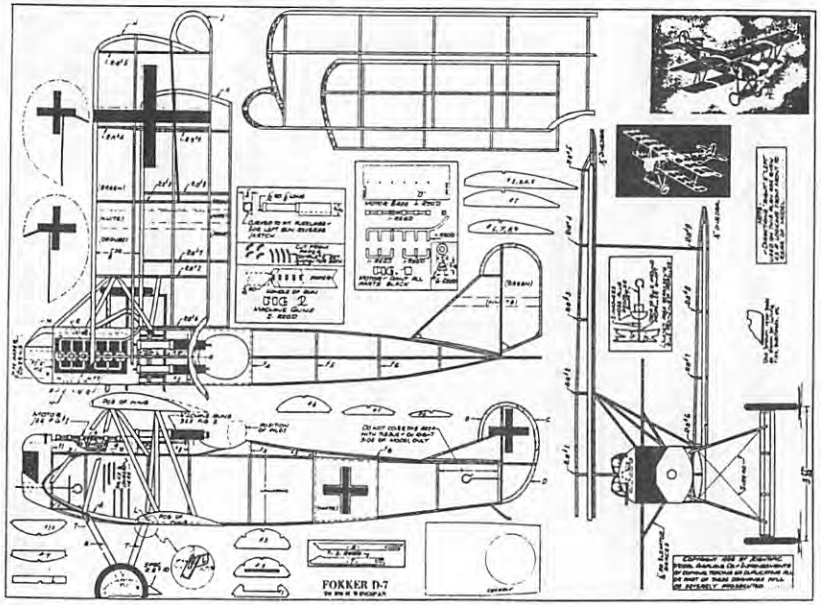
Designed & Drawn by
Dennis O. Norman

COPYRIGHT 2002



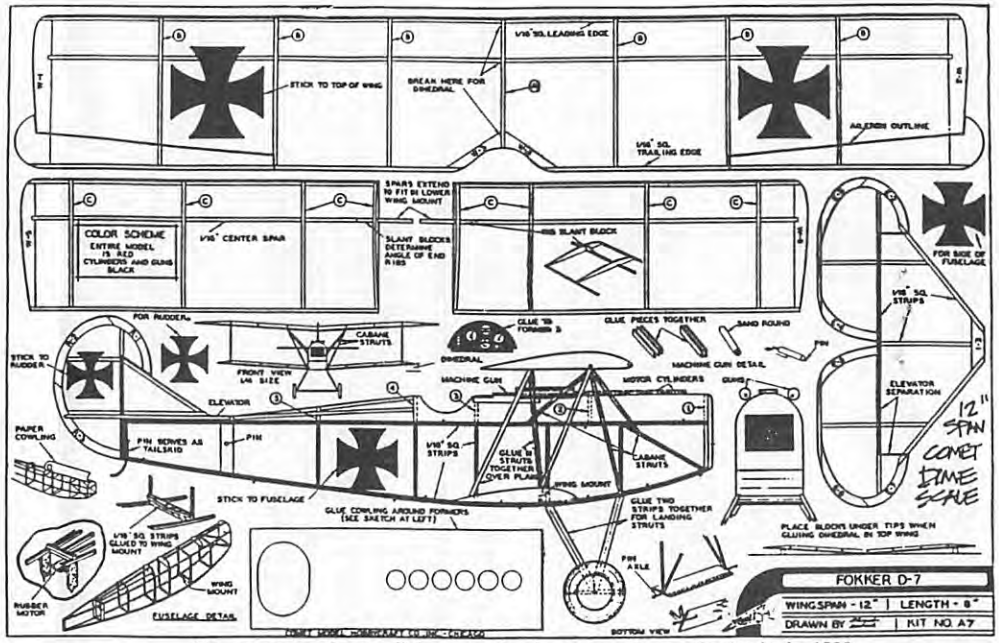


The Megow's plan is lightly constructed, but looks fairly accurate, while the Scientific effort appears to be more fanciful.

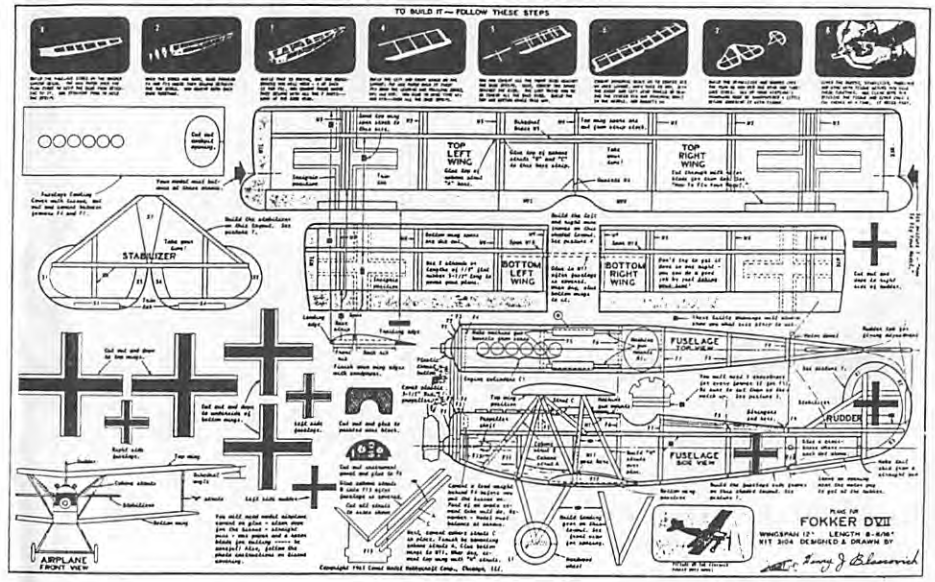




MODEL AEROPLANE PUBLICATIONS
HANNAN'S RUNWAY where FUN takes off! COMPLETE CATALOG
BOX 210, MAGALIA, CA 95954, USA $1 (REFUNDABLE)

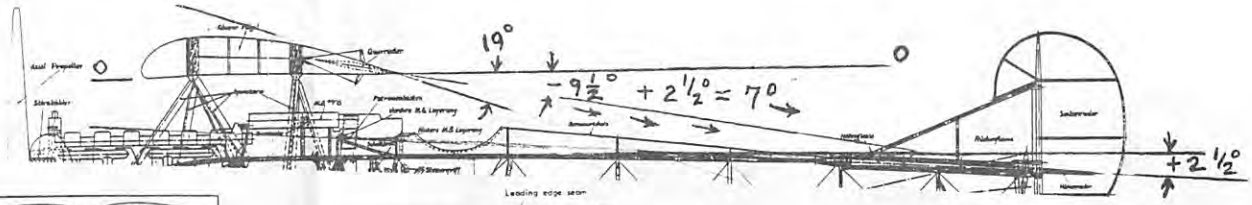


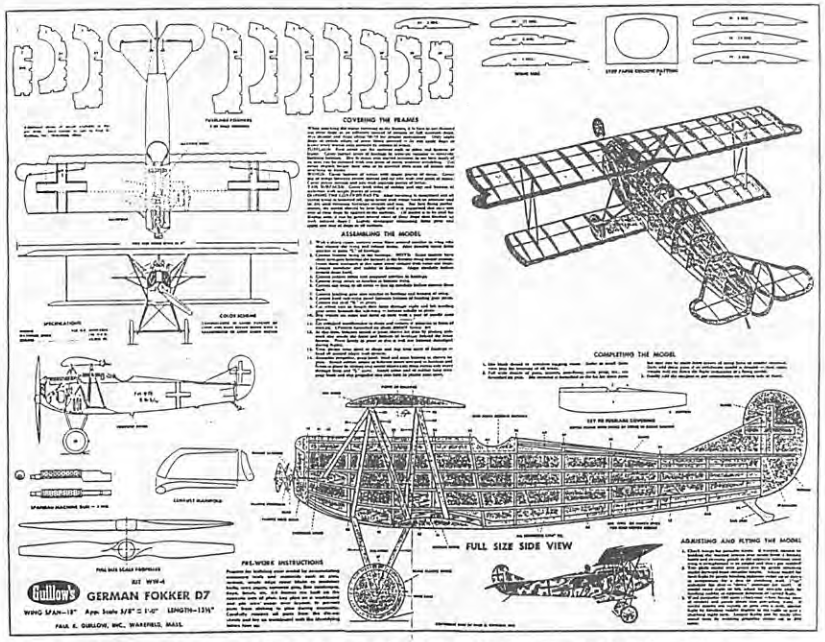
Comet presented a very light, somewhat inaccurate dime-scale plan in the 1930s. It should produce a good flying model and stands in dramatic contrast to the horribly inaccurate and over structured example, marketed in the 1960s (below).



