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Fokker D.XXI

Scale 1 : 33 design by **NOBI**

## Fokker D.XXI

### Origin:

NV Fokker Vliegtuigenfabriek, the Netherlands.  
 Aircraft license-built by Valtion Lentokonetehtäs Finland, Haerens Flyvertroppernes Værksteder, Denmark and the Spanish Republic Government Plant.

### Type:

Single-seat fighter.

### Engine:

(Dutch) One 830 hp Bristol Mercury VIII nine-cylinder radial.  
 (Danish) One 645 hp Mercury VIS.  
 (Finnish) One 825 hp Pratt & Whitney R-1535-SB4-G Twin Wasp Junior 14-cyl-inder two-row radial.

### Dimensions:

Span: 36 ft, 1 inch / 11 m.  
 Length: (Mercury) 26 ft, 11 inch / 8.22 m, (P&W R-1535) 26 ft, 3 inch / 8 m.  
 Height: 9 ft, 8 inch / 2.94 m.

### Weights:

Empty: (Mercury) 3180 lb / 1422 kg, (P&W R-1535) 3380 lb / 1534 kg.  
 Loaded: (Mercury) 4519 lb / 2050 kg, (P&W R-1535) 4820 lb / 2186 kg.

### Performance:

Max. Speed: (Mercury VIII) 286 Mph / 480 Km/h. (P&W R-1535) 272 Mph / 439 km/h.  
 Climb: (to 9842 ft / 3000 m) (Mercury) 3 – 5 min, (P&W R-1535) 4 – 5 min.  
 S. Ceiling: (Mercury) 36090 ft / 11000 m, (P&W R-1535) 32000 ft / 9750 m.  
 Range: (Mercury) 590 miles / 950 km, (P&W R-1535) 559 miles / 900 km.

### Armament:

(Dutch) Four 7.9 mm FN-Browning machine guns, two in the fuselage and two in the wings.

(Danish) Two Madsen 7.9 mm machine guns in the wings and two Madsen 20 mm cannons in underwing blisters.

(Finnish) Four 7.7 mm machine guns in outer wings.

### History:

First flight: 27 March 1936.

Delivery: Dutch service: January 1938, Finnish production: June 1938, Danish production: 1939.

Users: Denmark, Finland, and the Netherlands.

### Development:

In the second half of the 1930's, any sound warplane that was generally available could be sure of attracting widespread interest. The FOKKER D-XXI came from a company with a great reputation all over the world, and though it was designed - by Ir. E. Schatzki in 1935 - purely to meet the requirements of the Netherlands East Indies Army Air Service, it became the leading fighter of three major European nations and was planned as a standard type by a fourth. This was as well for Fokker, because the plans of the original customer were changed and a contract was never signed. Yet the little fighter was all one could expect: neat, tough and highly maneuverable, with good performance and heavy armament. It marked the transition between the fabric-covered biplane and the stressed-skin monoplane. The wing was wood, with bakelite / ply skin. The fuselage was welded steel tube, with detachable metal panels back to the cockpit and fabric on the rear fuselage and tail. Landing gear was fixed.

The prototype flew at Welschap (today: Eindhoven Airport, both civil and military aviation) on a Mercury VIS engine, and in May 1937 the home government ordered 36 aircraft with a more powerful Mercury, supplied from Bristol. There were many Fokker projects for developed D-XXI's with retractable landing gear and other engines, but the production aircraft was generally similar to the prototype.

In the seventh prototype (No. 217) test pilot H. Leegstra set a Dutch height record at 37.250 ft / 11.400 m. Meanwhile, production of a modified version was getting under way for Finland, which bought seven aircraft with a manufacturing license. Denmark followed with an order for three and a manufacturing license and a fourth to adopt the D-XXI was Republican Spain. The latter set up a new plant and was about to start accepting deliveries, when the area was overrun by nationalist forces.

The VL (Finnish State factory) delivered 38 in 1939- 1939 and all of them participated very successfully in air battles against the Soviet forces from the start of the Soviet invasion, but all the Finnish-built Mercuries were needed for Blenheims. The Finnish D-XXI was redesigned to take the heavier but less powerful Twin Wasp Junior, 55 of this type being built, one of these having a retractable landing gear.

The Danish Royal Army Aircraft Factory gradually delivered ten aircraft with low-rated Mercury engines and two cannons, eight being taken over during the German Invasion in March 1940.

Finally, on 10 May 1940, the 29 combat ready aircraft in Holland fought round the clock until their ammunition ran out the third day.

The Dutch gave up fighting on 14 May 1940...

### Some information on:

#### THE DUTCH AIR FORCE IN MAY 1940

The Dutch Air Force at that time was divided in three groups;

- 1e Luchtvaartregiment (1st Aviation Regiment); Luchtverdediging (Air Defense).
- 2e Luchtvaartregiment (2nd Aviation Regiment); Legervliegdiens (Army Air Service).
- 3e Luchtvaartregiment (3rd Aviation Regiment); Opleidingen, hulpdiensen en depot (Training, Support and Depots).

All three regiments had several squadrons and used several types of aircraft. In the 1st Regiment (Air Defense), there were three units using the D-XXI.

- STRATEGISCHE GROEP (Strategic Group):

BOMVA (Schiphol) BombardeerVliegtuig Afdeling 9 aircraft.

This unit was a Bombardment Group that was based at Schiphol Airport, using 9 Fokker D-XXI aircraft.

- JACHTGROEP (Fighter Group)

1e JAVA (de Kooy) JAchtVliegtuig Afdeling 11 aircraft.

1e JAVA was a fighter squadron, based at de Kooy airbase, this unit was using 11 Fokker D-XXI aircraft.

2e JAVA (Schiphol) JAchtVliegtuig Afdeling 9 aircraft.

2e JAVA was also a fighter squadron, based at Schiphol Airport and was using 9 Fokker D-XXI aircraft.

In the 2nd Regiment (Army Air Service) was only one unit using the D-XXI.

- JACHTGROEP VELDLERGER (Fighter Group Field Army):

1st Division (Ypenburg) Fighter Group Field Army 8 aircraft.

This 1st Division of the Fighter Group Field Army was also a fighter squadron, and it was using 8 Fokker D-XXI aircraft.

