ARCHIVAL MAP PRESERVATION AND DOCUMENTATION

by

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Archivists and manuscript librarians, though they may lack mapkeeping training, frequently are called upon to take charge of substantial map collections. This paper speaks to workers in this situation; it aims to sketch major aspects of mapkeeping and to suggest ways in which traditional map collection practice can be adapted to the archives and manuscripts context.

TYPES OF MAP COLLECTIONS

Map collections readily subdivide into series collections and reference collections. Map series cover wide areas such as capital city, state, country or continent, have all sheets on the same scale, and are usually published over a long period and by a government agency. Reference map collections include series maps and also single sheet and set maps of diverse scales, themes and areas.

Maps in archives are usually mostly series maps, manuscript collections usually include mostly single sheet maps, but both repositories often hold some of both types of map. Therefore, filing and documenting systems for archives and manuscripts maps must draw on both series and reference collection practice to achieve the most economical and adequate mapkeeping possible.

Series collections can be easily controlled by careful semi-professionals, but reference collections need professional attention. Series sheets can be filed in series order, numerically by series grid numbers or alphabetically by sheet names, while the series themselves can be arranged in a fixed location sequence or in a general continent-country-state-city sequence. Users rarely request maps from several series at once; most often they request the largest scale coverage available for a specific region, which requires several sheets from one particular series. Reference collections receive more varied requests requiring many maps of the same area on different scales. To minimize retrieval time, reference collections are usually filed in classified order and catalogued in depth.

ARCHIVES SERIES

Maps transferred to archives repositories are often large series of working plans of government departments such as Crown Lands or Public Works. Twentieth century maps usually retain their office order, numbered or coded to office needs. Provided a useable register of office order comes with the maps, this sequence can be made the permanent fixed location system for the series; obviously this measure accords with good archival practice. However, earlier official maps were often issued separately *ad hoc,* or were moved from their original order to fit a new system, or were scattered to new subdivisions of a department. It may be useless or impossible to reorganize these maps in the

original fashion. Moreover, if the maps were originally stored folded small to fit other office paper files, putting them back into original position would be detrimental to preservation. As a general rule, folded maps should be unfolded and laid flat, even if this means cross-referencing from another file. A simple accessions register and fixed location system will serve to control and store these scattered maps if they are the only non-series sheets held. If the archives include over about a thousand single sheet maps, however, it is worthwhile to treat the maps as a reference collection, to classify and catalogue.

Indexing for series can be included in the general archives index with little trouble. Series title, issuing agency, dates of issue and scale should appear in the body of the index entries, with separate headings for area, issuing agency, and series theme, e.g. Topography, Water Supply, Roads, Bridges.

SINGLE MAPS

Rare maps and modern single sheet maps require more extensive documentation than series. The same cataloguing elements as for series description apply, but amplified: title and issuing agent(s), compiler, publisher, place, date of publication and date of situation shown on the map, scale, size of printed area and special data shown. If the map collection numbers over a thousand maps, the mapkeeper would do well to adopt the Boggs and Lewis classification and cataloguing system, used by the National Library, the Mitchell Library, the State Library of Victoria and others. This system copes well with variant editions, multiple "authors", historical maps, maps from books and reports, special projections and areal divisions.

The Boggs and Lewis "unit card" system obviates confusion about main entry choice and facilitates adding numerous points of access for the catalogue user without interminable fretting by the cataloguer over "author" vs. "compiler" vs. "editor" vs. "publisher" or "area entry" vs. "main entry" vs. "subject heading". The unit card includes call number, title, author, edition, place, publisher, date, scale, number of sheets, measurements, and as needed, projection, prime meridian, series note, notes, tracings, added copies. Some map libraries put tracings on shelf list cards only, to save space on all unit cards and to save confusion about main entry in the reference catalogue. To simplify Boggs and Lewis headings, subject qualifiers to area entries should be omitted: place and date of situation shown on the map are adequate. Boggs and Lewis subject headings are based on L.C. but have not been updated, so latest L.C. subject headings with minor map alterations are to be preferred. If map cards are to be integrated into a general catalogue, the qualifier *Maps* can be added to each heading. The classification by alpha-numeric code can be used for filing the maps and/or for sequencing a classified catalogue. The subject code is by far the least used element of the call number and may conveniently be omitted.

Cataloguing can be very much simplified so that a trained clerk under professional supervision could produce adequate catalogue cards once the system was established. The professional is needed to establish the map-keeping system, to extract the required information from the collection in difficult searches, and to oversee routine processing. Unless a trained map-

keeper can be appointed, a classified catalogue is probably less useful than an alphabetical semi-classified one; most users prefer alphabetical geographical catalogues to classified listings.

