

CYCLONE TRACY!



ACTION & REACTION



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TRACY!**
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Museum & Art Gallery of the Northern Territory
Darwin 1994

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CYCLONES

A WAY OF LIFE IN THE COASTAL NORTH

Tropical cyclones form over the waters to the north of Australia practically every year, mainly during the months from November to April. Cyclones do not often form within eight degrees of latitude of equator because of the need for a coriolis force (a force due to the earth's rotation which causes air to rotate around pressure centres) larger than a certain minimum value to initiate the circulation. Tracy was an interesting phenomenon in this regard in that it formed near the usual northern limit and became a fully mature storm after travelling only a few degrees southward. The preferred geographical areas for the formation of cyclones are determined by the requirement for sufficiently large sea areas with a water temperature near 30°C. The temperature of the moist air near the surface must be so high that it remains warmer than the surrounding atmosphere when lifted up to heights of at least 12 km.

These conditions occur in the summer months most frequently over the Coral Sea and Timor Sea, and the vast majority of tropical cyclones in the Australian region affect the areas off the Queensland coast and the north coast of Western Australia. However a less frequent but still significant breeding ground is also to be found in the Arafura Sea between Timor and West Irian. It was in this area that Tracy formed, 700 km northeast of Darwin on 20 December 1974.



COMPARISONS WITH MAJOR CYCLONES IN THE PAST

Over the past 25 years at least 22 cyclones have been recognised as having originated in the Arafura Sea area. Most of these cyclones either moved west-southwest through the Timor Sea or southeastwards into the Gulf of Carpentaria and had little effect on the Northern Territory coast. But occasionally, as in the case of Tracy, a more southerly track was followed.

Prior to Tracy and since records were kept, at least six tropical cyclones have severely affected Darwin communities.

1839

The early settlement of Port Essington, on the Cobourg Peninsula was wrecked by a 'hurricane' on 27 November. Buildings and boats were destroyed. HMS *Pelorus* was driven ashore.

1878

From 14–20 January terrific storms and hurricane squalls prevailed over an area extending from the coast to 560 km inland. During the night of 14 January every building in Darwin (called Palmerston until 1911) was damaged and several totally destroyed.

1881

On 16–17 January heavy gales did considerable damage. Many buildings were completely destroyed, and every house was more or less damaged.

1897

On 6–7 January Darwin was almost completely destroyed by a 'disastrous hurricane' accompanied by 'phenomenally heavy rainfall'. It was estimated that the damage done exceeded one hundred and fifty thousand pounds. Twenty-eight people lost their lives - 15 on the water and 13 on shore.

1917

On 1 April Darwin was visited by a 'hurricane' which 'had no equal' since that of 1897. Winds of 110 km/h blew mainly from the south and southeast. Buildings were damaged and a fishing junk was wrecked and its crew of seven drowned.

1937

A severe tropical cyclone during the hours of darkness of 10–11 March caused damage estimated at fifty thousand pounds and the deaths of five people - one in Darwin and four on Melville Island. A peak gust of 160 km/h from the north-northwest was recorded at Darwin airport just before 1.30 am on 11 March.

From all accounts, the storm of 1897 was the most intense cyclone to affect Darwin prior to Tracy. It is interesting to note that this cyclone hit Darwin at the same time of day as Tracy.

Northern Territory Times and Gazette

25 January 1897.

The storm which broke over the city [Darwin] early on Wednesday the 6th inst. culminated in one of the most destructive cyclones ever recorded. From a fairly stiff blow about 8 pm the



Smith Street, Darwin
Christmas 1974
State Library of the Northern
Territory (SLNT)
PH0095/0103
State Library Collection

wind gradually increased to hurricane force by 11.30 or midnight, and from then on, till nearly 5 o'clock, it raged with terrific fury. Accompanying the wind was a downpour of rain such as even our tropical records have never equalled.

Department of Science, *Bureau of Meteorology*
– *Report on Cyclone Tracy, December 1974*,
Canberra 1977.

