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NSCG Newsletter

Title: "THE MOVE" in Norwich, 2000-2001

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Source: Irwin, T. (2002). "THE MOVE" in Norwich, 2000-2001. *NSCG Newsletter, Issue 19*, 14 - 16.

URL: <http://www.natsca.org/article/626>

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"THE MOVE" in Norwich, 2000-2001

Tony Irwin, Natural History Department - Castle Museum Study Centre

While Norwich Castle Museum was being redeveloped (should I feel guilty at never having bought a lottery ticket?), the opportunity was taken to improve the storage facilities of the Natural History collections. One aspect of this involved designing a cabinet system that was flexible enough to accommodate both the botany and vertebrate collections. The solution we adopted was to settle on a double-door steel cabinet that could be fitted out for different functions. A central vertical panel divides most of the cabinets, so that the magnetic seals on each door close on a flat surface. Doors are hinged so that they can fold back flat against adjacent cabinets, and so that doors on adjacent cabinets can be opened simultaneously.



The left-hand door on "double width" cabinets is fitted with a steel flange onto which the right-hand door can close. Double width cabinets are used with steel shelves (for large mounted birds and mammals), or with crates doubling as plastic drawers (for large bird skins). Both shelves and drawers are supported on adjustable runners. The "single width" cabinets are fitted with adjustable runners, which take plastic trays for smaller mounts and skins of birds and mammals, or with fixed steel shelves for herbarium folders and boxes of cryptogams.

"Stop the topple!"

Many mounted birds are top-heavy so that they are easily unbalanced and fall over (sometimes like dominoes). Storing them on a shelf makes access difficult, and reaching for one at the back of the shelf can lead to others being disturbed or knocked over. Access is easier if they are stored on a sliding drawer or tray. Even then, they may be prone to falling over, particularly if stored in mobile units. Suspending the mounts from a vertical screen provides better access, but places strain on heavier specimens, which were designed to stand vertically. During our reorganisation, it was decided that storing the birds on sliding trays was the best solution, providing a way could be found to fix the birds so that they did not topple. We considered adhesive putty, restraining elastic, cut-out shapes in polythene foam, turn buttons, pegboard, wire clips and lots of other complex, tedious and probably expensive solutions. We finally decided to go for a simple, relatively cheap, solution that is temporary, infinitely adjustable, adaptable for different bases and prevents the birds sliding and toppling.



"Mr Tippy tests the tangers!"

The key to the system is a steel tray insert. Into our standard polythene tray is dropped an epoxy powder-coated flat steel sheet, (other systems could use all steel trays.) The bird bases are fitted with pieces of magnetic sheet (if the base is almost or absolutely flat) or three or four small magnets (if the base is irregular, or if the base is largely covered by writing or a label). The sheet magnets are cut into rectangles from strips of 1mm thick magnetic plastic, and fixed using double-sided adhesive tape. (The tape will not last forever, but it should be easily replaced.) If the base is not flat, then magnetic adhesion on the steel is poor. In this case, the base is fitted with three or four small ceramic magnets, about 10mm diameter or square. These are held in place with a blob of hot melt glue. It is important to apply all the magnets at the same time to ensure that they all make good contact with the tray. To do this, the magnets are placed on a steel plate, in the correct position, and then hot melt glue is applied to all of them. The mount is then placed carefully in place and gently pressed onto the glue. When the glue sets, the magnets should still be sitting flat on the steel plate. If any of the magnets come off or do not make good contact, then they can be easily re-fixed. An advantage of this system is that it protects any writing or labels under the base of the mount from damage.

Larger, heavier mounts are less inclined to topple, but their momentum, sometimes causes them to slide within the tray. To prevent this, flat lengths of wood have plastic magnetic sheet applied to them, then they are placed on the steel sheet to ensure that they sit flush with the surface, and the mount bases glued to them with hot melt glue. The combination of the plastic's high coefficient of friction, together with the magnetic effect, stops any tendency to slide. Using these systems, then entire bird collection was moved by road in cartons in which the trays had been fastened (using foam adhesive pads). Only in one box (of more than two hundred) had the birds fallen over during the journey. The packing process was very straightforward, and no packing materials came into contact with the birds. The trays, with their birds, were removed from the cartons and slotted straight onto runners in the new cabinets.

