



Author demonstrates the low level flying capabilities of the Komet on this fast fly-by.

• HISTORY. The Me 163b "Komet" was developed from a series of tailless powered aircraft and gliders designed by Dr. Alexander M. Lippisch in the 1930's. Its immediate predecessor was the DFS 194, a tailless glider having a span of 34 ft. 9 ins. and overall length of 23 ft. 7½ ins.

The Komet was designed as a high speed, rocket propelled, short duration interceptor. The rocket motor was designed by Hellmuth Walter and in the 163b's was fuelled with C-Stoff (30% Hydrazine Hydrate solution in methanol) and T-Stoff (80% Hydrogen Peroxide plus Oxyquinol or Phosphate as a stabilizer. It produced 3,750 lbs thrust and had a duration of less than twelve minutes. First powered flights of the preproduction Me 163A were completed in 1940 and in October 1941 Henri Dittmar achieved a speed of 624 m.p.h. (0.84 Mach) in Me 163A V4. This extremely good performance coupled with excellent handling and a very flat glide, about 1 in 20, prompted the Germans to give the project some priority, and production of 163b's commenced. However severe difficulties were experienced in production of the rocket motors and with handling of the fuels which were not only explosive but very corrosive. Explosions were caused merely by using contaminated containers when handling fuel on the ground. Incidents of pilots being virtually dissolved by fumes and fuel leakage into the cockpit were not uncommon. Problems were also apparent when landing on the skid. Several pilots, including Dittmar, received severe spinal injuries due to heavy landing. Eventually seats were designed to withstand 20g landing loads. Hanna Reitsch the famous woman test pilot was also severely injured when, during a gliding test on an unpowered 163b, the take-off dolly failed to release. She released the tow line from the Me BF 110 tug and attempted a landing but stalled in from about 100 ft due to control problems caused by excessive drag from undercarriage. Another problem was the need to

## MESSERSCHMITT Me163B-1a



Three-quarter rear view shows the clean, stubby lines of the plane.



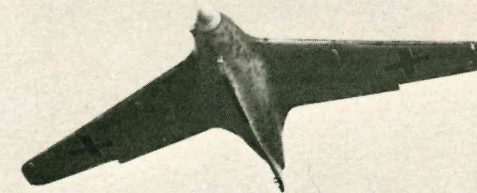
Front view shows the clean cowling of the engine, also belly skid.

make a perfect approach the first time, for when the fuel exhausted after a mission it was not possible to do an overshoot. Several pilots were killed by missing the airfield completely.

Design duration of the rocket motor on the 163b was only twelve minutes and from take-off to 39,000 ft took approximately three minutes. At this point thrust would be reduced to translate the remaining nine minutes on full power to thirty minutes of level flight at about 590 m.p.h., tactical radius thus being about 150 miles.

Many Komets were produced during the period to 1944 when two developments occurred. The first, the 163c featured a pressurized cockpit enabling the ceiling to be extended to 52,000 ft. using a dual chamber rocket motor. Small chamber was used for cruise conditions, both chambers for full power extending the duration. Only three of this version were built and they were quickly followed by the 163d later known as the Junkers J.U. 248, and finally as the Me 263. This was similar to the 163c but featured retractable tricycle undercarriage. Very few were built.

In March 1944 agreement was reached with the Japanese to manufacture the Komet and its KWK 509A rocket motor.



Lift-off and dropping of the take-off dolly seen here in this exciting flight shot. Stability is shown after dropping the gear.

**BY COLIN MOSS . . . exciting scale of famous WWII tailless fighter with the very apt code name of the "Komet." First rocket powered aircraft in the war!**

Very few of the Japanese version, the J8M1 "Skusui" were completed before the end of the war and they did in fact differ considerably from the German Komet. I believe that an example of the Skusui as well as several Komets are still in existence.

I feel the Komet would have achieved far greater success and recognition had reliable rocket motors been available in 1941.

