

### HEINKEL HE 177A-5

The Heinkel He 177 was one of the most ingenious German aircraft to appear during the Second World War and was the only German heavy bomber to go into large scale production. The Grief (Griffon) had the reputation of being more dangerous to its own crews than to the enemy and in fact more He 177's were lost in accidents than in combat.

Early in 1938 the German Air Ministry issued a specification for a heavy bomber which could also be used for reconnaissance and anti-shipping duties; it had to have the speed of over 335 m.p.h., a range of over 4,000 miles and the ability to attack from a dive. The Heinkel Company was the only manufacturer to whom the specification was issued and the initial design study was completed within a few months; the resultant design incorporated many advanced and untried features but promised to exceed the required performance with a calculated speed of over 340 m.p.h., faster than most fighters then in service.

One of the most radical ideas of the He 177 was the use of coupled engines (two engines mounted side by side in each nacelle) driving a single airscrew. This had the advantage of using existing engines rather than developing a larger and more powerful motor and gave a cleaner airframe but was to present difficulties that were never to be overcome in practice. Other original features such as remotely controlled armament, had to be abandoned before production and a new requirement that the aircraft was to be suitable for steep dives called for a stronger structure and increased weight which in turn affected the undercarriage design and was responsible for the unusual double undercarriage leg system finally selected.

By the summer of 1939 it had become obvious that Germany would be involved in a war with Britain and it was also obvious that no Luftwaffe bomber in service had the range to operate effectively over the whole of the British Isles. Development was rushed forward and the first prototype flew in November 1939. Test flight showed several alarming features and the second prototype disintegrated in the air after control difficulties. The fourth and fifth prototypes also crashed on test and the next two built for operational trials proved entirely unsatisfactory. Thirty five He 177 A-O pre production aircraft were built in 1941 and 1942 and used for trials, but the bomber was still prone to engine over-heating and subsequent fire. Because of the desperate need for an anti-shipping bomber, production was pressed forward although it was clearly unsuitable for combat and 130 He 177 A-1's were built. So much trouble was experienced in service that these were all withdrawn from operations and replaced in 1943 by the A-3.

As the first A-3's became available they were rushed to the Eastern front and used as transports, flying supplies to the German Army surrounded at Stalingrad. After a few weeks virtually all the aircraft had been destroyed, an average of one aircraft a day having crashed on landing. Development of the A-3 continued and armament was progressively improved, some versions being equipped with a 75mm. cannon for ground attack and others equipped to drop torpedoes. The first use was also made of the Hs 293 radio controlled bomb which was designed for use against shipping and which was to become one of the main weapons of the last main production version, the He 177 A-5, of which over 700 were built.

The He 177 A-5 was designed primarily to carry external bomb loads and those which carried the Henschel HS 293 guided missile had the forward bomb bay blanked off. In late 1943 allied convoys were attacked by forces of A-5's which launched missiles but without success, the Hs 293 missile proving difficult to guide. Once again losses were high among the bombers, both from combat and accident and later attacks were made by night, the Hs 293 being launched at a range of between five and ten miles from the target. In January 1944 the He 177 took part in mass raids against London and although many of the medium bombers which were used were shot down the He 177's were able to make use of their high speed to avoid night fighters and anti-aircraft fire and suffered only light losses. In October of 1944 German aircraft production was concentrated on fighters and bomber development virtually ceased. A few A-6 prototypes were produced and the He 277 was introduced. The He 277 had four separate engines which for the first time overcame the engine fires which had plagued the career of the coupled engines but the war was over before production could begin.