In the 3rd Regiment (Training, Support and Depots) was a Flight school for advanced pilots that had to train on fighters (and also aircraft with more than one engine). One unit in this school was called JACHTVLEIGESCHOOL (Fighter School).

This school used several types of aircraft, two of them were Fokker D-XXI.

The unit was based at Texel (one of the Netherlands North Sea Islands).

Totally the Dutch Air Force had 36 Fokker D-XXI aircraft, registrations were 212 to 247 in white numbers on both sides of the fuselage. Unfortunately, when the war started, only 28 D-XXI aircraft were operational, not one survived the war.

At the present day, there is only one Fokker D-XXI present in the Netherlands, this aircraft is displayed in the Militaire Luchtvaart Museum (Military Aviation Museum) at Soesterberg Airbase. It is a former Finnish aircraft, painted in Dutch markings.

Following below is a brief history of the actions of the Fokker D-XXI during the German attack on the Netherlands.

#### THE EXHAUSTING ACTIONS OF THE FOKKER D-XXI.

History of the Fokker D-XXI during the German attack on the Netherlands, 10 to 14 May 1940.

The 28 operational Fokker's are divided in 1e JAVA (DE KOOY airfield, near Den Helder), 2nd JAVA (SCHIPHOL, near Amsterdam) and the 1st Division Fighter Group Field Army (YPENBURG Airpark, near Rotterdam).

At De Kooy are 11 D-XXI's. They are divided in in three sections of 3 and one section of 2 aircraft. Only the aircraft of the commanders are equipped with radio's, so there is no communication possible between the pilots in the aircraft. About 04.00 h in the morning, all D-XXI's of 1e JAVA are ordered to scramble.

- The 223 is chasing a Heinkel He-111 bomber. Nearby "Wassenaarse Slag", the 213 is shot down by other He-111's.

- The 244 is chasing a Junkers Ju-88. The Junkers is shot down nearby "Noordwijkerhout". After a stopover at SCHIPHOL, the aircraft returns to De Kooy. The other planes are flying CAP's over De Kooy, Texel, the Afsluitdijk en Bergen. After a while they return to De Kooy to refuel. When the first six aircraft take off again at 04.45 h and the last three are preparing for landing, there is an attack by nine German Messerschmidt Bf-109 aircraft.

- The 241 is shot and set on fire during the landing. The 219 is aborting the landing and the 218 is taking off again. There is a bitter fight between seven Dutch aircraft and these nine German Bf-109's. The 219 is destroying the engine of one Bf-109, forcing it to make a crash landing. The 234 and the 242 both gun down a Bf-109. The 221 is damaging one of the Bf-109's so badly, that it is going down in the "Wieringermeer" lake. The 218 and the 234 are chasing two other Germans and force them to disengage. One of these two Bf-109's crash lands on one of the German North Sea Islands. The remaining nine D-XXI aircraft all land at De Kooy, all with battle damage, five of them have serious battle damage.

- The 214 and the 233 are destroyed shortly after that due to shelling by Bf-109 and Me-110 aircraft.

- After four D-XXI's are repaired, there is a bombardment with firebombs by Me-110 aircraft. The 234 is lost in this bombardment while six others are seriously damaged. The remainder of 1e JAVA is being joined together with what is left of the 2nd JAVA (SCHIPHOL) at the auxiliary airfield BUIKSLOOT nearby Tuindorp-Oostzaan.

2nd JAVA is posted at SCHIPHOL and has nine operational D-XXI aircraft. They take off during a bombardment of the airfield at 03.58 h. -

The 245 crash lands nearby Zwaagdijk and is lost. The 225 shoots down a Junkers JU-88 and evades to RUIGENHOEK, lands there at 04.15 h. just to discover that people over there are not aware of the fact that there is a war situation. The 224 is attacking Heinkel He-111 bombers and evades to Ruigenhoek, together with the 229. Later on the 213 and the 239 are being sent to Ruigenhoek, after landing at Schiphol, when the first attack on Schiphol is over.

- From Ruigenhoek, five D-XXI aircraft are being sent on patrol over the province of ZUID-HOLLAND (South Holland). During this mission, they continuously attack a Junkers Ju-52 transport plane. This Ju-52 finally crash lands near "Stolwijk".

- Near "Oudekerk aan de Yssel" the 229 is being attacked and crashes in the "Hollandse Yssel" river. Two other D-XXI's land at Schiphol, the other aircraft at Ruigenhoek. From there, they take off for a patrol mission to "Katwijk", where they strafe German aircraft that have landed on the beach. After that they return to Schiphol.

At the end of the first morning the six aircraft are available again. A D-XXI that evaded from Ypenburg airfield comes in for a landing. Three Fokker T-V bombers are flying to WAALHAVEN airfield, protected by six D-XXI's. At Waalhaven they are spotted by nine Me-109 aircraft in an entangled battle is developing.

- The 238 is being shot down. The 236 is shooting while diving at a landed Junkers Ju-52, hits a Me-109 that crashes near "Oud Beijerland" and returns intact to Schiphol. There it appears that the 239 is damaged beyond repair. The remaining six aircraft will be regrouped with the remainder of 1e JAVA at the auxiliary airfield Buiksloot. 1e and 2nd JAVA are now operating together and they have eight Fokker D-XXI aircraft available.

- On 11 May three D-XXI's will escort two Fokker C-V biplanes to "Ede / Arnhem", but there is a misunderstanding during this mission and the D-XXI's return to Buiksloot. Three other D-XXI's, being repaired at De Kooy airfield, land there.

- Three other D-XXI aircraft escort Fokker T-V bombers on a mission to Rotterdam to destroy the "Maasbrug" (bridge over the river "Maas"). All aircraft return intact.

- Again three D-XXI's are escorting two C-V biplanes to "Ede / Arnhem" and these planes too return intact.

- The first effort on bombing the Maasbrug failed, so a second mission is planned. Again the T-V bombers are being escorted by three D-XXI's. They meet twelve Messerschmidt Me-110 aircraft. The 242 escapes and lands at Buiksloot. The pilot of the 225 decides to use his parachute. He has already released his canopy, this canopy hits the propeller of a Me-110. He flies through a cloud and with his machine guns he hits a second Me-110. After that he is shot down himself. His aircraft ends up in the surroundings of "Leiden" city.