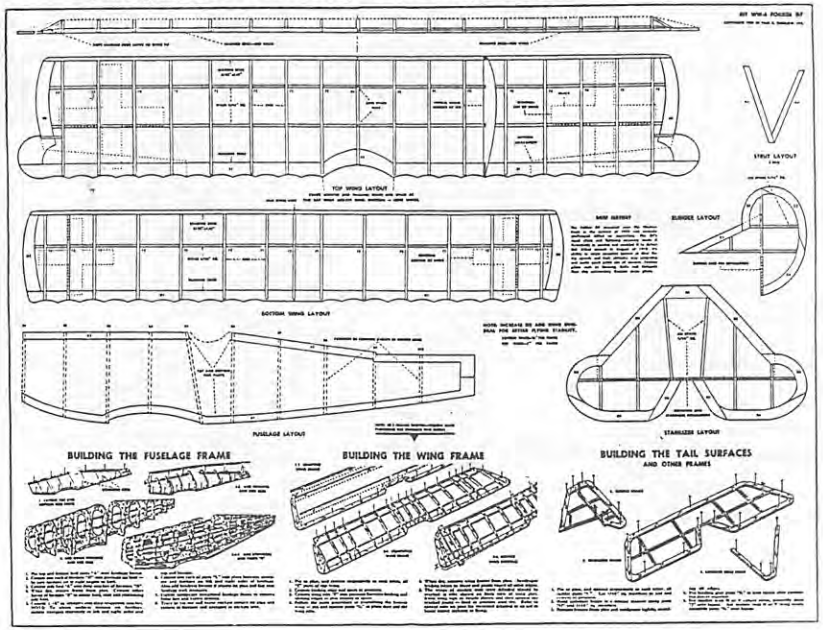
Fokker - Kampf- Doppeldecker D.VII.
(Längsschnitt von links gesehen)
Maßstab 1:10.

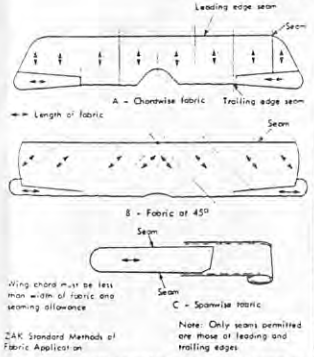
Fokker-Flugzeugwerke m.b.H. Schwerin (Mecklbg.)
Nr. 11075





A classic for many of today's modelers is this 1950s effort by Paul K. Guillow, Inc. Again, it is over structured, but reasonably accurate.





date, a proper scheme could be undertaken with painted fabric using proper dyes.

In 1966 the definitive HAMG report on printed fabrics was complete and the only airframe fabrics having the predominantly reddish-maroon colouring were found to belong to some of the earlier hand-painted camouflage types prior to the instruction of the standard pattern. It was, therefore, assumed that the pieces comprising that particular reproduction had been a mixture of machine-printed and hand-painted fabrics that had fitted together purely as a coincidence; certainly all other known references to the printed variety did not show any red-maroon colouring at all, and it may well have been researchers' expectations that a pale pink in the undersurface fabric meant that a dull red could (quite wrongly) be expected in any uppersurface equivalent.

Application of fabric to wings

AIRCRAFT fabric is barely strong enough to hang on to the wing structure and as it is substantially much stronger across its width rather than along its length; the strongest fibres *must* be placed at right angles to the airstream. For that reason small fighter aircraft had the fabric applied chordwise, *ie* with the seams parallel with the wing ribs. Larger and heavier types did not pass through the air quite so easily thus the airflow tended to push out either side of the fuselage, crossing the wings at an angle of some 45°. It was therefore common to apply the fabric at the same angle, cut towards the tip at the trailing edge on each wing. Even without the angular flow, fabric at 45° tended to take heavy airloads better.

The use of spanwise fabric was not really permitted, unless the object to be covered was less in chord than the width of the fabric allowing for the loss of half an inch at each selvedge for seaming. Spanwise fabric could be seen on the narrow chord lower wings of Siemens-Schuckert types, or on most ailerons and elevators of other types. To have used spanwise fabric on wings with chords greater than the fabric width would have meant adding a strip to the trailing edge with a dangerous spanwise seam. Seams were far stronger than single fabric and in the event of fabric stripping back across the chord of the wing, as was often the case in combat, the seam would have held fast long enough to 'bag' causing sufficient sudden drag to have broken the wing structure, or to have put the machine completely out of control.

The German inspecting authority ZAK, laid down very careful instructions regarding the application of fabric to wings and that, coupled with the personal experiences of aircrew under fire, when the bullets holes in the wing fabric could cause the area between a pair of ribs to strip back to the trailing edge due to the air pressure, pilots would not be very happy to fly any machine with a spanwise seam under any conditions. It is therefore rather unfortunate that this unlikely method of application is shown on the Albatros DV in the Canberra Museum of Aviation in Australia and that various models articles also portray such a scheme. The latter have also shown diagrams with fabric at the same 45° angle right from one wing tip to another, which is also of potential danger.

HAMG findings

HAVING arrived at an average size for the five colour fabric, it was disturbing to find that the size quoted for the Australian DV fabric was larger overall. Last minute size checks were carried out subsequently at the Imperial War Museum who confirmed with at least two samples of similar five colour fabric, that the HAMG averages were in fact correct.

The average colour values for undersurface and uppersurface (light and standard) colour fabrics are appended in **Tables 1** and **2** opposite. □

COMPARATIVE DIMENSIONS APRIL 1959
FIVE COLOUR FABRIC

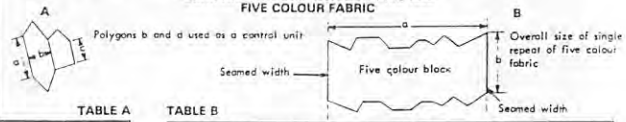


TABLE A

Dimension	P. Gray's DIII Rudder	H.Hasting's (US) Five Colour Fabric	HAMG findings Five Colour Fabric	IWM Alb DIII Rudder	Average by *empirical means	P. Gray's Nov. 1957 pattern
a	5ft 9in	4ft 6in	4ft 3½in + ⅛in	4ft 3in plus	4ft 3⅛in + ⅜in	3ft 2½in (not complete)
b	2ft 3⅛in	1ft 6in	1ft 5⅛in	1ft 5in plus ± ½in	1ft 4in	1ft 4in

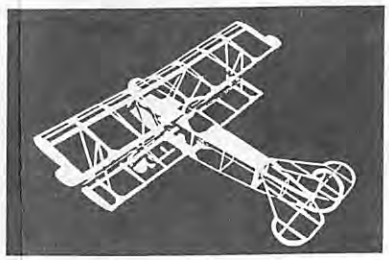
TABLE B

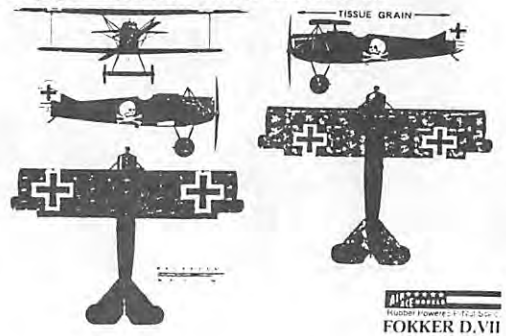
Dimension	P. Gray's DIII Rudder (1957)	H.Hasting's (US) Five Colour Fabric	HAMG findings Five Colour Fabric	IWM Alb DIII Rudder	Average by *empirical means	P. Gray's Nov.1957 pattern
a	1ft 9in	1ft 3⅜in	1ft 2½in	1ft 2⅛in	1ft 2⅛in	1ft 2⅛in
b	9½in	6½in	6in	6 1/16in	6in	5⅛in
c	10⅛in	7⅜in	6⅛in	6⅜in	6⅛in	7⅛in

*Banks and Huntley January 1954

Special thanks to G K Zimmer of Hamden, Conn., USA for some very useful fabric dimensions.

