

Professional Notes

Computers I: Treasure Hunt

Let us make one thing clear at the outset: discipline, not automation, is the key to location control. Given a truly oppressive level of enforcement, applicable to all ranks, and given a coherent record system, it was and is possible to know the location of every object in the museum at almost every moment. Automation can be useful in the actual record-keeping aspect of inventory control though not—as yet—in its prerequisite: prompt, exact and complete reporting. Whether automation can help a particular museum depends upon a number of considerations. Some points against it follow.

Firstly, storage location is a strictly internal affair, not to be shared with other museums or the public. Indeed, for objects of value, it is a question of security, one of a museum's few legitimate secrets. Thus, even if inventory data are automated, they must not be mixed with collection records that may be open to a communication network. As readers know, there are elaborate schemes for protection of electronically stored data. They are costly, inconvenient and imperfect. The rule is *never tell a computer a secret*, and this includes in-house networks, since most museum theft is done from within.

Secondly, many simple hardware and software systems that might be dedicated to inventory control are subject to mishap, rendering stored data inaccessible for hours, days or weeks. Hours may be acceptable, now and again; but it is intolerable to lose control for days. This entails a rigorous back-up technique that is, at least in part, manual.

Thirdly, speaking as we are of back-up, this process is especially exacting for location

data because they are both vital and volatile. The adjective 'volatile' is applied to data that change very rapidly as location data do in some but not all museum operations. The issue comes back, as always, to discipline: location files must be copied often and systematically, with manual records maintained for recent moves that may otherwise be lost to a momentary power failure.

There are, of course, advantages as well. One is psychological: the computer as 'patsy'. Discipline may be essential; but it is not easy to instill in the face of long-trenched indiscipline and pride of place. The director may say 'Thou shalt', to no avail; 'God wills this', ditto. But 'The computer makes us do things thus' has proved effective in certain cases.

Another advantage is the facilitation of inventory taking, for a file containing the location of every object can be 'inverted' to list the expected content of every location. In Table 1 museum identification and location numbering are simplified. 'A12' may be taken to mean shelf 12 in room A.

If location records are computerized, they may form a 'stand-alone' system divorced from other documentation, an integral part of object catalogue records, or a strongly protected division of an integrated collection

Table 1. Museum Identification and Location Numbering

Location File		The Same Inverted	
Object	Location	Location	Object
39.1	B12	A12	45.12
39.2	B01	B01	39.2
40.4	B09	B09	40.4
42.345	C13	B12	39.1
45.12	A12	C13	42.345

database. This last approach is recommended but each has its pros and cons. The stand-alone system may utilize cheap hardware and software and may be easy to implement. It need not await development of cunningly integrated solutions or agreement upon data standards, for these data are never to be shared. Security becomes a matter of protecting one small machine and its terminal(s), if any. One drawback is that it may be desirable for the location file to 'import' catalogue data beyond the two basic fields suggested above; and, if the location system is isolated, this cannot be done.

The disadvantages of putting location data into a general catalogue entry are many. Security has already been cited. Volatility is also important, for it is cheaper to update tiny records than large ones. Another potential problem is that updating tends to 'lock' the database: in general one may not look at data while they are changing. The occasional momentary delay passes without notice; but, where updating is frequent and slow and, moreover, blocks access to much of the museum catalogue, it may prove a nuisance.

The integrated database avoids such difficulties. The division containing location records can be manipulated as a stand-alone system and yet have access to other parts of the database. This does call for more elaborate software including data protection.

The skeletal location data in Table 1 are necessary but not enough. Both elements are more problematic than the example suggests; and, as hinted before, there is often a need for ancillary fields.