- The 213 lures away six Me-110's from the T-V bombers. One of the enemy planes is shot down over "Moerkapelle", probably a second one. However, the pilot of the 213 is seriously injured and lands on the road between Den Haag (the Hague) and Utrecht, near "Zevenhuizen".

- Nine Fokker D-XXI aircraft are left at Buiksloot airfield. In the afternoon, two of the planes are going on a reconnaissance mission over western Amsterdam. It is believed that paratroopers have landed there but they are not spotted.

On 12 May three D-XXI's escort two C-V biplanes to Arnhem. On the way to Arnhem they are being shot at by friendly forces. The 218 comes in for a landing, overruns and is damaged beyond repair.

- Three D-XXI aircraft accompany four C-V biplanes to Rotterdam and Delft, where German forces have to be attacked. The mission is not developing as planned, but the aircraft return safely to Buiksloot airfield. There, two repaired D-XXI's have also arrived from De Kooy airfield.

- In the afternoon, six D-XXI's are ordered to escort Fokker C-X biplanes on a bombing mission to Waalhaven airport and Feyenoord Shipyard. With their machine guns, the D-XXI's also have to set enemy planes on fire, that have landed at Waalhaven airport. The mission is a great success and all planes return safely. Later that afternoon another D-XXI is escorting a T-V bomber from Schiphol to "Wonsstelling" (the frontline at Wonsstelling). Near "Medemblik" they are being stopped by five German planes and the Dutch aircraft return to base.

On 13 May four Fokker C-X biplanes are being escorted by five D-XXI's for a mission in the "Wageningen" region. Friendly forces are shooting on the aircraft again and again. Late in the morning the bombing mission on the "Grebbeberg" line is repeated by four C-X's escorted by five D-XXI's. During the night from 13 to 14 May, an order comes in to leave and destroy Buiksloot auxiliary airfield, all aircraft and personnel are ordered to Schiphol. But first five D-XXI aircraft have to cover the withdrawal of the forces of the Field Army, who have evacuated the Grebbeberg Line. For a long time they are being shot at, again by friendly forces.

- The 236 is being hit and crash lands near "Vleuten". The remaining aircraft land at Schiphol, as ordered.

As a result of the many repairs, the material and equipment is wearing out very fast, the power of the Germans is too much. A list is being put together with names of possible "Engelandvaarders", people that evacuate to Great Britain. However, five D-XXI's still go on a patrol mission. They encounter no enemy aircraft and return to base safely. The aircraft are being prepared for a next mission but there is almost no ammunition left. The remaining nine D-XXI see no action any more. At 19.00 h that 14th May, the Dutch surrender and the submission is being signed. Crossing to England is strictly forbidden, as being against submission rules.

At YPENBURG Airpark, nine D-XXI aircraft of the 1e Afdeling Jachtgroep Veldleger (1st Division Fighter Group Field Army) are detached. When German aircraft are approaching at 04.00 h, eight D-XXI aircraft that are battle-ready, take off. They fly in two formations of three and one of two aircraft. The formations however, are being driven apart by the Germans and than the D-XXI pilots engage the German aircraft by themselves.

- The 222 is engaging but has problems with jamming guns. The aircraft heads west but is attacked by German planes and crash lands near "Monster".

- The 216 is engaging too and shoots down a Ju-52 near Den Haag (the Hague). He then runs out of fuel and ammunition and lands at Ruigenhoek. There is no pressed air available for his machine guns. With his machine guns damaged beyond repair, this D-XXI takes off again, but near VALKENBURG airfield, the aircraft is being attacked by five Me-110's. The aircraft crashes near "Den Deyl".

- The 247 shoots down an enemy fighter and has to land for fuel and ammunition on the upset Ypenburg airfield. Shortly after that the 247 is being attacked by German fighters and catches fire.

- On Ypenburg airfield, the backward unarmed D-XXI is a prey for German machine guns.

- The 246 has four jamming guns. The pilot lands his plane and takes off again in the 215. Later on he lands the undamaged airplane on the beach at "Kijkduin", where the aircraft is destroyed by German fighters.

- The 212 is taking part in the battle until the aircraft runs out of fuel and then heads for Schiphol. Near "De Kaag" this D-XXI shoots down a Dornier D0-17, but during this attack his engine receives damage. The D-XXI glides down to Schiphol, where it lands. There the 212 is attached to 2nd JAVA.

- During take off, the repaired 246 has all the luck of the world, when a bomb misses the plane with a few meters. During an air battle near Delft, the pilot is injured and has to leave his D-XXI. The aircraft crashes near "Pijnacker".

- After shooting down a German plane, the 228 lands at OCKENBURG Airfield, out of fuel and ammunition. The aircraft is being damaged during a German attack.

