

The Kyrenia Ship Conservation Project

Kyrenia Ship Collection: Conservation Progress Report

January 2017



Photographs courtesy of Veronica Ford and Cassy Cutulle, 2017

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General Introduction

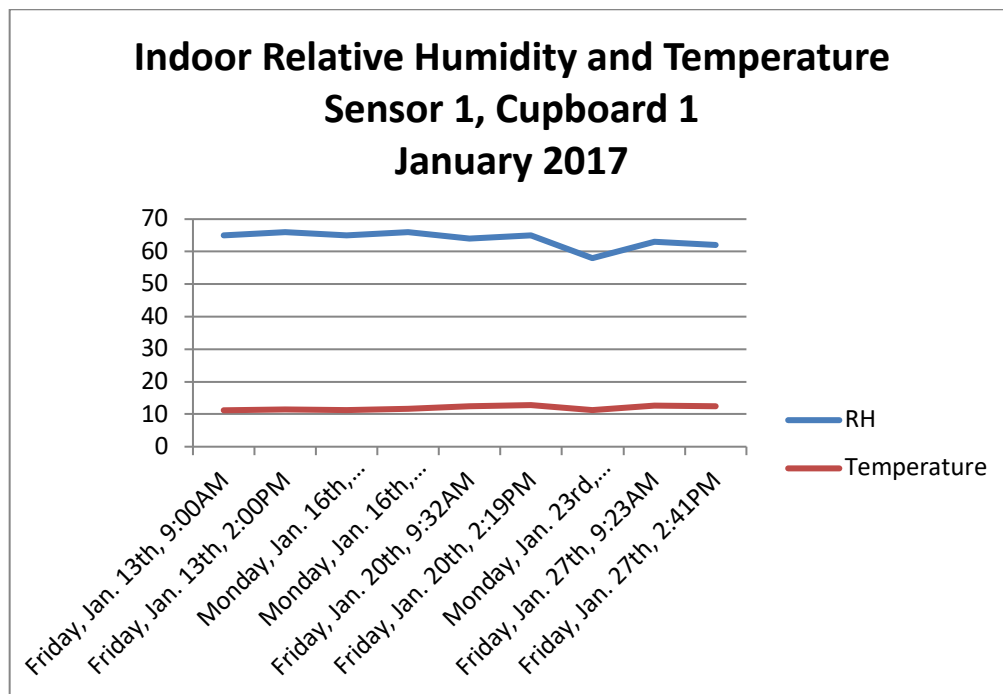
During the first part of January, conservators Cassy and Veronica were on holiday leave in the USA and UK. This was an excellent opportunity to collect and transport additional conservation supplies which were ordered in December. On their return to Cyprus the first priority was to ensure that the objects belonging to the Kyrenia Shipwreck were safe and secure. Once this had been ascertained, conservation work on the collection continued.

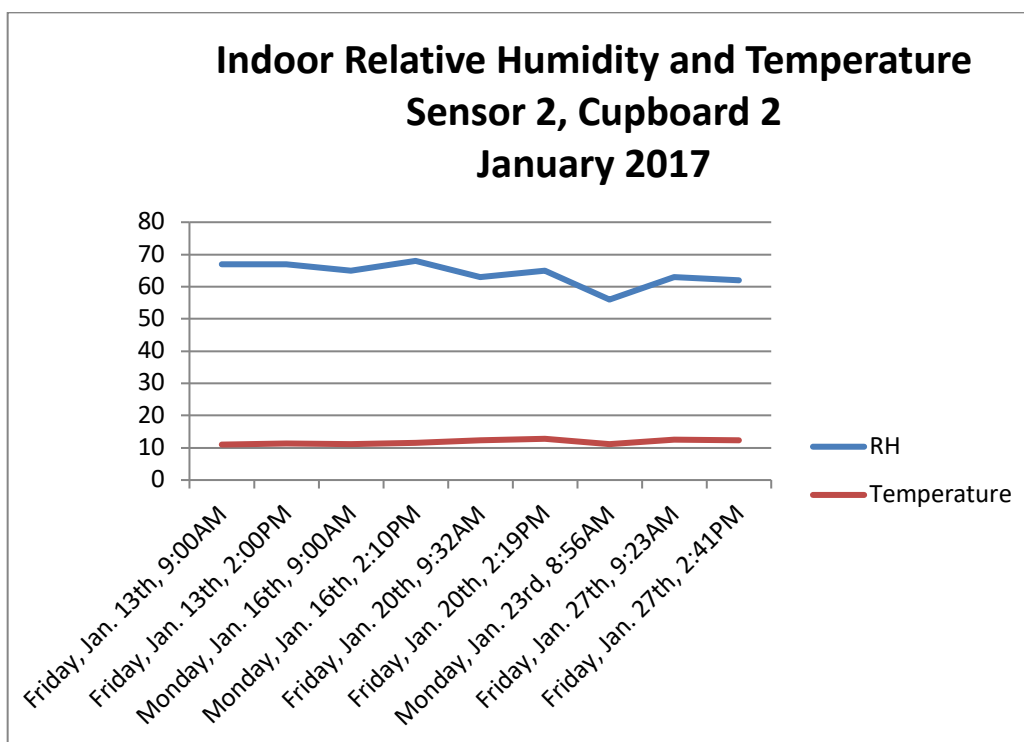
At the conservation laboratory in Nicosia, the metal objects were reassessed to ensure that the silica gel added in December was providing adequate buffering from the environment. In addition, work commenced on the reconstruction of P113, which was considered a priority for treatment and was recently transported from Kyrenia castle. At Kyrenia Castle, focus was placed on planning new storage for the Kyrenia Ship Storeroom, including how objects will be rehoused using archival materials.