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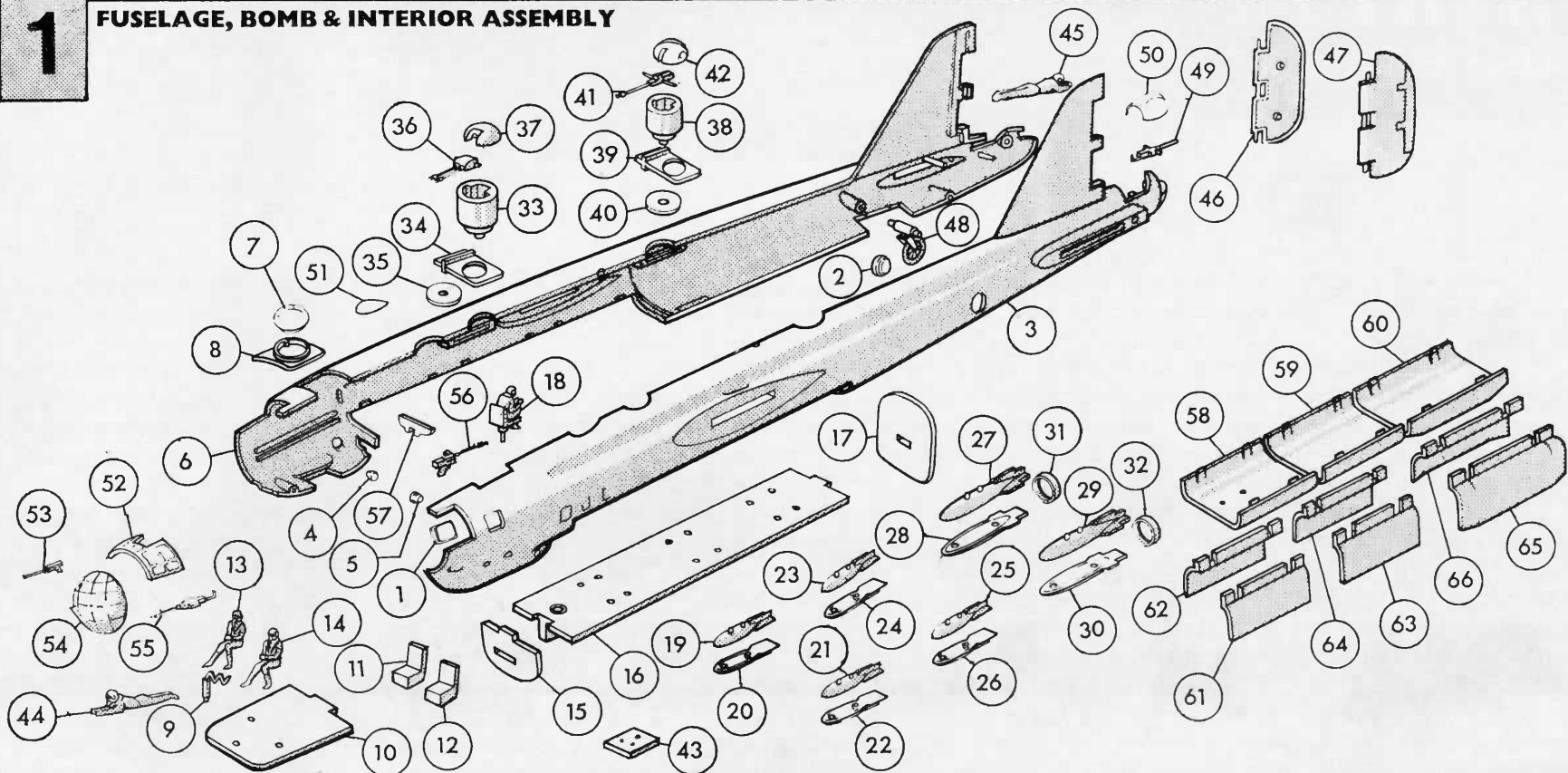
The Heinkel He 177 A-5 was powered by two Daimler-Benz 610 coupled engines of 3000 h.p. giving a maximum speed of 303 m.p.h. and a range of over 3,000 miles. Defensive armament consisted of two 20mm. cannon, three 13mm. machine guns and three 7.9mm. machine guns. Bomb load varied with the mission up to a maximum of 13,000 lbs. Wing span was 103 ft. 2 inches.

# INSTRUCTIONS

PAINT ALL DETAILS AND LET DRY BEFORE ASSEMBLING (SEE SECTION 4)  
N.B. FOR PAINTING USE "AIRFIX" PAINTS, FOR FIXING USE "AIRFIX" POLYSTYRENE CEMENT

# 1

## FUSELAGE, BOMB & INTERIOR ASSEMBLY



It is recommended that the instructions and exploded views are studied before assembly. If it is wished to paint internal details such as crew, bombs and fuselage interior, etc., this should also be completed before assembly. Fuselage interior is grey. It should be noted that if the model is to be displayed on its stand, the wall of plastic must be cut away from stand slot in fuselage. Also if the Henschel flying bombs are to be carried, the locating holes for these must be opened up in port and starboard lower wing halves and front closed bomb doors.

1. From inside locate and cement square front (1) and oval rear (2) window transparencies into port fuselage half (3) applying cement carefully to window surround only.
2. Similarly locate and cement circular window transparencies (4,5) into lower rear fuselage gondola sides on port and starboard (6) fuselage halves and front turret transparency (7) into front turret panel (8).
3. Cement front turret panel onto rib in large cut out at top and front of starboard fuselage half: check panel is flush with top of fuselage, raised rib on panel to outside.
4. Locate and cement control column (9) into forward locating hole in cockpit floor (10).
5. Locate and cement locating pins beneath seats (11,12) into locating holes in cockpit floor to rear of control column.
6. Cement pilot and co-pilot (13,14) to seats.
7. Cement tab (15) into slot in front

closed bomb doors are provided. If bombs are to be carried cement upper and lower halves (19-26) of the four 550lb. bombs then cement locating pins on bombs into forward pairs of holes below bomb bay. Similarly cement together halves of the two 1100lb. bombs (27-30), cement bomb rings (31,32) over ends of bombs then cement into remaining locating holes below bomb bay.

11. When assembly is dry, position and cement below and against small ribs and between long forward ribs and against large rear rib within starboard fuselage half.
12. Insert bottom of forward remote controlled (small diameter) dorsal turret (33) through circular hole in turret platform (34), DO NOT CEMENT place turret retaining plate (35) over pin on bottom of turret and secure with a drop of cement on end of pin, check turret is free to rotate. Press pivot pins on twin guns (36) into pivot recesses in forward dorsal top (with squared back) turret (37) DO NOT CEMENT Then carefully cement forward dorsal turret top to top of turret, keep cement from pivot pins on guns.
13. Cement tab on turret platform into slot in forward box within starboard fuselage half.
14. Similarly assemble rear dorsal remote controlled turret (38), turret platform (39), turret retaining plate (40), single gun (41), circular rear dorsal turret transparency (42) then cement tab on platform into slot in rear box within starboard fuselage half.
15. If crew hatch cover and crew ladder are required in

forward or to rear as desired.

