

The ^hWarram Percy disc brooch (AM No 781608)

The brooch is made of six main parts: The top (front) metal sheet is decorated with a repousse design which has then been filled with solder to retain its shape. This is attached to the back plate of the brooch (The edge of the back plate is rolled over the edge of the front plate). Before it was attached to the front, the back plate had a strip rivetted on to it, which was shaped to act as a hinge point and catch plate. The hinge end of this strip was rolled and rivetted round a thin metal bar on which the pin was free to swing. The final part of the brooch was a decorative knob, fixed in the centre of the front plate. A rivet is visible on the back of the brooch in this position so it is possible that the knob was rivetted on. It now appears as a roughly spherical ginger-brown lump with a powdery surface and a slight but distinct surface patterning.

All the main parts of the brooch were analysed by X-ray fluorescence and the results are tabulated below:

	Copper	Zinc	Tin	Lead	
Front Sheet	ds	x?	d	d	
Back Sheet	ds	dw	ds	d	d = detected
Catch Plate	ds	dw?	d	dw	w = weak
Solder Fill	x	x	d	ds	s = strong
Pin	dw	d(w)	dw	dw	? = uncertain x = not present

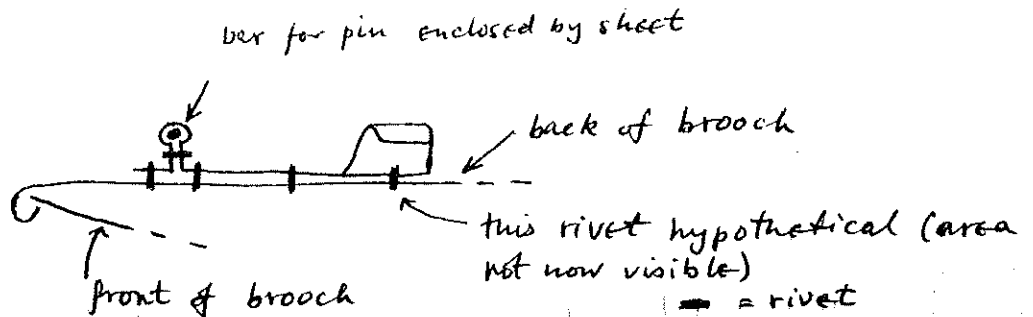
Signal strength is a function of both sample composition and surface geometry and so allowances have to be made for these effects in interpreting the results. The metal used for the front and back sheets and catch plate are basically bronzes but all contain some lead and zinc(?). Samples would have to be removed if more accurate results were required.

The filling of the repousse design is a lead-rich solder and not just pure lead. The red colour visible on the object is due to red-coloured lead corrosion products.

The pin is far more deeply corroded than the rest of the object and is therefore likely to be of a different copper alloy. The analyses are inconclusive but suggest an alloy containing more zinc than the main parts of the brooch. The rivets and hinge bar appear to have corroded in a similar way to the pin and are hence probably of similar composition.

The composition of the decorative knob is enigmatic. X-ray fluorescence detected large amounts of copper and small amounts of zinc but these could be re-deposited material from the corroding metal. The knob itself certainly does not look metallic. It also does not look like glass, amber or any of the commoner minerals or semi-precious stones. The surface patterning is somewhat reminiscent of the textures often noted on fossils and material like coral, but the colour would be unusual in this context. If a sample was taken and examined by X-ray diffraction it might provide an identification of the minerals present and so aid the interpretation of this material.

The catch plate assembly is now squashed but would originally have had this form:



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