January 2017: Conservation Tasks in Progress

Preventive Conservation Tasks

From the 13th of January, the relative humidity and temperature at the Conservation Laboratory in Nicosia continued to be logged by Cassy and Veronica. Data was collected from both of the cupboards used to store the objects indoors. Due to lack of internet access, outdoor conditions were not logged for this month. The same recording schedule was utilized as previously: logging of relative humidity and temperature took place four times a week—two recordings on Monday and Friday mornings and afternoons at approximately 9:00am and 2:00pm. Monitoring was not carried out between December 15th and January 11th, when the conservators were on holiday leave.





Figs. 1-2: Line graphs displaying the relative humidity and temperature within the two object cupboards housed in the Conservation Laboratory in Nicosia. The temperature and overall humidity outdoors was not recorded during this month due to lack of internet access (Graphs courtesy of Cassy Cutulle, 2017).

During January, the indoor graphs for cupboards 1 and 2 (above) displayed a stable temperature, of around 11-12°C, a few degrees lower than that seen in December. However, the indoor relative humidity rose considerably compared to previous months, remaining consistently above 60%. This is concerning, particularly for the metals stored in cupboard 2, which should ideally be kept at a much lower relative humidity. As a result, the metals were regularly assessed to ensure that damage was not occurring and that the packaging materials and silica gel were continuing to buffer the environment within. A new monitoring system was set up which involved taking regular readings of the relative humidity cards within the boxes used to contain the metals. Where relative humidity was found to be high, additional packing materials and silica gel were added to reduce the local relative humidity. The relative humidity within the boxes was compared to the relative humidity within the cupboard, and as can be seen in the table below, it was found that the packaging and silica gel considerably reduced the local relative humidity.

Box	Cu17	Cu18	Cu19	C1-8, Cu11, Cu21-Cu23, Pb23, Pb25, S9	Copper spikes	Copper tacks
Date	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017	12/01/2017
RH reading (blue strip)	30%	20%	40-50%	40-50%	20%	20%
Temp and RH (cupboard)	10.6C, 66%	10.6C, 66%	10.6C, 66%	10.6C, 66%	10.6C, 66%	10.6C, 66%
Observations	no color change of silica gel	no color change of silica gel	one (of two) bags of silica gel beginning to change color	no color change of silica gel	no color change of silica gel	no color change of silica gel
Actions	none	none	additional bag of silica gel added (total: 3)	additional bag of silica gel added (total: 3), additional buffering acid free tissue added	none	none
Date	16/01/2017	16/01/2017	16/01/2017	16/01/2017	16/01/2017	16/01/2017
RH reading (blue strip)	30%	20%	30-40%	30-40%	20%	20%
Temp and RH (cupboard)	11.1C, 65%	11.1C, 65%	11.1C, 65%	11.1C, 65%	11.1C, 65%	11.1C, 65%
Observations	no color change of silica gel	no color change of silica gel	one (of three) bags of silica gel beginning to change color	no color change of silica gel	no color change of silica gel	no color change of silica gel
Actions	none	none	none	none	none	none

Fig.3: Table displaying the relative humidity readings and observations from each box containing copper alloy objects, compared to the relative humidity within the cupboard at the same time (Table courtesy of Veronica Ford 2017)

At Kyrenia Castle, the six Tiny Tag environmental loggers have continued to log the temperature and relative humidity in the Ship Storeroom, Shipwreck Museum Gallery and Ship Gallery every 7 minutes from December 12th 2016 (when the data was last downloaded) through January 2017. These devices will reach full capacity on March 1st 2017, after which the data will be downloaded, analyzed and reported on. During a trip to the castle in late January it was confirmed that all of the Tiny Tags remained in place and undisturbed.