18. Cement tail gunner (45) onto pegs inside rear of starboard fuselage half, gunner faces downwards with feet hooked over front peg.
19. Cement rudder halves (46,47) together. When dry, lay hinges in hinge recesses in fin, also insert pivot pins on tail wheel (48) and tail gun (49) into holes in bushes at rear of starboard fuselage half. DO NOT CEMENT any of these parts.
20. Locate and cement port and starboard fuselage halves together and check tail wheel, tail gun and rudder are free to move.
21. Cement tail gunner's transparency (50) to top and rear of fuselage, apply cement to edges of transparency only.
22. Similarly, cement in position astro dome transparency (51) to forward top of fuselage, front transparency (52) to front and top of fuselage.
23. From rear insert upper nose gun (53) through upper hole in nose transparency (54) and lower front gondola gun (55) through lower front of gondola. Carefully cement in position, then cement transparency to front of fuselage.
24. Similarly locate and cement rear gondola gun (56) and rear gondola transparency (57) together, then carefully cement transparency into cut out at rear of gondola. NOTE Gun is omitted if flying bombs are carried.
25. For a model with bomb doors closed, cement closed bomb door sections front (58), mid (59), rear (60) to

It is recommended that the instructions and exploded views are studied before assembly. If it is wished to paint internal details such as crew, bombs and fuselage interior, etc., this should also be completed before assembly. Fuselage interior is grey. It should be noted that if the model is to be displayed on its stand, the wall of plastic must be cut away from stand slot in fuselage. Also if the Henschel flying bombs are to be carried, the locating holes for these must be opened up in port and starboard lower wing halves and front closed bomb doors.

1. From inside locate and cement square front (1) and oval rear (2) window transparencies into port fuselage half (3) applying cement carefully to window surround only.
2. Similarly locate and cement circular window transparencies (4,5) into lower rear fuselage gondola sides on port and starboard (6) fuselage halves and front turret transparency (7) into front turret panel (8).
3. Cement front turret panel onto rib in large cut out at top and front of starboard fuselage half; check panel is flush with top of fuselage, raised rib on panel to outside.
4. Locate and cement control column (9) into forward locating hole in cockpit floor (10).
5. Locate and cement locating pins beneath seats (11,12) into locating holes in cockpit floor to rear of control column.
6. Cement pilot and co-pilot (13,14) to seats.
7. Cement tab at rear of cockpit floor into slot in front bulkhead (15). Cement tab at top of front bulkhead into forward cut out in bomb bay (16).
8. Cement tab on bomb bay into slot in rear bulkhead (17).
9. Cement pin beneath seat of top gunner (18) into hole in boss at front of bomb bay floor, gunner facing to rear.
10. NOTE: Bombs are optional as alternative open and

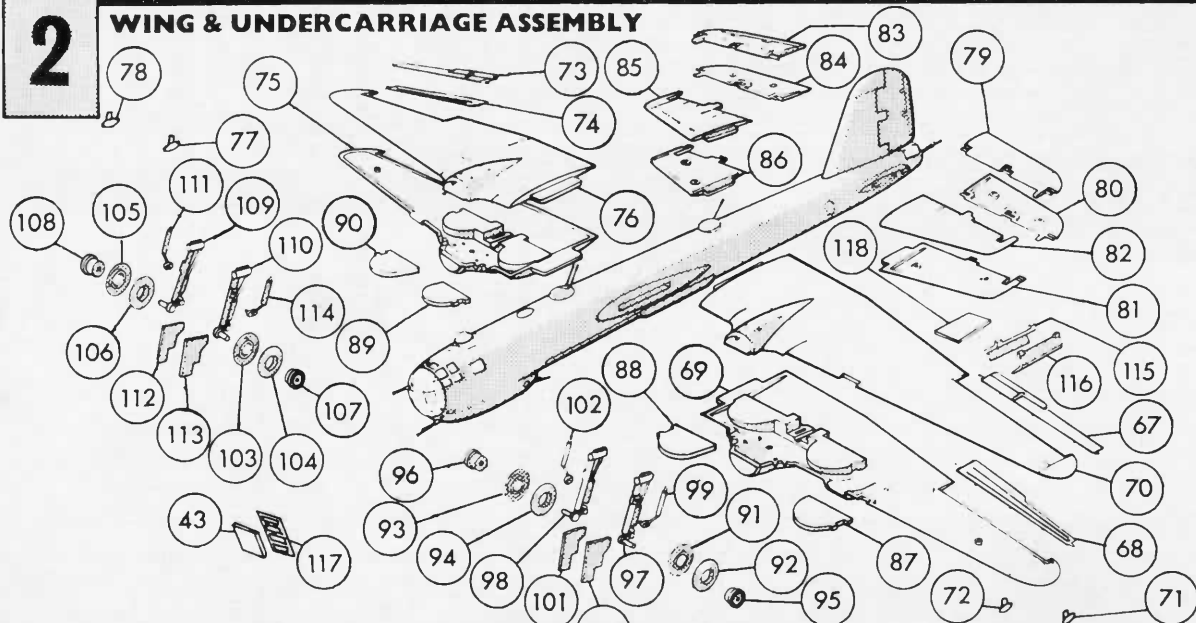
closed bomb doors are provided. If bombs are to be carried cement upper and lower halves (19-26) of the four 550lb. bombs then cement locating pins on bombs into forward pairs of holes below bomb bay. Similarly cement together halves of the two 1100lb. bombs (27-30), cement bomb rings (31,32) over ends of bombs then cement into remaining locating holes below bomb bay.

