

# Metal Travel Case Vänersborgs Museum Konserveringsrapport



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Konserveringsrapport

## Tekniska och administrativa uppgifter

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# Konserveringsrapport

## Föremål

Metal Travel Case treatment carried out for Vänersborgs Museum storage by SVK Metals intern.

## Teknisk beskrivning

Iron sheet metal travel case with tin plating, lead paint layer and a black paint finish.

Some additional brown paint decoration.

Six wood pulp paper travel stamps adorn the case, adhesive for the stamps is unknown.

One card note attached by string (Protein or Vegetable fibre) to the handle.

## Kulturhistorisk kommentar

Travel Case owned by Olof Hammer who kept this at his address in Lerum from 1916 and then his Stockholm address from 1919 to 1930. From the stamps on the case it is believed Olof took this case with him on a trip to Colombo in Sri Lanka.

## Befintligt skick/skadeorsak

The case can be divided into two materials, metal and paper.

The metal areas are covered in dust and dirt especially on the lid, there also seems to be evidence of mould especially in the less ventilated interior of the case.

Much of the paint layers on the lid have been abraded away possibly in transit during its many trips, This has left exposed areas where heavy corrosion is ripe.

The corrosion takes the form of both a more stable oxidised layer and what appears to be a more active akagenite corrosion with some sporadic weeping. Both the active and stable corrosion is causing further flaking of the paint and metal layers as it allows oxygen and moisture to penetrate underneath the protected paint and tin coatings.

The paper stamps and card note are in an extremely poor condition owing in part to their nature as fragile wood pulp papers and cards which readily absorb uv light through the lignins present in the material causing them to yellow and become brittle.

Additionally the deterioration of the paper is being abetted by the iron corrosion on the surface of the case which, where the paper meets it, is breaking down the cellulose chains in the material leaving brown blotches on the surface of the paper. The deterioration of the paper is so advanced that it is in many areas illegible and dissociated.

There is also the string holding the card note to the handle which is in a good structural condition but is notably stained brown with rust on one end.

## Åtgärder

1. First some light dry cleaning was carried out using a soft brush to remove loose dirt and dust, unfortunately the brush was insufficient to remove the mould on the interior of the case.
2. Next the condition of the labels and their position on the travel case was thoroughly documented with photographs.

3. The labels were then removed from the travel case using water. At first I attempted just brushing water onto the labels, testing to see if the ink would run, thankfully none of the inks used on them were fugitive in water, however this light brushing of water was insufficient in causing the old adhesive to give way. I then tried brushing more water on which was also mixed with 50% ethanol which allowed it to penetrate the paper better and more effectively soak the adhesive underneath. A layer of cling film was also used to hold the water and ethanol mixture in place stopping it from evaporating, effectively submerging the labels and adhesive behind the label for a longer period. This allowed the adhesive to gradually give way. However the now wet paper was extremely fragile in this state and during careful removal some areas were lost even with the cling film effectively acting as a facing providing support to the label.

Quite interestingly one of the overlapping labels removed to reveal interesting details on the label below which were recorded.

4. Next the tag attached by string to the handle was carefully removed with the exact knot being photodocumented during each stage of its untying.
5. Immediately after the removal of the labels and the removal of the tied tag the labels and tag were submerged into a bath of luke warm water where they stayed for 30 minutes. They were then carefully removed from the bath using melinex slid underneath acting as a support. Once removed from the water the labels were left to dry on the melinex over night.



(The labels left to dry overnight, including in the centre, the label which is covered by other labels on the case, revealing its text as stating (P.&O. Special train TO BE REGISTERED TO LONDON by Bombay = Express))

6. With the labels out the way a more thorough cleaning of the metal was carried out using cocktail sticks and a glass fibre bristle brush to remove the akaganeite and flaking corrosion.
7. Next solvents were tested for use in removing the glass fibre bristles, the now lifted corrosion and the more ingrained dirt. Ethanol was first tested however it appeared ineffective at lifting the more ingrained dirt on the paint. Acetone was tested next, however the paint was found to be soluble in it. Finally white spirit was tested which worked well in removing dirt and the lifted corrosion without damaging the paint layers.



