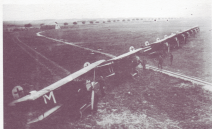


# FOKKER D.VII



WINDSOCK DATAFILE 9

# WINDSOCK DATAFILE 9



## ON THE COVER

Recess on the ground. An evocative portrayal of three Jasta Fokker DVIIs during the Summer of 1918. This unit was mostly equipped with GAW-built aeroplanes all of which were strikingly coloured, particularly that of Lieutenant Günther von Beren who added four pump clips to the squadron's usual raven emblem.

Painting by Brian Knight G-A-A of the Guild of Aviation Artists.

Above, line-up of Jasta 72 Fokker DVI fighters. The first is that of Staffel commander Lieutenant Karl Morschhoff.

Opposite page  
Fokker DVI (N414) 5824/18 (s/n 5823), believed to be the machine of Richard Kunt shown here being tested by an English pilot at Hounslow aerodrome in 1918.

## FOREWORD

MUCH has been written about the mercurial Fokker DVI, undeniably one of the 'Great War's finest combat aeroplanes and a perennially popular subject for modelers and full-size replica builders and yet a definitive study has still to be written. Until that long-awaited history arrives, WINDSOCK DATAFILE No. 9 will more than suffice, the opportunity having been taken by the publishers to secure the services of leading German aeronautical historian PM Gross to provide fruits of his latest researches as well as a large selection of fascinating DVI photographs, several of which are published collectively for the first time.

Regular readers of the DATAFILE series

will note the addition of extra pages initiated with this volume, and the consequent increased photographic content providing an even wider pictorial coverage to aid modelers seeking extra detail and also those many students of camouflage, some of whom have made the DVI a special target for detailed research and analysis. Indeed, a survey of DVI *Asses* colours and markings would fill a very much larger book for this magnificent aeroplane enjoyed comparatively widespread service, despite its late entry into the air war, and carried the distinctive liveries of many units into battle, some of which are illustrated in this new DATAFILE.

Ray Hinell, March 1988.

## Data

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## ALBATROS PRODUCTIONS LTD

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# FOKKER D.VII

By

P M Grosz



# AN INTRODUCTION

**T**he Fokker D.VII was the best fighter of the war. There, I've said it! It's an opinion and I'll stick with it. What better proof than the fact that the Fokker D.VII was the only aircraft specifically mentioned by name in the Allied armistice terms? Here is the pertinent clause regarding surrender of German military equipment:

*'I. Surrender in good condition by the German armies of the following equipment: ... 2000 aeroplanes (fighters, bombers - Army D-7's and night bombing machines)'*  
When Captain Raymond A. Brooks, a secretary Spad ace of the US 22nd Aero Squadron, tested a surrendered D.VII fighter, powered by a 160 hp Mercedes D.IVb engine, on March 7 1918, his logbook documented admiration for this superior machine:  
*'I, the 208-42 Fokker (BMW D6 powered version) am impressed on this one also'*

*'I'm glad the ace got what it did leave this D.VII in a dandy light, maneuverable, good like the ace and the motor is a dream.'*

According to an interview with American pilot Albert Frank Lee, the French issued orders in September 1918 for Spad 13 pilots to avoid combat with the Fokker D.VII; it was superior on all counts except in a dive. Although the German air service was literally overwhelmed by Allied fighters in the second half of 1918, Jagdwaffenflieger the Fokker D.VII, for the most part, continued to inflict serious losses. A critical analysis of comparative loss figures versus front-line fighter complements remains to be written, but indications are that the German fighter force, man for man, aeroplane for aeroplane, was equal if not superior to the Allied force in 1918. If so, the Fokker D.VII played a lead role. In March 1920 the US Air Service tested

Right, the Fokker V 11 (no/n 1883) prototype in its original form. The Fokker experimental shop received instructions to build this machine on September 20 1917. Note the aileron extension beyond the trailing edge, the lack of a wing cutout, the square aerodynamic elevator and aileron balances.

Below, the Fokker V 11 (no/n 1883), also designated V 11/1 or 1 V 11 in various official documents, in its original form was test flown unarmed. Note that the cowling contours have not been fully developed and the fuselage appears shorter than the modified V 11/1L.



Fokker D.VII 8223/18 (US No. F4271), powered by a 215 hp Liberty Model A engine — equivalent to the over-compressed 185 hp BMW IIIa, although the German engine provided more power at altitude. Test pilot Louis P. Mustary made the following (excerpted) observations:

*The flying qualities of this aeroplane are exceptionally good. In manoeuvring it responds nimbly and equally, all the control surfaces being balanced and very effective. It is tail heavy on climb or in level flight with full engine, and nose heavy in a glide, at certain throttle positions it balances beautifully. The lateral balance is normal. . . . The main advantages of this airplane are its manoeuvrability, which is very good, its stability, which is much better than that of the*

*average biplane, and its high stalling angle, which permits shooting almost vertically upward.*

#### **Canthlever wing**

The Fokker D.VII was the result of a rather long development cycle which in some ways began on April 1 1906. Wilhelms Forssman, a Swedish engineer, who had built an aircraft in Russia and the SSN-Forssman giant aircraft in Germany, provided Fokker with patent and engineering consulting services in Berlin. Acting through Forssman, Brünning & Sohn AG, a large German plywood manufacturer, offered to build at no cost veneer-covered, plywood wings to Fokker's specifications. The resulting experimental 'veneer' wing, lighter than its fabric-covered counterpart, was first tested by

Left, the Fokker V 16 (w/n 2114) ordered from the experimental shop on December 12 1917, on the Adlershof flight line during the First Fighter Competition on January 23 1918. The control surfaces have been rounded, a fin has been fitted and a wing cutout provided for better visibility.

Below, after structural modifications and a new wing outline, the Fokker V 11/II (w/n 1882) took part in the First Fighter Competition and was subject to static load tests as part of the Fokker D.VII Typenschriftzug. The fuselage appears lengthened, the cowling contours are more rounded and a small wing cutout is visible.



*Ätling* (*Ätlingen* der Fliegertruppen — Inspectorate of Aviation Troops), but further data is missing. This episode and the association with the Dick Janßen wing (Fokker flew the Janßen J 2 on December 22 1918) certainly contributed to Fokker's continuing quest to develop the all-wood, internally-braced, cantilever wing (fabric and veneer-covered torsion), which in the end was responsible for the robust wing cellule and exceptional flying qualities of the Fokker D.VII. Furthermore Fokker's ear was always carefully tuned to the wishes of German fighter pilots (whose language he spoke and many of whom were personal friends). A daring and wonderfully skilled aviator acting as his own test pilot, Fokker hand-tailored the D.VII's flight characteristics to perfection.