**COLOUR FINISH.** The Komets were finished in a number of camouflage schemes probably the most common being the one in which my model was finished i.e. the underside of wings and fuselage light blue (Hellblau 65), top surfaces of wings and fuselage in a "Splinter" camouflage in dark green (Dunkelgrun 71) and black green (Schwarzgrun 70), sides, top of fuselage and tail surfaces were then over-sprayed with a light grey (R.L.M. Grau 02) in a mottle pattern. This light grey also being used for cockpit interior.

The Komet Me 163B OV41 flown by Major Wolfgang Spate was finished in red all over and was the subject of the Simon brothers model which won the 1972 World Scale Championships.

Profile Publications No. 225, Rocket Fighter by William Green, and

Aeromodeller Publication No. AH 2907 available from Model and Allied Publications, 13/35 Bridge Street, Hemel Hempstead, Herts, England provide a vast amount of information on fine detail finish and color schemes and will be of great help to anyone intending to use the model in scale competitions.

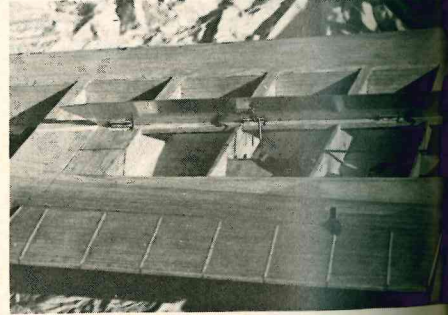
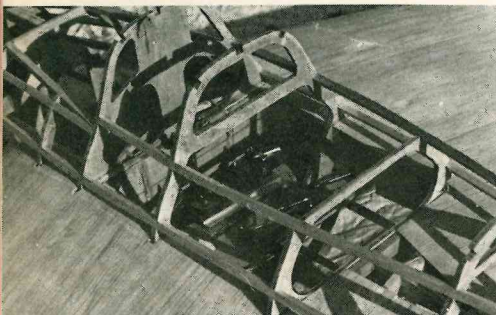
This started initially by my buying a book called Rocket Fighter by William Green during my summer vacation in 1973. Being interested in unusual aircraft and also influenced by the Simon brothers success in the 1972 World Championships I decided to build a model of the 163. At about this time our club was trying to raise interest in pylon racing, basically ¼ Midget, the only actual requirement being semi-scale appearance and maximum engine size .19 cu.ins. The first model I built was a 40 ins version of the ME 163c mainly because of the simple fuselage section and bubble canopy, it was powered by a Fox 19 and proved very successful. I learned a lot about the problems associated with this type of model from the 163c and as I was becoming interested in Class 2 scale at this time decided on a 1/6th scale version of the 163b for the '74 season, this being the subject of this arti-

(Continued on next page)



High flight speed seen here by checking blurred background. Germany's Werner Simon won '72 R/C Scale World Champs with similar plane.

### MESSERSCHMITT Me 163B-1a



Construction shots shown here are of the 1/5th scale version. Left view of fuselage at cockpit, center cockpit, right flaps, spoilers.