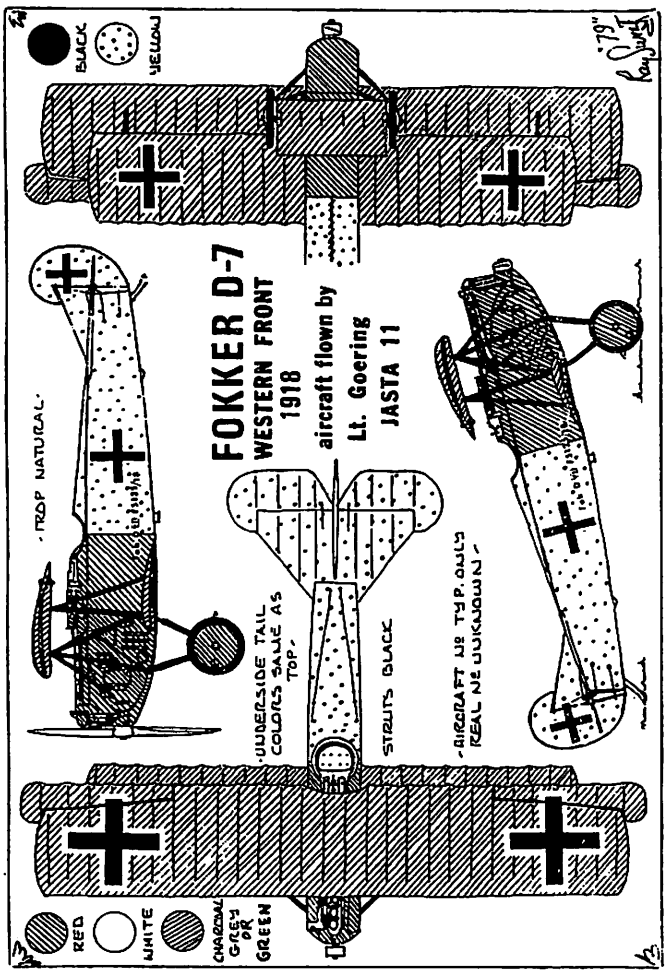
There are a wide number of color schemes available for Fokker D.VIIs. The type was not only used by Germany in World War I, but also by Belgium, Denmark, Holland, Italy, Spain, Sweden, Switzerland, and the United States in the post war period. We have not presented a detailed consideration of markings (perhaps we will in a future issue of Crosswinds) but, as mentioned earlier in this issue, a detailed set of tissue markings in full color for the D.VII flown by Georg von Hantelmann (red nose, blue fuselage and tail with a skull and crossbones making and detailed lozenge covered wings and stabilizer (underside) may be obtained along with a 20 page booklet from AirAce models at the cost of $20.00 post paid.

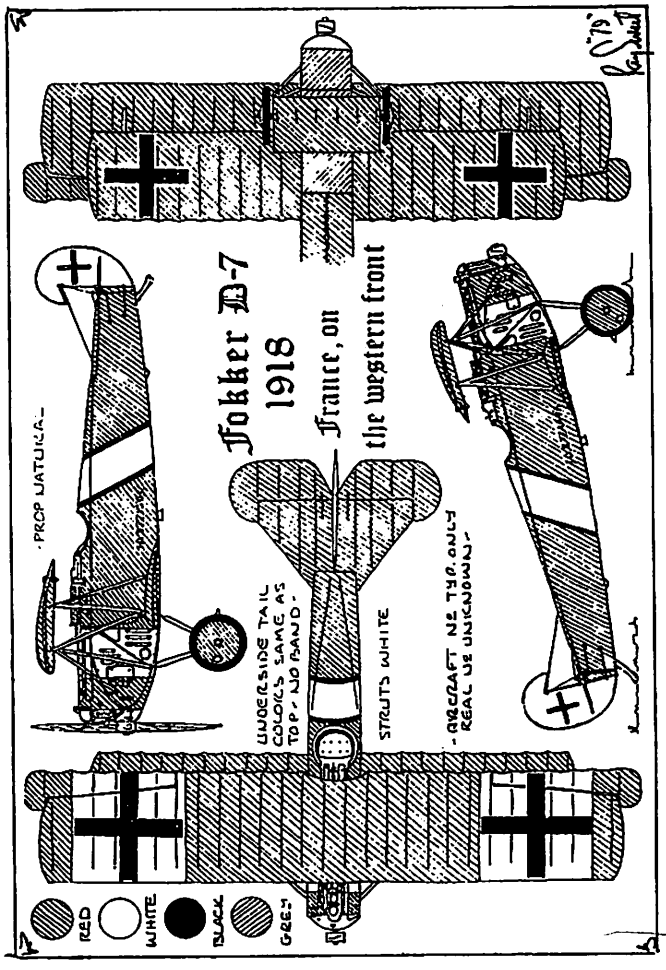


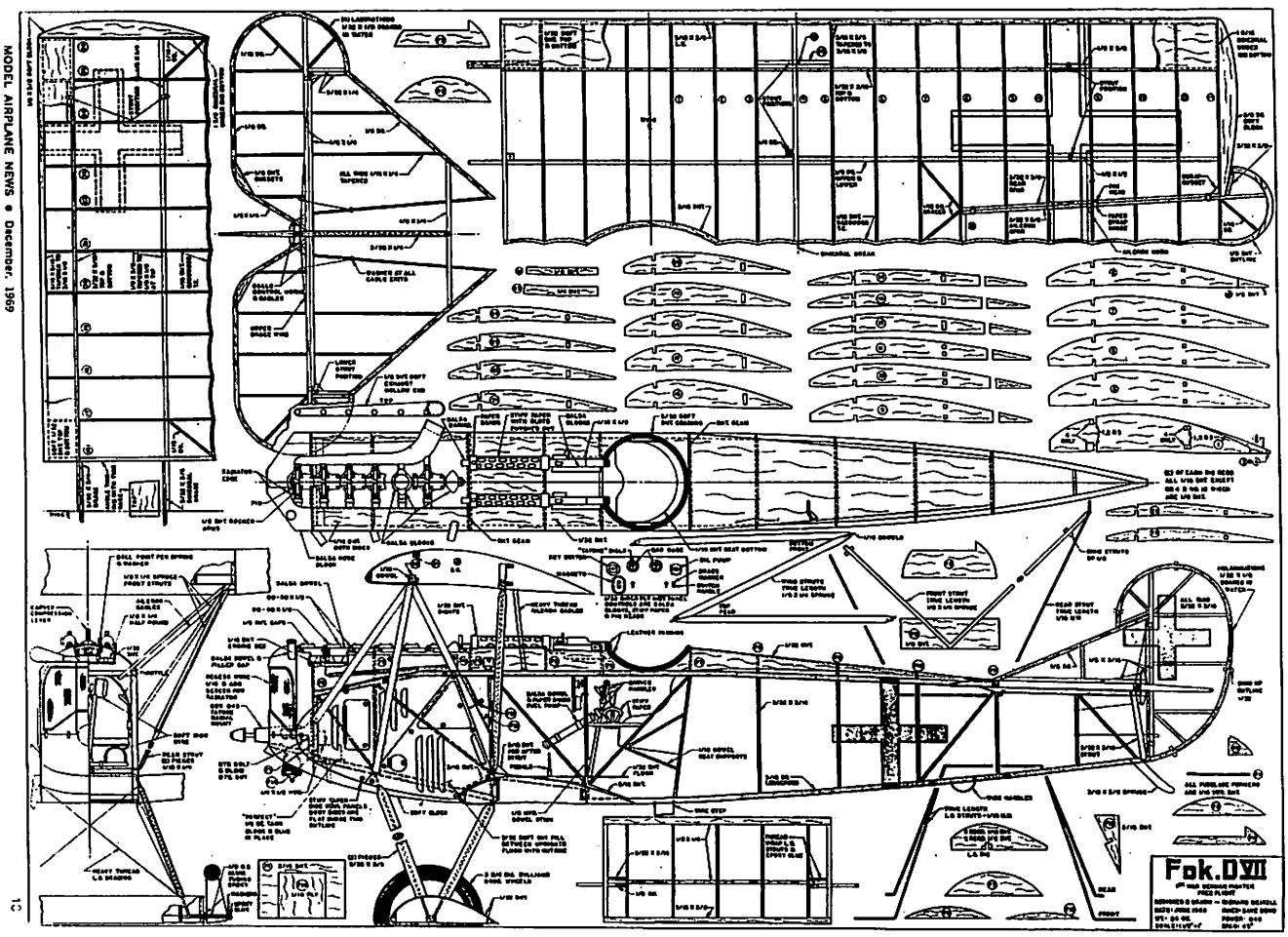


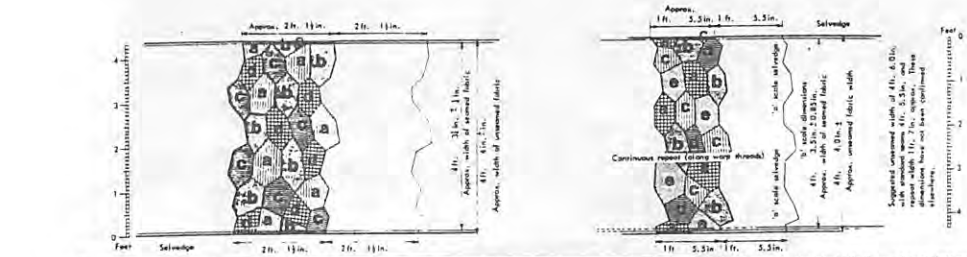
AIRACE MODELS
Rudder Flowers Publication
FOKKER D.VII