The cyclone reached its highest pitch between 3.30 and 4.30, and in that hour it was impossible for human beings to stand erect against it. The crash of buildings and rattle of iron and timber falling about, combined with the blinding rain and roaring of the tempest, was an experience which those who underwent it will never forget to their dying day. Strongly built houses collapsed like houses of cards; roofs blew bodily away; lamp and telegraph posts were bent or torn up; immense beams of timber were hurled away like chaff; trees were uprooted; in many instances large houses were lifted bodily from their foundations and deposited ten and twelve feet away; and in short the night was one of terrifying destructiveness that made the stoutest heart quail. How it was that hundreds were not killed outright is one of those inscrutable mysteries which will never be explained.

WHAT HAPPENED

Cyclone Tracy began as a weak tropical low in the Arafura Sea some 600 km northeast of Darwin on 20 December 1974. Satellite photographs on the morning of 21 December showed the intensifying weather system to be moving slowly southwestwards, and a tropical cyclone alert was issued by the Darwin Cyclone Warning Centre at 4 pm. Central Standard Time (CST) advising of the possibility of a tropical cyclone developing. By evening infra red satellite photographs showed the disturbance had developed the characteristic spiral cloud bands of a tropical cyclone. The growing storm was named Tracy at 10 pm CST 21 December.

With continuous monitoring by Darwin weather radar, the eye was first detected around mid-day 22 December, and by 3.30 pm. was clearly defined, located just over 200 km north of Darwin. Throughout 23 December the cyclone moved slowly southwest and by 9 am on 24 December was located near the southwest tip of Bathurst Island. From the continuous radar observations, it then became apparent that Tracy was changing course, first to southerly and then to east-south-easterly, directly towards Darwin. A top priority Flash Cyclone Warning was issued at 12.30 pm. CST 24 December, advising of Tracy's expected landfall early on Christmas morning with very destructive winds in the Darwin area.

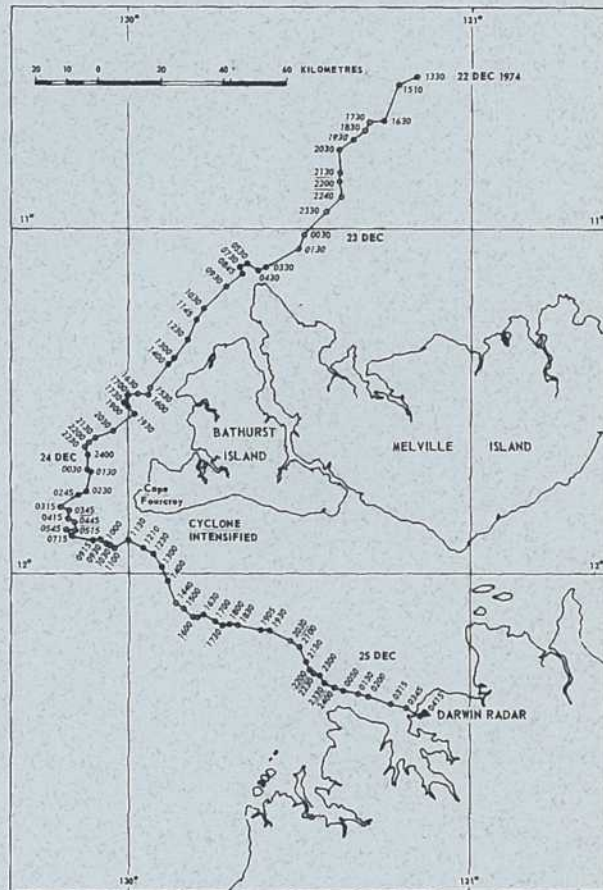
These destructive winds commenced in the early hours of 25 December, with the airport anemometer recording winds from the northern quadrant of 100 km/h, with gusts to 195 km/h. The anemometer was damaged after recording a gust of 217 km/h at 3.05 am. The eye passed directly over the airport around 4 am CST. The lowest pressure measured in the eye was 950 mb. With the

passage of the eye, winds from the west and southwest may have been stronger than those experienced before the eye. Engineering estimates based on structural damage suggest that gusts up to 263 km/h may have been experienced. Very strong winds (over 100 km/h) appear to have persisted until 7 am.

After passing through Darwin Tracy weakened rapidly and moved slowly east-south-east across southern Arnhem Land and into the Gulf country of Queensland.

