

SNECMA C450 Coléoptère

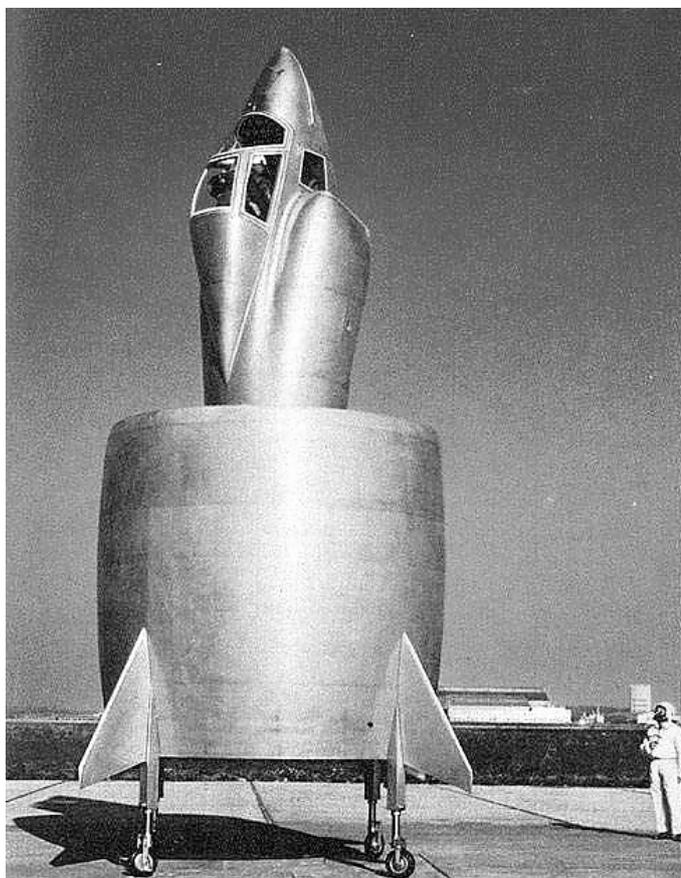
History: During the 1950s many countries and companies experimented with vertical take-off and landing aeroplanes. If successful they would enable air forces to operate fleets of aircraft that did not need large aerodromes and vulnerable runways so they would be able to disperse their aeroplanes more widely so they would be less vulnerable to attack. Despite numerous attempts the only version that proved successful was the British Hawker P.1127 that evolved into the Hawker Siddeley Harrier and the McDonnell Douglas AV-8B. The SNECMA Coléoptère was one of the more obscure but spectacular failures.

Although primarily an engine manufacturer SNECMA (the Société National d'Etude et de Construction de Moteurs d'Aviation (National Society for the Study and Construction of Aviation Engines)) became interested in direct lift turbine engines that could power vertical take off and landing aeroplanes. It acquired the European patent rights to an annular wing developed by Professor vonZborowski and began development in three phases. The first phase was a small remotely controlled test vehicle powered by a 45kg (96lb) thrust SNECMA pulse just that was tested in tethered flights in 1954. This led to a full-size test vehicle, the Atar Volant, that comprised basically a vertically mounted Atar jet engine in a nacell attached to a four wheel landing gear. The first Volant was remotely controlled and flew for the first time on 22 September 1956 and made over 200 flights. The next Volant was pilot controlled and had an ejector seat mounted above the engine air intake. It's first flight was accomplished on 14 May 1957 and it subsequently made 123 tetherd and free flights. The final Volant was basically the same with the more powerful Atar 101 engine.

The success of these tests led to construction of the C.450 Coléoptèr which was conceptually a Volant with an annular wing. The airframe was built for SNECMA by the Nord company. Control in vertical hover was achieved by vanes in the nozzle of the jet engine and aerodynamic control was achieved by four small fins mounted on the annual wing. The pilot was strapped into an ejector seat that could rotate through ninety-degrees and windows in the side and floor of the cockpit give good visibility in all directions. The aeroplane was accompanied by a large supporting trailer that could hold in it vertical and horizontal positions.

