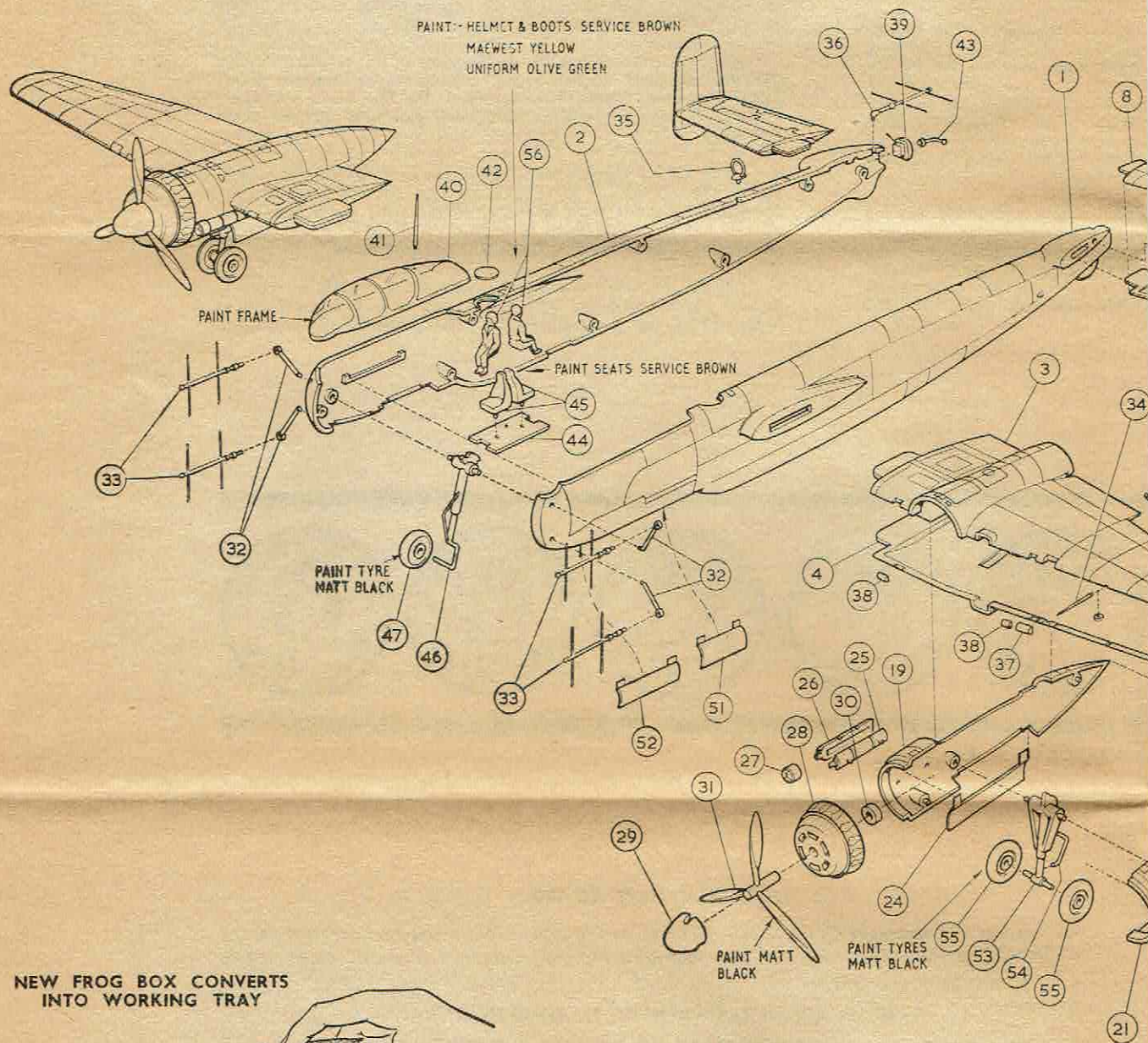


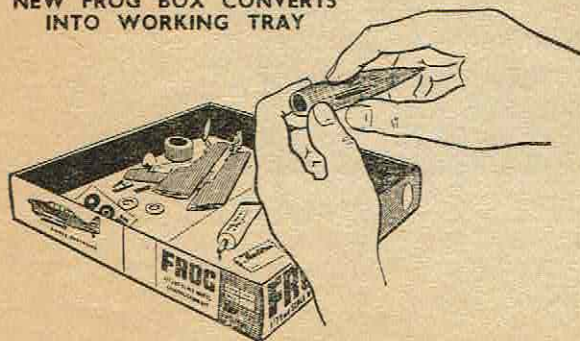
# FROG

1/72nd Scale Model Kit.

# Heinkel 21



NEW FROG BOX CONVERTS INTO WORKING TRAY



## HOW TO ASSEMBLE YOUR MODEL

It is recommended that the instructions and exploded view are studied and assembly practised before commencing. Use Frog Polystyrene Cement and Frog Paints.