11. When assembly is dry, position and cement below and against small ribs and between long forward ribs and against large rear rib within starboard fuselage half.
12. Insert bottom of forward remote controlled (small diameter) dorsal turret (33) through circular hole in turret platform (34), DO NOT CEMENT, place turret retaining plate (35) over pin on bottom of turret and secure with a drop of cement on end of pin, check turret is free to rotate. Press pivot pins on twin guns (36) into pivot recesses in forward dorsal top (with squared back) turret (37) DO NOT CEMENT Then carefully cement forward dorsal turret top to top of turret, keep cement from pivot pins on guns.
13. Cement tab on turret platform into slot in forward box within starboard fuselage half.
14. Similarly assemble rear dorsal remote controlled turret (38), turret platform (39), turret retaining plate (40), single gun (41), circular rear dorsal turret transparency (42) then cement tab on platform into slot in rear box within starboard fuselage half.
15. If crew hatch cover and crew ladder are required in down position and gunner omitted this must be done at a later stage and the following TWO instructions disregarded.
16. For a model with crew hatch cover closed, cement crew hatch cover (43) into cut out in gondola in starboard fuselage half.
17. Cement gunner (44) to top of crew hatch cover facing

forward or to rear as desired.

18. Cement tail gunner (45) onto pegs inside rear of starboard fuselage half, gunner faces downwards with feet hooked over front peg.
19. Cement rudder halves (46,47) together. When dry, lay hinges in hinge recesses in fin, also insert pivot pins on tail wheel (48) and tail gun (49) into holes in bushes at rear of starboard fuselage half. DO NOT CEMENT any of these parts.
20. Locate and cement port and starboard fuselage halves together and check tail wheel, tail gun and rudder are free to move.
21. Cement tail gunner's transparency (50) to top and rear of fuselage, apply cement to edges of transparency only.
22. Similarly, cement in position astro dome transparency (51) to forward top of fuselage, front transparency (52) to front and top of fuselage.
23. From rear insert upper nose gun (53) through upper hole in nose transparency (54) and lower front gondola gun (55) through lower front of gondola. Carefully cement in position, then cement transparency to front of fuselage.
24. Similarly locate and cement rear gondola gun (56) and rear gondola transparency (57) together, then carefully cement transparency into cut out at rear of gondola. NOTE Gun is omitted if flying bombs are carried.
25. For a model with bomb doors closed, cement closed bomb door sections front (58), mid (59), rear (60) to bottom of fuselage. It should be noted if flying bombs are to be carried, locating holes must be opened up in front closed bomb doors. NOTE. Holes forward.
26. For a model with bomb doors open, locate and cement cut outs in front (61,62), mid (63,64), rear (65,66) open bomb doors either side of lugs at bottom of port and starboard inner sides of bomb bay.