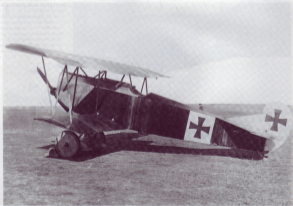
On September 20 1917, knowing *Ätling* was planning a fighter competition in early 1918, Fokker ordered the experimental shop, then under the direction of Reinhold Platz, a master welder by trade and imbued with a craftsman's zeal to reduce structural complexity to a minimum, to build a biplane prototype powered by a 160 hp Mercedes engine. This, the true Fokker D.VII prototype, was designated Fokker V XI (later V III) and assigned work number 1883. The Fokker V 18 (w/n 2116), a second D.VII prototype (somewhat larger and heavier than the V III), was ordered from the experimental shop on December 12 1918 also to participate in the forthcoming competition.

Fokker entered six rotary and two in-line engined fighters in the First Fighter

Competition convened at Adenstedt, the *Ätling* test centre, between January 20 and February 12 1918. The in-line fighters were the new modified Fokker V II (also designated V II/B) and the V 18. Based on the overall performance results and the preferences of the attending fighter pilots, *Ätling* awarded 'substantial' production orders for the Fokker D.VII (designated internally as the Fokker V 22) and the rotary-engined Platz D.VIII.<sup>2</sup> Sufficient interest was shown in the Rumpier D.I, Roland D.VI and SSW D.VI for *Ätling* to order an 'experimental' batch of 50 aircraft each.

The Fokker D.VII *Typenprüfung* (type-testing programme), a full range of static and performance tests mandatory for Front-line release, was concluded in February 1918. *Ätling* engineers must have been impressed, not to say astounded, by the functional simplicity and inherent strength of the airplane. With their eye on lowering production man-hours, Fokker and Platz had designed a simple, welded, steel-tube fuselage that provided good pilot protection in event of a crash. The clean and robust cantilever wing cellule was free of drag-producing wires, although it was braced with an outer *N-strut*, a structural feature the necessity of which has been questioned. It is a little known fact that comparative speed tests performed with and without struts at Revalia in October 1918 demonstrated that the strutless VII was marginally slower, but 'better' in the air and was appreciably less responsive to aileron deflection.

Below, this early production Fokker D.VII has the typical Fokker strutted fuselage and carries the old-style insignia. Both the V II and V 18 prototypes, possibly brought up to D.VII standard, were designated Fokker D.VII 227/18 and 228/18 respectively.



### A tough opponent

Although the First Fighter Competition did not formally end until February 12 1918, manufacturing drawings for the DVII were already nearing completion and the V 21-II was undergoing load testing. An indication that DVII production may have been approved by Adflog before the competition officially ended, Fokker received an initial contract for 300 machines and Albatros and its affiliate Odenwälder Albatros Werke (DAW), companies with far greater capacity, 600 machines. Owing to the lack of records, it is not known when the first production DVII was accepted from Fokker, but 21 were accepted in February-March 1918. From a total Front-line inventory of 19 on April 30 1918, the combined output from Fokker, Albatros and DAW rapidly raised the number to 487 on June 30 and to 828 on August 31.

Needless to say, German fighter pilots received the Fokker DVII with instant acclaim. Many acts built up their scores with the DVII. It was always a tough opponent when flown by a competent pilot and even more dangerous when powered by the over-compressed 185 hp BMW-like high-altitude engine. This engine (BMW 'w/v V 2) was first installed in DVII 231/18 (w/v 2318). The machine was accepted on April 25 1918 and sent to the engine test group at Adlershof for performance trials. The first 14 BMW-engined DVII fighters were accepted in May and the 81 Fokker DVII accepted through November 1918, about one-third had BMW engines installed, some built by Opel under licence.

These simply were not enough DVII engines to power every DVII and German pilots felt sorely deprived if they were forced to fly the Mercedes-engined version. Actually, the 'over-compressed' Mercedes DIIIa engine that was supplied beginning September 1918 was nearly as effective.

Eventually, the DVII was distributed along the Western Front, among Kampfverband Staffeln (home defence flights), in Turkey, Bulgaria and even in Austria-Hungary, where at the war's end a few Fokker-built machines had been delivered and licence production at BAC and west-roy. Aviatik was just getting underway. □

### Notes

1. The German text read: 'kamen alle vier Fokker DVII'. See *Pipers* relating to the Foreign Relations of the United States, 1918, Supplement 1, The World War, US Government Printing Office, 1925, p.464 and *Aviatiker Krüge* (Gepfeiler, IANVE, p.207).

2. *Brooks' Logbook*, National Air and Space Museum, Washington, DC.

3. Fokker records positively identify two different V 21 aircraft. One is the production DVII (V 21) and the other is the tapewinged monoplane fighter V 21 (w/v 2318) that took part in the Second Fighter Competition. For a discussion of the V 21 see *WM / Aero*, No.104, April 1985, No.121, September 1986 and No.122, December 1986.



Left, an early production Fokker DVII 230/18 (w/v 2318) at Adlershof in interim markings. The D,7 230/18 lettering on fuselage and tail does not follow standard Fokker practice and may have been applied at Adlershof.

Below, to guard against a steel-tube shortage, the plywood-covered, wooden fuselage was built by Flugzeugwerk Löhck-Trenckeln (which Fokker owned) and assembled as the Fokker DVII (w/v 2308). It partook in the Second Fighter Competition in May-June 1918.

Right, another early production Fokker D.VII, believed to be 247/18. The distinctive Fokker-applied dark olive drab steady camouflage is well in evidence and the old style national markings appear to have been converted to straight-sided configuration. Note DeJ Triplanes in background.

Below, Unterofficer Piel of Jasta 13 with his Fokker D.VII 373/18. The roundels on the fuselage signify bullet holes from Allied aeroplanes and note the factory-applied aerial number still visible beneath the blue(?) overpainting. Piel was shot down and killed on June 29 1918.







THEY IS THE COMMANDER OF THE 262/18 FOKKER DIVE BOMBER, WHICH WAS THE FIRST OF ITS KIND TO BE FITTED WITH A SIGNALING FLARE GUN.

THEY IS THE COMMANDER OF THE 262/18 FOKKER DIVE BOMBER, WHICH WAS THE FIRST OF ITS KIND TO BE FITTED WITH A SIGNALING FLARE GUN. THE CARTRIDGES IN WHICH ARE AFFIXED TO THE GUN.

