

## COVER ENCAPSULATION FOR BOOK CONSERVATION

by N. J. CORBETT

OLD JOURNALS, account books and registers can be an embarrassment to Archives and Conservators. They are often historically valuable and therefore high on the conservation priority list. Yet they are so large and there are so many of them that the task of conservation becomes a monumental one. To strip down one such book, clean, deacidify, repair, guard, inlay and rebind can take weeks at the least—and sometimes months. For one book! The best that Conservators can hope to do, in the main, is to hold the position as far as possible and to prevent further damage from occurring.

Most of these old books are in half-bound leather bindings and the leather has succumbed to acid damage and wear and tear. Every time one is taken from its appointed shelf it leaves behind a forlorn scatter of red leather pieces. It contaminates the hands of the researcher who handles the cover, and that contamination is carried into the pages of the volume to add to the already high level of acidity in the paper. A good sneeze will perhaps clear the head of the researcher, but can also add moisture, acid and bits of the morning's bickie to the hazards paper is heir to.

Even if left undisturbed the acidity from the rotten leather will migrate to nearby pages if nothing is done to shield it from the carcass of the volume.

'Of course,' I hear you say, 'they have to go into the rebinding programme'. Well and good! But, even so, the modern materials used commercially are unsuitable for long-term preservation and they themselves should be shielded from the paper and be protected from pollutants of one kind and another—dust, insecticides, air-borne aerosols to name but a few.

There is a need for cover-encapsulation to reduce the rate of deterioration and perhaps more important to allow for continued use of these books. By encapsulation is meant the enclosure of an item in an inert plastic sealed on all four sides. Polyester is chosen for documents. The encapsulation of book covers will require certain modifications as will be seen, but the idea is similar.

The covering of book casings with plastic is carried out in Libraries quite extensively. Standardized sizes are mass produced from P.V.C. or custom made for each book and they do a perfectly adequate job for library requirements. However, the requirements of libraries are different to those of Archives, in that many libraries accept the practice of using adhesive tape to attach the plastic to the cover.

These library techniques for covering books in P.V.C. plastic will not serve in Archives. In the first place, P.V.C. has some long-term drawbacks, not the least of which are the embrittlement that comes from evaporation of the solvent and the shrinkage that occurs after about five to 10 years. This shrinkage of P.V.C. can cause splitting of

the plastic and sometimes bending of book covers. The use of adhesive tape is not acceptable when it attaches to the book.

In 1967, Mr R. N. Britton (then Officer-in-Charge of the N.S.W. Branch and now Repository Manager, Australian Archives, N.S.W.) instituted a test programme for the protection of leather-bound books using clear plastic and 'Magic' mending tape. It is interesting to see that the condition of these volumes after ten years is demonstrably superior to those of similar type and age not so treated. Accordingly the procedure is worth developing and the idea worth restating.

The choice of a suitable clear plastic for the job is an important concern. Of the various options, two plastics seem to show promise: Polyester (marketed as 'Marynel' by Dupont or 'Melinex' by I.C.I.) has the best dimensional stability and clarity, is enormously strong, but is expensive and once a tear starts it will propagate quite readily. Polyester also suffers from the disadvantages that it is quite difficult to bend and cannot be heat sealed. It is recommended for encapsulation of documents and maps, but not, in my view, for book covers.