## WING &amp; UNDERCARRIAGE ASSEMBLY

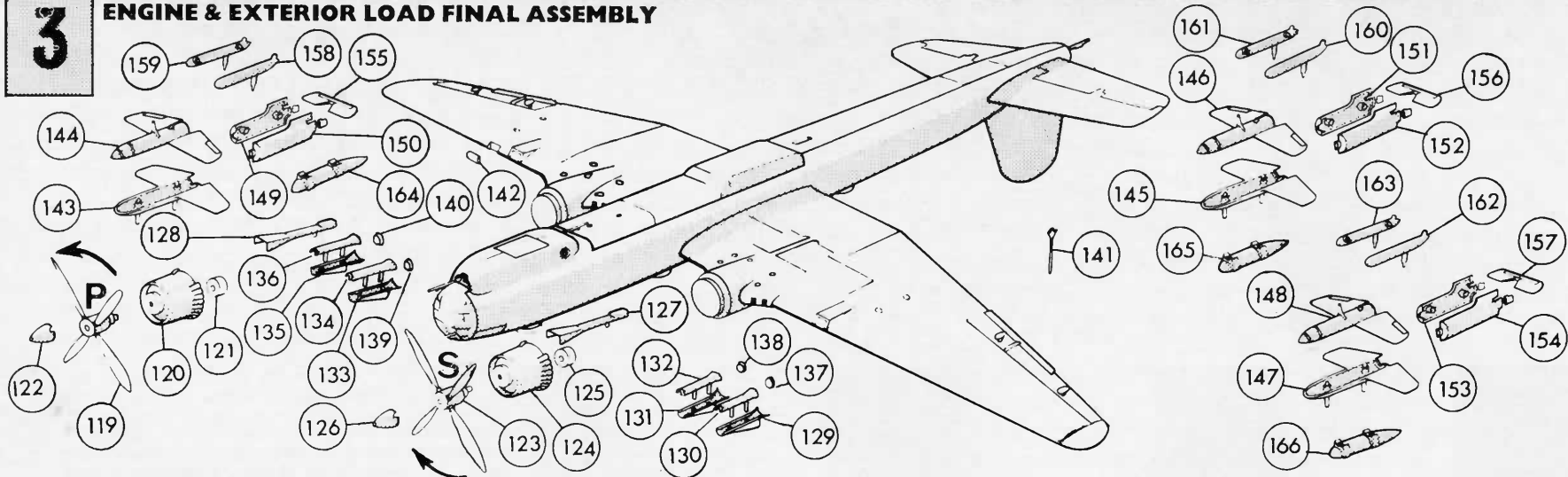


27. Locate and cement together upper and lower port aileron halves (67,68) lay pivot pins on aileron into pivot recesses in lower port wing half (69), DO NOT CEMENT, then cement upper port wing half (70) to lower
28. Cement mass balances (71,72) into locating holes in aileron then cement tab on completed wing into slot in port fuselage side.
29. Similarly assemble starboard wing. Aileron halves (73,74), upper and lower wing halves (75,76), mass

- balances (77,78) then tab on wing into slot in starboard fuselage side.
30. Locate and cement together upper and lower halves of port elevator (79,80), lay pivot bars on elevator into recesses in port lower tail plane half (81), DO NOT CEMENT, then cement upper tailplane half (82) to lower. Cement tab on tailplane into slot in rear port side of fuselage, pin on elevator engages in hole in fuselage but not cemented.
31. Similarly assemble starboard elevator halves (83,84),

tailplane halves (85,86) and cement into starboard side of fuselage.

