



STORM WARNING

Extract from *Flight Safety*: Spring 1996 and November–December 2000

Every kind of aviation hazard is packed into a thunderstorm: reduced visibility, low cloud, severe icing, turbulence, hail, heavy rain, lightning, windshear – maybe even a tornado.

In the north of Australia, the monsoonal ‘wet season’ is characterised by high humidity, high temperatures and atmospheric instability. The season is preceded by a transitional phase or build-up, characterised by increasing thunderstorms, especially in coastal regions, nearby ranges, and particularly rocky regions where surface temperatures are unusually high.

These northern storms are normally less destructive than the fast-moving frontal storms that sweep across much of southern Australia, tearing roofs off buildings, and battering property and crops with high winds and hail.

‘What north and south have in common are weather conditions which need pose no hazard to aviators at all, as long as proper precautions are taken.’

THUNDERSTORMS 101

- ▶ If thunderstorms are forecast, plan an alternate route before becoming airborne. Your planning will much more rational if you're not confronted by the problem.
- ▶ Be prepared to divert before the thunderstorms become unavoidable.
- ▶ Avoid by at least 30km, any thunderstorm identified as ‘severe’ or giving an intense radio echo.
- ▶ Avoid the entire area if it has ‘BKN’ or more thunderstorm activity.
- ▶ Remember that vivid and frequent lightning indicates the probability of a severe thunderstorm.
- ▶ Consider any localised convective cell over approximately 15,000ft high as a thunderstorm, whether there is thunder or not.
- ▶ Don't land or take-off in the face of an approaching thunderstorm. A sudden gust front or low-level turbulence could cause loss of control.
- ▶ Don't try to fly under a thunderstorm – even if you can see through to the other side. Don't fly into a cloud mass containing isolated thunderstorms without airborne weather radar.
- ▶ Don't trust appearance as a reliable indicator of turbulence inside a thunderstorm.

When faced with **no other** option, the penetration of thunderstorms by a **properly-rated pilot flying an IFR-equipped aircraft** should be carried out with **extreme caution** and due attention.

Before entering a storm, GA pilots should:

- ▶ Tighten seat belts and secure all loose objects.
- ▶ Plan and hold your heading to take you through the storm in the minimum possible time.
- ▶ To avoid the most critical icing, establish a penetration altitude below the freezing level, or above the level of minus 15°C.
- ▶ Turn pitot heat on, and select carburettor heat or turbine-engine anti-ice.
- ▶ Disengage the autopilot. The automatic altitude and attitude hold controls on most GA-autopilots will cause the aircraft to overreact, thus increasing the likelihood of structural stress.
- ▶ During thunderstorm penetration, keep your eyes on your instruments. Looking outside can increase the danger of temporary blindness from lightning, and cause spatial disorientation. Don't change power settings: maintain the power settings for the recommended turbulence penetration airspeed.
- ▶ Strive to maintain a constant attitude.
- ▶ Do not try to maintain a constant altitude or airspeed, as the control inputs can significantly increase the stress on your aircraft.
- ▶ Don't try to turn back once you are in a thunderstorm. A straight course through the storm will usually get you out of the hazards in the shortest time. In addition, turning manoeuvres increase stress on the aircraft. 🚧