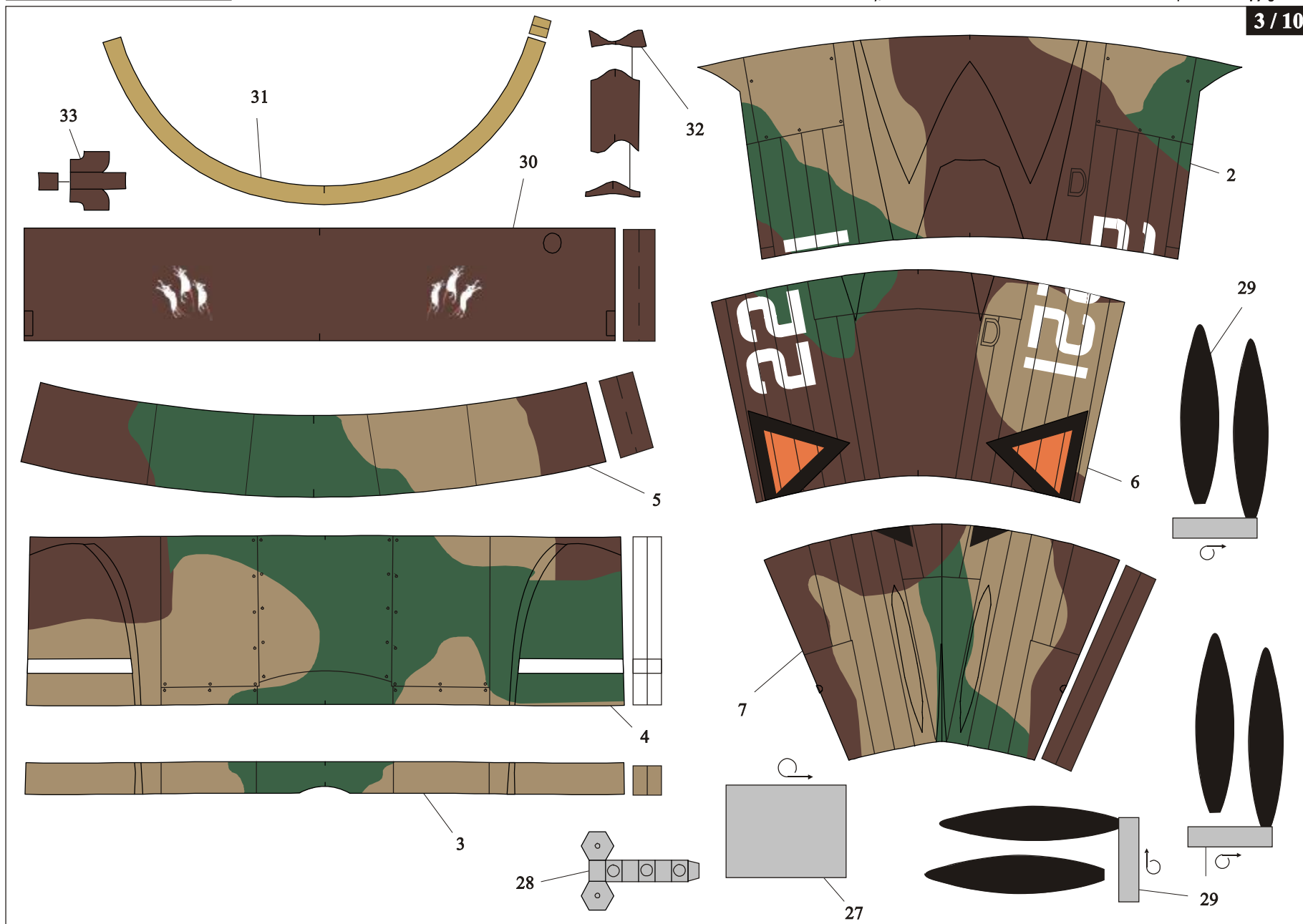
- The 217 is engaging in air battles and then also lands at Ockenburg airfield. This aircraft too is unable to take off again.

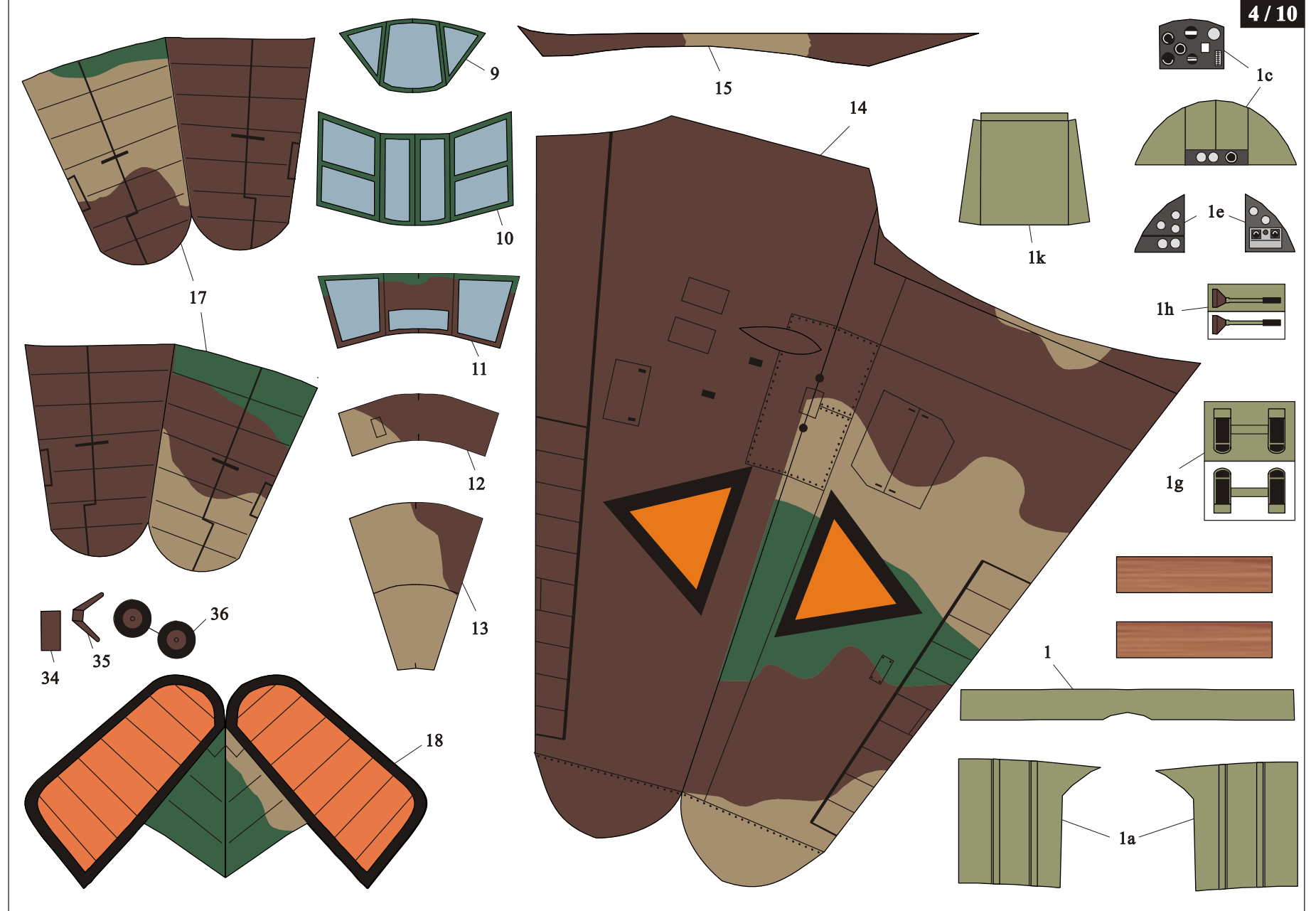
Due to shortage of fuel and ammunition the 1e Afdeling Jachtgroep Veldleger is not existing anymore within 1? hour of battle.