**Left, Lieutenant Emil They, commander of plane 26 with his Fokker DIVE 262/18. An aperture has been fitted for a signaling flare gun, the cartridges to which are affixed to the cowling.**

**Below, in this post-war lineup of Polish Air Service Fokker DIVE fighters, 262/18 and 265/18, both powered by BMW engines, can be discerned. Note Polish markings applied over original finish.**



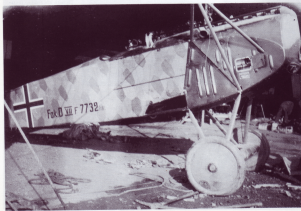
Right, eleven-victory ace  
Vizefeldwebel Willy Gabriel  
of Jasta 11 in his Fokker  
DVII 286/18. The tail  
markings were a red nose  
cowling, red struts and  
wheel covers. Personal  
markings consisted of light  
blue and orange stripes on  
top and bottom of tailplane  
and elevators with orange  
near fuselage and light  
blue stripes under the tail.



Centre, this unarmed  
Fokker D8MF 7732/18  
was taken to Kelly Field, USA,  
after being surrendered as  
part of the Armistice  
terms. The 'F' signified the  
aircraft was powered by a  
BMW engine, although not  
all BMW-powered aircraft  
were so designated. Note  
the oil stains along the  
fuselage floor.



Below, fuselage detail of  
this Fokker D8MF 7732/18  
(s/n 3184) showing the  
additional cowling louvers  
required after several  
aircraft suffered  
spontaneous ignition of  
phosphor ammunition  
during hot weather service.





Left, an example of the Fokker DVII in Allied hands after the Armistice; the pointed spinner was seen only on BMW-powered machines. No details of the aeroplane's interesting markings are available.

Centre, the appearance of the coveted Fokker DVII was always an event. Here British officers inspect a surrendered machine — note Bristol Fighter in background.



Below, rare bird! Only three Fokker DVII fighters are known to have had the 185 hp Madsen III engine installed; one was the factory-fresh Fokker DVII 100-40/14 (s/n 2400) shown here in American hands after the Armistice. Built by the Maschinenfabrik Augsburg-Nürnberg in Nürnberg, 73 Madsen III engines were delivered to 1 November 1918.



Right, eleven military and  
Civilian-owned WW1  
of June 11. In his Fokker  
D.VII (A10) (S27/187)

mark high technology and  
was a significant step  
in development. The  
lack of tail fin and  
armament and the  
unfinished undercarriage  
wing.

Right, this machine is  
believed to be the first  
Fokker D.VII (A10) (S27/187)  
built by Albatros. Note the  
lack of tail fin and  
armament and the  
unfinished undercarriage  
wing.

Centre, the first production  
Fokker D.VII (A10) built by  
Albatros was numbered  
S27/18, shown here at  
Adlershof during its  
Type-testing.

Below, an early production  
Fokker D.VII (A10) 611/18  
of an unidentified unit  
although the black(?) and  
white stripes on nose  
cowling and tailplane may  
mark the aeroplane as  
belonging to Jasta 6. Note  
excellent photographic  
clarity of the five-colour  
printed camouflage fabric  
on fuselage side.





Left, unarmoured Fokker D.VII (A1b) 6666/18 in American hands was another post-Armistice machine. The 'fat' strut numbers were a typical Albatross feature — note diamond pattern on rear fuselage.



Centre, the black raven and chevron insignia of a Justo 18 Fokker D.VII (A1b). Machines from this unit are depicted on this book's cover painting.



Below, a colourful Fokker D.VII (A1b) of an unidentified Jasta. The star and 'Astes' nameband on the struts show it was manufactured by the Stolteiger company of Bremen.

Left, right-hand illustration, an aircraft from a German Jasta unit's cover painting — how many struts of yours?

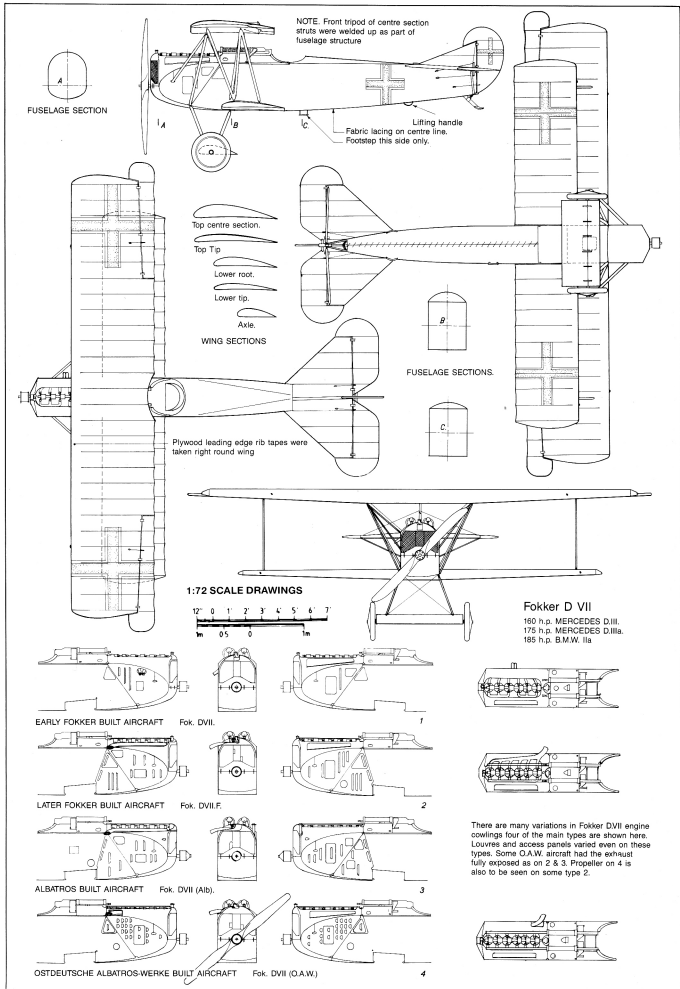
1917. The first machine to be delivered to the United States was a Fokker D.VII (July 1918) built from 1917-18 designs. It had two 100-hp (73.5 kW) D.VII engines. The aircraft was a single-engine, single-seat biplane with ailerons, but still contained many features that were borrowed from the D.VIII.

**Above,** a Fokker D.VII (July) of an unidentified form — Note method of marking tail cross. Fuselage colours are unknown.

