

Blue outline, white outline...

Part 2

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Colours of the Czechoslovak Air Force S-199

In the part one of the Czechoslovak S-199 colors analysis the complicated situation with the suitable paints used by Czechoslovak post-war aviation industry was described and the color differences among the supplied aircraft were summarized.

Even before receiving the final single color overall finish the completed S-199 left the assembly lines of Avia in Cakovice and Aero in Vysocany with the surfaces treated with a dope or primer according to the material used in the construction (duralumin, fabric). We can only speculate about the actual color. It could have been RLM 02 grey from the stocks left behind by the Germans or some other available greyish paint. Let's be aware of the fact that the „hundredninetynines“ were not manufactured from the scratch but just modified or refurbished various versions of the Bf 109 fighter airframes and their components produced during the wartime. There

were „Gustavs“ of the variants 6, 10 and 14 as well as K-4 airframes gathered in Czechoslovakia from a variety of sources, be it from the Luftwaffe airports located on the former Protectorate territory or as a war bounty received as a gift from the Red Army or purchased from Bulgaria.

The gaps between the metal skin panels were puttied (refer to the pictures in the previous issue of INFO Eduard) followed by the sprayed coat of the single paint color. Initially it was a light grey-green shade (factory drawings dated October 1947 identify this color as grey) and once availability improved, replaced by new, darker green color. The

aircraft that were repaired or overhauled at the aviation repair shops or underwent the additional modifications at the manufacturer were often sprayed with various darker shades of green but there were cases of refurbished aircraft painted in light color or airframes painted partially in light grey-green as well as dark green color. The most colorful S-199s were those after the partial repair of the worn finish (panel gaps) on the fuselage and wings as well. The good example is „black“ EX-11 (serial number 260), „white“ GY-37 (serial number 40) or „training“ UF-56 (serial number 331). Real eye-catching appearance is demonstrated by S-199.253 (black codes EZ-9) featuring unpainted panels (probably replacement parts) on the nose, cowling and at the base of the vertical stabilizer.

The ailerons, elevators and the rudder i.e., fabric covered components, were treated with a dope, installed on the airframe and only then sprayed together with the other aircraft

surfaces as a whole assembly. The horizontal and vertical stabilizers on the aircraft from the initial series were all wood design and before the final coating they were sprayed with a dope or a darker (dark green?) color. On the newly constructed airframes and gradually converted older aircraft (since 1950) these components were made out of duralumin and therefore showed their natural color before the application of the final coating.

The national insignia application on S-199 (as well as its predecessor S-99) were promulgated by the order MNO-VL č. j. 157 Taj. let. 1946 from January 1946 on the matter of "Aircraft Markings" which besides prescribing the units' codes also established the appearance of the Czechoslovak Air Force and National Security Aviation national insignia. There were two orders governing the military S-199: the first is dated January 9, 1946, marked by Avia company's number MeS 101 and prescribed the position of the circular national insignia in the usual six locations on the upper and bottom wings and both sides of the vertical tail surface. The circular design was to have three equal segments, blue one always facing forward, red on the wing always towards the fuselage and facing downwards on the vertical tail surface. For the "aircraft sprayed in the dark shade" the insignia diameter was to be 930 mm on the wings including 15 mm thick outline (i.e. the actual insignia's diameter was 900 mm), distance from the wingtip edge 1600 mm, insignia center 680 mm from the leading edge on the wing upper surfaces and 560 mm on the wing lower surfaces. The vertical tail surface insignia was to be of 600 mm diameter including 15 mm thick outline (i.e., the diameter of the actual insignia was 570 mm). Note: another color shade covered by this order was aluminum overall with blue insignia outline for CS-199 trainers.

