

CASE STUDY: Brisbane Hail Storm, 1985

By Mr Jeff Callaghan

Retired Senior Severe Weather Forecaster, Bureau of Meteorology, Brisbane

On 18 January 1985 a major hailstorm struck Brisbane's SW and NE suburbs (see damage track in Figure 1). The storm as viewed on radar is shown in Figure 2. The maximum wind gust as measured by anemometers in the City was 78knots (145km/h) at 0644UTC (4.44pm local time) and 101knots (187km/h) at the Airport at 0700UTC (5pm local time). These extreme wind gusts turned hail up to cricket ball size into dangerous missiles causing much damage. The damage was widespread with 2000 houses unroofed, 20000 damaged and 12 structurally unsafe. The damage track was 8 to 12 km wide from Jamboree Heights to Banyo. Major damage occurred at Jamboree Heights, Corinda, Sherwood, Graceville area and a region bounded by Windsor, Chermside, Banyo, Eagle Farm and Hamilton.

The storm struck at peak hour, and the resulting traffic jam left thousands of cars stranded like sitting ducks in the open. The ferocious hail missiles inflicted severe damage to body panels and windscreens. Twenty people were injured during the storm. The insurance bill was \$300 million AUD (\$AU1.7 billion in 2007 adjusted dollars). Brisbane was virtually left without glass for two years.

The rain was extremely heavy and 55mm was recorded in 10 minutes at the Brisbane City Regional Forecasting Centre. This caused severe flash flooding in the city taking out the electric train network at peak hour.

The mean sea level weather charts (Figure 3) show a cold front at Byron Bay at 2300UTC 17 January (9am 18th local time) which had moved up to Southport by 0500UTC (3pm 18th local time). The chart shows a major storm cell inland from the Gold Coast and this was the storm complex which reached Brisbane Airport at 5pm.