PRESERVATION

If a group of maps arrives reasonably whole and clean, the mapkeeper has a choice of storing them as is, edging, mounting, sleeving in loose plastic or in Mylar, or deacidifying and laminating. Available funds and staffing, potential use, original condition and number of maps, historical and commercial value must all be taken into consideration. Assuming that labor costs rank high among mapkeeping expenses, sleeving in loose plastic bags seems the most feasible preservation measure within immediate reach of Australian mapkeepers. Indeed, very few overseas institutions can afford the more elaborate methods of deacidifying and laminating, mounting, edging, or sewing into Mylar jackets.

EDGING

What are the pros and cons of edging maps? Undoubtedly, attaching a resilient border to a map sheet reduces edge tearing when the sheet is moved about. However, the method of attachment may cause trouble: heat seals may make the paper edge brittle; chemical adhesives may weep outside the border and stick to adjacent material; sewing may cause points of weakness along which the edge tears off. Possible the advantage outweighs the disadvantages if labor is cheap (witness the practice of some mapkeeping agencies in days gone by) but labor is not easy to come by now in any map collection I know. A pile of edged maps develops a firm perimeter where the edging tapes grab each other and where the map thicknesses are tripled by the edging, but the centre area develops a soft trough where the single thicknesses of map are. Inadvertently put a heavy object on a pile like this, a few inches high, and you encourage the top maps to pull away from the edging tapes. Therefore it is not advisable to edge every map, even if you could afford the cost. Moreoever, technology has provided us with a modern preservation technique to replace edging and perhaps mounting: bags, sleeves, envelopes, call them as you will, made from plastic.

PLASTIC BAGS

In the Map Section of the State Library of Victoria, we have used for two years clear polyethylene bags made locally to our design, with specifications for the plastic from the Canadian National Archives. The bags are of two standard sizes to fit our map cases: 20 by 30 inches and 30 by 40 inches, open on one smaller side, thermally welded on the other smaller side. The plastic is .004 polyethylene sheeting extruded in tubes 20 or 30 inches wide, then flattened.

Lighter weight plastic was tested and found too weak; the .004 weight is the minimum possible to resist tearing, scratches, rumpling of the bag and therefore of the map. The bags cost about 15c and 30c respectively. Curators of

other types of collections have warned us against mould in sealed bags, so we leave one end open, rarely tipping the open edge at the midpoint or thirds points with thin "Magic Mending Tape" if a too small map persists in slipping out. Slipperyness may be a problem; when plastic bags or plastic-bagged maps are piled more than a few inches high, they tend to develop a life of their own. Strong sunlight embrittles plastic, so bags are not left exposed for long periods (neither should maps be, for that matter!). We bag fragile or torn maps during accessioning or whenever the need is noticed. Bagging is so quick and easy, the labor costs are practically nil. Since the plastic is transparent and protects against users' pens, fingerprints and elbow impressions, we leave the maps bagged when presented to readers.

MOUNTING

Mounting maps preserves them from tearing and provides back cover for holes. However, the rough surface of the linen usually pasted on the maps hinders filing and retrieval, as the mounted map does not slide easily from the pile in a drawer; it must be lifted free. The high cost of artisan labor required in the map mounting process also detracts from its appeal as a map conservation measure. If maps must go outside the map department for mounting, the exercise also requires much documenting and checking maps out and in, additional work for the map staff.

Compared to plastic bags, mounting requires more staff effort, higher costs, and protection to only one side of the map. Bags offer the same protection against tearing, plus protection of the face of the map against dust, users' pens, abrasion from other maps on top. Maps can be easily removed from plastic bags for use on light tables, but mounted maps are permanently thickened and difficult to use on light tables. On the other hand, bags almost triple map thickness, while mounting doubles it. Most maps do not require any treatment, however, so doubling or tripling does not apply to the whole collection. Bagging offers greater handling ease and complete protection at less cost and for less effort than alternative treatments, so the benefits seem well worth the increase in space requirements.