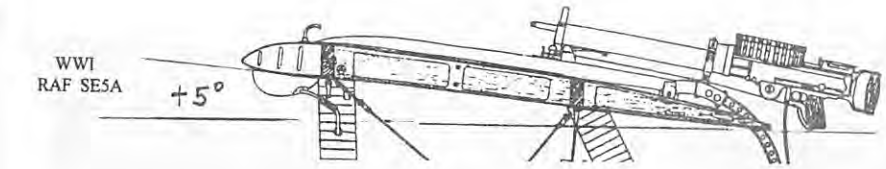
12


FOKKER D-7
WESTERN FRONT
1918
aircraft flown by
Lt. Goering
JASTA 11
BLACK
YELLOW
RED
WHITE
CHARCOAL GREY OR GREEN
- PROP NATURAL -
- UNDERSIDE TAIL COLORS SAME AS TOP -
- STRUTS BLACK
- AIRCRAFT NR TYP. ONLY REAL NR UNKNOWN -


Fokker D-7
1918
France, on
the western front
RED
WHITE
BLACK
GREY
- PROP NATURAL -
- UNDERSIDE TAIL COLORS SAME AS TOP - NO BAND -
- STRUTS WHITE
- AIRCRAFT NR TYP. ONLY REAL NR UNKNOWN -


Fok.DVII





No. 13. German WW1 Printed Polygonal Fabric

Investigations

FOLLOWING acquisition of the Nash Collection of aircraft by the Royal Aeronautical Society in 1953, various interested members commenced research into exactly what comprised the irregular polygonal, dye-printed unbleached linen fabric used by Germany during the latter part of the First World War in the hope of establishing a method of reproducing the material.

In order to speed the enterprise, several technicians in West London got together to form what was initially the Heathrow Group (HG) which after 1958 became part of the joint RAeS, SLAE restoration team, known as the Historic Aircraft Maintenance Group (HAMG). HG soon discovered there was more than one pattern in use, and that patterns could be dye-printed in differing intensities so as to give light, dark and very dark appearances as gathered from the examination of many small off-cuts of original fabric contained in London museums.

The actual printed fabric is hard to describe, as the dyes used were of a transparent nature and when printed only partially obscured the natural colour of the fabric. Due to the process each irregular polygonal area was given an overlap of a few millimetres to allow for any out-of-register movement of the fabric. This all round oversize of each shape resulted in a 'leaded light' effect due to the concentration of overlapped colours along each demarcation edge. This meant in effect that the fabric could not be simulated by applying ordinary paint onto fabric by hand brushed means as that made the subdued hue of the fabric disappear. Liquid dyes were hand-brushed on with better success, but as the distribution could not be evenly controlled, the areas became patchy and uneven in hue; far too much dye was being absorbed by the fabric to make it an economical proposition. So quite early on the HG realised that it was necessary to go right back to the beginning and re-establish a similar method of production; the group split into two parts, one to establish the geometric size and shape of the patterns and the other to establish the colours and the method of application.

Original evolution

IN early 1954 it was discovered that due to a shortage of pigments suitable for making coloured cellulose finishes, the Germans had tried putting dye into dopes with some success, and during 1915 had commenced to paint very irregular polygonal patterns on the uppersurfaces of Fokker and Pfalz monoplanes in colours which ordinarily would not in themselves provide a camouflage effect. However, the random use of both bright and dark colours in a mixed pattern had a most useful result when complete, the only real drawback being the amount of man hours involved.

Here perhaps it ought to be pointed out that although there were hundreds of different dyes available, many of which were ideal for camouflage colours, only a few were light fast. Thus taking only these colours, only one or two would have sufficed for camouflage, which would have put an immense strain on manufacture but by taking five or six colours and using a mottle pattern, both supply and camouflage were achieved without too many problems.

Having outlined two patterns from the study of contemporary photographs, the next difficult task was to set an accurate outline to scale for each of two patterns, which turned out to be far more difficult than was originally supposed. By comparing the patterns to known airframe dimensions it was soon possible to obtain approximate dimensions for both, but the transposition to accurate dimensions took several years to achieve. An early discovery was that at some point in time somebody in Germany had hit upon the idea to base a standard pattern on the numerous hand-painted forms of multi-coloured camouflage, then print the fabric with the pattern so that when applied to the airframe, all that was needed were coats of clear shrinking dope to complete the job; an immense saving of time, labour and other materials in short supply.

The first pattern was assumed to be one containing four colours and the overall size of the design was such that it fitted a sheet of paper placed on a standard sized drawing board. The standard width for German aircraft fabric being some 52 inches, approximately, and the four colour pattern repeat having an overall depth of approximately 33 inches. Later, it was thought, a second pattern was evolved in which five colours were used and perhaps eased the dye supply situation being quicker to print and process.

Building up the patterns

TRACINGS were made of every piece of available fabric as well as from photographic enlargements from prints where the camera was originally fairly square on to patterned areas, so that a jigsaw of shapes was soon obtained; for nowhere at that time were there sufficiently large pieces of either pattern from which the shapes could be drawn in one go.

Soon a number of drawings were completed in which each was substantially accurate over 80% of the area, and where confirmation was still needed for parts of the pattern. As an aid to further accuracy, permission was obtained from Fairey Aviation to use part of the photo-loft area at Hayes to lay out full scale wings of both the Fokker DVII and Albatros DIII. There it was possible to plot patterns and distances between seams from photographs and also to try out tracings of patterns to see if they would correspond to photographic references. Thus between 1954 and 1955, knowledge of the two patterns so far identified was quite well advanced.

In attempting to find further information on the suspect areas and in seeking confirmation of the pattern dimensions so far evolved, by contacting sources of information in Germany, France, Australia, Canada and the USA, the matter became very complicated by virtue of the difference found in the material quoted by the new source regions. Several hold-ups occurred due to examination of photos accidentally printed in reverse, which took some while in one or two cases to realise. In other cases drawings were reproduced to the wrong size, and in one case another had been quite incorrectly assembled from a mixture of both patterns.

By 1958 when the HAMG had been formed, it was realised that several original German airframes of the WWI period existed which showed complete patterns of both types of fabric; though at least one airframe was highly suspect in the way the fabric had been applied. In the latter case the fabric appeared oversized in relation to the work done on the photo-loft layouts.

Building up the colours

AGAIN, this was far from easy, as each piece of fabric examined showed some difference in hue. There was also the fact that light hues were often used for the undersurface areas and very much darker hues were used on night flying types so there were at least three sets of colour variations to be aware of. A further difficulty was that the apparent colour of dye-printed fabric was altered by the discoloration with age of the dope applied; and the colour of the dye in the raw state was vastly different when applied. Initially, fabric samples were grouped together so that averages for undoped and doped samples could be arrived at and having thus some idea of the colours involved, efforts were made to identify the original dyes used.

Quite naturally, enquiries commenced in Germany with BASF GmbH who came up with many references and an idea as to how the actual work of printing the fabric was carried out. However by 1960, it became necessary to concentrate effort on to getting the airframes restored as quickly as possible and due to the shortage of manpower, practical research into the finishing schemes was considerably slowed up for some two years. Then, with the help of ICI Dyestuffs Division, some full-scale work was undertaken to analyse pieces of real fabric and so identify the actual dye used. Finally, it was a surprise to be told by ICI that the original dyes, having been identified, were in fact still available today, and the company were on to outline plans as to how it would be possible to reproduce identical fabric. But at the stage whereby everything was coming together, the HAMG was disbanded and the restorations carried out to date were handed over to the care of the RAF Museum. Actual HAMG research on the fabrics was not in any way finalised at that time (1965) and although all the basic information was there it was not translated into a readily readable and understood form.

Temporary information?

BOTH the HG and the HAMG received much information on the subject of printed fabric from many keen and interested researchers from all over the world, most of which was of an invaluable nature. Equally well some of the material was misleading and was (unintentionally) quite inaccurate. Such material included some 'reproduction' fabric sent on loan from the USA which, although being reasonably accurate in pattern for one of the fabrics, the colours were of quite a different order from the 'averages' so far found. The reproduction was backed by genuine looking samples of original fabric which possibly had had their original hues intensified slightly, but unfortunately in the wrong hue avenues it was later discovered.

