DAMAGE TO RECORDS IN DARWIN CAUSED BY CYCLONE TRACY

by N. J. Corbett

On 13th December, 1974 as part of a recommendation I wrote "The history of archives all over the world is dotted with disasters of one kind or another, (fire, flood etc.) occurring when least expected. Florence was the classic example in recent times and nearer home there was the Brisbane flood. We are currently developing an 'Emergency Kit' to have on standby in case of fire, or flood, or disaster occurring anywhere". We had not the time to implement the idea. On Christmas morning cyclone Tracy slammed into Darwin giving it a four-hour hammering with winds up to 225 km/h. "So fast it bent the beam of my torch", said a survivor. Forty people died in the onslaught; the legacy of destruction was appalling; almost every structure in the city of 40,000 people was damaged. Most houses were simply blown away.

Immediately the greatest airlift in Australia's history was started and within two weeks 30,000 people had been evacuated. The sum of the human suffering could never be tallied but almost immediately the task of reorganization was commenced; Navy and Army moved in together with tradesmen volunteers to tidy up the mess and effect repairs.

High amongst the many problems ranked those of the administration, involving the rescue and preservation of government records. For Darwin has a somewhat special status — it is to a large extent a "government city" with many government departments functioning semi-autonomously, each with its own registry and archival material of all types. Much of the material on file is unique and vital for government.

Land records, births, deaths and marriage records, mining lease records, to mention a few, were not duplicated in other places. The half completed Archives building, ironically, was scarcely damaged; its unfinished store rooms stood massive, empty and undamaged . . . like a bad joke at a wake.

On 4th January, Mr Dunner, the then Director of Australian Archives and Dr Penny, Chief Archivist, visited the city where the decision was made to set up a reclamation centre in Brisbane and remove the endangered files and registers by air as soon as possible. Mr Cavendish, Officer in Charge, Australian Archives, Brisbane, was flown to Darwin to take charge of phase one of the operation. His job in those early days was an unenviable one because departmental staff were only at skeleton strength; conditions were atrocious for everyone.

A group of volunteer Australian Archives repository staff was flown in also to handle the physical work involved in "operation document rescue". As an Archives Conservator I prepared for the worst.

It was to be assumed that there would be a mass of wet, moulding material arriving at Brisbane by the plane load. So an inventory of requirements was prepared and stocks of chemicals were assembled in Brisbane at the reclamation centre in an air-conditioned three story building in Wharf Street, ultimately to be the city office of the Queensland Region of the Australian Archives.

The only available vacuum fumigation chambers in Brisbane were at the Queensland State Archives and the service of these two were offered; the offer was gratefully accepted. This prompt response by Queensland State Archives deserves special mention, being in the best tradition of help to fellow conservators in time of trouble. The fumigation programme proceeded smoothly and with a minimum of fuss.

These chambers have a capacity of 40 metres per day. While this is a useful capacity we had to prepare for a greater through-put. Only dry material can be successfully fumigated with ethylene oxide in vacuum chambers so preparations were made for thymol fumigation and thymol-in-alcohol spraying. Ethanol (95% pure alcohol) was chosen as the vehicle for spraying in preference to methanol or methylated spirit. Methanol and methylated spirit are toxic and if large scale spraying was to be undertaken then the protection of the health of the operators was the deciding factor.

Preparations were made to provide a garden shed for use as a thymol gas chamber. In this way we planned for a possible fumigation programme of 600 to 1,000 boxes per day (approximately half million documents).

Since mould would obviously be our great problem we sought to minimise this in as many ways as possible. The Gosford Horticultural Post Harvest Resources Institute was contacted and from the scientist in charge I learned that citrus exporters successfully inhibit mould on fruit by using special papers impregnated with di-phenyl. Chemically, di-phenyl has some of the fungicidal qualities of sodium ortho phenyl phenate (topane) and has the same characteristic odour. These di-phenyl citrus wraps which are imported from America are reported to be effective against penicillium (green mould) and others but not necessarily all strains. Nevertheless here was a bonanza for us. Australian Paper Mills had stocks in cold storage and we were able to obtain some thousands of them for insertion in the boxes of documents in Darwin. I believe that these were responsible for the very small amount of growing mould encountered in the material which ultimately arrived in Brisbane.

So we were thus prepared with chemicals, staff and facilities as the material began to leave Darwin for Brisbane in the "holds" of R.A.A.F. Hercules freight planes.

At this point arrangements were made for me to visit Darwin and make an on-the-spot assessment to confirm the arrangements or to make such adjustments as necessary. I spent a week there researching the problems, advising and rescuing items in peril.

Darwin, January, 1975
Tropical thunder
over
the staggered ruins
of Darwin after
one day of
first impressions.
Sun, Sun, Sun, hot through
the steam,
town of men,
battered cars,
broken windows,
steel poles twisted,
and bowed,
then laid almost down.
A moulded Christmas Card,
blown through the
skeleton of a house with
a sign that said,
"Bill and Elsie and the kids OK"
— lucky Bill and Elsie and the Kids;
they say 40 died.

It would be wrong to generalize on the condition of records. They ranged from very good to appalling. The damage was directly proportional to the extent to which the building was destroyed, and inversely to the security of the storage method.