It may be necessary in some cases to mix two or more colours to obtain shades required.

Make use of the Frog box as a working tray to prevent the loss of small parts.

**GREAT CARE SHOULD BE TAKEN ON HANDLING THE CAPSULES OF CEMENT TO AVOID GETTING THE ADHESIVE ON THE FACE OR CLOTHING, AND IN PARTICULAR, IN THE EYES.**

1. If you intend to paint your model, it is advisable to study the exploded diagram, paint the pilot and observer, their seats, wheels, propellers and other small parts the recommended colours before taking the parts off the stem.

### FUSELAGE ASSEMBLY.

2. Cement the seats (Parts 45) to the cockpit floor (Part 44) and cement the pilot and observer (Parts 56) to their seats. Then cement the assembly into the starboard fuselage side (Part 2).
3. Take the front undercarriage leg (Part 46) and place it in the fuselage side (Part 2) trapping it by cementing the two fuselage halves together. Note that the boss on the undercarriage leg should be positioned between the legs of the pilot and able to pivot freely.
4. Cement the fuel inspection cover (Part 42) and tail end (Part 39) in place. Cement the cockpit canopy (Part 40) and cockpit mast (Part 41) in place.

### WING ASSEMBLY.

5. Cement the main undercarriage leg supports (Parts 54) to the main undercarriage legs (Part 53). Secure the main undercarriage wheels (Parts 55) in place by turning over the end of the axle with a hot knife blade. Similarly assemble the front wheel (Part 47). The wheels should rotate freely.
6. Cement the spinners (Parts 29) to the propellers (Parts 31) and then pass the propeller shafts through the engine cowls (Parts 28) securing the propellers which should freely rotate, with the propeller bushes (Parts 30).
7. Cement the two halves of the engine nacelles (Parts 19 and 21) and (Parts 20 and 22) together, trapping in place the undercarriage assembly which should be free to swing. Note that the supports should be to the rear of the leg.
8. Cement the upper and lower wing halves (Parts 3 and 4) and (Parts 5 and 6) together, trapping in place the ailerons (Parts 49 and 50) in their correct wings, the ailerons being free to move. Locate and cement the lights (Parts 37 and 38) and the aileron balances (Parts 48) in place.
9. Locate the nacelle assemblies on to their wings and cement in place. Cement the two halves of the exhausts (Parts 25 and 26) together with the exhaust cowls (Parts 27) and cement the four exhaust assemblies to the nacelles.
10. Locate and cement to the fuselage the two wing assemblies. Then cement the propeller assemblies to the wings. Next cement in place the pitot tube (Part 34).
11. At this stage it must be decided whether the model is to be made with the undercarriage doors (Parts 23 and 24 and Parts 51 and 52) open or shut. If shut, the locating lugs should be cut off with a knife to allow the doors to fit the nacelles. If open, the lugs will locate inside the nacelles to give support.

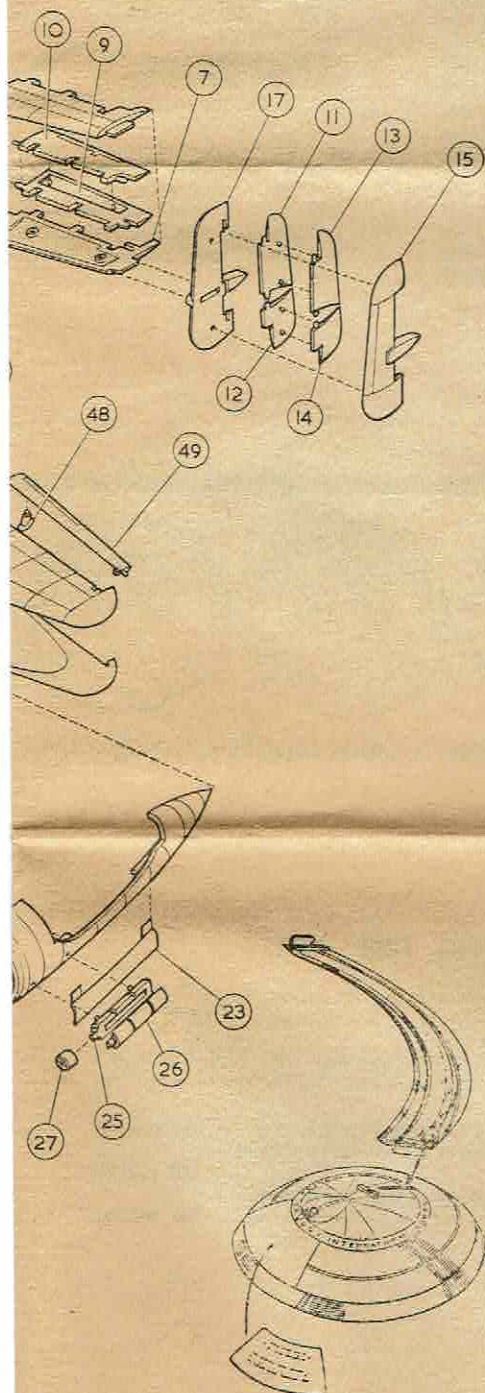
### TAIL.