A laboratory check showed that the samples were original, thus it seemed that a slightly different coloured version of the pattern was a possibility and, as a temporary measure, some oil enamels matched to the suggested colours were ordered for the Fokker DVII so that a hand-painted scheme could be applied; until at a later

TABLE 1 Four Colour Fabric

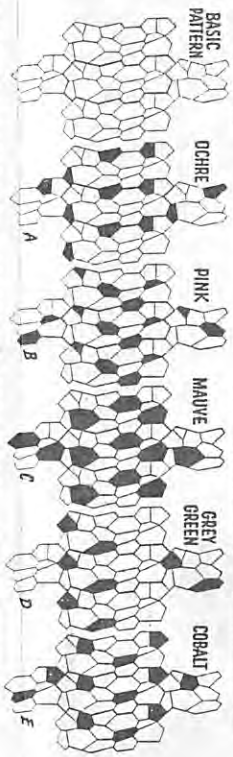
Area	Light undersurface colours	Methuen	FS595a	Area	Dark uppersurface colours	Methuen	FS595a
a	Pink	8B3	31433	a	Sage Green	27D6	34227
b	Blue	23C4	35237	b	Blue Grey	21E5	35164
c	Light Ochre	4B4	33613	c	Ochre	6D6	30257
d	Green	26C4	34325	d	Blue Green	25F5	34058

In all cases the Methuen values are a closer match than for FS595a
For reasons of space, over-dark night flying colours have not been included

TABLE 2 Five Colour Fabric

Area	Light undersurface colours	Methuen	FS595a	Area	Dark uppersurface colours	Methuen	FS595a
a	Pale Violet	15C3	*	a	Violet	13F2	37144
b	Ochre	4B4	33613	b	Dull Ochre	5D4	30219
c	Blue	23B4	35488	c	Blue grey	22F4	35053
d	Green	27B4	34449	d	Blue Green	25F6	34058
e	Pink	10A3	31668	e	Sage Green	27D4	34227

* Pale violet is equal parts 37144 and 37875



Hexagonal Camouflage

A simple method of obtaining realistic effect devised by **W. I. BARRETT**

ONE OF THE difficulties encountered in building flying scale models of certain German aircraft of the 1914-1918 War has been the reproduction of the hexagonal pattern camouflage system.

The method used on the full-size aircraft was to dope in place fabric which had been printed previously. A similar scheme may be used on models by following the instructions outlined as follows.

Pre-painted tissue—with chalk!

The first step is to determine the size of the hexagons to be used on the model under construction. This is best done by studying photographs of the machine concerned.

A start can then be made on the stencil, which is marked out from a sheet of paper on which has been drawn a honeycomb of hexagons of the required size. Every fourth hexagon is marked on to the stencil in the sequence indicated in the sketch (*Fig. 1*). The most suitable stencil material was found to be .010-in. thick acetate. A piece at least 6 ins. square should be used, as smaller pieces tend to make matching of the pattern difficult.

The hexagons marked on the stencil are then cut out with a sharp knife. It is preferable to make these slightly larger than as drawn (*Fig. 2*) as this prevents plain borders around each hexagon on completion of the pattern, due to the difficulty in getting the colouring material right to the edges of the hexagon.

This completes the stencil, the preparation of which may be considered the most tedious of the whole job, but care spent here will be repaid with the accuracy of the finished camouflage scheme.

The next stage is the application of the pattern to the covering material, which is of either heavy-weight or lightweight tissue, depending on the size of model.

With the tissue paper laid on a smooth flat surface, the stencil is placed at the top left-hand corner, and the colour applied to the hexagonal holes. For the irregular pattern use stencils as below.

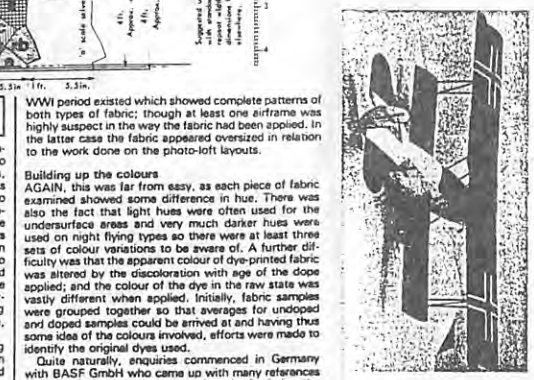
The colouring agent is a stick of chalk of the correct shade, which can be found in most packets of children's chalks obtainable at toy shops. The actual shades used on any particular type of aircraft may be found in the "Decor Detail" articles in the November 1957 issue.

By rubbing the chalk over the holes in the stencil, colour is applied to the tissue. A fine dust gathers at the edges of the holes and this is rubbed into the tissue with the tip of a finger, using a circular motion. Alternatively one can grind chalk into powder and dust on with a piece of cotton wool to avoid roughing the surface.

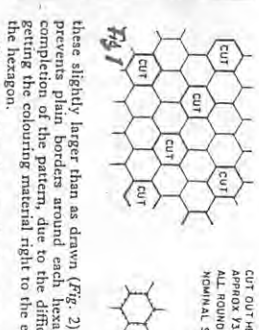
Repetition of the pattern is obtained by moving the stencil to the right, using previously marked hexagons for positioning.

When a sufficient area of tissue has been covered, excess chalk should be dusted off, and the stencil washed and dried.





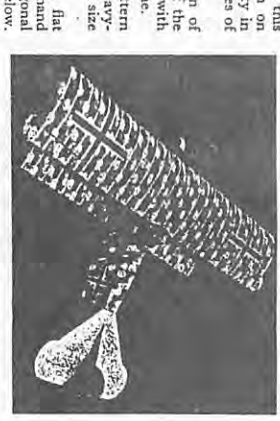
Handling shows the simplicity of application and below, D.VII with lower wing covered by pre-painted tissue. Built to 1/15th scale by Brian Smithies, it has a most realistic appearance



The next colour in the sequence can then be applied with the stencil placed in its new position relative to the original coloured hexagons. By following the same procedure as above, the camouflage scheme can be completed in a short time on the tissue in the four colour stages.

The model is then ready for covering.

It should be noted that the scrubbing action of the chalk tends to roughen the surface of the tissue, which should therefore be doped on to the model with the chalked surface on the inside. Applications of clear dope on the smooth side of the tissue renders it transparent, and allows the pattern to show through, needless to relate saving considerable weight and trouble in painting inaccessible areas.





Hand-painted fabric, his replacement by Brian Downham of Enfield, this 1/10 scale Dr.VII has an effect that, as a 22-in. span model, could have caused no end of trouble with an authentic stencil pattern before.

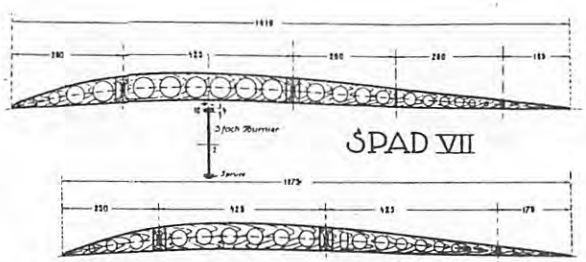
Bob White	Plan	Plan + CF Spars	Kit	ARF	RTF
Pixy 20	$5	$17	$39	$53	n/a
Perky 30*	6	27	73	97	n/a
Beau Coupe Mk II	7	53	n/a	231	$397

*Perky and Pzaz 30 must be built from kit for Builder of Model rule.

Star*Link	Plan	Plan + CF Spars	Kit	ARF	RTF
Pzaz 30*	$6	$26	$66	$88	$111
Candy G	7	36	n/a	111	177
Honey G	7	46	n/a	388	499
Sugar G	7	n/a	n/a	399	522
Win Star	8	n/a	n/a	555	888
Nova Star	8	n/a	n/a	588	899

Carbon Fiber Spars		Strong and Light		Russian Made	
3.5 x 440 mm	1.1 gm	$10	5.5 x 550 mm	3.2 gm	$12
4.0 x 440 mm	1.8 gm	10	8.0 x 700 mm	11.7 gm	15
4.5 x 550 mm	2.0 gm	12	10.0 x 700 mm	13.6 gm	15
5.0 x 550 mm	3.0 gm	12	12.0 x 910 mm	30.6 gm	20

Star*Link / Flite Tech / Bob White Signature Line
25500 Aquila Court Sun City CA 92586 (909)301-9975