Just what does such an entry represent? The location may be a permanently assigned 'home' location, it may be a current location, or it may indicate both. Alternatively one may record a *move*, complete with date and

hour and two locations, 'from' and 'to'. A system accumulating records of moves goes well beyond inventory into a 'tracking' function: a cumulative history of each object from its arrival at the museum. Tracking files grow without limit and may be seldom consulted. Where they are kept, only the most recent move of each object is a location record. The rest become archival data which it is reasonable to store off-line. A skeletal tracking record might look like this:

<i>Object</i>	<i>To</i>	<i>From</i>	<i>Date</i>	<i>Time</i>
39.1	B12	G20	13/01/89	14.30

For location purposes an object is *physical* and may not correspond to the *conceptual* 'object' of a catalogue entry. The latter may have any number of physically separate parts which can be stored, restored and even displayed separately, as suggested by Table 2. The museum's dilemma is that a distinct, permanent location record for each and every physical part may expand the location file quite unreasonably. Often the only workable solution is to keep a permanent record for each catalogued item and also create a separate, temporary record for each part that is away from the whole. Then it must be understood by all users that a part or 'member' without its own entry is presently 'at home'.

It is only in principle that a museum number clearly identifies a real object. In practice one does not set out to find '1.39' but Rouault's *Miserere*, M. Washington's shoes or herbarium plates of *Dirca palustris*. In other words, we search on data that belong to catalogue rather than location files. A sophisticated database system may handle this business automatically; but without such processing power, or with a stand-alone

Table 2. Data Fields from Catalogue Files and Location Files combined

No.	Artist	Title	Location	Date verified
1.59	Rouault, Georges	Miserere	print box 1235	17/08/89
1.59.5	Rouault, Georges	Miserere, P1.5	gallery 14	11/04/86
43.63	Rouault, Georges	Miserere	print box 3246	16/08/89

location system, it may be necessary to incorporate some fields of catalogue data (redundantly) into location records like those in Table 2.

The second entry represents a single print removed for exhibition, the third another impression of the whole *Miserere*, acquired, numbered and stored separately from the first. The foregoing illustrates a new field, date of verification. This is used in tracking misplaced objects and also as a warning when it may be time to check the stores again.

Descriptive fields in conjunction with location records serve another purpose when building contents are inventoried. At such times one finds objects without numbers, with wrong or illegible numbers or with numbers that cannot be seen without moving very heavy or fragile objects. Then additional data such as 'totem pole' and '24' 7" long' may suffice to verify an item's continued presence.

Location names present their own problems, which every museum is, happily, free to solve for itself, since the data are not to be shared. Usually a free text field of moderate length is appropriate. However, a strict syntax rule is necessary to ensure that, as spaces are inventoried, the various bins, shelves and drawers be examined in a convenient physical order. The notation might look like this:

B;10;63;4

interpreted as box 4 on shelf 63 in room 10 of building B. Note that the progression from left to right corresponds to the scale of units from large to small. An object out on loan

might have 'receipt # 427' in the 'current location' field. This accounts for the absent object but entails numbering the outgoing loan records. If an object has a permanent home location, however, then that must be retained even when the object is away; and the current location or receipt number goes in a separate field.

An advantage of the free text location field is that it allows variable entries, as shown above, so long as the large to small sequence is respected. Thus the third element, '63', may be a shelf in one room but a bin or platform in another while in a third room no third element may be needed. For a systematics collection, for example, a departmental designation such as 'Herbarium' may be enough: within a department specimens will usually be stored in taxonomic order. Other special entries such as 'office-director', 'entry hall', or 'ptg. cons.' will also fit a free text field.

Missing objects often reappear so they should not be simply dropped from the inventory. If there is a current location field, separate from the home location, then 'missing' may represent the current location. Alternatively or in addition, some special mark may be inserted into the date of verification field: if, for example, '17/08/89' means found on August 17, 1989, then '17/08/89*' might signify *not found* on that day. No matter how it is recorded, the date an object is missed from inventory must be preserved as a clue to help in finding it or, if necessary, to support a future insurance claim.

DAVID VANCE

Computers II: The Role of Older Descriptions and Identifications of Objects in a Museum Database

'Heir nocht abydis, heir standis nothing stabill,
This fals world ay flittis to and fro.'

William Dunbar

One of the central questions in planning the automation of data relating to a museum's collections is the relationship between the existing paper records and the database which will be created from them. An extension of this is the broader question of the way in which the records in the database will expand and alter in time. The purpose of the present note is to offer some reflections on these questions based on the experience of