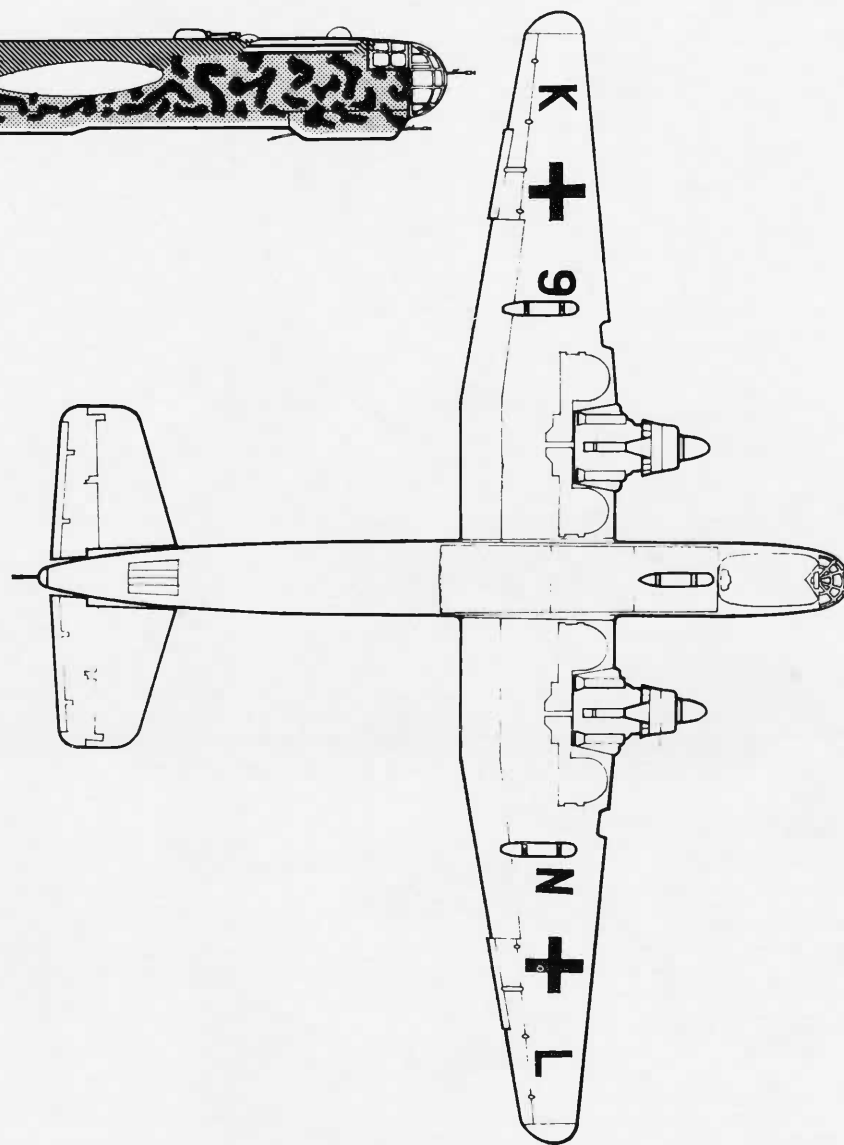
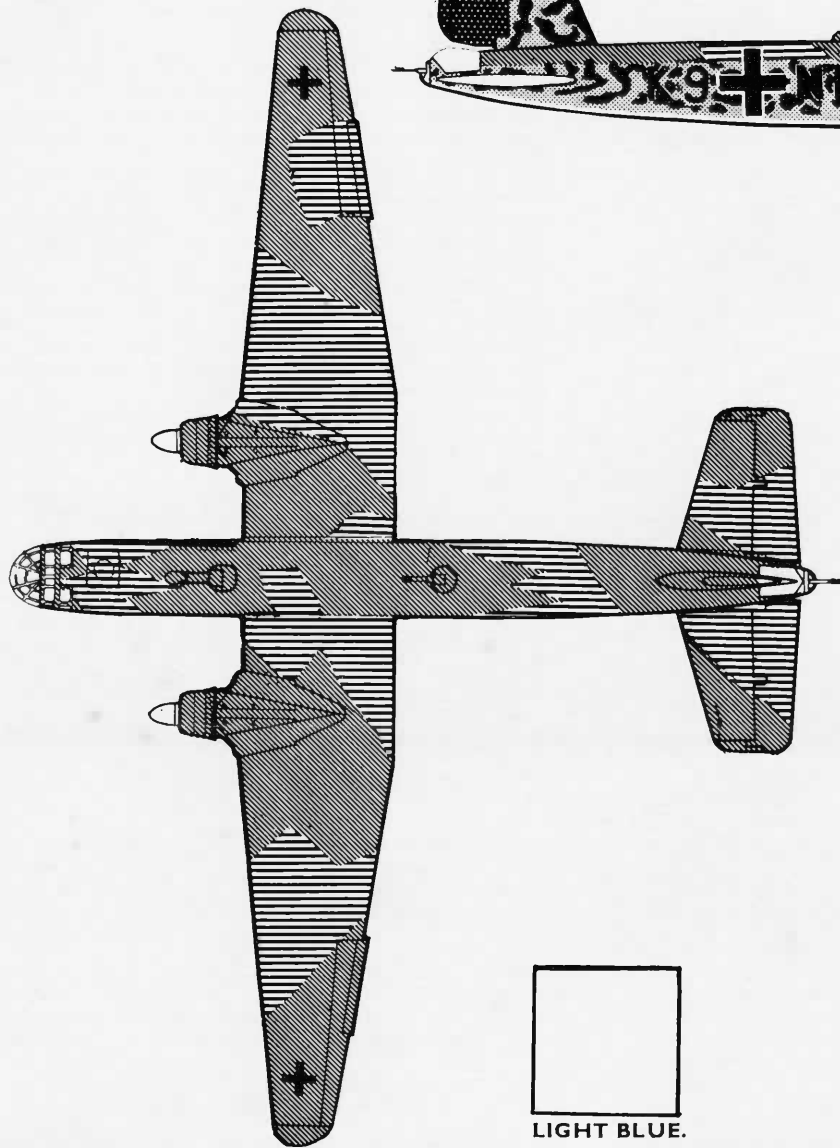
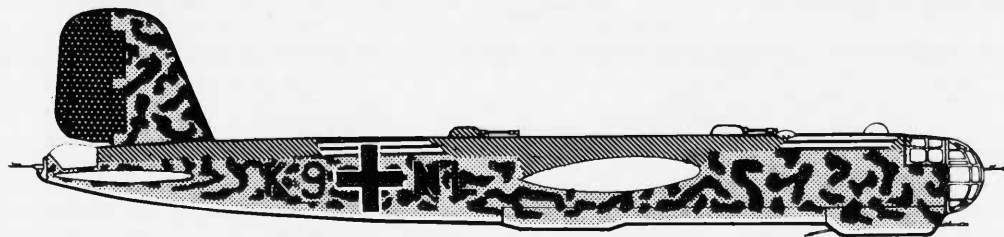
32. Locate and cement the large main undercarriage doors (87-90) flush into wheel wells. NOTE Doors are marked P and S for port and starboard.
33. The desired undercarriage position should now be selected. For a model with undercarriage in down position cement two male and female wheel halves together (91-94) press hubs (95,96) through centre of each completed wheel, DO NOT CEMENT then cement hubs onto projecting axles on inner and outer port main wheel legs (97,98), check wheels are free to rotate.
34. Cement tabs on both port main wheel legs into slots in wheel well beneath port wing, legs angled forward.
35. Cement locating pin on outer port undercarriage leg support (99) into outer locating hole within wheel well and to recess in undercarriage leg
36. Cement top of the small inner main undercarriage doors (100,101) into inner recesses in well against rib. Similarly position and cement inner port undercarriage leg support (102). NOTE Inner doors hang vertically and against undercarriage legs. NOTE Doors are marked P and S for port and starboard.
37. Repeat procedure for starboard undercarriage legs, wheel halves (103-106), hubs (107,108), legs (109,110), outer leg support (111), inner doors (112,113), inner leg support (114).
38. Cement tabs on open tail wheel doors (115,116) against port and starboard edges of tail wheel opening.
39. If the crew hatch cover (43) is desired in open position with ladder down, cement locating pins on ladder (117) into locating recesses in cover then cement top of cover against front of hatch opening angled slightly backwards.
40. For a model with undercarriage retracted:— omit legs and supports then cement doors in closed position. Push tailwheel up into fuselage and cement closed tailwheel doors (118) in place of open tailwheel doors.