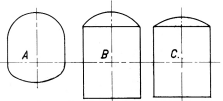
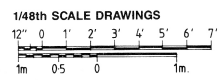
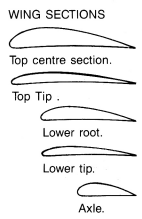
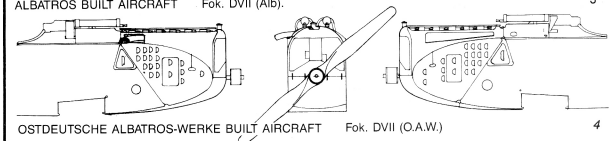
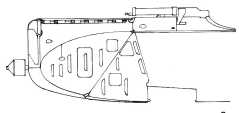
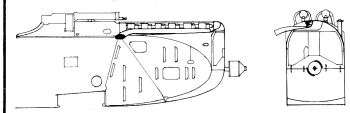
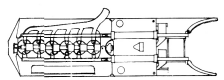
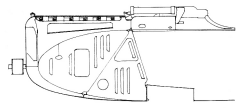
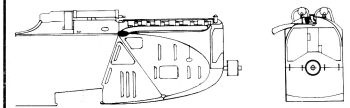
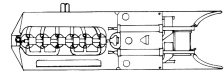
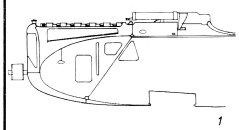
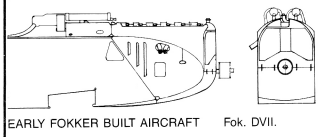
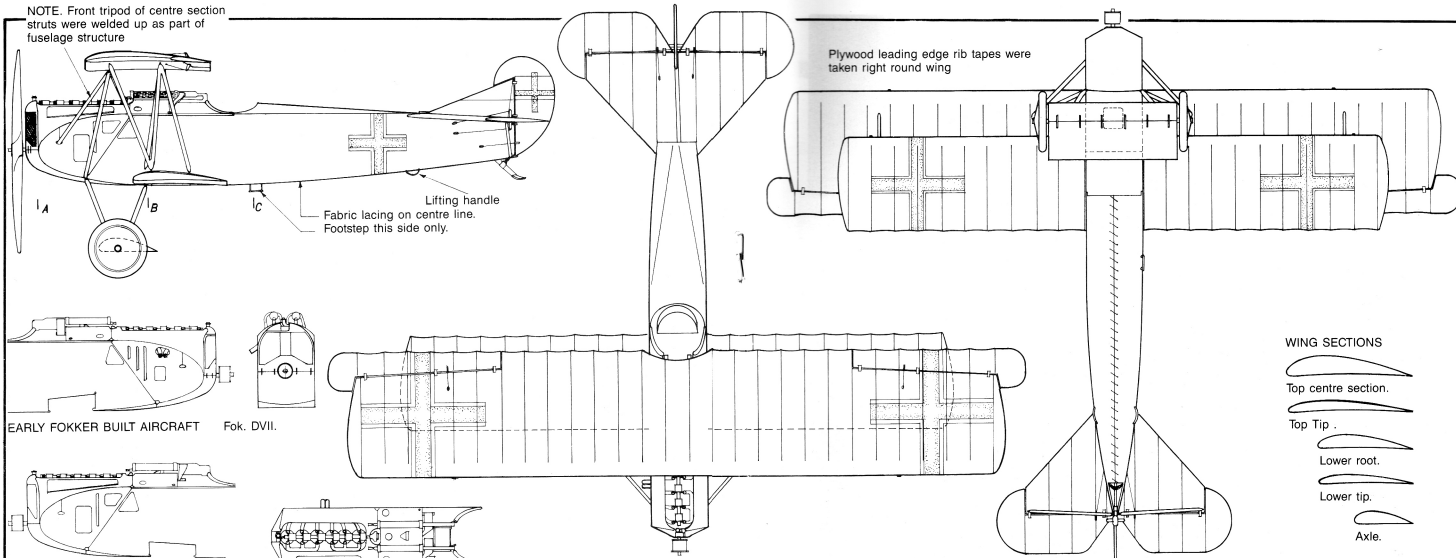
**Centre,** pilot Ritterberth of Jasta 40 with his Fokker D.VII (GAW). The application of the serial number was characteristic of GAW. Note the engine cooling louvers, which often differed from aeroplanes.

**Below,** Lieutenant Lohr's immaculate Fokker D.VII (July) 5218/18 with his personal markings, wing pennants and crosses on the wheels. Fuselage bands may be black, white and red.

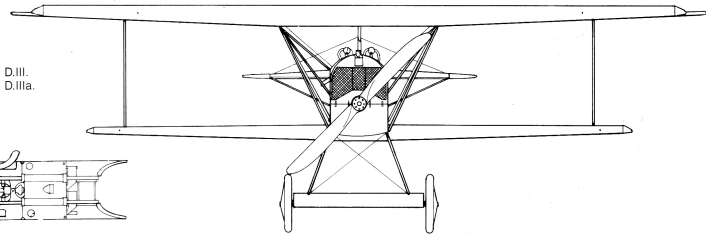
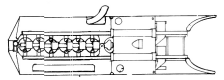




NOTE. Front tripod of centre section struts were welded up as part of fuselage structure



**Fokker D VII**  
 160 h.p. MERCEDES D.III.  
 175 h.p. MERCEDES D.IIIa.  
 185 h.p. B.M.W. IIa







Above, Gefreiter Scheinzel of Jasta 85 with Fokker D.VII (D.IV) 4402/18 gaily decorated with the German Fairy tale 'The Seven Swabians'.



Centre and below, two views of Lieutenant Hans Jungwirth's Fokker D.VII (D.IV) 4484/18 of Jasta 76 at Bald airfield in 1918. Of interest are the pale rib tapes over the printed-fabric-covered wings and various stencil data on struts and lower wing ribs (centre photo). This aeroblane is depicted in colour on the rear cover. (The AE 150 Forke)





Left, a man in a dark uniform stands in front of a biplane. The aircraft's tail features a prominent white cross on a dark background, characteristic of the German Luftwaffe.



Above, an unidentified GAW-built DH8 bearing the elaborate 'LH' monogram of its pilot — colours are not known.

Centre, colonial Fokker DVII (GAW) of one of the Marine Jagdflieger based at Jubbair — note position of rear fuselage lifting handle.

Below, appearing factory-fresh is this Fokker DVII (GAW) 9423/18 on a British aerodrome after the war. The painted camouflage on the cowling was seen on many GAW-built machines.