CROSSWINDS BLUE FOX BASE
RUSS BROWN 4909 N. SEDGEWICK
LYNDHURST, OHIO 44124

FLAT HATIN' ON SPADS AND D VII'S

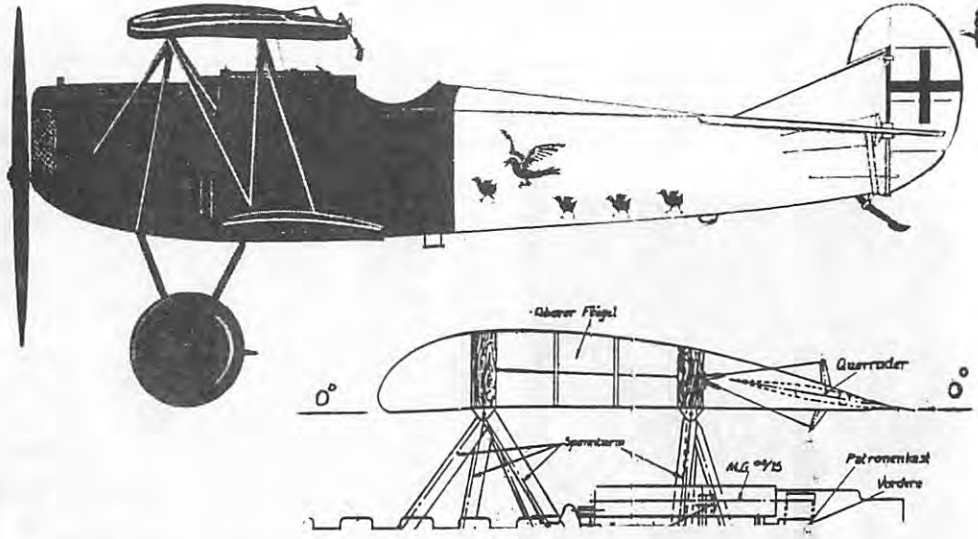
Flashing back on SPAD coverage leads full circle with a SPAD wrap (rap?) and equal affection for the Hun's Fokker (flying a D-VII). While Dennis was inspired to offer SPAD skin in color tissue. This camouflage was impressive enough that even a SPAD destaining, Albatross affectionado like von Rottensox hisself bought it! When the limited samples sold out at the Toledo Show, I had to restock Dennis from the Blue Fox Base archives. We remain indebited to Will Hubin for many an hour of watching his color printer cope with the final straw demand for near nine hundred sheets of CROSSWINDS No. 97 color insignia. Lucky for Dennis, iron crosses are black and white. But for this D VII issue, Dennis has come down with an incurable case of lozengitis like purple birth marks.

Inspirational mail from Dave Stott revealed the Comet SPAD was flight challenged, but inspired a romp through G-8's and The Lone Eagle for bright WW I SPAD decour and pulp adventure in CROSSWINDS No. 98. So much fun, I hooked into the new G-8 reprints of #1, #2, & #3 at $ 9.95 plus $ 2.25 for media mail from Adventure House at 914 Laredo Road- Silver Spring MD 20901. G-8 cover art on #2 Purple Aces shows Lt. Glover's bright yellow SPAD with a red cowl face ring crashing into a pair of all mid-blue Fok. D-VII's with red radiators flown by purple faced Hun zombies. Wild! Mid blue is hard to see in the air, so as bad as camouflage. Camouflage is fine for static charisma, but no help for outdoor flying visibility or finding in the bush.

Some Fok. D VII's flew with all fabric color painted. Hermann Goring led Jadgeschwader Richtofen in May 1918 in a D VII with a red fuselage, struts and wheels back to mid cockpit and yellow rear, with olive green wings as shown by Dayton FAC's Richard Meixell on the cover of M.A.N. December 1969. By August 1918 Goring's Fok D VII 5125 / 18 was painted all white. Lt. Fritz Rumey of Jasta 5 was shot down 27 Sept. in an all yellow D VII by S.E.5a R.A.F. Sq. 32 Lt. G E B Lawson. Ref.Profile Publication No. 25.

W.W.1 AERO has great D-VII coverage in No. 158 Nov. 1997 of Javier Arango test flying his two D VII's. The one built in France for the movie The Blue Max has camouflage lozeng fabric with Jasta 6 like black and white stripe trim. This machine had an inverted 200 hp Gipsy Queen 6 cyl engine. In 1992 the engine was converted to upright operation to correct thrust line looks. The second D VII replica was more authentically completed with a Mercedes 160 hp engine, like the majority of D VII's built before 185 hp B M W 's. High torque and a large 110 inch dia. prop gave the D VII enhanced ability to hang on the prop at moderate speed.





The Mercedes powered D VII replica is finished in high visibilty red from nose to back behind the cockpit and step, with white rear fuselage and tail. Wings, wheel discs, and struts are red.A black hen and four chicks complete the Jasta 74 motif on the white fuselage sides, as shown in W.W.1 Aero 158, and Profile Publications No. 25. Bill Hannan's Runway may have other examples? Fess up Bill!

While Aero Damn namics (can't spell dynamics for the General) is not forced on us by W.W.1 Aero, I'll take up the gauntlet to observe that the thick taper **blunt** nose airfoil is not so good as the thin undercamber S.E.5 and SPAD airfoils, but it does eliminate wing wires, and the taper from a very large trailing edge flow back angle to a smaller wing tip angle gives us a built in tip washout condition by less down wash outboard! The over 15% thick root rib set at o degrees to thrust line has a 19 degree trailing edge angle with a bit of undercamber angle to flow back toward the stab. at over 9-1/2 degrees down wash. , as shown in W.W.1 Aero 150 and 158. Fokker D VII's were rigged with the wing at 0 degrees attack, with the lower wing at plus 1 degree for lift in down wash from the upper wing.
The fuselage upper longeron (A french word for a German airplane!) curves down to the tail to provide a positive 2-1/2 degree or so stab angle. Thus about 9-1/2 degree down wash less 2-1/2 degree stab angle is about 7 degrees differential. The S.E.5 example in W.W.1 Aero 150 cranks up the wing angle of attack to put the horizontal tail at 0 degrees. I'll take a S.W.A.G.view that with a flat bottem thinner section airfoil at 0 degrees, the stab can be about 0 degrees, as most model plans show. Dennis shows the scale like or worse stab,angle, with a positive wing angle. This can work well, but it plays hell with the lower wing angle. Only the Peerless plan and Dick Meixell with the gas power D VII in M.A.N. 12/'69 use the droopy stab mount. Betcha Dennis bashes the ganding gear in his test glide.

Another comment for those that aspire to Kanones in W.W.I events more than to hang it by a string next to the Dave Stott inspired Comet SPAD, the construction will make a great rack for hanging Dennis' lozenge tissue. But the exceptional Martinsyde Buzzard by Steve Griebling in CROSSWINDS No. 87 is mostly 1/32 sq. framed, and lighter than the D VII as drawn. I trust most of us have too much pride to fly the boxy DeHavilland 6 trainer and sub bomber. By area ratio moment arm calculation, the Mean Aerodynamic chord of the combined top and bottom wings is about 1.8 inches chord, with the center of gravity at .76 to .88 inches behind the MAC wing section of 1.8 inches chord, or about 1-1/8 to 1-1/4 inches behind the top wing leading edge. Lotza words to find the C.G at 50-53% Top wing chord N'es Paw? (N'est-ce Pas?)

W.W.1 AERO and SKYWAYS are $30 minimum per year with reprint copies $6 ea. from Leon E. Opdyck at W.W.1 AERO, 15 Crescent Road- Poughkeepsie, NY 12601.

BAD SPAD FIX

Basic Bad SPAD flight tribulation by Dave Stott was reported by mail in CROSSWINDS 98 without much of a fix beyond the verticle monoline trim. But sky hooks are so hard to find at the flying field. All is not lost for the reluctant SPAD! A breakthrough in SPAD flying is confirmed that offers hope for the brute approach of building extra strong rather than feather wood lashups. Our hero for advanced SPAD flying is SPAD Sage and surviver Army Air Force Capt. Jake Larson from Sun City Center, Florida. Jake reports in with:

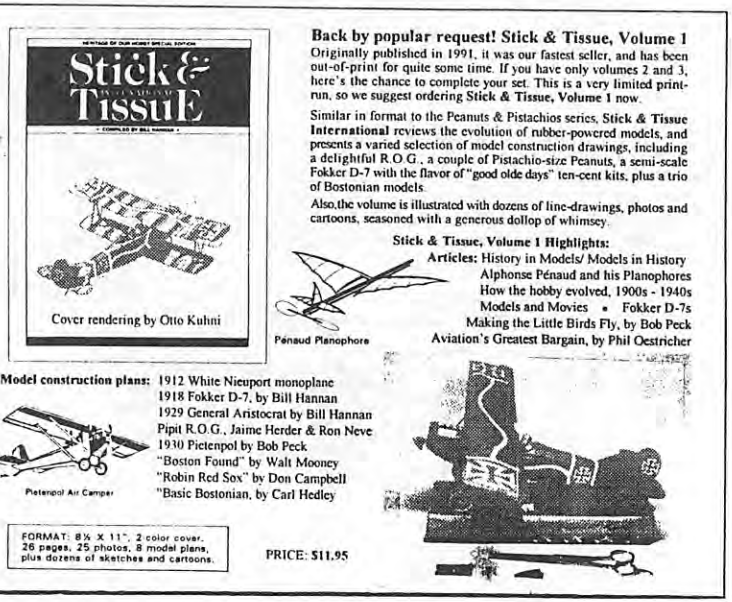
"Sure don't understand the fuss about getting the SPAD to fly. I made 5 of them when I lived on the farm. 2 pieces of 2 X 4 nailed together & sawed out for the fuselage. 1 X 4 boards for wings & 4 X 6 penny nails for cabane struts 1/4 ply for tailfeathers. 4 pieces of lathe + nails for interplane struts & landing gear. 2 Mason Jar lids for wheels. 2 BIG loops of innertube from the big rear wheels of the tractor.