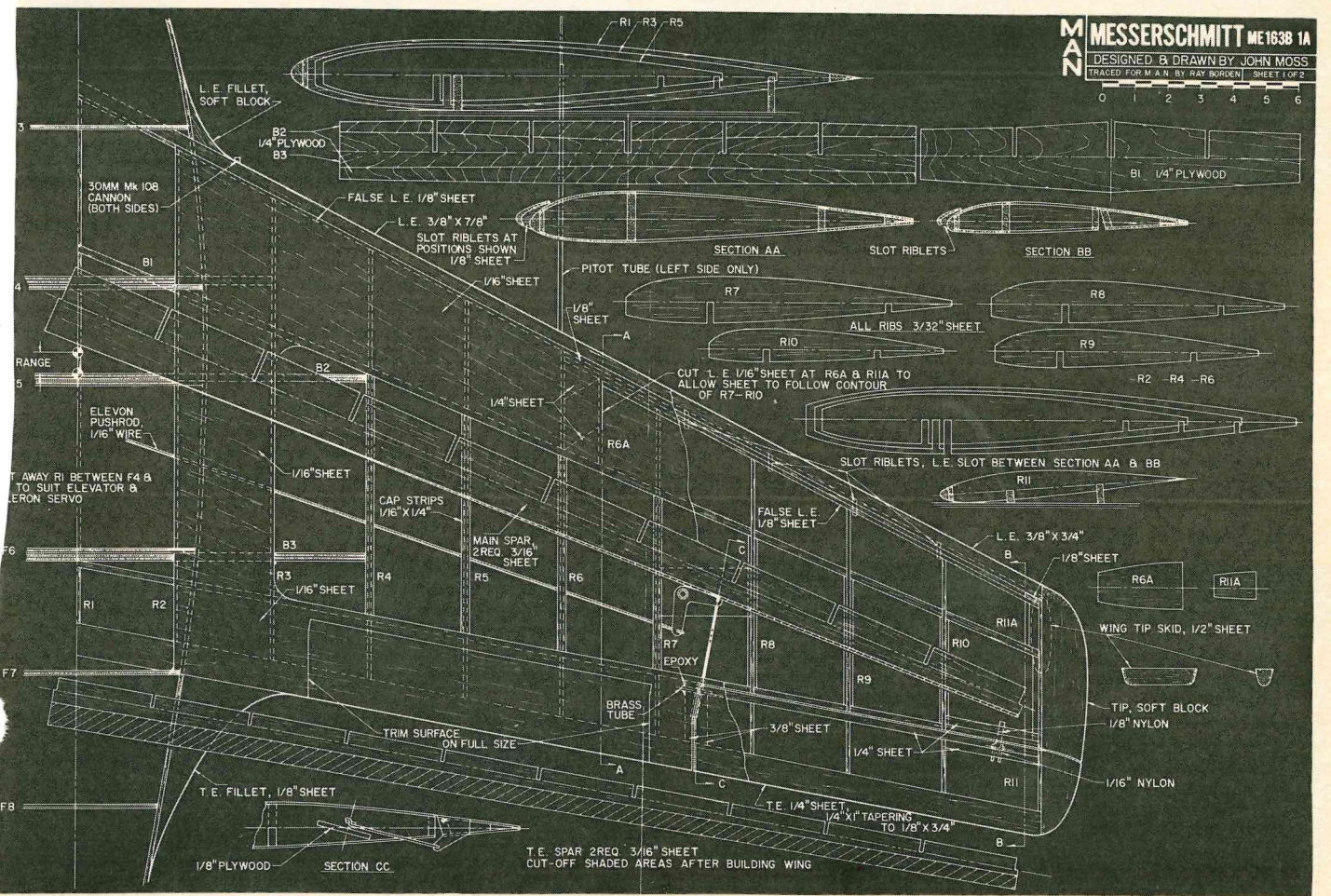
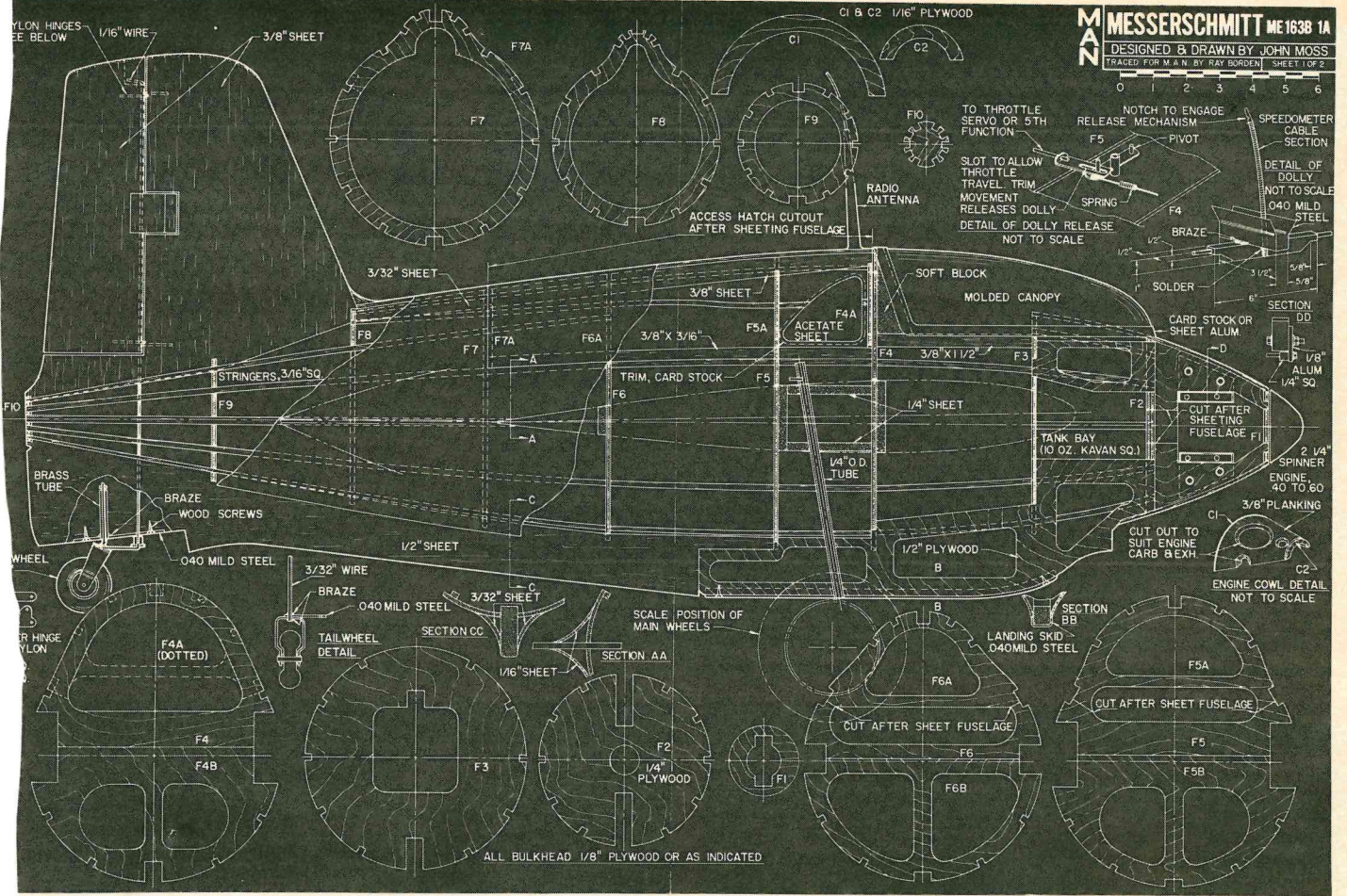
cle. The model was completed in Jan. '74 but I could not pluck up the courage to fly it until May, when I had the opportunity to try it at Little Rissington. Much to the surprise of those concerned everything went according to plan and the model proved extremely easy to fly although landings for the first few flights were confined to the grass rather than the runway. This model was originally powered by an aged Enya 45 which provided adequate power, but I have now re-engined it with an H.P. 40F and this has greatly improved performance. It weighs 7 lbs dry less take-off dolly and is nylon covered. The model is capable of most maneuvers including inverted flight but I have not succeeded in making it spin possibly due to the influence of the leading edge slots. I intend to try one day with the

