

PRESERVATION ISSUES OF 1930s – 1940s GAS MASK'S MATERIALS

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INTRODUCTION

For more than 100 years textile technologies have been in ongoing development. By combining different materials, new products have emerged to guarantee particular functions. Nevertheless, looking at these materials in long-term restorers are faced with a question: "How long can we preserve them?"

In the 1930s cotton fabric covered with a layer of rubber was used for the manufacturing of the gas mask's facepiece. This was used for many types of civil and military service functions (German "S-maske" and French "ST-38"). Already from the beginning the face piece of the gas mask had the tendency to deform. Due to the deformation of the material, face pieces lost their original form. Henceforth, they did not fit tightly and were not safe anymore. It was not advisable to keep these gas masks in the specifically designed case (metal can) for long because this type of storing encouraged further deformation of the face piece of the gas mask. These cases were used only to ensure the usage of the gas masks in action. Already in the 1930s and 1940s a structure in the form of the face piece was made from steel wires to help smoothen out any deformation. This steel wire model ensured that the face piece of the gas mask was in a stretched state (in which they were also stored).

CONSERVATION PROCESS

Before conservation both gas masks (German "S-maske" and French "ST-38") were covered with dust and deformed, with minor textile material defects. The metal parts were corroded, and the leather and textile materials were hardened. Due to the previous usage and storage conditions, the rubber surfaces were altered by cracking. In result of that, face pieces had become fragile.

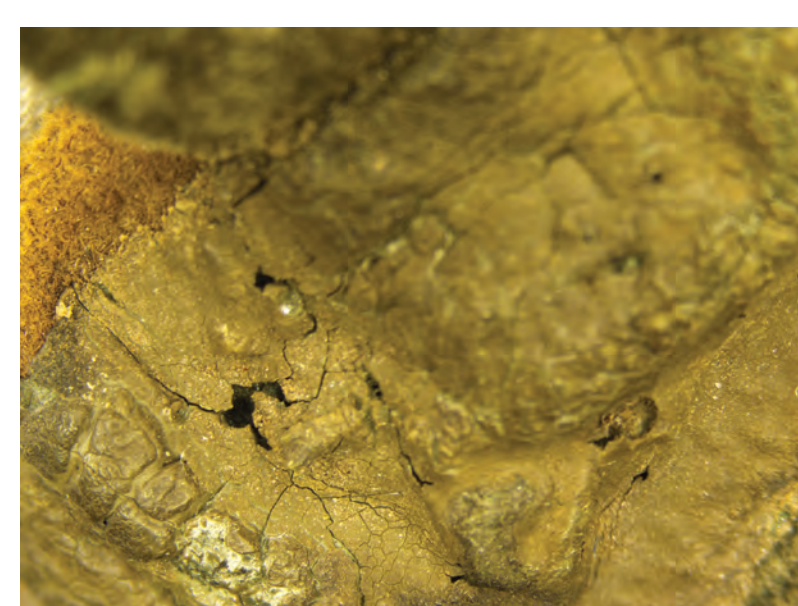
Originally "S-maske" gas mask had unsplinterable eyepieces with gelatin film on the inside to prevent dimming (the plate itself was made from 0,2 mm celluloid). The plates had been altered by cracking, turned yellow and deformed.

The main task was to remove the layer of dust from both gas masks and clean off the corrosion products from metal parts. Next step is to fix the deformation of the textile materials as much as possible. After the removal of dust, steam is used to correct the deformation of the face piece. The steaming of the artefacts is done repeatedly. Parallel to that it is important to secure the newly recovered form of the face piece so that when the textile material is dry again, it wouldn't deform again. The correction of the deformation is more difficult because rubber materials of the gas masks are cracked and fragile, it specially the rubber overlay of the French gas mask. During the process of straightening the mask's form, it is important to keep an eye on the rubber materials so that new cracks wouldn't arise, and they wouldn't detach from other materials. The unsplinterable eyepieces with gelatin film on the inside are dismantled, cleaned from dust as much as possible, and left as they were before restoration.