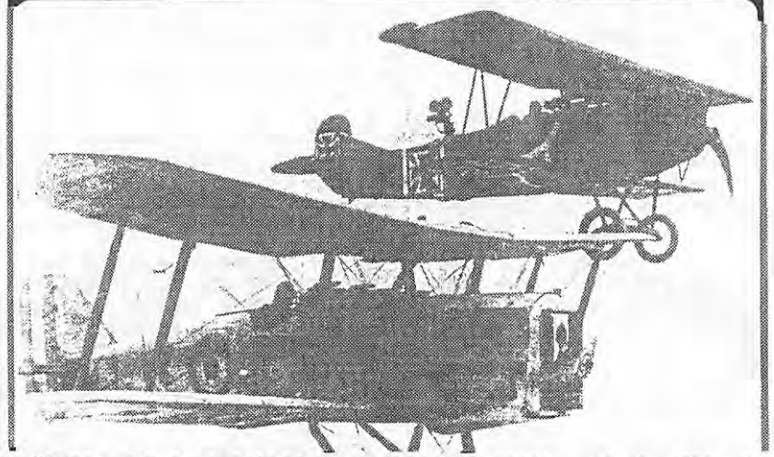
The rear of the corral in back of the barn was about a 15° downslope to the woods. Put the 2 loops of rubber together, hook one over a corral post & aim up about 45° & let go. All SPADS made it to the woods with room to SPARE. The 5th SPAD I used to copy a crash into the barn like Mantz or Tallman did in one of the movies. Worked real good. Fuselage went right through the barn wall whilst the wings stayed outside. My dad didn't think much of it as the cow that was in the stall on the other side of the wall fell over on him as he was milking her at the time. The cow never was "right" after that-she never wanted to go in the barn. I did have trouble with one SPAD. I was in the corral, hauling back on the rubber and the loop broke & I sat down in a cow pie. (fresh) Mom got a real chuckle out of that but she made me wash my clothes. I got a new loop of inner tube & the SPAD went just fine.

Cheers, JAKE"

The U.S. Navy missed out on all that catapult experience when Jake went into the USAF. Still thinking Navy, Jake built the WW II Navy "SPAD" model of SBD, and got 24 seconds flight times. Jake gave it to a WW II SBD tail gunner as shown on the photo in Cloudbusters club News. Another attaboyfor Jake and SPADs. As a Florida resident of the MIAMA circuit, Jake is more into Key Lime pie than cow pie these days. Key Lime is yellow like G-8's.

We are shaken by the loss of newsletter editors Doc. John Martin and Dick Hawes along with Dick Korda and now Ed Lidgard of Sparky fame. A sp'l event tribute to Ed Lidgard will be flown at the SAM Champs in Muncie in late August. Kit plan SPARKY with fixed 1.g. and a 10-1/2 in. dia. max.prop will be flown along with the many SAM events.





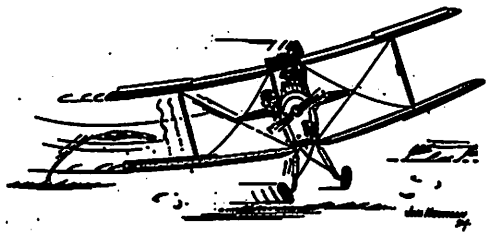
Bill Hannan was so inspired by seeing the opening of the film Hell's Angles (Bob Haight saw him in line) that he built the Comet Kit 16" w.s. Fokker D VII in the all over black tissue with white trim and early form crosses. Bill's A-26 kit has wire wheels and white spaghetti trim like the cover picture on W.W.1 AERO No. 171, FEB 2001. This D VII model is also cover art on STICK & TISSUE Vol. 1, with plans at $ 11.95 plus $ 3.50 by Bill Hannan at P.O. Box 210- Magalia, CA 95954 USA Phone 530-873-6421. Bill also has Datafiles Sp'l Edition Fok D VII Anthology Vol. 1 -$ 31.25, and Vol. 2 at $ 33.00. Fabric Special No.1, Richtofen's Flying Circus-colors & markings of Jagdeschwader Nr. 1 is $ 30.25. Get 'em all and you have $100 in data for your Dime model!

Readers and Kit makers are invited to coment on their Fokker D-VII's. Bill & Jean Shive at Penn Valley Hobby Center can supply the Jack Fike line Scale Flight Models # 1145 kit of the 16" w.s. Comet A 26 at $ 11.95 plus $ 5.00 shipping to US 48 states. Add $ 1.50 to foreign mail drops. PA add 6% tax. The SPAD A 25 kit described by Dave Stott in XW 98 is $ 14.95.

Penn Valley H.C. offers a choice of a dozen free flight Fokker D VII's including Megow # 2110, # F-8, 15"w.s. $ 12.95, # 2115 C-1 reduced to 18" @ $ 14.95, # 2210 solid D VII # S12, 8" @ $ 15.95, SFM 3035,Burd D-7 #28, 16" @ 12.95, The Gene DuBois PS-19 D-7 13" @ 13.95 and two Easy Built Mod. kits: FF-26, D-7 18" @ $ 9.43 and EB-13 D-7 17.5"w.s. @ 14.15. The Golden Age Reproductions P/N 06 Scientific D-7, 20" @ 10.00 or P/N 31 D-7 Megow M-5 # 177, 18" @ $ 9.00. Herr Engineering Lazer cut kit K 105 Fok D VII, 24" @ 36.08, and R/N Models two per kit CO2/Rub. power CG 502, SPAD 13 C 18" w.s. & Fokker D VII 21-3/4" two for $ 26.77. Penn Valley Hobby Center is at 837 W. Main St. Lansdale PA 19446 Phone (215) 855-1268.

Lee Campbell's Models in Muncie, IN. also has Easy Built Models kits, R/N Models Kits, and Peck Polymer products. The R/N SPAD & FOKKER D VII combo kit is # CG502 for .020/ELECT/CO2 at $31.49 in 2000 catalog. The 32" SPARKY L-10 plan by the late Ed Lidgard with fixed wheels for SAM Champs and FAC O.T. use is # BRX 100, and was $21.98 plus the $ 5.00 shipping. Fuel and Dope are only available at Muncie.Campbell's Custom Kits is at P.O. BOX 3104-MUNCIE, IN 47307. Call 1-765-289-7753 9 A.M. to 9 P.M. for an update on prices, or send Lee a couple $ for the full catalog. e-mail:souper30@gte.net. Best call after noon. Indiana is on Std. time.

P-20 FF was introduced as a Postal competition for Bob White PIXY 20 design models. Billy Reuter from Cleveland NOFFA took second place in 2001. The Bob White Beau Coupe like P-20 is the only P-20 specific design on the market so far in kit, or pre-fab form. Builder of model rule does not apply. Your Kids can jump right in, and beat up on dad's toy. P-20 PIXY Kits can be purchased from Allen & Tina Brush at 25500 Aquilla Ct. Sun City CA 92586. P-20 rules follow P-30 AMA rules with 20 inch dimension max., 20 gm. min. wt. and 10 gm, max. rubber wt. Commercially made plastic props of 8 inch +/-.4" must be used. Peck Polymer has an 8" Prop. Also Gizmo Geezer. 90 Sec. Max.' three flight totals go an extra 30 sec. each fly off round.