The second order (Avia drawing nr.109-Le 62217, national insignia and stencils on C-210 aircraft) dates from October 1947 and refers only to the "aircraft sprayed with grey color" with the white outlined national insignia. The wing insignia were to have 900 mm diameter



Avia S-299.155, "black" MR-4 from the 2nd flight of the 8th Fighter Squadron in Brno-Cernovice camouflaged in the light grey-green color. This crash occurred on March 24, 1949 while the aircraft was piloted by Lt. Frantisek Krist. The image of the lower wing half nicely shows the location of the national insignia with the thin blue outline, further the "baby bulge" of the ammunition belt links collector of the model 17/7.9N wing machine gun and the starboard liquid cooler with deployed discharge flap. The gun barrels are again protected by the linen covers.

including 10 mm thick outline (i.e., the actual insignia diameter was 880 mm), insignia distance from the edge of the wingtip was 1500 mm, insignia center was 615 mm from the wing's leading edge on the upper surfaces and 550 mm on the lower surfaces. The insignia on the vertical tail surface was to have 550 mm diameter including 10 mm thick outline (i.e. the insignia's actual diameter was 530 mm). The majority of S-199s were marked according to the aforementioned orders as far as the white outline is concerned ("a stripe" in the period terminology) however, as always the exceptions existed and therefore the photographs document both light and dark painted aircraft sporting blue outlined national insignia. It could have been a result of the older order from 1946 as well as frequently applied rule of thumb „dark outline (i.e., blue) on the light basis.

Once we described the S-199 camouflage and markings we have to mention the non-standard white strips found on both upper and

lower wing surfaces close to the wingtips edge. These are captured by the number of photographs but mostly appeared on the select airframes which may have led to the mistaken conclusion that it was a part of some tactical marking. The explanation is fairly simple – there were (so far) unpainted strips of fabric covering the gap after the replacement/installation of the wingtips which were in short time, in accordance with the aircraft maintenance program, painted with camouflage color, mostly of slightly different shade than the rest of the wing. To conclude this part, it is necessary to state that this article does not claim the ultimate historic accuracy especially as far as the aforementioned color shades is concerned. Considering the lack of the authentic documentation (lost due to the routine shredding or just plain sloppiness) or still to be unearthed relevant archive materials and orders this analysis needs to be accepted as the best authors' presentation of the work of several dedicated researchers.

Avia S-199.253, "black" EZ-9 from the 3rd flight of the 5th Fighter Squadron in Plana at Ceske Budejovice as mentioned in this article, demonstrating the attractive camouflage. This emergency landing resulting in the damaged wing and the bottom of the fuselage was performed by WO Jiljí Horak. Notice the unpainted metal skin panels on the nose, cowling and replacement fuselage-vertical tail fairing. The aircraft also features the very thin outline on the vertical tail surfaces national insignia. Of interest are also the protective fabric covers on the fuselage and wing machine guns.





