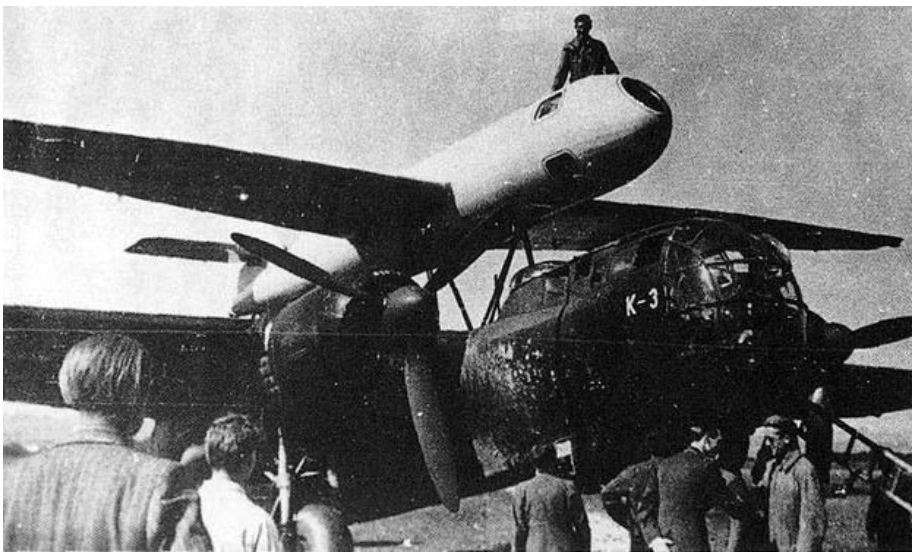
DFS 228

History: In 1940 the German Air Ministry issued DFS (Deutsche Forschungsanstalt für Segelflug - German Research Institute for Gliding) with a request to develop a high altitude reconnaissance aircraft. DFS had already examined the idea of high performance high altitude aircraft including pressurization and the use of a rocket motor to provide the lightest power plant. DFS decided to design a glider with a rocket motor and a pressurised compartment for the pilot to provide an aircraft capable of photographing enemy facilities from very high altitudes, well beyond the reach of any attempt to intercept it. The proposal was approved in 1941.

Three prototype DFS 228s were ordered and the first was completed in March 1944. It was of wooden construction in three parts; a pressurised cabin, forward of the wing, the centre section with a camera, fuel tanks, landing skid and a wide span wing, and the rear fuselage incorporating the rocket motor. The planned operational profile of the powered glider was to be carried to an altitude of 10,000m on the back of another aircraft. After it was released it would use the rocket motor to climb to an altitude of 23,000-25,000 metres (75,460-82,021 feet) by the time it was over its target. Being small and unpowered by that time it was expected to fly over the target undetected or, if it was detected, well beyond the reach of any enemy defences. This meant it could loiter over the target as long as necessary to take its reconnaissance photos before gliding back to its base to land on its skid.



The most complex part of the aircraft was the pressurised cabin. Originally it had been hoped to make it out of wood but the pressure differential was so great at its expected operational altitude that metal had to be used. Initially the first prototype was fitted with a conventional cockpit but having the pilot sitting in the conventional fashion made the pressure vessel too big so the pilot was given a couch and would fly the aircraft from the prone position, making pressurisation much simpler. In case of emergency the pressurised cabin could be jettisoned from the rest of the aircraft so the pilot inside it could fall to a safer altitude before parachuting to safety.

The first prototype made its first trial flights in late 1944. Forty test flights were made, none above 10,000 metres and none under rocket power. The problems with the initial cockpit design limited the first flights to a safe altitude. There were plans to begin testing with the rocket motor in February 1945 but none were conducted. The main faults found with the 228 were that it suffered from poor aileron effectiveness at high altitudes and the elevators were very sensitive; but these were not significant problems for the role the aircraft had.

The first prototype survived the war, the second was seriously damaged in the last days of the war and the third prototype was never completed. The surviving DFS 228 was taken to

the US Air Technical Intelligence Unit at Stuttgart in June 1945 and later sent to Farnborough in June 1946. It may have been scrapped in 1947 or it might have gone to Slingsby Sailplanes where it might have contributed to that company's proposal for a stratospheric research sailplane. In either case, it appears not to have survived.

Data: Single seat high altitude reconnaissance glider. *Engine* one Walter HWK 109-509D bi-fuel rocket motor of 3630 lb thrust. *Wing span* 17.60m (57ft 9in). *Length* 10.59m (34ft 9in). *Maximum take-off weight* 4210kg (9281lbs). *Maximum speed* 900km/h (560Xmph). *Range* 1050km (655miles).

The kit: Huma 1:72

I bought this kit by accident. Having a poor memory for many of the obscure details of German aviation history, I recalled that the first use of a rocket motor was to power a DFS glider, but instead of ending up with that pioneering aeroplane I ended up with this. Fortunately it turned out that the history of the DFS 228 was itself quite interesting, a sort of early German version of the U-2, so I was curious to see what the completed model would look like.

Huma make a very interesting range of obscure German aeroplanes. Unlike the French equivalent, Mach 2, Huma kits are exquisitely engineered so that fit is usually perfect and the moulding is crisp and clean. The DFS 228 was a very simple aeroplane and so is the kit. To make up for the small number of parts this kit has everything you need to make up a highly detailed cockpit with the most delicate and detailed set of parts I think I've ever seen. Unfortunately it all disappears inside the nose with its tiny windows. Apart from that, assembling this kit is the work of only a few minutes. If you want to make the project more complicated you can use the support pylons provided in the kit to attach the DFS 228 to a Dornier 217K, which would probably create a very interesting model.

The most difficult aspect of making this model is trying to make sense of which window parts to put with which decal options. You get the option of two different kinds of cockpit, both for the prone pilot, and three marking options; with spurious Luftwaffe marking, decals for D-IBFQ and the option of no decals at all. The first confusion is that although the first prototype apparently flew with the original wooden cockpit with upright accommodation for the pilot you don't get that option. None of the photos I've seen include the second cockpit option of a larger window at the front and no side windows and all the photos I was able to find used the smaller front window with the side windows. Most of the photos I was able to find showed the 228 with no markings at all. Photos of the captured first prototype shows it with civil registrations, one photo shows it with a dark line down the side of the fuselage and another again with swastikas on the tail. All the photos show the 228 appearing much lighter in colour than the RLM 02 Grey recommended in the instructions. After pondering on all this conflicting material I decided to take the simple course and painted the model all-over RLM 02 and applied the registrations as they appeared in the photos rather than in the instructions. It's as likely to be fairly correct in depicting the first prototype in the early months of 1945. It looks something like a winged torpedo.