As treatment work in the Conservation Laboratory in Nicosia is progressing well, a primary concern in January was to adequately plan and arrange storage for the objects at Kyrenia Castle. It is necessary to plan archival long term storage for the ceramics and metals currently being treated, but also in particular for the lead objects and wooden fragments of the hull which are currently being stored in the Kyrenia Ship Storeroom. On January 23rd, the conservators and Owen Gander visited the castle to plan this. The majority of the objects, including the smaller ceramics, the lead rigging rings and the copper alloy objects, will be rehoused in the metal cabinets which arrived at Kyrenia Castle in April 2016. Polypropylene boxes and padding materials such as Plastazote and acid free tissue will be used to protect the objects from the external

environment. Options are currently being considered for the rehousing of the lead sheathing – the current housing is inadequate as the shelving is bowing under the weight of the lead. The current plan is to purchase additional metal shelving and rehouse the lead in sealed plastic containers which will buffer it from the environment along with reduce the quantity of potentially hazardous lead in the atmosphere.

Remedial Conservation Tasks

Upon returning to Cyprus, the conservators continued the work on previously started restoration tasks, while beginning the reconstruction of P113—a larger amphora, and the last object to be desalinated. Additionally, the conservators are planning and preparing for the treatment of the metal objects, which has commenced during the last week of January.

While the conservators were on holiday leave, several objects in varying stages of restoration were carefully stored away. Treatment on two of these objects—P27 and P96—were resumed by conservator Cassy Cutulle to complete the restoration treatment. Object P27 required further in-painting of the structural fills made with an acrylic adhesive (Paraloid B-44 40% w/v in acetone) mixed with glass microballoons. This filling material was tinted with dry pigments and placed within the join between the handle and bowl portion of the ladle, as this join had suffered material loss which put it at risk of failing post-reconstruction. As a result of gently packing the areas of loss with this filling material, the join is more stable. After smoothing the area with acetone, the surface of the fill was further toned with acrylic pigments. For P96, the only remaining work included cleaning excess adhesive from the joining areas using cotton wool swabs dipped in acetone.



Figs. 4-5: Photograph of object P27 after treatment (left) and a detail photograph of the stabilizing fill placed in the join between the handle and bowl of the ladle (right) (Photographs courtesy of Cassy Cutulle, 2017)



Fig. 6: Photograph of object P96 after treatment (Photograph courtesy of Cassy Cutulle, 2017)

Another priority for the conservators is the reconstruction of a ceramic amphora—object P113. This amphora had undergone reconstruction and some restoration in the recent past, however, the joining areas were actively failing and the restorations were not aesthetically or structurally appropriate. After its deconstruction, cleaning and desalination, the conservators set out to reconstruct the amphora using Paraloid B-44 40% w/v in acetone. The thickness, size and curvature of the sherds have made the adhesion a timely process, however, the reconstruction is proceeding well despite this. The amphora reconstruction is due to be completed in early February.





Figs. 7-9: Photographs of conservators Veronica Ford (top and bottom left) and Cassy Cutulle (bottom right) reconstructing P113 (Photographs courtesy of Cassy Cutulle and Veronica Ford, 2017).

In the last week of January, conservation treatment of the metal objects was started, which involved the cleaning and chemical stabilization of the copper alloy tacks. Cleaning was done by soaking the tacks in ethanol for approximately two minutes, followed by removal of corrosion products using a stiff-bristle brush, a no. 15 scalpel, toothpick and more ethanol. After cleaning, the tacks were immersed in a chemical known as “benzotriazole” (BTA) for 24 hours, which prevents further corrosion of the copper alloy surface by way of a chemical reaction between the BTA and copper alloy surfaces. After the BTA treatment, the objects will be coated with a dilute acrylic adhesive (Paraloid B-44 2.5-5% w/v in acetone) to further prevent exposure to the environment and subsequent possible corrosion. It is important to note that this treatment does not alter the appearance of the metal. This treatment is planned for other copper alloy metals as well, but will only be utilized after a thorough assessment of the object is first undertaken.