CROSSWINDS AERO CALENDAR

Sundays	Indoor flying at Andrews School, Noon to 5. Check with Doc. Hacker 216-486-4990 or Don Slusarczyk 440-918-0290.
Sun.April 7	CFFS Annual Indoor at Kent State U Field House. 8-4:30.
	Minneapolis Indoor at Burnsville MN H.S. 651-429-3150.
-	Cactus Squadron FAC at Wolfswinkel Field.480-941-8778
April 27-28	MIAMA Indoor at St. Pete FL USCG
May 3- 5	Air Racing Historians Symposium at Cleveland, OH Holiday Inn-Brookpark. Bill Meixner 216-676-0475.
Sun. May 5	Cloudbusters 2002 SPRING INDOOR FLING at "Inside Swing Golf Dome" Flint, MI. Cat.III Site. Fred Gregg Jr. 586-264-1018.
Sun. May 19	Scale Staffel Annual at Otay Mesa, CA. John H'619-669-0146.
Sun. May 26	Cleveland FFS FAC & FF at Lorain County CC. Elyria, OHIO. I-90 Exit 148 to Rt. 301S to Hoag RD. Russ 216-382-4821.
May 29-June 2	USIC, NFFS Nat's at Johnson City, TN.
June 7- 8	FUNK Third Annual Fly-In, Probably at Akron City Airport.
Sun. June 9	Cleveland FFS FAC & FF at LCCC. Jim Hyka 216-481-6525.
Sat. June ~~16~~ /	~~Possible~~ Date for Dayton McCook ~~at Dayton or~~ at Muncie, IN.?
June 22-23	MAPS Military Aircraft Air Show at Akron Fulton City Airport.
June 27-30	Probable WACO Fly-In / Nat'l Club at Mt. Vernon, OH Wynkoop.
July 5- 7	Taylorcraft Fly-In at Barber Field, Alliance OH.
July 18-21	FLYING ACES NATIONALS at Geneseo, NY. CIC Lin Reichel.
July 28	Cleveland FAC & FF at LCCC. Gordon Roberts 216-749-4817
July 19-20	FUNK Reunion Fly-In at Coffeyville, KS. Probable Deke Slayton F-1 Air Race at Sparta, WI.
July 24-30	EAA Air Venture at Oshkosh, WI 920-426-4800.
August 11	Cleveland FAC & FF at LCCC. Peter Zbasnik 216-476-4824.
August 23-25	WACO Field Fly-In at Troy, Ohio.
August 23-30	SAM Champs at Muncie, IN. FF & R/c events. with SPARKY FF.
August 5- 9	AMA / NFFS Outdoor Champs at Muncie, IN.
Aug. 31-Sept 2	Cleveland Air Show at Burke Apt. with Parma Hobby Kids H L Gliders and CFFS and Air Racing Society Displays.
Sept 6- 8	MERFI fly in at Marion, Ohio.
7- 8	FAC Outdoor Champs at Muncie, IN. von Rottensox/ Starleaf.
7- 8	Gathering of Corsairs & Show at Mt. Comfort. IN (INDY)

CFFS CONTEST EVENTS AT LORAIN COUNTY COMMUNITY COLLEGE

1. FAC PEANUT SCALE, FULL POINTS	19. H.L. GLIDER (J)(S)(O) $1 POT PRIZE
2. HI-Wing CABIN PEANUT EXPERIMENTAL	20. 6" STICK CATAPULT GLIDER, $1 POT
3. HI-WING CABIN PEANUT PRODUCTION	21. FAC O.T. RUBBER 36" M.S. Max., $1 Pot.
4. FAC DIME SCALE	22. FAC O.T. STICK 36" $1 POT PRIZE.
5. FAC RUBBER SCALE	23. FAC O.T. TWO BIT 25" MAX.,$1 POT.
6. FAC OH FUNK & WACO LTD.ML 11:30	24. O.T. JIMMIE ALLEN R.O.T., $1 POT.
7. FAC JUMBO SCALE	25. FAC MODERN CIVILSCALE 3 ELT.TOTAL
8. FAC PIONEER SCALE	26. MODERN MILITARY MASS LAUNCH AT 12:00
9. FAC GOLDEN AGE CIVIL AIRCRAFT	27. WW I MULTIWING PEANUT M.L. 12:30
10. FAC GOLDEN AGE MILITARY A C	28. WW I MULTIWING FAC M.L. 1:00
11. FAC No. CAL PROFILE SCALE	29. WW II PEANUT COMBAT M.L. 1:30
12. NO. CAL WW II 3 FLT. TOTAL	30. WW II FAC COMBAT M.L. 2:00
13. FAC POWER SCALE ELECT. OR CO2	31. BENDIX PRE WAR RACE M.L. 2:30
14. O.T. GAS REPLICA ELECT OR CO2	32. GOODYEAR & F.1 RACE M.L. 3:00
15. EMBRYO ENDURANCE (J)(S)(O)	33. GREVE INLINES RACE M.L. 3:30
16. P-20, 8"PROP, 20gm, 4gmRUB.3 FLT.	34. THOMPSON RADIALS RACE M.L. 4:00
17. P-30, 9" PROP,40gm,10gm RUB., 3 FLT.120 MAX. P LUS 30"S.PER AMA RULES.	
18. JR. RUBBER 3 FLIGHTS, NO MAX.	

FAC RULES APPLY WITH INSPECTION OF NO. CAL,DIME, AND COMBAT M.L. MINIMUM DETAIL, AND O.T. PER PLAN. NO SIZE CHANGE FOR 25" MAX PER PLAN O.T. PRE SELECT EVENT FOR MULTIPLE OPTION MODELS. MASS LAUNCH AND OLD TIMER OUT OF BOUNDS TO BE SET AT FIELD. ALL MAY PICK A PLAN PRIZE.

SUNDAY APRIL 7 CFFS INDOOR CONTEST AT KENT STATE FIELD HOUSE CD MIKE ZAND.

SUNDAY MAY 26 CFFS AT LCCC 9AM-5 PM CD RUSS BROWN 216-382-4821. I-90 EXIT 148 TO RT. 301S ABBE RD. CHECK HOAG RD. OR UPWIND.

SUNDAY JUNE 9 CFFS AT LCCC 9AM-5PM CD JIM HYKA 216-481-6525.
THURS.-SUN. JULY 18-21,2002 FLYING ACES NAT'S MK. XIII AT GENESEO, NY.
SUNDAY JULY 28 CFFS AT LCCC 9AM-5PM CD GORDON ROBERTS 216-749-4817.

SUNDAY AUG. 11 CFFS AT LCCC 9AM-5PM CD PETER ZBASNIK 216-471-7478.

SUNDAY SEPT. 15 CFFS AT LCCC 9AM-5PM CD RUSS BROWN 216-382-4821.

SUNDAY OCT. 6 CFFS AT LCCC 9AM-5PM CD PETER ZBASNIK 216-471-7478.

CFFS INDOOR AND S.O. FLYING IS ON SUNDAYS AT ANDREWS SCHOOL NOON TO 5PM. CHECK DOC HACKER OR DON SLUSARCZYK 440-918-0290. HACK IS AT 216-486-4990 SEND $ CONTRIBUTIONS FOR USE OF ANDREWS SCHOOL TO DR. VERN HACKER AT 25599 BRECKENRIDGE, EUCLID, OH 44117-1807. THE GOAL IS $ 600 PER YEAR. KENT STATE RENT IS UP TO $800 THIS YEAR AND MAY GO OUT THE ROOF IN 2003.

SAM O.T. FF & R/C FLY 1ST WED OF MONTH AT SHELBY AIRPORT RT. 96 ON 5/1,6/5, FRI 7/5, 8/7, 9/4, & 10/2. FLYING AT SCHROEDER'S FARM ON RT. 61, 3MI S. OF RT. 224 IS ON 5/15, 5/29, 6/19,7/17,8/14, 8/28, AND 9/18.

THE SAM CHAMPS IS AUG 25-30 AT MUNCIE, IN. FOR FF, NFFS NOSTALGIA, SAM R/C, R C NOSTALGIA, AND SPECIAL EVENTS FOR COMET KIT PLAN SPARKY WITH TWO WHEEL GEAR AND 10 1/2"MAX PROP, FOLD OR FREE WHEEL. ALSO 1/2 A DALLAIRE SPORTSTER AND THE CLASS C BUZZARD BOMBSHELL DESIGN BY JOE KONEFES.

P-20 IS A NEW SMALL FIELD FF RUBBER POWER DURATION FUN EVENT AS A REDUCED P-30, THE MAX. DIMENSION IS 20 INCHES, WITH 20 gm. MINIMUM WEIGHT,4 gm. MAX RUBBER, AND A COMMERCIAL PLASTIC PROP. OF 7.6 TO 8.4 INCH DIA. THREE FLIGHT TOTALS ARE 90 SEC. MAX., WITH 30 SEC. ADDITIONAL EACH FLY OFF.THERE IS NO BUILDER OF THE MODEL RULE, SO JUNIORS AND OTHERS CAN GET IN WITH ARF'S AND EXPERIENCE FLYING.

Sept	9-15	National Air Races at Reno, NV
Sept	15	Cleveland FF Society FAC & FF at LCCC. Russ Brown & Lundy.
Sun	10/ 6	Cleveland FF Soc. FF & FAC at LCCC. Peter Zbasnik CD.