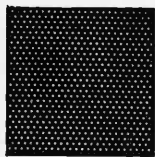
41. Propellers are marked P and S for port and starboard. Insert shaft at rear of port propeller (119) through cowling (120), DO NOT CEMENT place propeller retaining bush (121) over end of shaft and secure with a drop of cement. Keep cement from cowling and check propeller rotates. Locate and cement spinner (122) to front of propeller cut outs in spinner fitting around base of propeller blades, cement assembly to front of port nacelle. Similarly assemble starboard propeller (123), cowling (124), propeller retaining bush (125), spinner (126) and cement in position to front of starboard nacelle.
42. Cement locating pins on oil coolers (127,128) into central locating holes beneath port and starboard

- nacelles.
43. Cement together upper and lower exhaust halves (129-136), cement exhaust flash grilles (137 140) into rear of exhausts then cement locating pins on exhausts into locating holes either side and beneath port and starboard nacelles.
44. Cement antenna (141) into locating hole in top of fuselage.
45. Carefully cement landing light transparency (142) into cut out in leading edge of port wing.
46. If Henschel flying bombs are to be carried, cement together upper and lower flying bomb halves (143-148).
47. Cement flying bomb outer and inner tail halves (149-154) together and cement into ends of bombs.

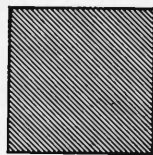
48. Cement Flying bomb tailplanes (155-157) into slots in bomb tails.
49. Cement together outer and inner Flying bomb engine halves (158-163) then cement locating pin on top of bomb engine into locating hole beneath bomb. Pin beneath bomb fitting into locating hole in engine.
50. Cement long locating pins on Flying bomb into locating holes in bomb carriers (164-166) then cement projecting pins into locating holes beneath port and starboard wings and front closed bomb door section. NOTE Two bomb carriers are formed to match wings.
51. Painting should be completed at this stage.
52. Cement together both parts of stand. Cement arm of stand into slot provided beneath fuselage.



LIGHT BLUE.



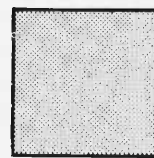
MATT RED.



DARK GREEN



OLIVE GREEN.