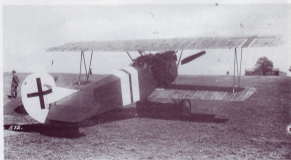
Right, the photo says this  
Fokker D8II (D8A) was  
flown by Lieutenant Meyer of  
Jasta 4. The rigging datum  
line appears white in this  
instance and edges of  
fuselage are edged in  
black(?) and white. Note  
how the cross has been  
reduced in area by crude  
overpainting.



Centre, an 'Armistice'  
Fokker D8II (D8B) on a  
French aerodrome after the  
war. Note the Fokker D8I  
in the background.



Below, Fokker D8II of an  
unidentified Jasta. The  
rubber carries the Albatross  
decal and an airspeed  
indicator is mounted on  
the port wing strut — note  
rear view mirror on wing  
cutout and flare rack  
beneath cockpit. Also of  
interest, the extreme  
position of the upper wing  
crosses.





Left, rather the wrong for  
near when this early  
photograph was taken. The  
tailboom has four vertical  
bars. (USAF AFM 1-100)  
1918-19 was authorized  
during the 1918s. Captured  
about in September 1918,  
the pilot was American  
then to 191803 with six days  
detention in Germany. It  
should normally contain  
spring balance of engine  
performance. It is a  
type of aircraft not  
before the war. (USAF AFM 1-100)  
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should normally contain  
spring balance of engine  
performance. It is a  
type of aircraft not  
before the war. (USAF AFM 1-100)

Above, Fokker DIVE (2AW)  
believed to be within the  
6380-6400/18 serial range  
as flown by Captain  
Michaelis of Jasta 13 from  
Carrigan airfield in 1918.  
Note how the fuselage  
cross is still readily  
discernable beneath the  
blue cowpainting. The  
machine is depicted in  
colour on the rear cover.  
(Dr V. Kous)

Centre, Lieutenant Franz  
Büchner's Fokker DIVE  
(number/serial unknown)  
also of Jasta 13. Note pale  
rib tape draped along wing  
leading edges.

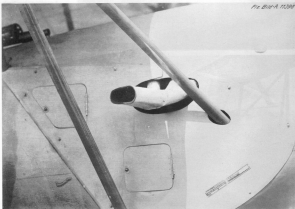
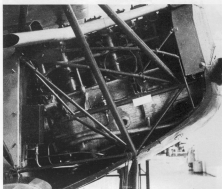
Right, Hauptwachtel  
Bilberg of Jasta 03 in his  
Fokker DIVE (A18) showing  
the additional cooling  
louvres in the engine  
cowling. These were often  
fabricated in the field  
which could explain the  
many variations.

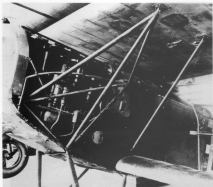
## THE D.VII IN CLOSE-UP

Right: The photo shows the engine (D.VII 3309) seen

from the cockpit. The engine detail of the D.VII preserved in Munich's Deutsches Museum. The aeroplane's serial is quoted as 4408/18 but this may not be authentic — see Appendix. (Albatros/FL. Gray Archive)

Below: close-up of the exhaust exit on Fokker D.VII (Alt) 527/18 (w/n 3148). The left plaque identifies the manufacturer, date and work number, the other the military serial number. Note the lack of cooling cooling louvers.

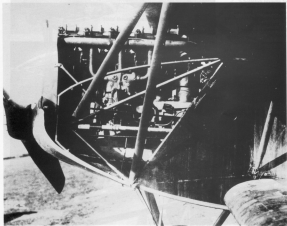




Left, after the nose has  
been removed, the  
structure of the fuselage  
is clearly visible. The  
structure is made of  
metal struts and ribs.

Below, the nose has  
been removed, and the  
structure of the fuselage  
is clearly visible. The  
structure is made of  
metal struts and ribs.

Below, the installation of a  
100 hp Gnome engine  
(no. 1234) in Fokker D.VI  
204/14 (no. 2180). The  
work number can be just  
seen on the lower fuselage  
side beyond the forward  
'ventre-section' strut.

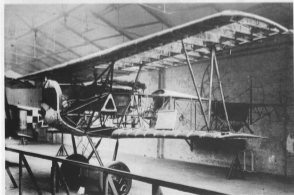


Right, Albatross test pilot  
Fliegerführer Richard  
Scholtz performing an  
acceptance flight in an  
early production Fokker  
D.VII (A/B). The weight  
table lettering was  
characteristic of Albatross-  
built machines.



Centre, close-up of the  
Fokker D.VII (A/B) 6796/18  
belonging to the Musée de  
l'Air prior to its most  
recent restoration. The  
'printed' fabric finish is not  
original — see Appendix A,  
(John Gunnard)

Below, Fokker D.VII  
368/18, part of a display of  
captured German  
aeroplanes exhibited at  
Islington's Agricultural Hall  
during 1918/19. The D.VII's  
pilot was Lieutenant der  
Reserve Hans Schultz who  
was brought down on June  
6 1918 by Lieutenant CBR  
Lagasse of No. 20 Squadron  
RAF flying SE5a D55463.  
368/18 formed the subject  
of several detailed  
technical reports. Note the  
white cooling and red  
wheel covers of this Juas  
71 aeroplane.  
(Albatross/P. L. Gray  
Archives)





Engine bearers were formed of steel tubes, supported on a tubular structure welded integrally with fuselage and 'ventro-section' struts. Note the slight attachment lugs for the engine cranks.



Rear fuselage detail showing the three-ply turtleback fairing supported on three wooden battens.



Rear lifting handle clipped to the lower fuselage longerons — one per side.



Main throttle control — on port side.



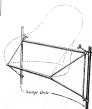
Control lever — at left is the auxiliary throttle control.



Dashboard diagram with original placards translated in this official British sketch. *Achtung, Heiliger* warned the pilot not to forget the extra air control and does not refer to any instrument on the ply dash.



Radiator bar — made of light welded construction.



The DVI seat was of sheet aluminium with a three-ply bottom — the whole usually covered in fabric. A steel tube framework supported the seat and was held to the fuselage by four clips which were adjustable to suit the pilot.



Right, Albatross test pilot Christoforus Richard Behley performing an emergency flight in an early production Fokker D.VII (418). The engine cable entering the fuselage is characteristic of Albatross-built aircraft.

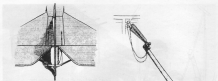
Center, drawing of the Fokker D.VII (418) belonging to the German 1.124 Jäger with the serial number 100000. The aircraft was built in an English factory in the British Isles (Germany).

