## Using the Great Box for the carving project: museum dilemmas and solutions

When the Haida delegation first saw the Great Box in 2009, they said that in order to truly understand its complexity they would have to make a new version, with the historic box in the room with them so that they could refer to it as they worked. The Pitt Rivers Museum is committed to making its collections accessible to members of the communities they come from, but museums also have protocols about physical care of objects in order to preserve them for the future. Handling is usually kept to a minimum, and sharp tools are not permitted around historic objects.

Once we had the grant to bring Gwaai and Jaalen and the new box to Oxford, things fell into place. The new blank box was frozen on arrival for 4 days at minus 30 Celsius, which the Museum does with all items made of organic materials coming in to prevent any insect pest infestations. While the new box was in the freezer, Collections Management and Conservation staff brought the historic box out of its display case and placed it on a wheeled cart for the month. They cleared a spot for it in one of the rooms in the museum used for temporary storage of objects. Every morning, before the public arrived in the museum, staff would bring the historic box into the room being used by the carvers. Curator Laura Peers would then sit with the box during the day, ensuring that the museum's usual policy of supervising researchers working with objects was followed. This also gave Laura the opportunity to watch and learn from the process and to bring colleagues in to assist when needed.

Gwaai and Jaalen are experienced carvers and are also experienced in research in historic museum collections. We discussed with them during their first few days in Oxford the need for physical care of the object, and they also shared with us their knowledge of bentwood box construction and weaknesses. We were able to work together to find solutions to accommodate both access and physical care. For instance, they wanted to replicate the depth of the carved areas, and so brought a profile gauge with them. In order to protect the paint on the historic box when they used it, we simply covered the surface of the box with clingfilm. We also covered the side they were not accessing each day with archival Tyvek to prevent damage to the surface from light.

Jaalen Edenshaw using profile gauge on historic box with clingfilm protecting surface.

The carvers also wanted to replicate the original pigments used on the box.

Detail, pigments on historic box

To find out what these were, Head of Conservation Heather Richardson arranged for Dr Kelly Domoney of Cranfield University to perform X-ray florescence (XRF) spectrometry. This is a non-destructive method of analyzing for heavy metal elements, so it can be used to give some idea about pigments such as reds containing iron oxide or vermilion, which contains mercury. Alternative testing methods involve the physical removal of paint samples from the box, which we didn't want to do. The analysis of the results, alongside published research, suggest the pigments on the great box are a red iron oxide, green earth and an iron rich black pigment containing calcium, which suggests bone black. Although it was not possible to make paint from these materials during the month they were in Oxford, Gwaai and Jaalen were fascinated to see the process and to learn more about the historic pigments. The research did not detect the use of any commercial paint on the historic box: it appears to be painted entirely with indigenous colors and materials, which suggests that it was made some time before Pitt Rivers acquired it in 1874.