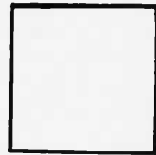
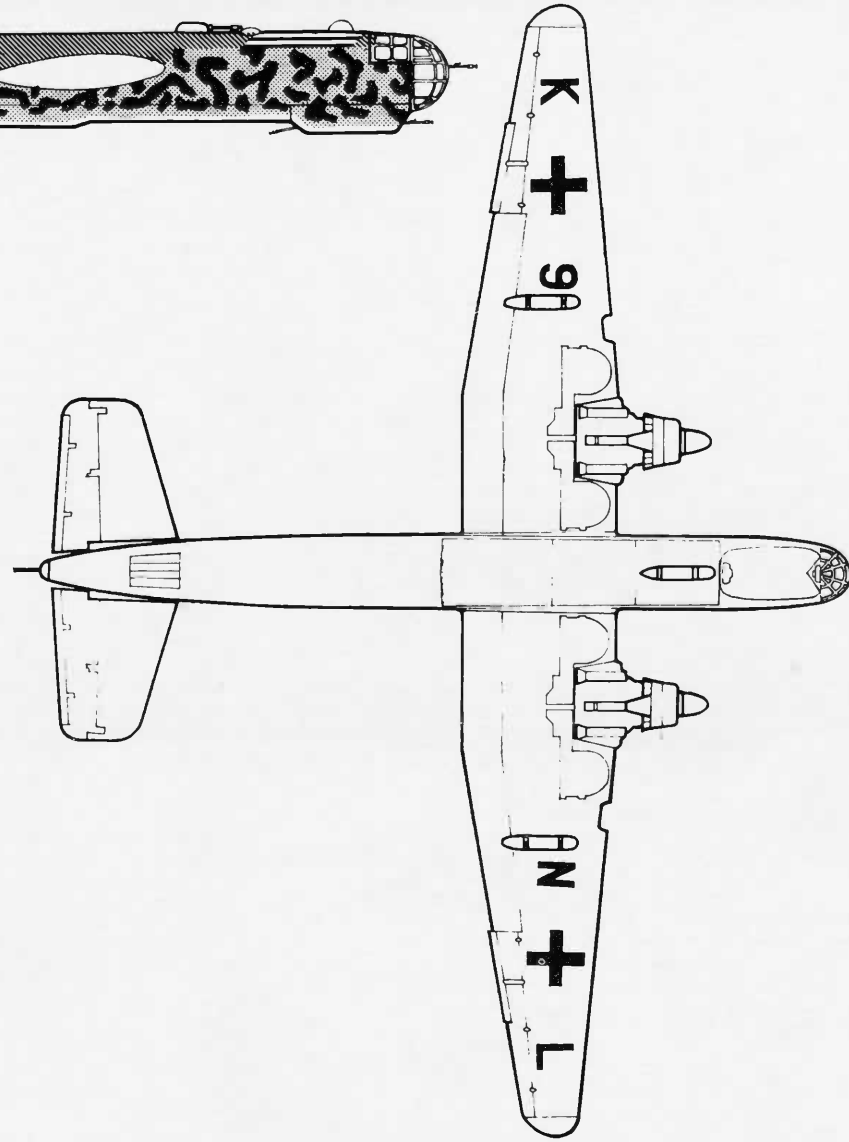
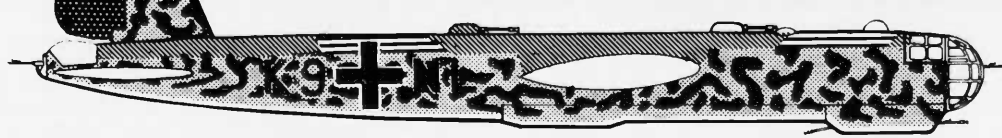
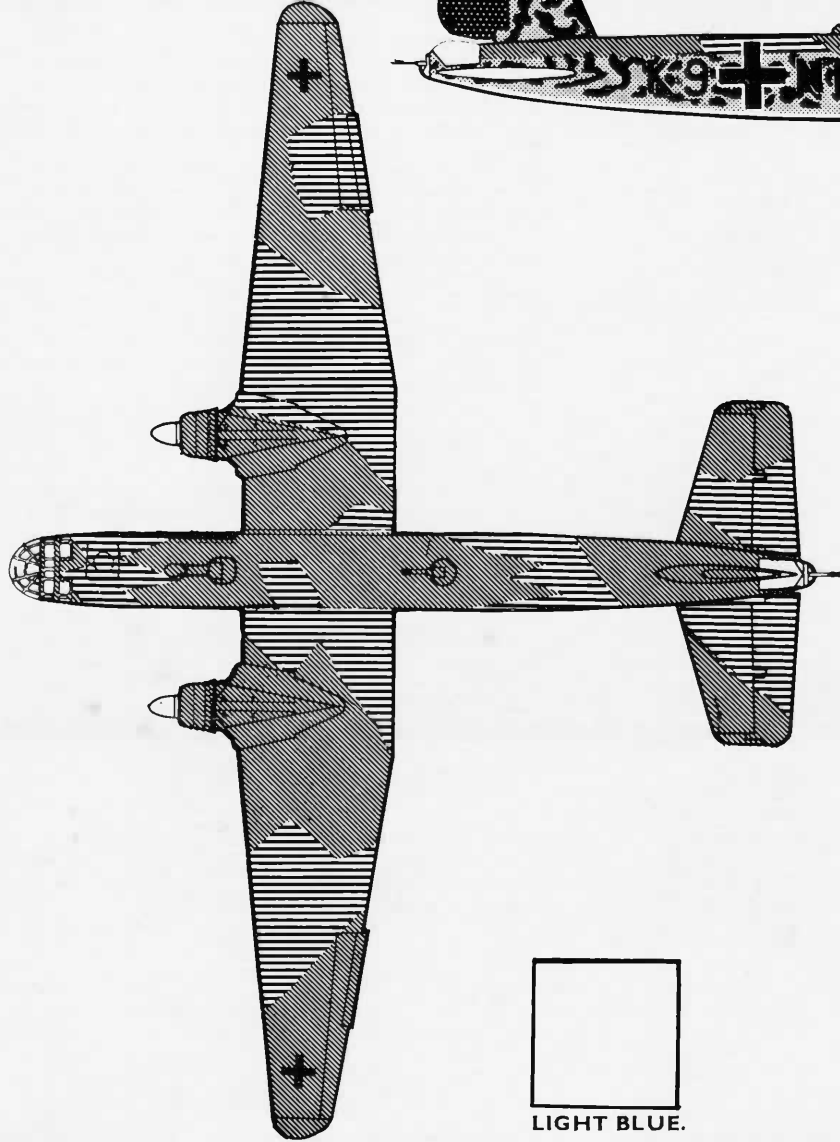
LIGHT GREY

Apply transfers. Separate the sheet into eleven subjects, dip each into warm water for a few minutes and slide off backing into position as shown on illustration. The small black crosses above port and starboard outer wing tips, the large black crosses below port and starboard wings. Large "K" outboard of starboard cross and large "9" inboard. Large "N" inboard of port cross and "L" outboard. The black letters with yellow 9 and large cross to port and starboard fuselage sides. The aircraft name to base of stand.

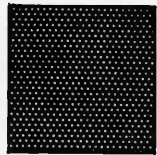
**DARK GREEN over OLIVE GREEN** Upper surfaces to give splinter camouflage effect.

**DARK GREEN blotches over LIGHT GREY** Fuselage sides.

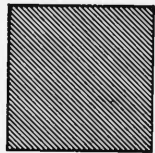




LIGHT BLUE.



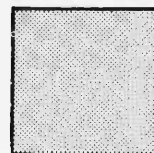
MATT RED.



DARK GREEN



OLIVE GREEN.



LIGHT GREY

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**DARK GREEN over OLIVE GREEN.** Upper surfaces to give splinter camouflage effect.

**DARK GREEN blotches over LIGHT GREY** Fuselage sides.

**LIGHT BLUE.** Undersurfaces, spinners.

**MATT RED.** Rudder

**MATT BLACK M6.** Wheel tyres, guns, inside front of cowlings, propeller blades.

**GREY.** Interior, bombs.

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