slots blanked off but I have a feeling that then the difficulty may be getting out of the spin. Full up elevator can be held on from the start of take-off run without any fears and the take-off dolly dropped when airborne by using throttle trim or 5th function. If flying from anything other than a perfectly smooth, flat surface it is necessary to position main wheels 1"-1½" in front of the true scale position as with no elevator in the slipstream it is impossible to keep the tail down until a reasonable ground speed has been achieved. In the air the ailerons are very effective but the elevator response is rather poor especially at low speeds. Landings on the runway are quite in order. The only thing that really suffers are the wing tip skids although the prototype has now had over 100 flights without coming to

much harm. It has been entered in several Class 2 Scale comps and has achieved top flight scores on three occasions in spite of its pilot, and due mainly to its impressive appearance in the air. Construction is fairly straightforward. A few notes are given below:

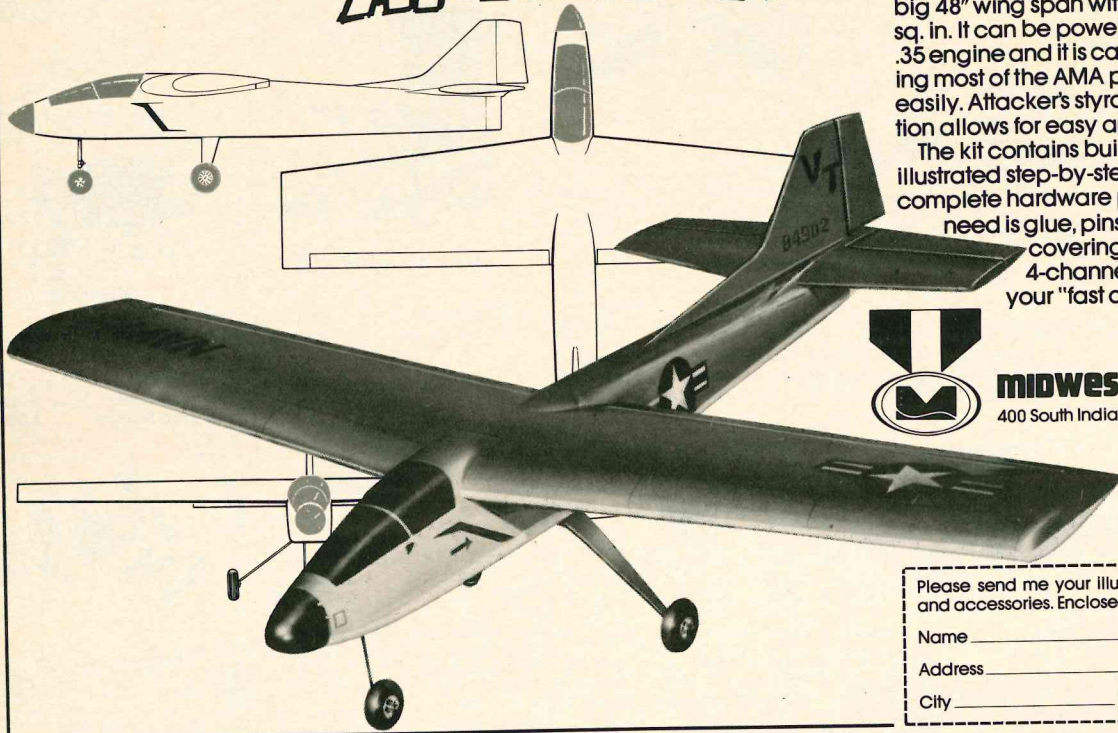
**WINGS.** The wings should be built first as the model is a one piece structure the fuselage being built onto the completed wing assy. Cut the wing spars from hard 3/16th sheet, mark center line and rib positions, cut rib slots at angle as per plan. Pin spars to building board over plan and add ribs, trailing edge, trailing edge sheeting, 1/8th sheet false leading edge, leading edge sheeting and cap strips.

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## Free Flight Championship

(Continued from page 58)

here, under tricky conditions (nobody maxed out) that saw several models going up into the same patch of air, with only 1 or 2 usually surviving to max.

The climax of the whole institution comes with the awarding of trophies for individual and team winner. It takes a special kind of individual to fly for 3 days at Taft and come out on top of the heap with the 7-foot tall Broadhurst Memorial Trophy symbolic of the grand championship, like Bruce Hannah, Jr., this year's winner.