The track of Cyclone Tracy
from radar positions
(times CST)
from Department of Science,
Bureau of Meteorology,
CYCLONE TRACY,
Technical Report 14
1975

Figure courtesy of the
Bureau of Meteorology



WHAT TRACY WAS LIKE

The descriptions of Cyclone Tracy provide an insight into the nature of the disaster.

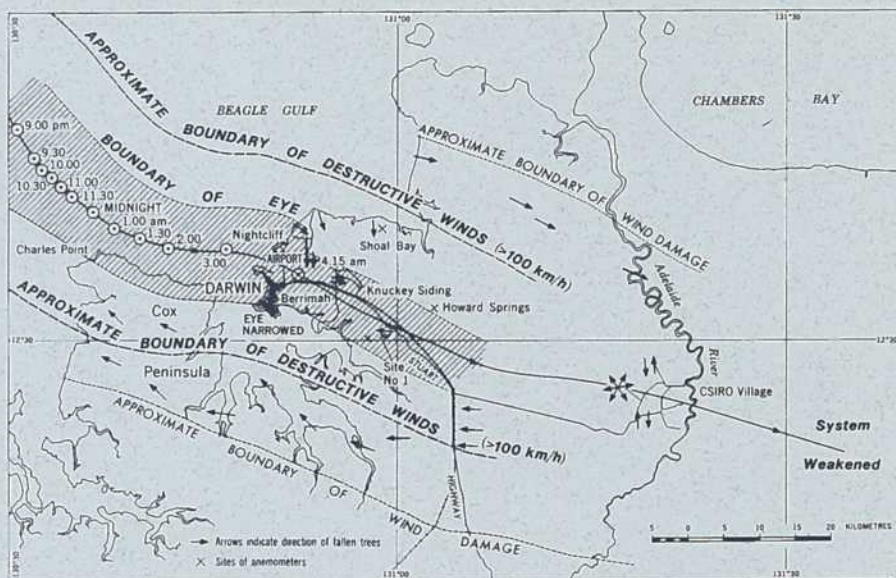
There was a horrible high-pitched sucking noise all round the house from the wind pressure against the windows and the noise of loose debris being bowled along the road. More uncanny and frightening than that was a sudden bursting sound from the other end of the house and then everything seemed to happen at once. The radio went off, the lights went out, the wind became unbelievably stronger and there was rain, thunder and lightning.

Above the noise of the storm, flying debris and breaking trees came a great rending noise of cracking wood, creaking and straining and the whole place was shaking. As we got under the bed there was one great heave - suddenly we could see the sky and feel the rain. Our roof was gone!

Kevin Murphy, *Big Blow Up North*, p. 57.

Because the Cyclone came on Christmas Eve, many Darwin citizens were partying and enjoying the festive season with a careless disregard for the weather. Long-time resident, journalist and Darwin commentator, Jim Bowditch described his experiences.

I was pretty sloshed when Tracy was moving in on Darwin because with some 1000's of other people in Darwin I was celebrating a normal Darwin Xmas Eve party which are pretty boozeey. At the party I had listened to the warnings about Tracy approaching and like most other people I ignored them as we had often had warnings of



The path of Cyclone Tracy showing variations in eye diameter and extent of destructive winds from Department of Science, Bureau of Meteorology, **CYCLONE TRACY**, Technical Report 14 1975

Figure courtesy of the Bureau of Meteorology

this nature over the years and nothing had happened. Next I remember being woken by my wife about midnight, and still didn't believe that anything was happening, and feeling pretty ill. However it did come clear but I'm not sure that the drama of our house is of much interest to you, but it did blow apart and I did in fact get trapped between the floor of the house and the ceilings and walls when I whipped upstairs to try and rescue the cat. After a couple of hippies from over the road had helped me out from the wreckage next morning we decided to go and see what had happened to the town.

Final Report of the Darwin Disaster Welfare Council, p. 126.

When the extent of the catastrophe was realised early on Christmas morning, the senior meteorologist on duty in the bureau's Regional Forecasting Centre in

Perth, informed the Natural Disasters Organisation duty officer. People were appalled when they realised the extent of the disaster. The Prime Minister, Edward Gough Whitlam, was overseas at the time of the tragedy. On 26 December he sent a message to the people of Darwin.