Below, Fokker D.VII 100000, serial 100000, built in an English factory in the British Isles (Germany). The aircraft was built in an English factory in the British Isles (Germany).

Far right, part undercarriage detail of the Deutsches Museum D.VII showing landing attachment and cord springing. (Albatross/P. E. Gray Archive)

Below left, D.VII radiator differed slightly in both shape and area — this one was manufactured by NKF (Norddeutsche Kältewerke) of Berlin.

Below right, this D.VII radiator was produced by NFW (Nissen Industrie Werke) of Berlin and Oberursel. (Albatross/P. E. Gray Archive)



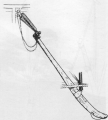
D.VII tail unit showing the offset position of the triangular fin.



D.VII shock absorber and axle detail.

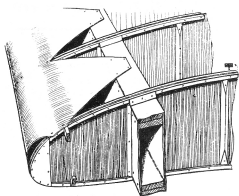


Rear view of a D.VII radiator (on 148/18) showing fixture points to the fuselage frame and internal earthenware shatter.

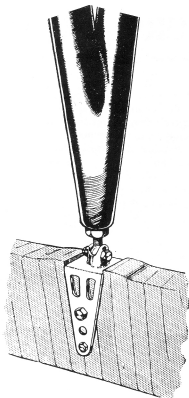


D.VII tail skid with two helical steel springs from the upper fuselage frame.

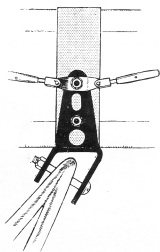




Forward spar, wing rib and ply leading-edge sheathing detail.

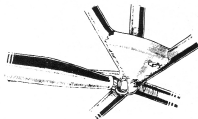


Lower wing spar to fuselage position.

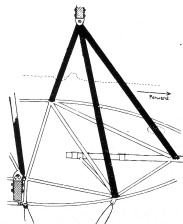


Attachment of upper 'centre-section' strut pylon to forward upper wing spar.

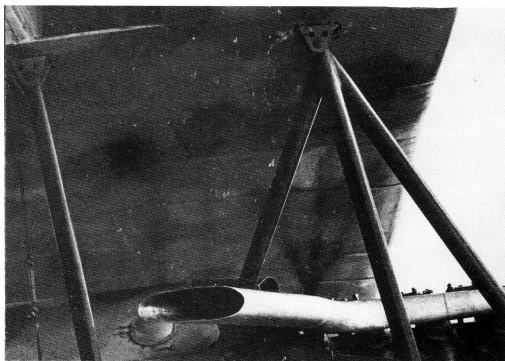
Detail of interplane strut attachment to forward lower wing spar — note ball and socket joint.



Lower fuselage structure showing attachment of rear 'centre-section' strut.



Forward 'centre-section' strut pylon welded integrally with the fuselage frame.



Left, Deutsches Museum DVII at Munich shows the spar attachment lugs through which are bolted the 'centre-section' struts — see sketches above for clarity. (Albatros/P L Gray Archive)

# COLOURS AND MARKINGS By R. I. Russell

**A**s indicated elsewhere, the subject of German DVL colours and markings would involve extensive research and result in an extremely large reference work. Over the years a number of specialists have laboured long and hard on *Jauno* markings as well as the various finishing practices specifically applied to the DVL. Some of their work has already been published and the reader is referred to the bibliography included for further details. Space precludes anything other than a brief overview of DVL colours and markings and the following notes serve as a general guide only.

Early Fokker-built DVLs had their fuselages covered with fabric finished with a streaky camouflage, the dark olive being brushed out in places leaving the paleless of the plain linen fabric showing through. Wings were similarly finished. Most other DVLs, however, were covered with lozenge camouflage fabric, pre-printed in two patterns, one consisting of a five-colour scheme and the other a two-colour scheme. Each pattern was printed in two types: darker shades for the top and side surfaces and paler shades for the undersurfaces. Ian Staar's tables opposite includes **Methuen** and **Russell** colour references for both four- and five-colour fabrics. (It must be noted, however, that there were considerable variations in the printed colours and allowances must be made for over-marking, density of inks and dyes used as well as general fading due to weathering.) Wing rib fabric stitching was covered by thin tapes which were either cut from strips of the camouflaged material itself or dyed pale blue or salmon pink. Metal nose panels on most DVLs were finished in a dark green (olive) with GSV built machines being further painted with periods 'lozenge'd' of either light grey and/or blue over the green finish.

## Unit colours

As may be seen from photographs, many and varied were the colour schemes applied by the *Jagdstaffeln*, combining both unit and individual identification of aeroplanes.

Sometimes markings were meticulously and artistically applied, sometimes they were quite crudely marked according to the abilities of the unit 'artist'. In the application of large areas of paint — the blue rear fuselage of Michaelis' *Jauno* DVL may be instanced — the national insignia crosses were often painted over and could be faintly discerned underneath the new colour. When machines were transferred from one unit to another as often happened, or from one pilot to another, the former owner's identity could also often be seen beneath the new paint.

It has proved difficult to pin down specific schemes as units changed their colours from time to time and no complete record of *Jauno* markings seems to have existed, or if it did, has not survived the ravages of time. One method of finding out colours of specific machines has been the patient tracking down of pilots and other staff personnel over the years and getting them to interpret photographs. This has been done by several



Above right, Leutnant Rudolf Windisch, commander of *Jauno* 68, photographed in a Fokker DVL presumably carrying the markings of Leutnant Carl Deglow, commander of *Jauno* 49. The combined head and telescope sight arrangement is unique.

Right, Fokker DVL 5278/18 — unit and pilot are unidentified. The machine is seen here after the war in Allied hands — note unusual size and position of serial number.



diligent researchers from Germany, the UK and America with some success but these is still much to be documented.

Less detailed colour notes, culled from wartime Intelligence Reports, combat reports, etc., and not infallible, may be of interest. *Acute 4*, red nose/light blue tail (July 1939); *Acute 5*, green tails outlined red; *Acute 6*, black/white striped nose and tails; *Acute 3*, black; *Acute 9*, black fuselage/white radiator/white wings; *Acute 10*, yellow nose; *Acute 11*, red nose fuselage and various colour tails; *Acute 16*, black and white stripes all of cockpit; *Acute 18*, red wings/fuselage, white nose and tails, black personal motifs; *Acute 27*, yellow noses and undersides; *Acute 34*, silver tails; *Acute 36*, blue noses; *Acute 46*, green and yellow striped tails; *Acute 71*, red nose/white tail; *Acute 80*, black tails with white stripes. Fritz Remy of *Acute 5* was reported flying a yellow-fuselage DVIH when shot down on September 27 1938 and Hermann Götting flew a DVIH with red nose and yellow rear fuselage when with AGI and his 2125-38 was doped overall in white. Such overall colours, however, were rare and such colours were usually confined to fuselages and tail units.