REPAIR

Maps transferred to archives or sent to manuscripts collections are often prime examples of damage and decay from practical use and deficient storage. Torn maps can be mended with acid-free tissue or silk and acid-free paste, or they can be sleeved, laminated, or mounted. Use of the popular "Magic Mending Tape" appears to violate the cardinal rule of preservation, "Don't do what you can't undo", because "Magic Mending Tape" is practically unremovable *(see Special Libraries, Vol. 61, October 1970, p.466: "Commentary on Mending Tape for Maps" by John Landers of the U.S. National Archives).*

Ordinary dust and marks come off well with artgum, Pelikan UG/20 or Pink Pearl eraser. Carefully remove all rubbing debris or it dries hard and abrades the paper. Photographers' air brushes or draftsmen's hair brushes serve

well for this purpose. Grease stains and smears may respond to solvents such as acetone or dry cleaning fluid; work slowly and consult *Cunha's Conservation of library materials* for further suggestions. Crinkles and rumples detract from a map as much as soiling; they can be smoothed out and almost erased with a warm steam iron. The heat relaxes the paper and the steam restores its substance. Maps curling from long rolled storage may also be flattened in this way. Less effort but more time is required for flattening by laying on weights. To prevent future rust stains, grease spots, and embrittlement, avoid metal paper fasteners, pins, rubber bands, and brown paper folders. Use plastic paperclips, linen tape, and acid-free folders.

STORAGE CHOICES

Map storage units currently available include: 1. shelves for flat maps; 2. shelves for rolled maps, 3. hangers for rolled maps, 4. shelves for boxed maps, 5. vertical hangers, 6. vertical slots, 7. deep drawers, and 8. shallow drawers. For full descriptions and arrangement advice, see the papers by Galneder[1], Hill[2] and Metcalf[3]. This paper will treat only the question of choice among units available at this time in Australia.

Flat maps on shelves suffer exposure to light, dust, inadvertent moving and careless browsers. To these hazards rolled maps add permanent curling, crushing, and cracking of varnish in the sort of nineteenth century wall map common to Australian collections. Hook and eye hangers for rolled maps or Holland blind roller units also lack adequate archival protection, however useful they may be for storage of ephemeral display maps. Covers for rolled maps made of cloth or acid-free paper somewhat reduce preservation hazards, but dissecting and storing flat keep oversize maps best. Clean, flat, untorn dissected sections are better than frayed, curling, dirty rolled wholes. Sections about 30 x 40 inches to fit standard cases are quite reasonable, not too small. If the map is wanted whole again for display it can be butted whole and displayed under glass or remounted in one piece.

Boxes reduce dust pollution in shelved maps but require folding or too minute dissection and mounting in articulated sections. Either the map itself will wear at the folds, losing data printed along frayed creases, or the linen backing will perish at the folds. Besides their preservation hazards, rolled and folded maps make the user lose time opening them out for inspection. Whenever possible, maps should be kept unfolded, flat, and covered.

Vertically filed maps are either stood in slots between pressure plates or hung from prongs. Pressure plates sometimes leave marks. Holes for prongs must be punched in the maps or a punched hanger strip must be attached to the maps; either method involves extra work and permanent damage to the map. The risk is high of tearing maps during filing or retrieval as the maps are lifted out of vertical cases. However, vertical cases take up less floor space for one unit than horizontal cases and fit where horizontal cases do not.

For collections requiring more than two cases (rule of thumb: most standard cases take around 1,000 new single thickness sheets), horizontal cases with drawers

save space because two or more can be stacked. Two vertical cases take up twice the floor space of one, but two horizontal cases share the floorspace of one. The tops of horizontal cases can be used as table space, but vertical case tops must be always cleared for opening.

HANDLING CHARACTERISTICS

There's a world of difference between shallow and deep map drawers in horizontal cases. Deep drawers, deeper than about one inch, make filing and retrieval difficult because bottom maps tear easily under the weight of the high pile and against back and sides as upper maps are moved about. Shallow drawers eliminate the problem of bottom maps tearing; one inch of maps, about 100 new single thickness sheets, handle easily and safely. Folders may be used to group maps for slightly easier handling in deep drawers, but folders also bring problems of increasing thickness, high cost, and acid migration to maps.

Searching is easy in half-filled vertical cases of either type; this is their main appeal to viewers in showrooms. Fill vertical cases or deep drawers close to capacity, however, and searching becomes very difficult. In filled cases, maps fall off pronged hangers or are pressed too close together in slot cases or are too heavy under two inches of maps to lift easily for a glimpse at a special map. Shallow drawers are the only storage units offering convenient handling characteristics when full.

Drawers should have fixed hoods at the back visible when the drawers are pulled out to safety position; hinged flaps at the front opening 180^{O}; safety catches that prevent drawers from falling out; and smooth, clean cabinet edges and walls. The two common horizontal map case sizes are Antiquarian (58 x 34 inch outer area) or Double Elephant (45 x 32 inch outer area), usually two to three feet high. Most maps fit the smaller unit with little waste space; however, special series may exactly fit the larger unit without folding.

Careful selection from the conservation and documentation methods discussed here will facilitate convenient map reference as well as preservation of archives and manuscripts maps.

REFERENCES

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