I am horrified by the appalling loss of life and the destruction that have befallen Darwin on Christmas day. The only city on Australian soil to suffer extensive damage from enemy action in war is now the scene of one of our worst natural disasters. I am in touch with my Ministers and officials concerning relief measures and have directed that nothing be spared to bring aid to the homeless and afflicted. The full resources of

*Paper Drive taken from the water tower
SLNT PH0095/0101
State Library Collection*



the new disaster relief organisation which the government established this year will be at the disposal of the local authorities and people of Darwin. Do not hesitate to request whatever assistance may be needed. On behalf of the government I pledge a determined and unremitting effort to rebuild your city and relieve suffering. Please convey to the people of Darwin my own profound sense of shock at this grievous and unseasonal calamity, and my heartfelt personal sympathy to all the victims.

Damage estimates ranged between \$500–\$1,000 million. It was Australia's worst natural disaster to that date.

*Wreckage
Christmas Day, Moil
Glenn Cole Collection*



AFTER TRACY

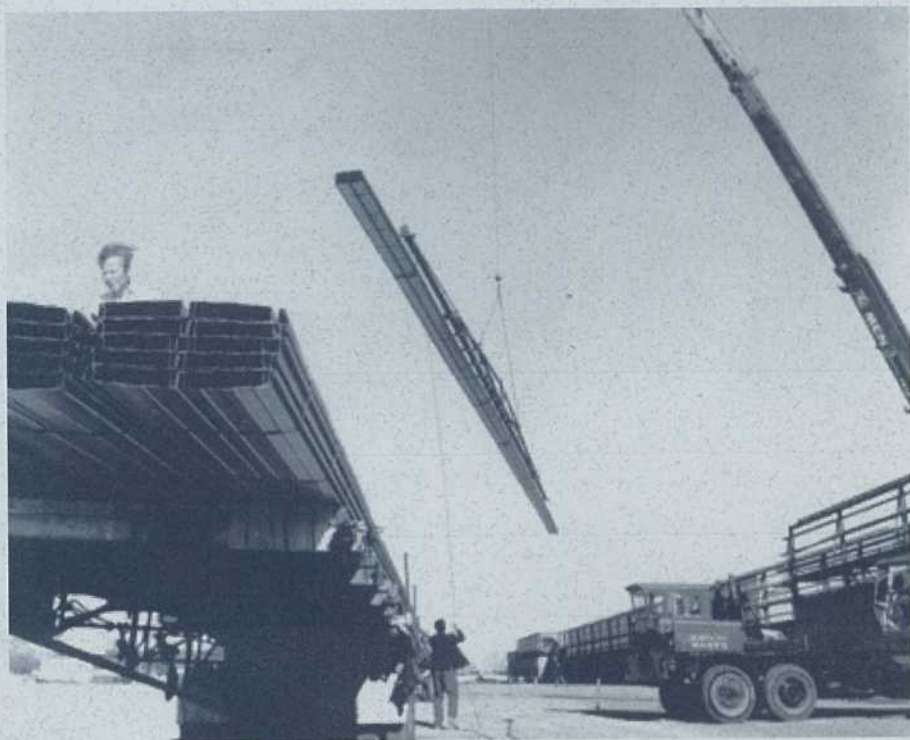


By dawn Darwin was virtually destroyed and most of the population of 48,000 made homeless by the highest winds ever recorded on the Australian mainland. Most of the city's houses were damaged, many beyond repair, and communications were cut off, power lines destroyed and water and sewerage services put out of action.