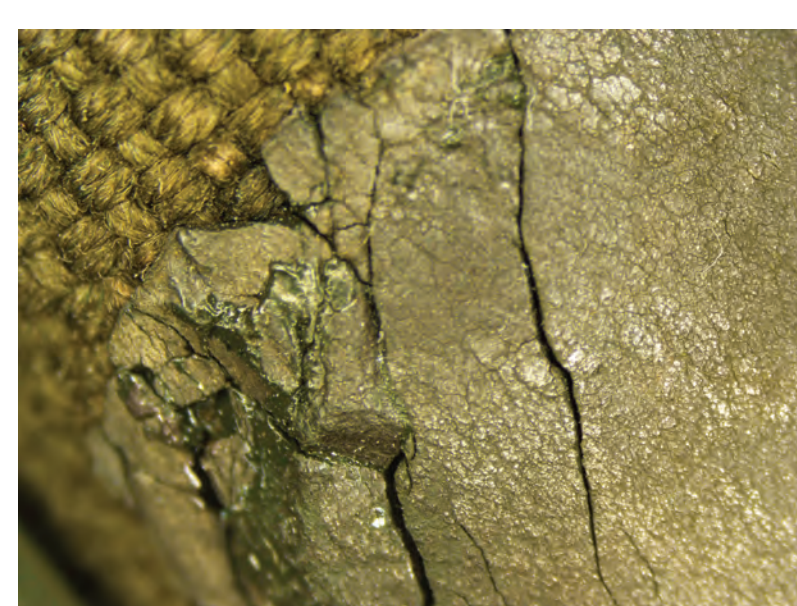
The broader the variety of materials used in the manufacturing of the artefacts the more restricted are the options for the restorer to preserve all the materials.



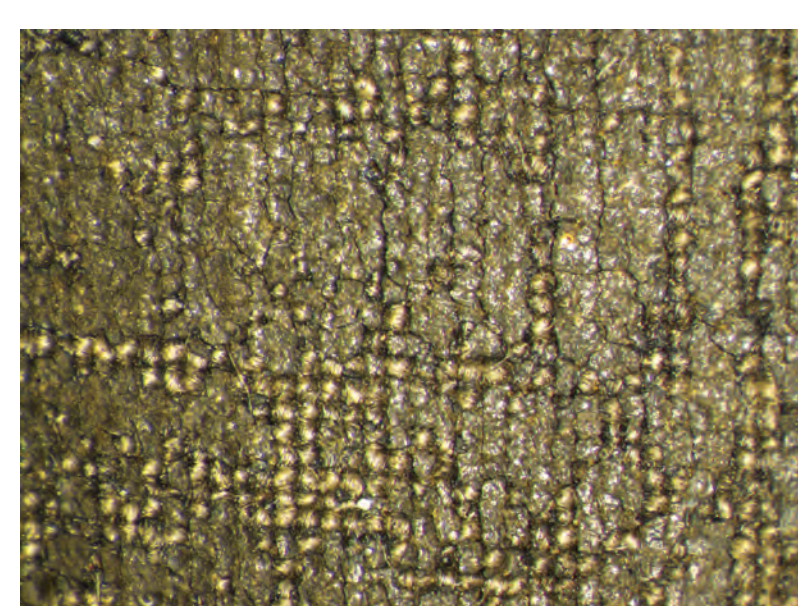
German S-maske, cracked rubber coating materials (mag. 10x).
Photo: Indra Saulesleja



German S-maske, cracked rubber coating materials (mag. 15x).
Photo: Indra Saulesleja



German S-maske, cracked rubber coating materials (mag. 20x).
Photo: Indra Saulesleja



German S-maske, coated textile fabric of the inside of the gas mask (mag. 20x).
Photo: Indra Saulesleja



German S-maske before conservation.
Photo: Valters Lacis



German S-maske after conservation.
Photo: Valters Lacis



German S-maske before conservation.
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Gas mask ST-38 before conservation.
Photo: Valters Lacis



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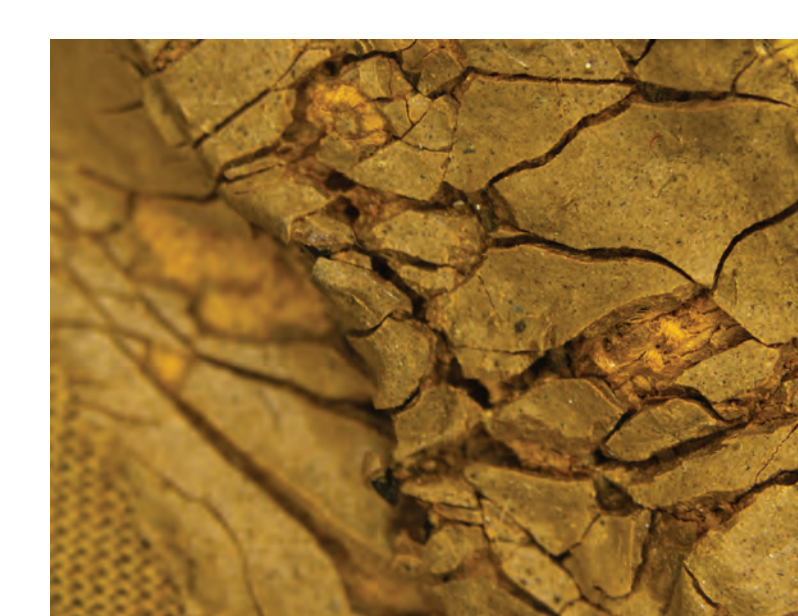
Gas mask ST-38 after conservation.
Photo: Valters Lacis