Saturday, he chased his FAI power model for over an hour (stuck timer), only to see it disappear into the outskirts of Taft. There's a lot of time, effort and EXPENSE that goes into one of these models, and losing one can really blow your mind, particularly if it's your #1 model and you're qualified for the Team Finals, like Bruce is. He spent a lot of time peering into back alleys, driveways, backyards, etc., but still hadn't found it by the end of the contest. (It was returned a week later). But he was undaunted enough by the experience to fly his other events well enough to win the big trophy.

The team championship was won by the mellifluously named Uncle Sal's Flying Circus, consisting of Lee Hines, Sal Taibi and Bob White. Their combined modeling experience of more than 100 years and some consistent flying paid off with the victory, even though Sal was the only team member to bring home an individual trophy.

And so it's over for another year. Next Memorial Day, it'll be the same time, same place, practically the same everything all over again. But a sudden thought hits—I probably won't be back next year (moving away to Oregon this summer). Just have to read about it in M.A.N., I guess (do a good one, Dave). But the memories of it all will still linger until I return. And even if that's 1, 2, 5 or more years, I probably won't

notice that much change when I make it back. The USFFC doesn't change that much. That's what we like about it.

## Messerschmitt Me 163B-1a

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Remove from board and trim off excess from spars, and trailing edge and leading edge sheeting leaving off sufficient L.E. sheeting to enable front 1/4 ply brace to be fitted when wings are joined. Cut out elevons after fitting soft block tips. Add elevon hinges, bell crank, push rod etc. Fit leading edge to slotted section and sand to aerofoil. Fit slot riblets and main leading edge together with top section of slot from hard 1/8th, sheet. Reverse plan and build other wing panel in same way, join two panels with three 1/4 ply braces, no dihedral. Complete leading edge sheeting etc.

**FUSELAGE.** Glue halves of F4, F5, & F6 to wing braces ensuring that centre lines coincide. Araldite (a slow-setting epoxy) F3 & F2 to 1/2 ply keel and then add this assy to wing. Leading edge will have to be trimmed to accept F3. Fit 3/8th sheet between F3 & F4 and soft block to F4. Fit 3/16th fuselage stringers, remainder of fuselage formers and balsa rear keel. Drill ply keel to accept U/C locating tube and Araldite in position. Fit fin and rudder then sheet fuselage with medium 3/32 sheet, cut out radio access hatch, and engine mounting plate assy and plank left side of engine cowling with 3/8th sheet. Fit wing root fairings and fairings between fuselage and keel. Complete detachable engine cowling using C1 & C2 with 3/8th planking. Fit canopy, canopy surround and windows to access hatch. Add aerial, hatch retainers, U/C release mechanism etc.

**INSTALLATION.** Install radio gear to obtain

correct C.G. position with tank empty. Cover the airframe preferably in nylon and finish, the prototype was finished using automotive primer surfacer, Humbrol matt enamels and proofed with matt Kingstom Diamond Translac, a clear polyurethane finish. Ensure that the control surface linkage is free from lost motion especially the elevon linkage this is most important. Check control surface movements, elevator at least 3/8th up, aileron 6 + 1/4 ins. set elevons so that full down elevator trim gives elevons level with T.E. Level flight will require about 1/8th up elevon. On the prototype the U/C dolly is dropped using throttle trim and this has proved 100% reliable but if available a fifth function may be used. **DO NOT** attempt to fly with the C.G. located behind the rear position indicated on the plan but remember the further forward the C.G. the less effective the elevator will be.

**CONCLUSION.** I am sure that if you build a 163 you be pleased with its performance and its impressive appearance in the air. I am certainly hooked on the airplane as I am now building, a 1/5th scale version with Air Brakes and Trim Flaps as the full size.

## Launching A Space Shuttle

(Continued from page 46)

mechanism.

The Orbiter model was made by Scotty Paton. He used 2 and 4 ounce fiberglass cloth in the existing molds and then added enough structure to support the radio and take the loads at the 747 attach points. The separation is initiated by using an EK products tow hook release. The 747 wing and tail were covered with Monokote and the fuselage and the Orbiter were painted with epoxy paint. Scale markings were added to improve the appearance.

After much midnight oil both models were

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