At 5.30 am on Christmas Day the Natural Disasters Organisation in Perth informed its parent body in Canberra that the Darwin Weather Bureau had gone off the air in the middle of a severe cyclone. The first official word of the extent of the destruction was received in Canberra at about midday, when it was reported that at least 12 people had been killed and damage was severe. Major-General Allan Stretton, then head of the recently-established Natural Disasters

*Darwin Public Library,
Hooker Building in the
background
SLNT PH0028/0005
State Library Collection*

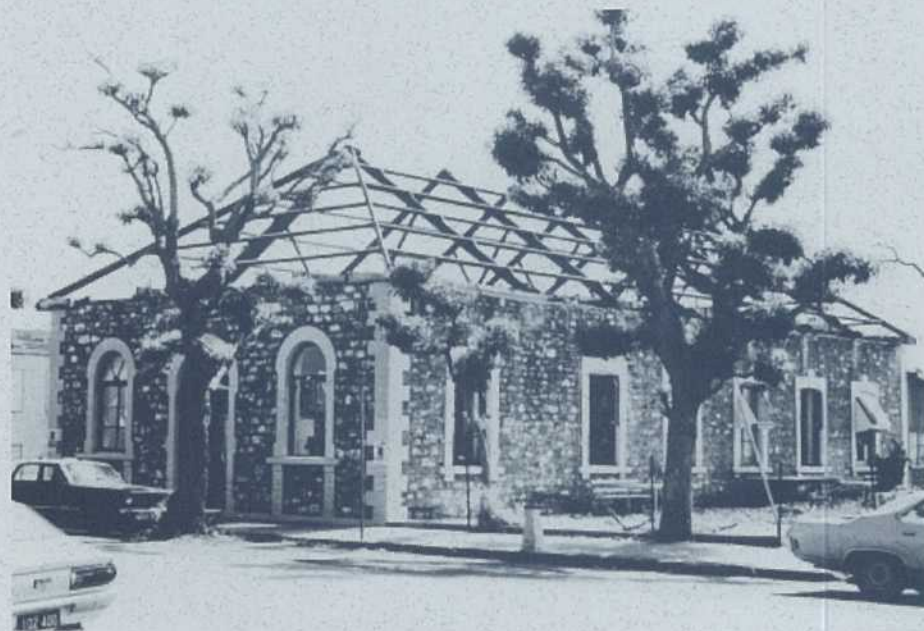
Organisation, flew into Darwin on Christmas night. With the city declared a disaster area, he was appointed in complete command of relief operations by Acting Prime Minister Dr Cairns at 8.45 pm.



*Unloading roofing materials, Winnellie
SLNT PH0026/0121
State Library Collection*

On 26 December the Minister for Housing and Construction, Mr Les Johnson, despatched huge consignments of urgently required building and electrical materials to Darwin in HMAS. Melbourne. The consignment included 13 truckloads of materials for damaged buildings including two truckloads of galvanised iron, and loads of plywood, sisal, malthoid, timber, glass, nails, waterpipe and other materials. It also included two truckloads of electrical materials

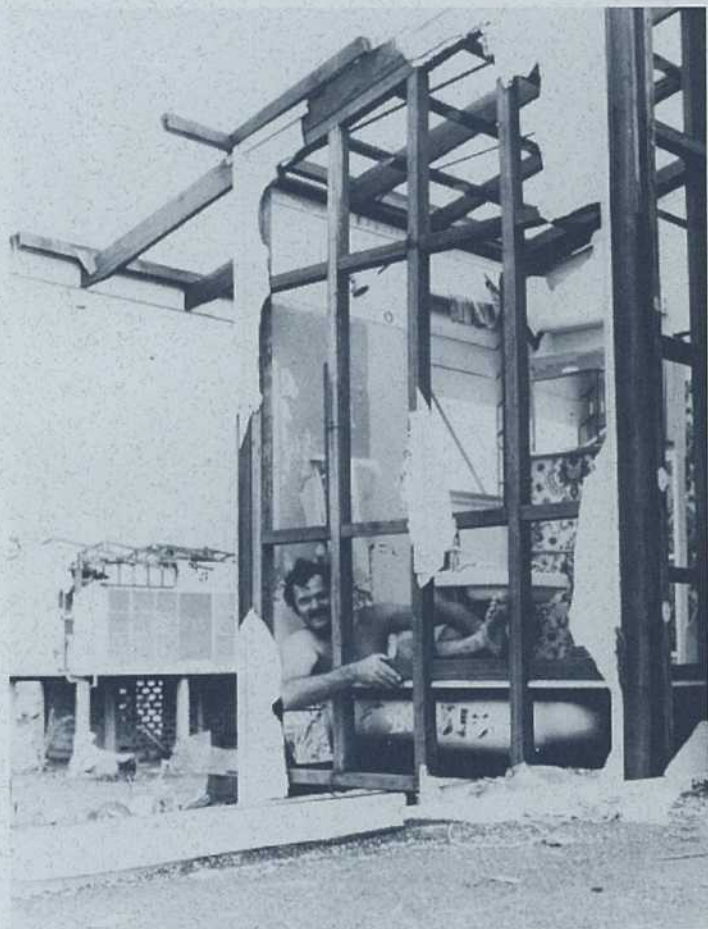
which the Department of Housing and Construction obtained from the Prospect County Council and two semitrailer loads of cables and other electrical gear from the Sydney Council. Four tonnes of canned food was made available by Commonwealth Hostels for dispatch to Darwin. Commonwealth Hostels also organised supplies of soft goods including sheets, pillow slips, towels and blankets.