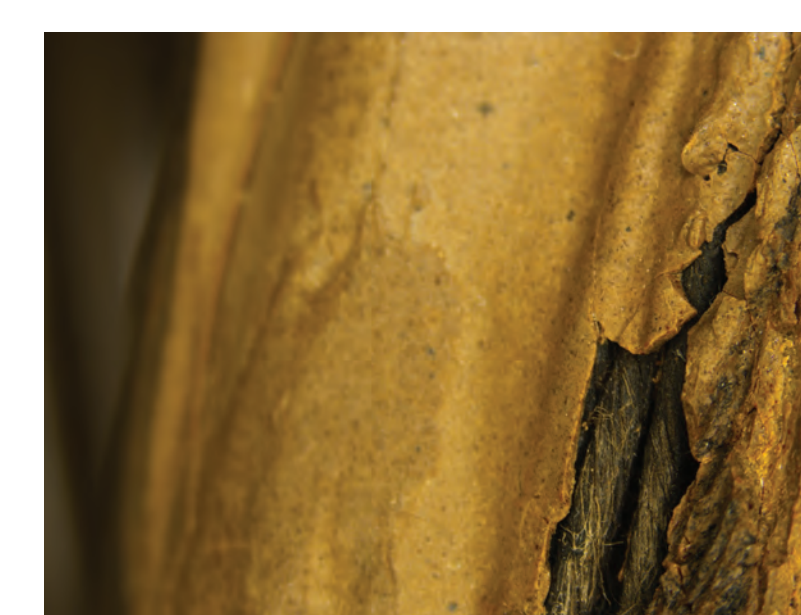
Gas mask ST-38 after conservation.
Photo: Valters Lacis



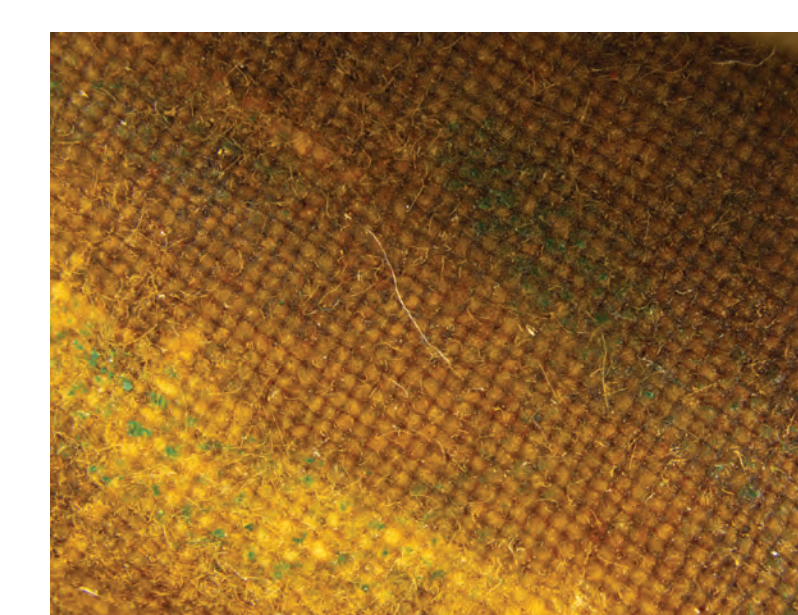
Gas mask ST-38, cracked rubber coating materials (mag. 10x).
Photo: Indra Saulesleja



Gas mask ST-38, cracked rubber coating materials (mag. 20x).
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Gas mask ST-38, cracked rubber coating materials (mag. 20x).
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Gas mask ST-38, textile fabric of the inside of the gas mask (mag. 10x).
Photo: Indra Saulesleja