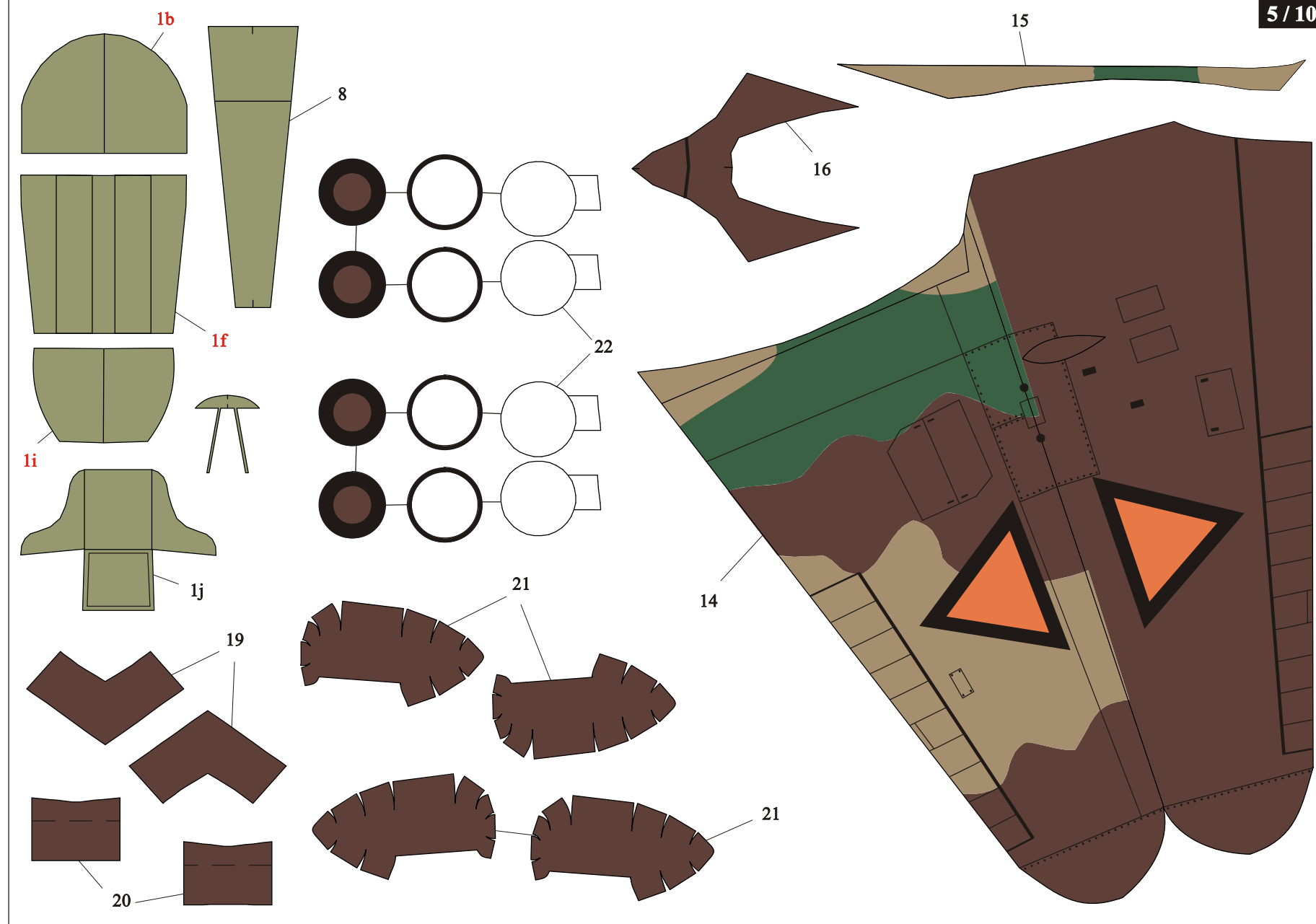
At the end of the fighting, the "Militaire Luchtvaartafdeling" (Military Aviation) had lost 20 officers, 25 Non Commissioned Officers and 30 corporals and airmen.

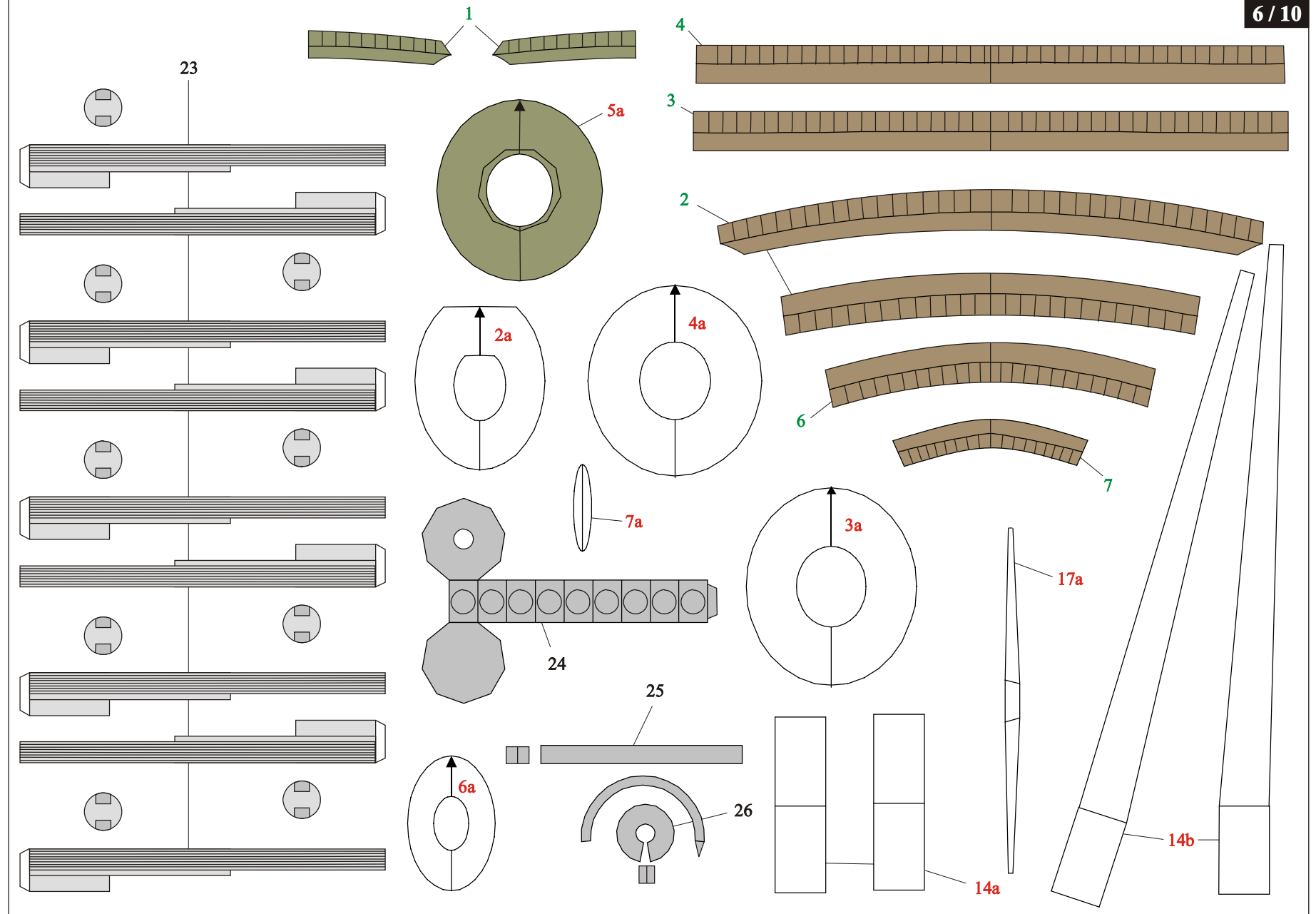
On 18 May 1940 the "Wapen der Militaire Luchtvaart" (the Military Aviation) is awarded the "Militaire Willemsorde 4e klasse" (Military Williams medal 4th class) by the supreme commander of the Army and the Navy. The medal is awarded for "MOED, BELEID en TROUW" (Courage, Policy and Loyalty).