12. Cement the tailplane halves (Parts 7 and 8) together. Then cement together the elevator halves (Parts 9 and 10). Cement the tailplane assemblies to the fuselage trapping the elevators in place but allowing them to move.
13. Cement together the upper and lower rudder halves (Parts 11 and 13 and Parts 12 and 14). Then trap the rudder assemblies by cementing together the tailfin halves (Parts 15 and 17 and Parts 16 and 18), the rudders being free to move. The complete Rudder assemblies can now be cemented to the Tailplane.

### FINISHING.

14. Cement the four nose aerial masts (Parts 32) to the fuselage and then line up and cement the aerials (Parts 33) in place. Cement in place the three radio aerials (Parts 35, 36 and 43).
15. If it is desired to paint the model, it is necessary at this stage to choose between the two alternate colour schemes shown on the box back. Note that there are appropriate aircraft markings to suit each colour scheme.
16. Apply the transfers when the paint is dry. First, cut the sheet into two halves along the dotted line selecting the transfers which are to be used. Then separate the individual transfers, noting from the box back where each should be placed. Soak the transfer required in warm water for not more than 30 seconds, then slide the transfer off the backing paper into position. Press well down, wiping from the centre outwards to squeeze out surplus water and air bubbles, before leaving to dry.
17. Locate the arm of stand in the base slot and cement together. Apply the name transfer of your model to the base.

CAT. No. F.177



The Heinkel He 219 Uhu, or Owl, was conceived as a private design venture for a multi-purpose machine for day time operations. In service it became one of the finest, if not the finest night fighting aircraft evolved by any of the Second World War's combatants. Few combat aircraft enjoyed a more auspicious operational debut, for when tested under service conditions for the first time on the night of June 11-12, 1943, its pilot, Major Streib succeeded in destroying five R.A.F. Lancaster bombers during a single sortie!

In the early summer of 1940 the Heinkel Aircraft Company found themselves with spare design capacity and the He 219 embodying several novel and advanced features such as a pressurized cockpit and nose wheel undercarriage was evolved. At that stage of the war the German Air Ministry was under the opinion that victory could be achieved with the existing aircraft and the project was shelved. Nor was the Air Ministry of the opinion that specialised night fighters were necessary for it was considered that the Me.110 and Ju.88 bomber could be modified to this role.

By the end of 1941 the position had changed in Germany and the pressure of the R.A.F. bombing by night forced the German Air Ministry to change their mind and request a night fighter version of the He 219. In March 1942 the aircraft suffered the first of the setbacks which were to be a feature of its career. Two R.A.F.

attacks on the factory at Rostock destroyed the prototype drawings though the prototype programme was then transferred to V and thirty pre-production aircraft entered service by April 1943.

The first prototype was completed of the contract and first flew on 1943 the first comparison flights and Ju 88 from which the He 219 design. The outcome of the trial production order to 300 machines. armament were carried out and the with four 15mm or 30mm cannon. out to find the most suitable radar

By August 1943 the aircraft was success as a night fighter. The R new German fighter by sending bomber stream to seek out the H version of the fighter with a high possessing more powerful engine: warning radar.



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Printed in England.

DRY.

destroyed eighty per cent of the  
survived. The development pro-  
fienna for safety and one hundred  
were ordered to be in operational

sted in eleven months from receipt  
November 15th, 1942. In January  
were made between the He219  
emerged as the more successful  
s was an increase in the pre-pro-  
Various trials to finalise the ideal  
production aircraft were delivered  
Extensive trials were also carried  
installation.

was in full production and meeting  
A.F. countered the threat of this  
Mosquito night fighters with the  
inkels. A special 'Anti-Mosquito'  
top speed was hurriedly evolved  
less protective armour and tail

During the production of the He219 the radar equipment was  
progressively improved. The crew, engines, fuel and ammunition  
tanks and radiators were all well protected and the He219 was the  
first operational aircraft to feature ejector seats. Fully loaded the  
fighter enjoyed a surplus of power and an instance is recorded of a  
pilot making an emergency take off on one engine with his under-  
carriage locked 'down' and flaps fully extended.

Many different variations were proposed of this successful design  
but the advancing Russian armies overran the production plants  
before they could materialise. Several of the hand-made prototypes  
including a high altitude version were destroyed by the allied  
bombing.

In all, 286 Pre-production and production aircraft were com-  
pleted, 195 in 1944 and 62 in 1945. In addition, twenty "Versuchs"  
(prototype) aircraft were employed operationally and a further six  
aircraft had been assembled unofficially from spare components at  
the service airfields bringing the total to 294 machines.

The He.219 had proved to be an excellent aircraft whose pro-  
duction development had been started too late otherwise it might  
have inflicted severe damage to the R.A.F. bombing effort.



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