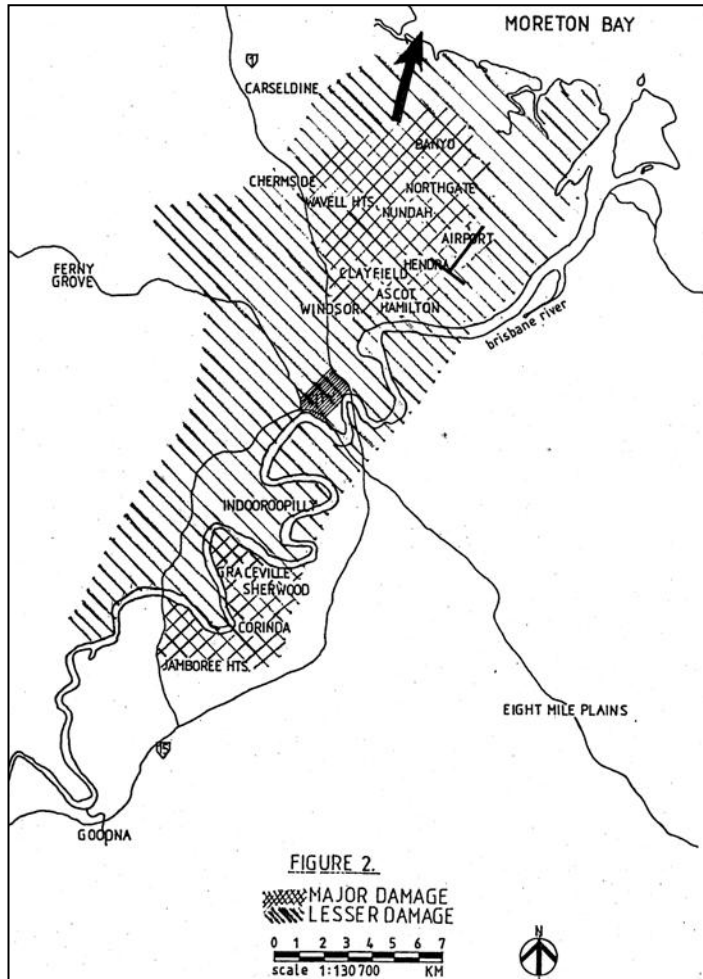


Figure 1 Damage swathe from the January 1985 severe thunderstorm

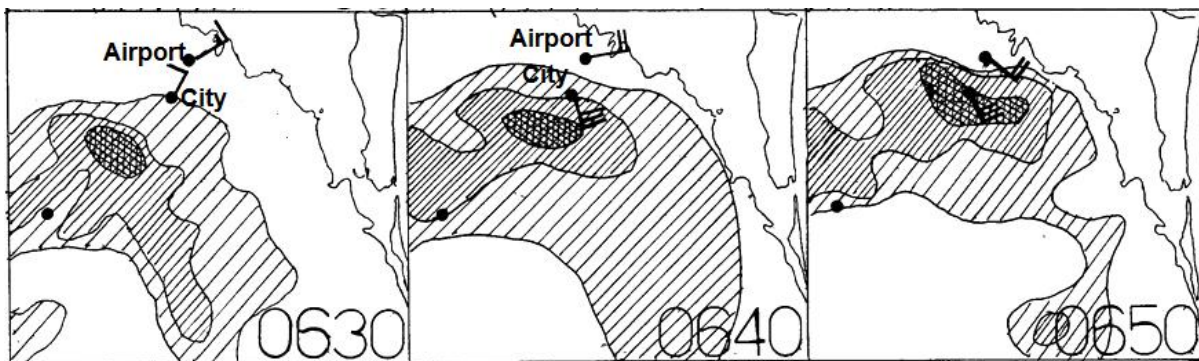


Figure 2 Brisbane Airport radar echoes 0630UTC, 0640UTC and 0650UTC 18 January 1985 with increased hatching indicating heavier rain and heavy cross hatching indicating hail. Brisbane City and Brisbane Airport wind observations are shown. The maximum wind gust as measured by anemometers in the City was 78knots (145km/h) at 0644UTC and 101knots (187km/h) at the Airport at 0700UTC.

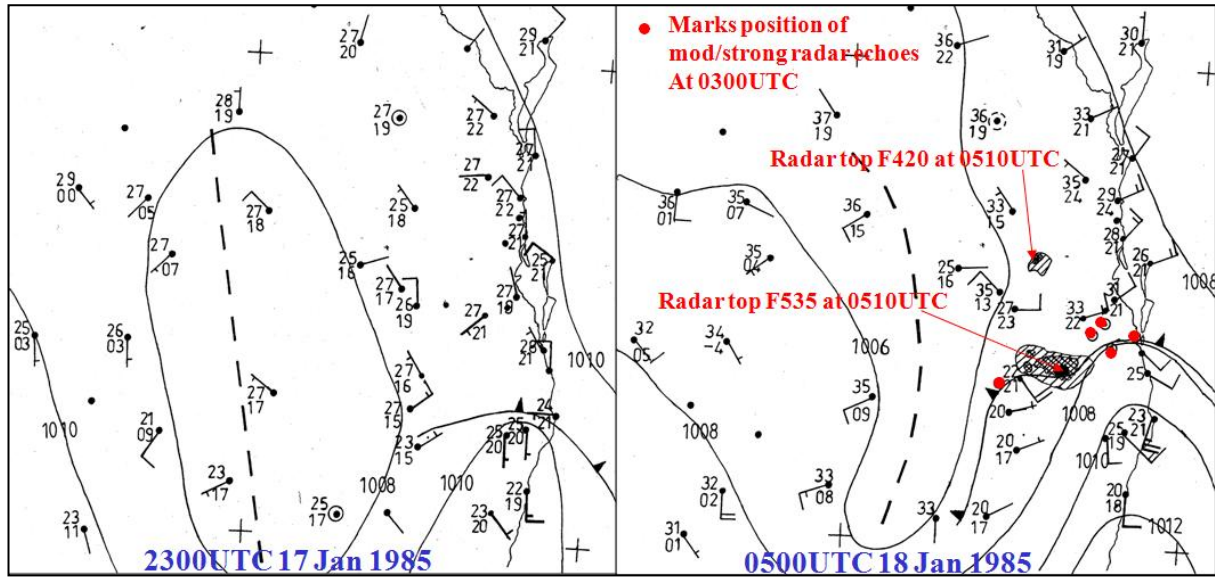


Figure 3 Mean Sea Level analyses and observations showing winds temperatures and dewpoints for 2300UTC 17 January 1985 (9am 18th local time) and 0500UTC 18 January 1985 (3pm 18th local time). Location of radar echoes are marked at 3pm with heights noted F535 means radar echoes extend to an elevation of 53,500feet (16,307metres).