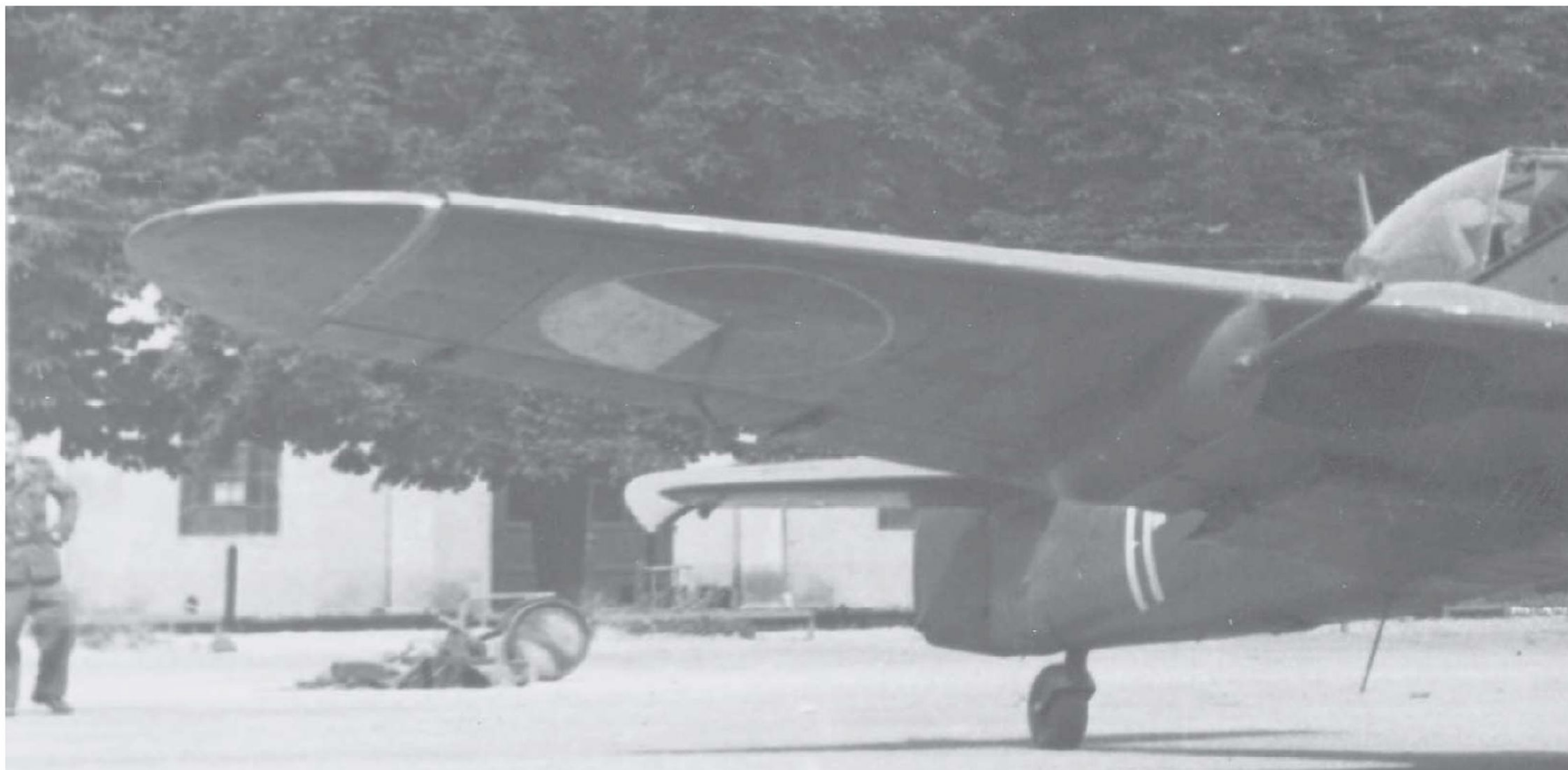
An example of the dark green painted aircraft (S-199.180) featuring the white UF-21 fuselage codes and non-standard blue outline of the national insignias. This aircraft was written off after the crash of pilot student Bohuslav Solta from the 4th Aviation School in Prostějov-Stichovice on May 30, 1953.



Crop of the well-known photograph of the apron with S-199 and C-2 aircraft from the 18th Fighter Squadron in Pardubice, spring 1954. The dark painted aircraft in the middle is EX-58 belonging to the 3rd section of the 3rd flight (initially this was a photo reconnaissance aircraft). In this photograph we can compare the light gray-green finish of the older aircraft with the newer (or overhauled) aircraft sprayed with dark green color. In both cases the fuselage codes are white and the national insignia feature a blue outline.