An immediate decision was made to evacuate Darwin, with the aim of reducing the population to about 10,000 as soon as possible. Over the next five days almost 26,000 people were airlifted from Darwin to southern capitals by Royal Australian and US. Air Force aircraft and commercial airlines, and a further 10,000 left by road. Roadblocks were established to record those leaving the area, petrol vouchers were issued and entry

*Brown's Mart, note the regrowth on the trees
SLNT PH0091/0147
State Library Collection*

was restricted to essential personnel. Meanwhile urgently needed medical and relief supplies were rushed to the devastated city, donations and messages of sympathy began pouring in from all over the world, and eight ships of the Royal Australian Navy set sail for Darwin.



*Glenn Cole in the bath
after the Cyclone
Glenn Cole Collection*

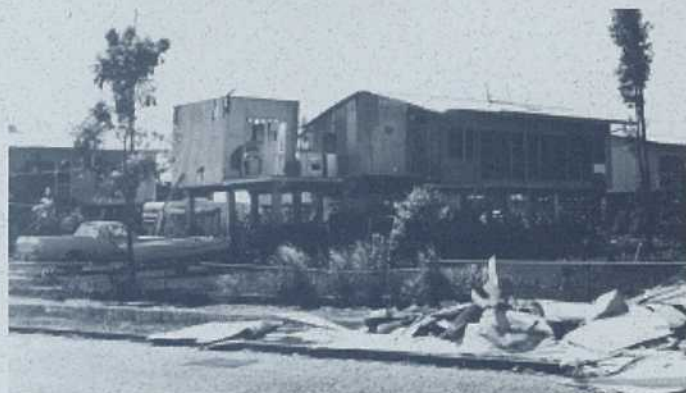
The massive clean-up program began as the emergency evacuation ended, with the main aims of eliminating health hazards and establishing the groundwork for huge rebuilding and rehabilitation schemes. Bulldozers began clearing the streets and the city was sprayed with insecticide to prevent the spread of disease. Teams of soldiers and civilian volunteers went from house to house to remove rotting food from refrigerators and freezers, and premises were disinfected with hand-held sprays. By New Years Day four Navy ships - HMAS *Melbourne*, *Stuart*, *Brisbane* and *Flinders* - had arrived in Darwin and Operation Navy Help Darwin began. With around 10,000 men ashore each day the clean-up operation moved into full swing. Rubble was cleared from homes, valuables retrieved and catalogued for later claimants, and emergency repair work begun.

On 30 December the Federal Government announced that it would establish a statutory authority, to be known as the Darwin Reconstruction Commission, to plan, co-ordinate and undertake the enormous task of rebuilding the city. Its fundamental objective was to ensure that the population of Darwin was adequately housed and provided with full community services as soon as reasonably and economically possible. The immediate emphasis was on emergency housing; 1,200 caravans and 480 demountable houses were ordered for allocation to the homeless. The liner *Patris* was chartered and moored in Darwin Harbour and, until November 1975, provided accommodation for up to 900 people at a time. Until 31 December, when General Stretton returned to Canberra, Darwin was virtually under martial control. Local and interstate police were on constant patrol to prevent the possibility of looting of abandoned premises and to destroy numbers of

stray and starving dogs which roamed the streets.