Costs:

- steel tray inserts - £4.50 each (specially manufactured for us by Balmforths (they've gone bust), but we have quite a lot spare - please enquire!
- magnetic rubber sheet - 6 sheets 300 x 50 cost £2.33 - thus a 50mm x 50mm square costs 9.1p

- small magnets - bag of 300 costs £20.73. This works out at approximately 7p per magnet, or 20p to 30p per mount. We got both through the Eastern Shires Purchasing Organisation (ESPO), but any schools- or craft-suppliers should be able to get them.

- Cost of double-sided tape and hot melt glue is negligible.

The Bungee Trolley.

One minor hurdle we faced was how to move the insect collections. In the end we held out for the completion of a link between the Castle and our new premises, so that we could move the drawers and boxes there ourselves, rather than by road.

The cabinets were emptied and all the drawers and store boxes were wrapped in bubble-wrap and packed in large double-wall cartons fitted with cloth tape handles. But when we came to start the move we discovered that the architects had specified a textured floor covering for the link, so that the solid-wheel trolleys we had were going to vibrate and shake the insects apart! One sleepless night later, we had the answer – the trolleys were fitted with a plywood shelf supported on “bungee rope”.



The boxes sat on the platform and were held in place with elastic straps. With this system, no vibrations were transmitted to the boxes and the insects all travelled safely.

Tony is very happy to be contacted directly for more details about suppliers and equipment:
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The Packing and Shipping of a Natural History Exhibition Mark Hunt, Technical Services Manager, Constantine

The exhibition in question was “Voyages of Discovery”, generated by the Natural History Museum in Early 2000, and then packaged into a long term touring show to various venues in the US. The NHM describes the exhibition thus:

“Voyages of Discovery reveals the stories of Captain Cook, Charles Darwin and many other pioneers of scientific exploration. They brought back priceless scientific specimens and exquisite works of natural history art, which changed the course of the natural sciences and have a legacy of importance to this day”

Constantine was employed to handle the packing and transport of this exhibition, including the transfers in the U.S. We work regularly with the Natural History Museum, and with other collections of Natural History, Ethnographic, scientific and similarly fragile material. Packing and shipping international exhibitions of Museum objects, be they specimens, artefacts or art, is a specialised field combining the requirements of international shipping and the technical understanding of the objects to be moved. This particular exhibition, for those of you who didn't see it, included a large number of fragile original specimens.

The list of exhibit items covered the specimens that were collected, the equipment that was used to find and collect them, and the documentary illustrations and notebooks of the expeditions, as well as several sundry items. The specimens fell into two main groups – Herbarium and botanic examples mounted on paper, and zoological items either loose or, in the case of butterflies and beetles, pin mounted on self contained trays. The first thing that we had to agree was the various specifications for the packing and handling of the collections. The museum issued a list of display environment and transportation conditions. This included preferred wrapping methods and materials, methods of shock absorption, crate structure and identification, as well transport requirements including the use of couriers and the general preference for air shipment over other methods. We were able to interpret this, and update it in certain areas. For example, there are many commonly held misconceptions about airfreight and conditions in aircraft holds. Nowadays, all but the very oldest planes plying the most obscure routes, are temperature and pressure equalized, which means that the conditions that exist in the passenger cabin are the same as those in the freight compartment. There are commonly applied standards governing the construction of packing cases to accommodate freight shipments, based on a model defined by the Tate Gallery nearly 15 years ago. This was adapted to the specific requirements of the samples and other objects.

Aside from the traditional ply and timber construction, we defined such things as the lid fixings, in this case two part re-usable fixings, which are good for touring exhibitions where the cases will be subject to repeated opening and closing. We decided on large blocked feet to aid manual handling, as well as the method of waterproof sealing, the maximum height of each case so that it would fit on internal U.S. flights, the type of foam used to form the lining, and the rough grouping of objects so that similar material would be packed together. I also suggested that the Museum choose a colour. A painted case has twofold benefits. Firstly it improves the water resistance of the case. Secondly, and most importantly where a courier is concerned, the shipment becomes easily recognisable. When you are in a large commercial freight shed at a hub airport in the mid-west, the ability to distinguish your crates amongst the millions of others can save a lot of anxiety.