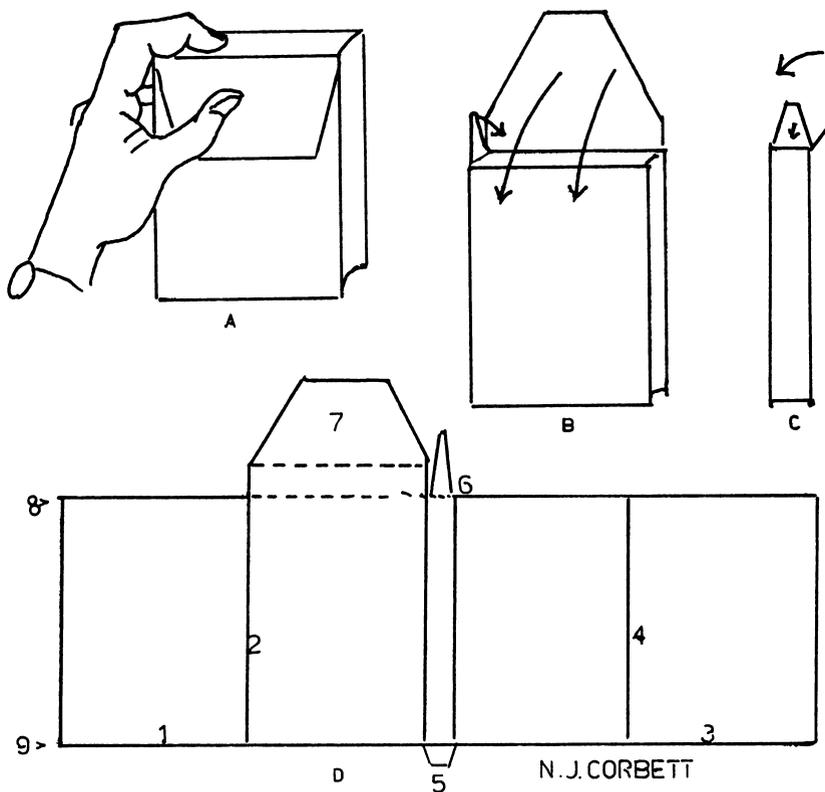
A suitable choice would be cross-linked poly-ethylene (ionomer). It is chemically stable, has good transparency, will not shrink to any important degree except under very high temperature. Even when a tear is deliberately started it resists any extension of the tear. It can be heat sealed. This particular poly-ethylene is extruded by Exthene Pty Ltd, under the brand name of Surlyn. Preferably the heavier grade (125 u m) should be chosen as it lends itself better to heat-sealing and its cost is modest.

The design for the encapsulation is a matter for decision by each institution. The design shown here can be prefabricated and mass produced or custom-made for each book. There is no attachment direct to the book and flaps are provided to prevent dust or insecticides dropping down into the pages of the book.

Pattern for the cover is cut, using the book as template. The sealing can be done with a hot iron such as an Ademco Tacking Iron, although the edge of a domestic iron can be used, albeit with some small difficulty. A bookbinder's heated file wheel serves very well. 'Scotch' Magic Tape could be used in the absence of a heat sealer; Silicon release paper or silicon-coated vegetable parchment must be used to prevent the plastic adhering to the tool and the support against which it is pressed.

There are some final points on cover encapsulation which are most important. Encapsulation creates a micro-climate around the book cover, so it is important that it be clean as possible, that it be pre-treated against mould either by fumigation or treatment with an anti-fungicide such as Dovicide 1 in spirit. Then the book should be climate-conditioned for enough time in a reasonably dry atmosphere such as prevails in air-conditioned premises (50% R.H. and 20°C) to ensure equilibrium with these conditions. In humid or unconditioned atmosphere particular care should be exercised in cleaning, fumigating, and drying.

Encapsulation as a method of conservation for paper documents and maps is becoming important as has been pointed out before in these pages.<sup>1</sup> It has the virtue of not attaching or adding anything



A Shows how top, sides and spine of the book are protected from damage when extracted from shelf; dust and pollution cannot drop into the pages from above.

B and C Shows how top spine flap and top side flap protect the pages from vertical intrusion of aerosols.

D Shows the plan view of the plastic pattern. SURLYN by EXTHENE is the recommended plastic.

1 and 3 fold inward over book cover at 2 and 4.

Heat seal or use MAGIC TAPE along 8 and 9.

Flap 6 lies along top of the book.

Flap 7 folds over top of book (and flap 6).

Flap 5 tucks up into the hollow back.

direct to the archive; it does not require the preserved material to be subjected to heat, or adhesives that may, with time, become irremovable. It protects from dust, insecticides, water and physical damage. Cover encapsulation in use has clear benefits which will be immediately apparent to everyone in archives with old volumes wholly or partly bound in leather. It will also be of benefit for new books of value whose covers should be protected from mechanical damage through handling, pollution and dust. Not a cure but certainly a worthwhile protection.

#### REFERENCE

1. *Archives and Manuscripts*, Vol. 6 No. 8 (February 1977) pp.379-81.