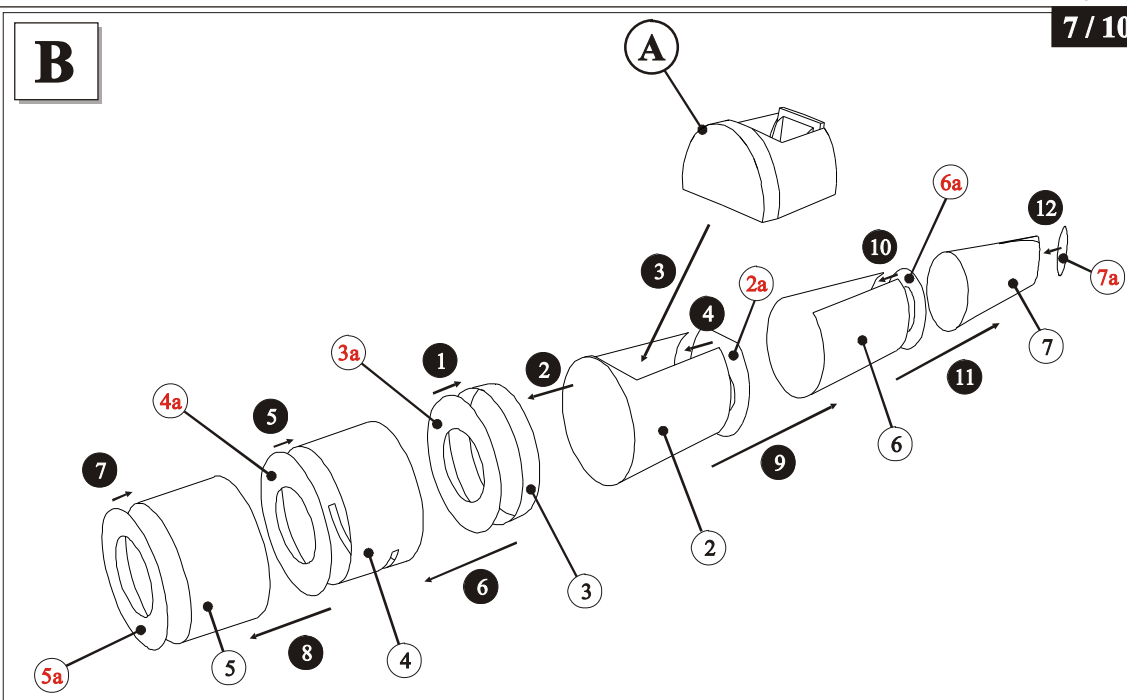
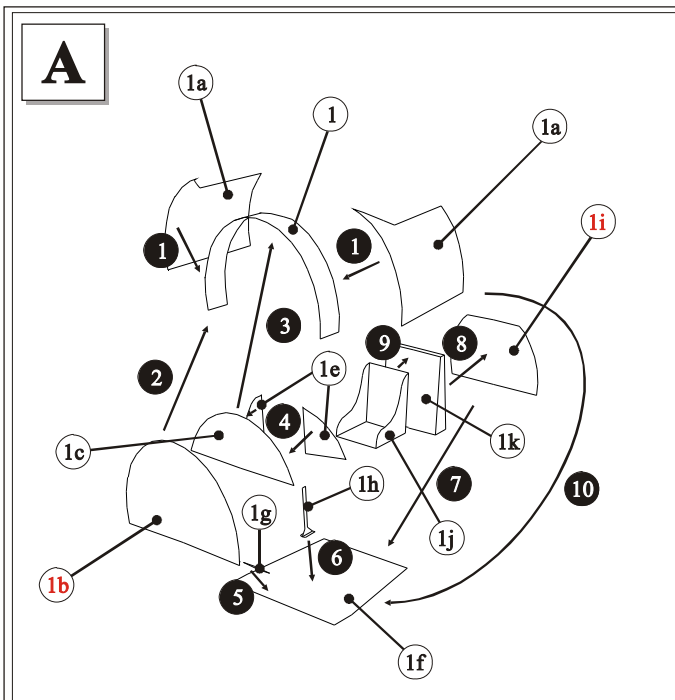
Although the D-XXI was not as heavy armed as his German opponents, the aircraft outclassed the German Messerschmidt Me-110 in maneuverability and in climbing.