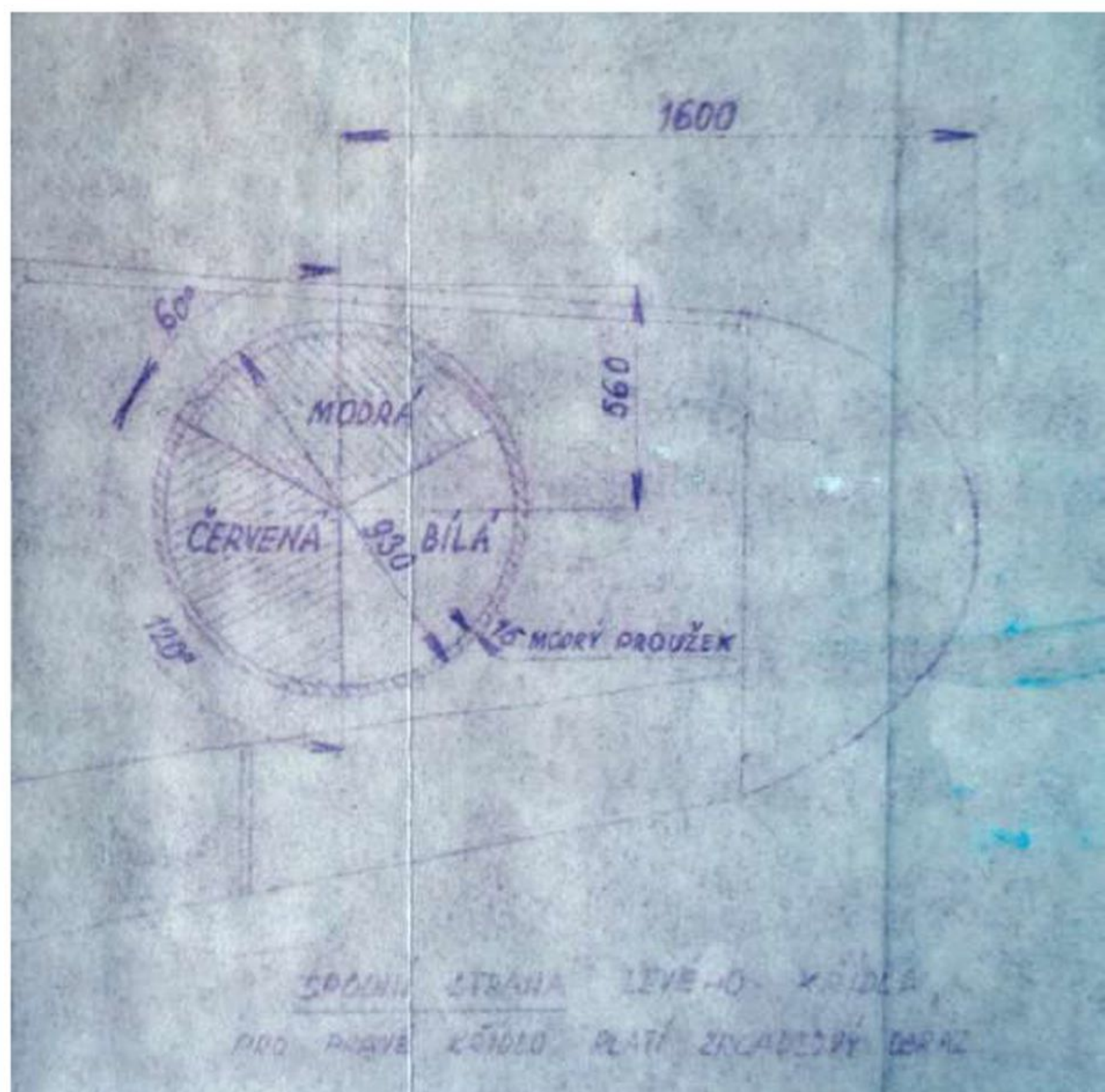
S-199.458 (manufactured by Aero) flown by Lt. Zdeněk Štefl grounded after the mid-air collision with another „onehundredninetynine“ in the area of Letkov village on July 15, 1952. The aircraft belonged to the 2nd Flight of the 51st Fighter Squadron in Pilsen. The code B-0235 indicates the previous owner, the National Security Aviation (disbanded on December 23, 1950). The Czechoslovak insignia with the standard 15mm white outline are painted in accordance with the 2nd Order of the National Markings Application dated October 1947.



The fabric strips application on the wingtips: in the detailed picture of S-199.185 coded IF-01 the fabric covering strip on the rib nr.13 location is not applied yet (or it was removed) while in the picture from Pilsen taken in winter (the codes SO were allocated to the 4th Fighter Squadron, namely its 3rd Flight) it is already over painted and shows a bit darker shade.



Image of the Skoda-Kauba SK 257 wing fragment from VHU collection: light gray-green paint applied on the aileron fabric covering that may have influenced the Czechoslovak aviation industry after the war. We cannot exclude this paint (of which some stocks could have remained) and its shade as potential application on the Czechoslovak airplanes, including S-199.



The fragment of the original Avia drawings nr.MeS 101 dated January 1946 which prescribed the location and dimensions of the wing circular national markings. It was specific for S-99 aircraft but later applicable to S-199 as well.