Two weeks after Tracy, 4,000 people attended a free concert led by roksinger Johnny O'Keefe at Darwin High School, and the following night Rolf Harris performed at Gardens Amphitheatre. At the same time the final official death toll was set at 49 (including 13 children under the age of 12) with a further 16 missing at sea (unconfirmed reports suggest that the death toll may have been higher than this).

*Moll house
October 1971
and June 1975
Glenn Cole Collection*



EMERGENCY SERVICES

The Northern Territory Emergency Service was established under the Disasters Act (1982) as part of the Counter Disaster Organisation within the Northern Territory. These counter disaster arrangements have been largely developed from the experience of Cyclone Tracy, and the Organisation provides a practical approach to dealing with both natural and man-made disasters such as cyclones, storm surges, floods, oil spills, chemical leakage, explosions and so on.

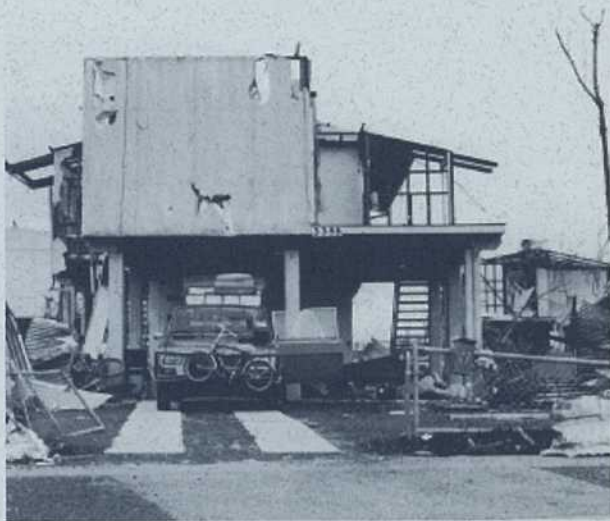
The Emergency Service has three major functions in relation to countering such disasters:

- is responsible for producing counter-disaster plans
- co-ordinates organisations, equipment and manpower in the event of a disaster, and provides the counter-disaster communication system and operational facilities throughout the Territory
- trains and equips volunteer units to assist with local counter-disaster arrangements.



*Cyclone Tracy
Emergency Station
SLNT PH0107/0138
State Library Collection*

*Evacuating
south to Sydney
Glenn Cole Collection*



AFTERMATH

Historians of the future will no doubt regard Cyclone Tracy as a major watershed in Territory history. The cyclone had a profound effect on the architecture, town planning, social and economic development of the town.

With the exception of the Aboriginal people of the region, traditionally Darwin has been populated largely by people who come from elsewhere who call somewhere else home. Administered first by South Australia and then by the Commonwealth, the Northern Territory became mainland Australia's 'colonial outpost', populated by public servants, short-term contract workers and 'soldiers of fortune'.

Darwin society was characterised by transience and impermanence. Many came to make (and hopefully to save) money before returning south, while others saw Darwin as a refuge from society or the law. Four times in its brief history the settlement was to be virtually destroyed by cyclones and the ravages of war, but with the devastation of Cyclone Tracy came a time of national decision - to rebuild the city or to abandon once again Australia's main northern settlement. The reconstruction of Darwin reaffirmed a commitment to populate the continent's north, a commitment manifest in modern Darwin.

For some, who see an end to the more casual way of life, the changes in the cityscape are to be regretted. Darwin has sometimes been called, unkindly, the Canberra of the north. Others see a city of the future, where lush gardens, civic planning, good public amenities and multi-culturalism, provide a blend of ingredients not found in cities elsewhere in Australia.

Certainly the festivals and cultural activities have thrived in the new Darwin. In a national climate which looks to establish itself within the Asian context, Darwin has ceased to be a long way away.

Today 80,000 people live in Darwin. The physical scars of Cyclone Tracy have all but disappeared, but for many the memories remain. There is no single monument which remembers this great natural calamity. The city of Darwin itself, whose present character and style is lasting testimony to the changes wrought by the disaster, forms the memorial for Cyclone Tracy.

SELECT BIBLIOGRAPHY

There were many books, articles, videos and news items produced about Cyclone Tracy. Here are some of the references from which the information contained in *Cyclone Tracy – Action And Reaction* was compiled which could provide further reading.

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