**Instructions Diagram**

Please study each part before you cut it out. Look on the assembly diagram and see how the parts fit on the model. When you have become familiar with the model and its parts, prepare the tools you will need to assemble the kit.

These tools should include a sharp hobby knife, such as an Xacto Knife, a cutting pad, a steel ruler to assist in making straight cuts, glue and a ball point pen or other tool to use to score fold lines on the model.

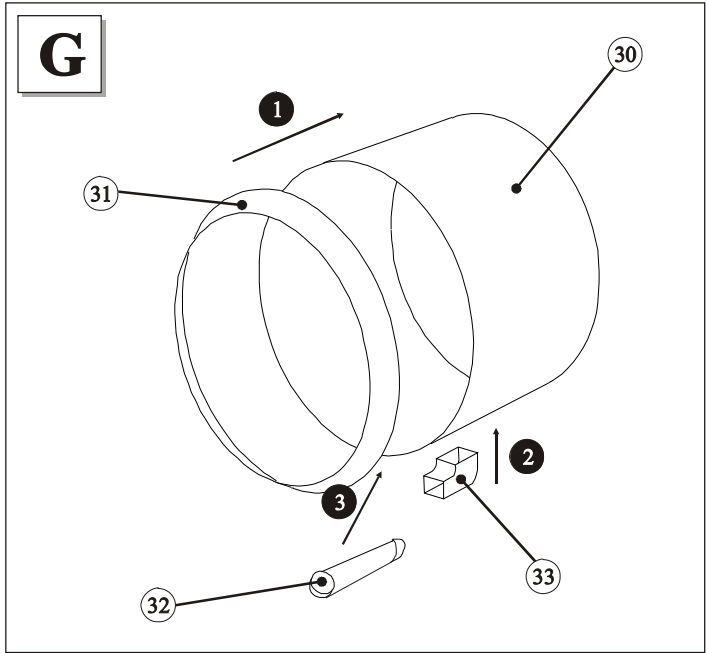
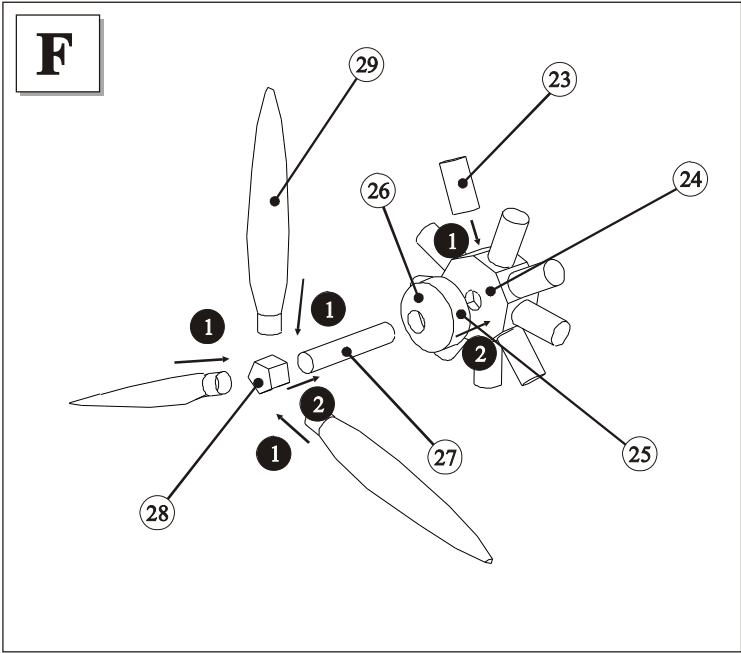
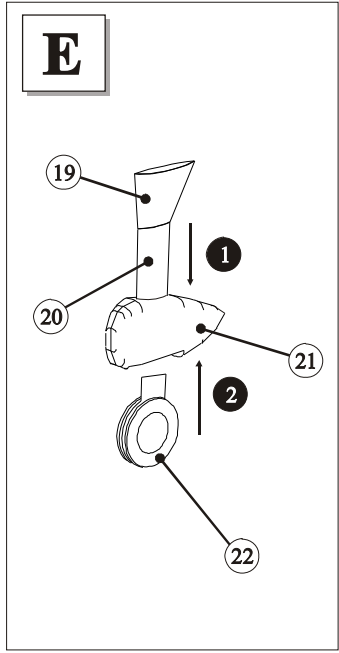
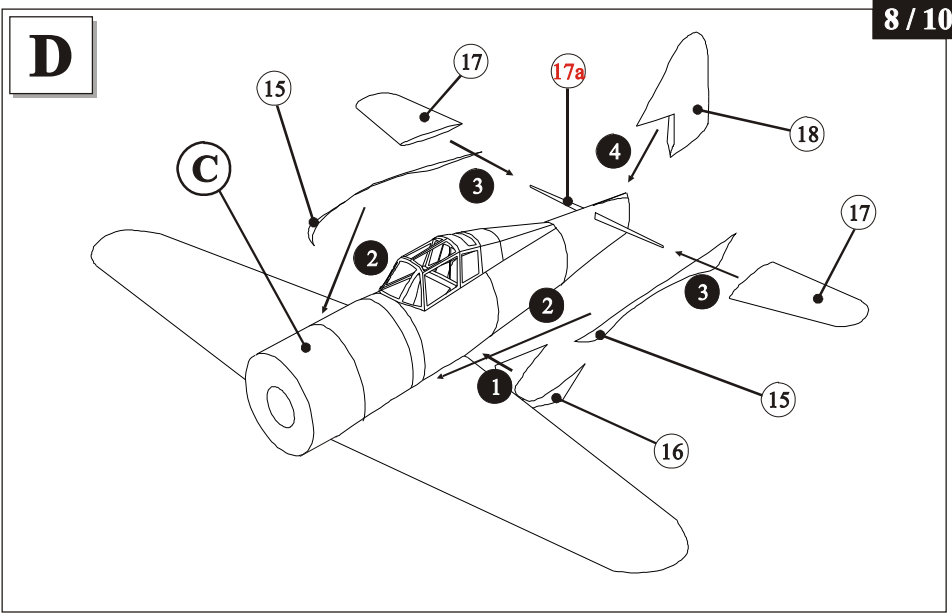
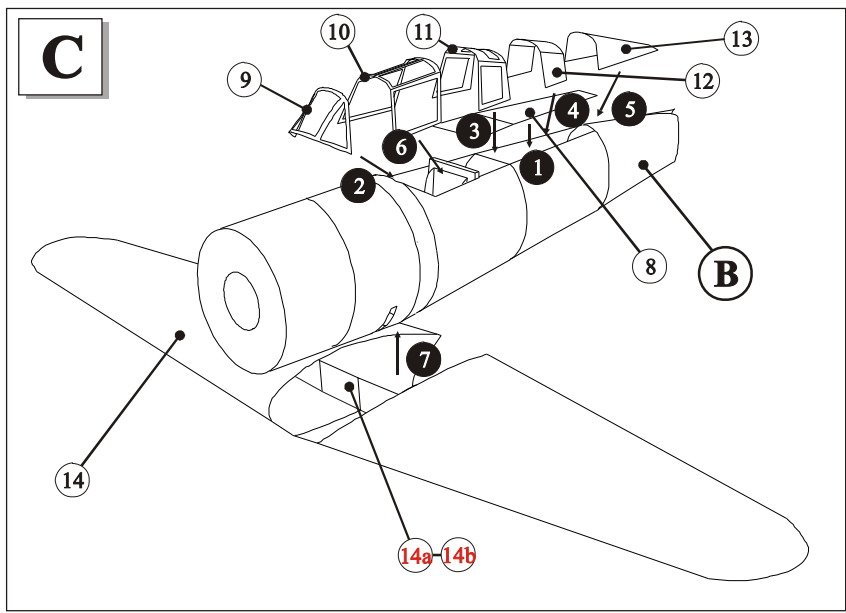
When you understand how each part is used and where it goes on the model, begin cutting out the parts for each assembly block. Do each block in the order shown. When completed, your model will be ready for display.