Fig. 10: Photograph of the reverse side of the copper alloy tacks before treatment. Note that the tacks on top of white Tyvek labels are those which were analyzed by a portable handheld x-ray fluorescence device in May 2016 (Photograph courtesy of Cassy Cutulle, 2017)



Fig. 11: Photograph of Cassy Cutulle cleaning a copper alloy tack after immersion in ethanol (Photograph courtesy of Veronica Ford, 2017)

February 2017: Projected Work Plan

During February the conservators plan to commence the treatment of the copper alloy objects with treatment in Benzotriazole (BTA) where appropriate. In addition, rehousing of some of the objects at Kyrenia Castle will commence, beginning with the lead rigging rings. By the end of February, plans for the rehousing of the collection will be finalized so that rehousing work may continue in March and April. Additional materials will be ordered where necessary, including additional archival plastic boxes and acid free tissue. Where time is available, restoration of the small ceramics will continue.

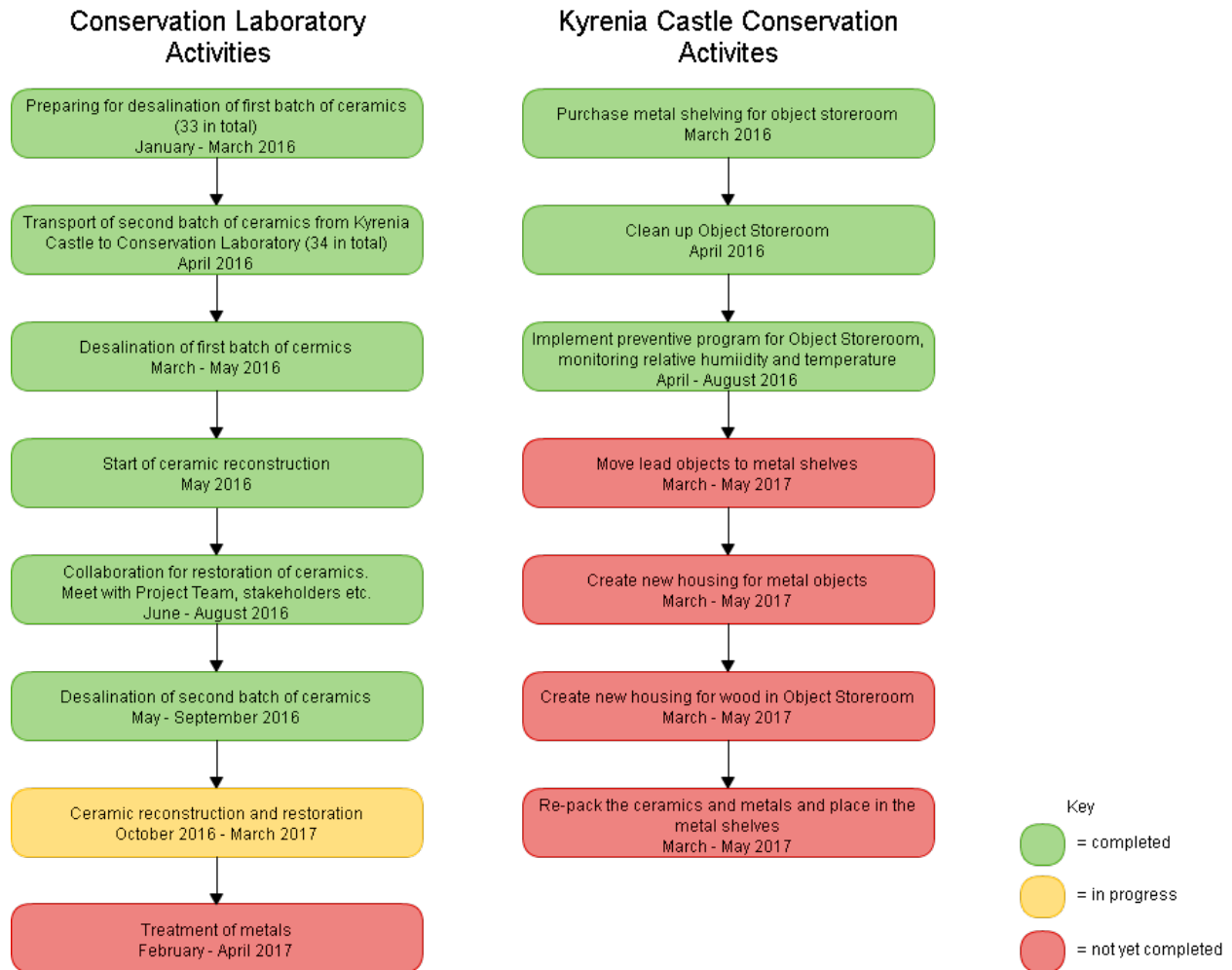


Fig.12: Flow chart displaying the activities to be undertaken by the conservators for this Project and the progress made thus far (Flow chart courtesy of Veronica Ford, 2017).