The Coléoptèr made its first tethered hover flight on 17 April 1959

and its first free hover of three and a half minutes duration on 3 May. On 25 July 1959, it was planned to hover the Coléoptèr at 2000feet and transition to about thirty degrees from the vertical, return to the hover and land. However it became unstable, began descending out of



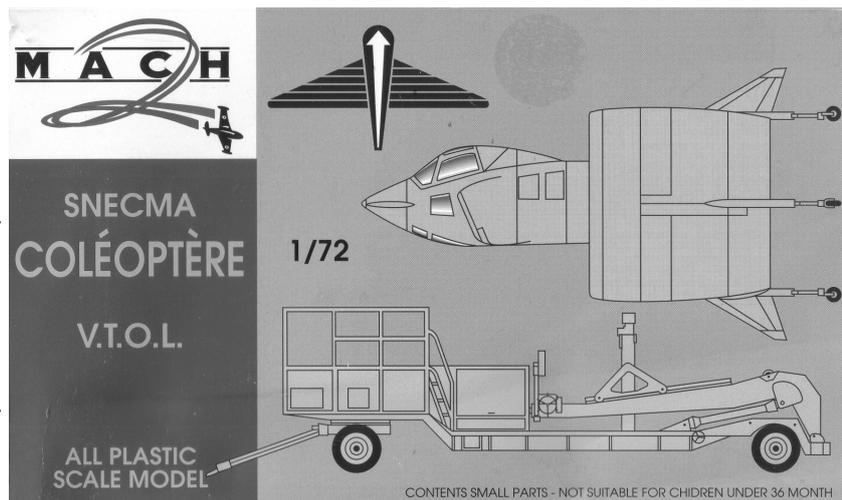
control and the pilot successfully ejected. The Coléoptère was destroyed and that was the end of that.

Data: Experimental single-seat vertical takeoff aeroplane. *Engine* one SNECMA Atar 101 turbojet engine of 3700kg (8156lb) thrust. *Wing span* an annular wing of 3.20m (10ft 6in) external diameter. *Length* 6.70m (22ft). *Maximum take-off weight* 3000kg (6614lb).

The kit: Mach 2 1:72

I read somewhere that this aeroplane was voted one of the ugliest ten aircraft of all time. It is tempting to agree but there are still some notable United States and German (and perhaps French) aeroplanes from the inter-war period that would give it good competition. I will admit, however, that it is not one of the prettiest little aircraft that ever flew. At the same time it is a well known fact that Mach 2 kits are not the easiest to put together and their decal sheets are far from perfect (and the sheet in this kit is particularly nasty looking example). So why put myself through so much torment. Because it's French, what more can I say...

The kit comes in the standard Mach 2 box in which the top is also the painting instructions and the best view of the model subject provided that gives you some kind of idea of what the finished thing is supposed to look like. The instruction sheet is basic, to put it mildly, and still leaves you guessing about some of the major construction details. The box is actually jammed full of plastic



because not only do you get the little aeroplane, you also get its launching trailer. It went straight in the bin, it is hard enough making a Mach 2 kit at the best of times without banging your head against an unnecessary added impediment. It also turns out that the ghastly looking little decal sheets are for the trailer, not for the aircraft, so that is another reason not to bother with the trailer.

With all that out of the way the box now looks much emptier and the project almost enticing. Mach 2 have been getting much better at their surface detail and if they could only find a way of making the mouldings line up properly when the plastic is injected they would be starting to head in the right direction. However, I still had to work at almost every little part of this kit to remove some truly awesome moulding lines and to get all the parts to fit properly. The cockpit itself has quite a bit of detail but when the instruction sheet gives no hint of what colour it should be the only recourse is Plan B, so all that detail disappears. Surprisingly the cockpit canopy and windows fit nicely and the fuselage goes together nicely, more or less. The annular wing comprised two fairly nicely moulded pieces of plastic that fit nicely after you have spent some time working on them to make sure the end result is square (if you know what I mean). When they are set it is time to make sure that the leading and trailing edges are also square and well rounded, which also takes more time than you would expect. After that there is the usual tidying up, that also takes more time than you'd expect and then on with a couple of coats of Alclad II 'polished aluminium' which comes up very nicely.

Then the fuselage and the wing are joined in unholy matrimony, there are a few little flourishes like the wheels and it's all finished. Mon Dieu! They didn't actually think this thing would fly, did they?