#### Publisher's note

For the convenience of modelers, *Meinheim* colour references wherever possible have been quoted and can be found in the *Meinheim Handbook of Colour* by A. Kärnerup and J. H. Wanscher published by Meinheim and Co. Ltd., a book which provides over 1200 colour samples. Copies of the book are available at most main libraries or, if not, many libraries belonging to the Regional Libraries Bureau can obtain a loan from another member library which may carry the title.

**Meinheim notations matched to extant fabric samples of DVIH and other contemporary German aeroplanes.**

#### Meinheim Colour Samples

**Dark Olive: 26F3 (dark) fading to 26D3 (light)**

**Light: 1PC5**

**Light Grey: 1B1/1C1**

**Pale Mauve/Lavender: 24C5**

**Pale blue rib tape: 21C8**

**Yellowish pink rib tape: 18C5**

For printed fabric colours — refer to table.

Below, GDF-built Fokker DVIH showing the distinctive method of camouflaging the metal nose panels. Note floor cartridge holder below cockpit opening.



	SP 26D3/2	Notation (1)	Notation (2)	SP 26D3/2	Notation (1)	Notation (2)	
4. 000.000		Dark blue	27 24	26F3/26C7	Dark olive (26F3)	26 24	
		Dark greenish blue	24F1 - 26F1	26F3/26C7 - 26F3/26C7	Dark greenish grey	26D5	26D5/27
		Dark green (not used)	26A - 26A	26F3/26C7 - 26F3/26C7	Dark yellow (not used)	24F - 24F	26F3/26C7 - 26F3/26C7
		Dark yellow (not used)	26E - 26E	26F3/26C7 - 26F3/26C7	Dark red	18 18	26F3/26C7
5. 000.000		Dark greenish blue	27 24 - 26F1	26F3/26C7 - 26F3/26C7	Dark yellow (not used)	24F - 24F	
		Dark greenish blue	26E - 26E	26F3/26C7 - 26F3/26C7	Dark red	18 18 - 26E	26F3/26C7 - 26F3/26C7
		Dark greenish blue	26E - 26E	26F3/26C7 - 26F3/26C7	Dark yellow (not used)	24F - 24F	26F3/26C7 - 26F3/26C7
		Dark greenish blue	26E - 26E	26F3/26C7 - 26F3/26C7	Dark yellow (not used)	24F - 24F	26F3/26C7 - 26F3/26C7
		Dark blue	27 24 - 26F1	26F3/26C7 - 26F3/26C7	Dark yellow (not used)	24F - 24F	
		Dark blue	27 24 - 26F1	26F3/26C7 - 26F3/26C7	Dark yellow (not used)	24F - 24F	

DETAILS OF LOZENGE CAMOUFLAGE PATTERNS.

Drawn by Gen. R. Ross.

## BIBLIOGRAPHY

The following references will be a valuable aid when researching further into DVI colours and markings.

*Cross and Corbridge Journal* (15), Vol.25, No.1, Spring 1984 for 'Cross Colours - 'Zeppelin' 18' by Greg Van Myrgarten.

*German Fighter Units - June 1917-M* by A. Lewis. (Egmont, 1978).

*Flugzeugtypen 1914-1918* No.2 by A. E. (Ed) Focke. Published by its author, 1987. (Serial for Juks 18 schemes.)

*WINGS* International, Vol.4, No.4, Winter 1988 for 'The DVIs of Great War' by D. S. Abbott - detailed analysis of Udet's red-fuselage Fokkers.

*WW1 Aero*, No.102, December 1984. For details and marking notes for Albatross-built DVIs (including covering practices) by Wally Trigg.

*WW1 Aero*, No.107, December 1985. For

details 'Markings and finish of Fokker-built Aircraft' by D. S. Abbott - comprehensive drawings and notes.



Far right, Fokker DVI (16W) 2024/18 with ornate fuselage decoration over the printed camouflage fabric covering. (Abbott/P. L. Gray Archive)

## KEY TO COLOUR PLATES

**FOKKER DVI (Early production model) 16W.**

Fabric covered upper surfaces were natural linen camouflaged with dark olive banding to provide a streaky effect. Struts 2024 (black) to 2023 (light). Under-surfaces are light turquoise (27C2) and wheel covers either the same colour or maybe white. Forward fuselage metal panels and struts in pale grey (2C) with all upper surface Cross Fokker markings on large white fields. Lower wing cross fields are believed to have been left clear-doped.

References: photograph, page 4; *WW1 Aero* No.107, December 1985, page 7.

**FOKKER DVI (GAM) 4884/18. flown by Lieutenant Hans Jungwirth of Juks 76, Staff Airfield, 1918.**

Forward fuselage metal panels are dark green (28F2) with greyish violet patches (27C2). The sole wing is similarly painted. Fuselage, tailplane and wheel covers are vivid blue (27C2), butterflies and stripes in this white dope. All struts are light grey (18L) and both wings are covered in upper and lower four-colour printed camouflage fabric with light coloured rib tapes (27C2) or Salomon Pink (27C2) or a combination of the two.

References: photographs, page 14.

**FOKKER DVI (GAM) Fren 8200-8249 series flown by Gefreiter Wilhelm of Juks 12, Corbie airfield, 1918.**

Forward fuselage metal panels, sole 'wing' wheel covers, 'cross section' and undercarriage struts in mid green (28D7) with remainder of fuselage, entire tailplane, interplane and tail struts in blue (27C2). Note fuselage cross still visible beneath blue dope. White forward stripe on fuselage passes across underneath the fuselage. Wings are covered in upper and lower four-colour printed camouflage fabric with rib tapes cut from this material.

Reference: photograph, page 15.

## APPENDICES

### FOKKER DVI SURVIVORS

#### CANADA

National Aviation Museum, St. Catharines Airport, Ontario CM 688

FOKKER DVI 18347/18. (94, No. 343-4). Currently under restoration.

Brome County Historical Society Museum, 120 Lakeside PO Box 690, Keewauke, Quebec, J0E 2J0

Fokker DVI 4818/18 (GAM). Probably most authentic specimen.

#### FRANCE

Musée de l'Air et de l'Espace, 93300 Le Bourget

Fokker DVI 6786/18. Now displayed at Le Grand Galerie.