(The effect of white spirit cleaning)

8. Next the mould in the interior of the case was removed using solvents, at first 70% Ethanol in deionised water was tested however the interior paint unlike the exterior paint actually appeared to be soluble in Ethanol. White spirit was tested next which did not effect the interior paint however it also did not seem to have much effect on the mould. Finally a microfibre cloth was used which when applied with some effort did seem to remove the mould.

9. With the metal now clean a variety of lacquers were tested for application. Acetone and Ethanol could not be used as solvents as the paint was soluble in them additionally Paraloid B44 was also insoluble in white spirit. This limited my options to Toluene which after testing on the exterior of the case appeared safe to use.

After testing different concentrations 10% B44 in toluene was selected as giving a good coating that also was not so thick as to adversely effect the aesthetics of the case. Into this solution 1% of Aerosil 200 was mixed, Aerosil 200 is fumed silica that provides a matting effect to the lacquer which stops the Paraloid appearing so shiny after application. Two coating of this lacquer where applied to the exterior of the case ensuring all areas where covered.



(Before an after of the Paraloid B44 lacquer)

10. A 5% B44 in toluene was also tested on the base of the case where there was more paint and less corrosion, however the effect of the lacquer even at 5% was noticeable on the paint giving it a cleaner and slightly shiner finish. Additionally



under closer inspection the base which had far more surviving paint on it than the lid was covered in small pits and flecks of corrosion. Due to this we decided to cover the whole base with the lacquer giving it an even finish which also effectively protected it from further corrosion.

11. To cover the whole base without leaving any focal points for corrosion to focus and continue it was decided to remove the last remaining label on the base of the case. The label was removed in a similar method to the rest of the labels however when testing the use of Ethanol on it this labels ink was found to be soluble in ethanol so only water was used. The water gradually allowed the adhesive to give way however it was less effective than the water and ethanol mixture and again some areas were lost during removal as the paper became incredibly fragile when saturated. After removing similarly to the other labels it was immediately washed in a bath of luke warm water for 30 minutes.



(The base label after drying showing areas of loss from its necessary removal)

12. Next area behind the label on the base of the case was cleaned with cocktail sticks and white spirit before the 5% B44 in toluene with 1% Aerosil 200 mixture was applied in two coatings sealing the area.
13. Application of the lacquer was then tested on the inside however here the paint appeared to be soluble in toluene unlike the exterior paint. With only white spirit appearing safe to use on the interior we decided to use microcrystalline wax instead of the paraloid lacquer on the interior. As the interior is not exposed to the elements the wax should last a long time and unlike on the outside there were also no labels which needed an actual solid lacquer to provide a safe barrier between them and the metal. Hence microcrystalline wax was applied using white spirit and then polished using microfibre cloths. This completed the treatment of the metal.



(The polished microcrystalline wax on the interior lid of the case)

14. Next lining paper was colour matched to each of the individual labels using acrylic paints. The labels and lining were then relaxed using water and the labels were applied to the lining using wheat starch paste.
15. Once dry these the labels were cut out using a scalpel and reapplied to the travel case on top of the Paraloid B44 lacquer. At first gelatine was used however it was not strong enough to hold the labels to the Paraloid and neither was the animal hide glue which was tested next. Finally PVA glue mixed with 50% wheat starch was tested which appeared to effectively adhere the lined labels whilst still being removable using water during testing. This was used for all labels which did not sit on top of other labels. Where labels overlapped they were instead adhered with just wheat starch paste. Additionally the tag was now retyed to the handle using the same knot which originally held it in place.



(The label revealed earlier lined and cut out before and after re-adhering)



(The case after the successful re-adhering of all labels)

16. Finally I was unhappy with the colour matching of one of the labels lining and the lining was carefully retouched to a darker more brown shade. This completed the treatment of the travel case.





(The darker label before and after lining retouching)

### Syfte/målsättning

Clean, stabilise and consolidate the metal areas and the wood pulp stamps and cards on the lid of the case.

### Skötselansvisningar

The travel case should now be perfectly fine in storage at around 55% RH as the all the exposed metal areas are protected by the lacquer. Additionally an RH of this level will be better for the paper parts and stop them from getting to desiccated.