Some other tools you may consider having available include transparent paper for making canopy glass, tweezers for hold small parts, and some toothpicks or other thin straight item for dabbing glue on parts. You may also want to have available numerous colored pencils, or watercolor paints to hide the cut edges of the model. For that, you can also use a neutral gray color which will hide the white paper edge

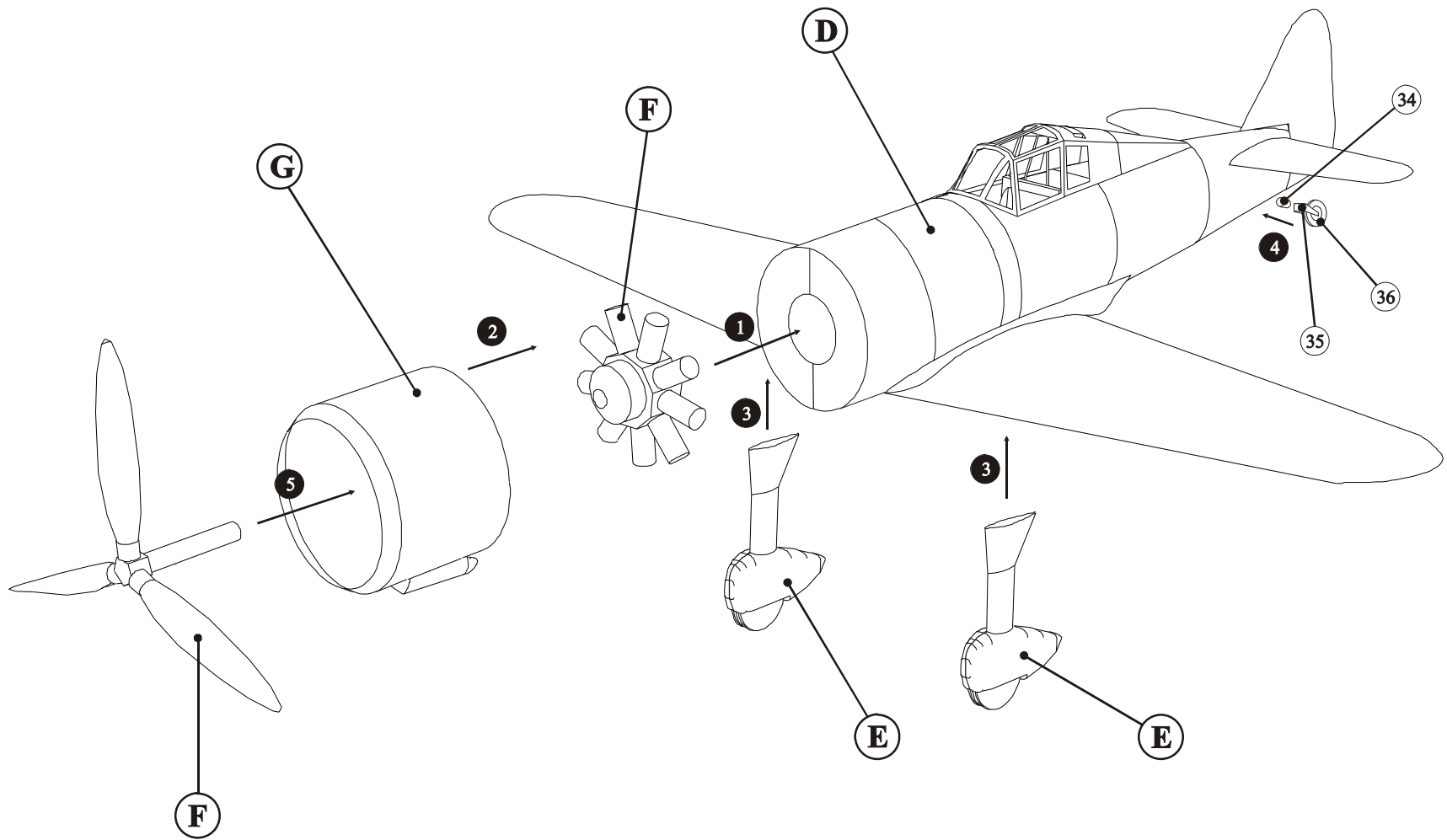
and provide a natural looking seam on the aircraft should any of it show through.

Remember to always fit the part and make sure it is formed correctly before doing any gluing.





**H**



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Reinforce part with mark \* on .5 mm cardboard

Part mark with green color mean a strip