#### WEST GERMANY

Deutscher Museum, Museumstr. 1, 8080 München 23.

Fokker DVI 1868/18. Serial 20. Some parts missing.

#### NETHERLANDS

Militaire Luchtvaart Museum, Kamp van Zeijl, 3745 ZK Soesterberg

Fokker DVI 7748/18. Ex 76226-76229 (254).

#### UNITED KINGDOM

Royal Air Force Museum Storage Facility, RAF Cosington, Bedfordshire

Fokker DVI (GAM) 8417/18. Waiting restoration.

#### UNITED STATES OF AMERICA

National Air and Space Museum, Smithsonian Institution, Independence Avenue, SW, Washington DC 20560.

Fokker DVI 4625/18. (WL No. 353). On display.

Further details of the seven known surviving DVIs and all the world's other extant WW1 aeroplanes are to be found in *WW1 Survivors* by B. L. Blundell published in 1988 by Aston Publications Ltd.

## SPECIFICATIONS

**Power:** One 160hp Mercedes D38/175hp, Mercedes D118a/185hp; BMW IIIa six cylinder air-cooled in-line engine. Max speed, 120mph, (200 km/h) (BMW 111a) Endurance: two hours (approx.)

**Weights:** Empty 1540 lbs (708 kg), loaded 1940 lbs (880 kg).

**Dimensions:** Span, top wing, 29 ft 1 in. (8960 mm), length, 22 ft 8 in. (6950mm) height 9 ft 6 in. (2938 mm); wing area 20.2 m.

**Armament:** Two fixed 7.62 mm LMG 08/15 machine guns synchronized to fire through the airstream arc.

## DEFILING ORDERS FOR THE FOKKER D.VII

The Fokker D.VII was ordered in large quantity up to the end of the war from three large German and two Austro-Hungarian manufacturers. Contrary to what has been written before, the Allgemeine Elektrizitäts Gesellschaft (AEG) was never considered as a license manufacturer by Afling. The German manufacturers were: Fokker Flugzeugwerke, Schwenk & Mecklenburg, Albatros Gesellschaft für Flugzeugunternehmungen mbH, Johannthal; and Ostdeutsche Albatros Werke GmbH, Scheidefeldt.

Because D.VII was a subsidiary of Albatros, all contracts were assigned to the latter company and were not individually identified in Afling records. Caution: the following list of known orders is incomplete.

Date	Manufacturer	Number ordered from . . .	
		Fokker	Albatros & DAW
February 1918	Fokker	200	—
February 1918	Albatros	—	400
March 1918	Albatros	—	200
June 1918	Fokker	100	—
June 1918	Albatros	—	200
July 1918	Fokker	200	—
July 1918	Albatros	—	200
August 1918	Albatros	—	200
August 1918	Fokker	200	—
September 1918	Fokker	200	—
October 1918	Fokker	200	—
October 1918	Albatros	—	200
November 1918	Albatros	—	200
Total known orders:		1000	2200

To the wartime totals should be added the Fokker D.VII fighters ordered by the Austro-Hungarian Luftwaffe, which if fully executed would have totalled 628 machines built by Fokker, the Ungarische Allgemeine Maschinenfabrik AG (UAG) in Mányaföldi and the Oesterreichisch-Ungarischer Flugzeugfabrik Aviatik GmbH (Av) in Vienna.

August 1918 Fokker 225 August 1918 UAG 150 August 1918 Aviatik 225

## Fokker D.VII serial numbers

The Fokker numbers, taken from company production records, are relatively accurate, while Albatros and DAW numbers in the higher ranges (6000/18) are tentative and must be used with caution.

Manufacturer	Serial numbers
Fokker D.VII	227 — 526/18
Fokker D.VIIA1b	527 — 526/18
Fokker D.VIIcDAW	2080 — 2159/18
Fokker D.VIIcDAW	4080 — 4159/18
Fokker D.VII	4280 — 4449/18
Fokker D.VIIcDAW	4450 — 4449/18
Fokker D.VII	5050 — 5149/18
Fokker D.VIIA1b	5280 — 5399/18
Fokker D.VIIcDAW	6380 — 6449/18
Fokker D.VIIA1b	6520 — 6829/18
Fokker D.VII	7084 — 7809/18 (includes two experimental machines)
Fokker D.VIIcDAW	8380 — 8449/18
Fokker D.VIIA1b	10050 — 10100/18 (Only two machines identified)
Fokker D.VII	10347 — 10389/18 (27 built in this range)

## Fokker D.VII production and front-line inventory

The production acceptance figures are available for Fokker only, those of Albatros and DAW have not been found. The bi-monthly front-line inventory is complete only through August 1918. The list does not carry the few D.VIIs which were accepted since by Fokker.

Month	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
Acceptances:	—	21	—	89	115	85	52	34	112	145	79
Front inventory:	—	—	—	19	—	487	—	628	—	—	—

## GENERAL BIBLIOGRAPHY

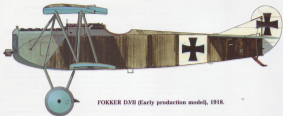
Although much has been written about the D.VII and rightfully so, a comprehensive history of the D.VII still remains to be done. The best source material for operational details are the many books written by German pilots. In English, the following books are worthwhile looking into:

*Fokker Fighters of World War One* by Alan Beale, Vintage Warbirds No. 5, Arms and Armour Press, London, 1988. (This volume is accurate, informative and highly recommended as the best of the lot.)

*Fokker Fighters of World War I* by P. I. Gray and J. R. Stair, Wingspan Publications, Oxford, 1975. (Interesting drawings by Ian Stair, the text is somewhat outdated.)

*Fokker: The Creative Years* by A. B. Weyl, Putnam, London, 1966 and 1987. (Overly biased towards Pfalz and inaccurate, but still giving a flavour of the times. Must be taken with a large dash of salt. Surprisingly there are no references.)

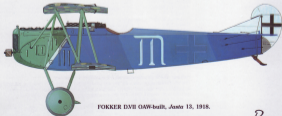
*Die Mergende Albatros* by A. H. G. Fokker and B. Goudt, Van Nostrand, Amsterdam, 1931. (Also published in USA, Switzerland, Germany, UK, this book is pure oral history as told by Fokker and recorded by Goudt. It is interesting for local colour, and of course the historical events are best in Fokker's favour.)



FOKKER D.VII (Early production model), 1918.



FOKKER D.VII GAW-built, Jasta 78b, 1918.



FOKKER D.VII GAW-built, Jasta 13, 1918.