Where water entered (and this was in all of the buildings) the damage to files depended upon whether they were exposed or not. Boxed files fared well as did files in cabinets, drawers and compactor units. Even files in shelving fared well, unless, as did happen in some instances, the shelves were blown over and the files scattered on to wet floors. In these cases the high relative humidity of tropical Darwin soon caused luxuriant growths of mould . . . green, brown, black, yellow; colourful but calamitous.

Files on desks were invariably water soaked and often mouldy. Water soluble felt pens are fairly widely used on file covers and elsewhere. The writing of these pens wept into indecipherable smudges. Exposed books were worst affected by mould; leathers and book cloths provided excellent nutrient for moulds of many descriptions. Subsequently I submitted samples of these for identification to the micologist at the C.S.I.R.O. Food Research Division of North Ryde.

Most proved to be various species of the common aspergillus, with rhizopus and syncephalastrum racemosum competing for the nutrients. The latter is the light furry fungus that looks like fairy-floss; it is peculiar to tropical and sub-tropical climates. Incidentally, the ubiquitous black mould in Darwin is of the aspergillus niger group. The volatile di-phenyl is known to be strongly inhibitory to aspergillus and rhizopus so the use of the citrus wraps seems vindicated. Catch 22 is that use of these chemicals can produce new strains resistant to them. It can happen that in the future di-phenyl might prove less effective as a result; it is advisable therefore to check it from time to time.

The first materials shipped out were those in the custody of the Australian Archives. The building in which these were housed had been badly damaged and the floor was perpetually wet. However, the corrugated cardboard boxes in which the Australian Archives stores material did a splendid job in protecting the contents. They were whisked away before serious mould problems arose and were dried out by the time they arrived in Brisbane. They did require fumigation but damage was avoided.

Some departments were nominated for transfer to Brisbane and their records were boxed and loaded on to pallets for transport to Wharf Street. Much of it was moist when loaded but had dried out a week later and could be fumigated. The di-phenyl pads were incorporated — one per box or more according to the dampness of the material. The survey of departments brought to light a number of valuable items which were neglected in the initial clean up. The prison registers of Fannie Bay Gaol were a case in point. They could easily have been bulldozed away with the rest of the rubbish as old registers would be the least of the problems of those doing the work. As it was they were rescued, cleaned and packed off for restoration. The Archives is also the custodian now of the Fannie Bay Gaol sign which was made by prisoners some years ago. The visitors' books from Government House had been lying open on the verandah of Government House when Tracy blasted over the bay stripping the garden and flinging vegetation literally into the pages. These are now in Sydney undergoing restoration.

There are two factors which I regard as significant flowing from the "Tracy" experience. Firstly, the cyclone itself did not do any great damage to records. Records were not blown away, or torn or covered with mud or oil. They did get wet in some instances and there was salt in the spray so exposed material will have suffered in the long term. But by and large "Tracy" did comparatively little damage to records. Further, where documents were in drawers, cabinets or cupboards it did no damage whatsoever. The second point is that the potential for damage or loss occurred after "Tracy" due to the humidity causing damp material to grow mould; and human apathy.

So it is the aftermath of this cyclone with which we are most concerned. And here the human factor becomes important. Clearly, staff, having survived the holocaust, can be expected to react afterwards with various psychological responses upon which I am not qualified to comment. However, there was ample evidence of apathy resulting in further damage by rain during the weeks following the cyclone, and resulting unnecessary mould problems which can be expected to increase with the coming of the wet season.

Tentative plans were laid to hold mould problems by freezing. It may yet be necessary as the wetting through damaged roofs since the cyclone could cause a proliferation of mould as the monsoon season sets in.

What lessons did we learn? What precautions should we take for the future?

The first lesson: Files, documents, books and valuable materials should never be left overnight on desks, floor or cupboard tops. This

should be written into departmental-head commandments and constantly policed. The saving in time and labour would be enormous if this simple housekeeping rule was enforced. A malfunction in a sprinkler system or a well-intentioned fire hose are potentially more hazardous than a cyclone.

Secondly: Human nature *is* inclined to make the same mistake twice. The lessons of "Tracy" are not being spontaneously learned in Darwin, as those of flooding weren't in Brisbane after the disasters of the Australia Day weekend of 1974.

Please! Is there someone "out there" who can generate the momentum necessary to cause one simple rule to be observed; namely; books, files and items of value under cover and off the floor — at night and on weekends. This one rule properly observed would do more for conservation of archive material than anything I can imagine. Backlog of filing in registries should be covered with plastic and never heaped on floors, drawers and cabinet tops should be closed.

The rescue programme from here on became logistic. As much material as possible has to be kept out of Darwin's humid conditions. The amount grows daily. Presently we have brought out 15,000 boxes. As it arrives in Brisbane it is inspected, listed, dried, fumigated and stacked ready for access. Segregating the fumigated from unfumigated is done by using the second floor for demoulded material. An electric tile-lifter takes care of the hoisting from the street to the upstairs floor. After each load has gone to fumigation the trucks are spray-fumigated with 10% thymol in alcohol. This is to kill mould spores and reduces the likelihood of re-infection. Items requiring special care are set aside for cleaning and restoration.

I have deliberately not gone into detail here on exotic restoration techniques, however interesting they are. For, if I had a thousand years, I could not do as much good for the preservation of archival material as would be done by sensible, non-complicated preventive office housekeeping.