



ROB FOX

## An encounter with severe low-level turbulence.

### Neil Bates

WHILE CARRYING OUT AERIAL mustering operations in the mid seventies in the north west of Western Australia, I noticed a line of dust a few miles in front. I thought it was a mining vehicle passing through the paddock and about to upset the sheep I was mustering, which were travelling in that direction. I became slightly irate as there were heavy cumulus clouds starting to build up in the area, and I didn't need any hold ups at this stage.

I decided to fly to the line of dust and find out who was causing it so we could have a chat later. I was flying at about 200ft AGL by the time I arrived at the lead of the dust. The storm clouds were very close by now and there was no vehicle to be seen anywhere. The turbulence suddenly became very

violent, and, as I started to turn the Cessna 172 away from the low cloud, I began to rapidly lose height. I tried using full power to maintain height and control, but to no avail. I was down to approximately 50ft when I decided to use flaps to cushion the inevitable crash.

But to my surprise, the aircraft bottomed out very close to the ground, started to rise rapidly and cleared the severe turbulence. I flew away to a safe position where I could land and inspect the aircraft and myself for any visual damage.

Believe me, this was the most frightening flight of my career (26 years and 10,000 hours plus.) Now, as an IFR pilot flying a twin with everything, I certainly give those cumulonimbus clouds a wide berth and track to the rear.

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### ANALYSIS

## Between the lines

John Freeman

I GUESS ONE COULD UNDERSTAND THE pilot acting as he did. His mind was set on the task of mustering sheep and the approaching poor weather, both of which may have played a part in distracting him from correct assessment and decision making.

A line of dust produced by a passing vehicle – even a heavy one – is thickest immediately behind the vehicle, gradually tailing off in density as the dust spreads and disperses. Dust lines generated by a line squall – which apparently this was – are of a more consistent nature albeit with denser areas along the line.

These lines occur when extreme down draughts from clouds strike the ground so hard that dust is lifted into the air. To approach such a line is to court disaster.

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It was only the fact that the volume of the outpouring air was such that it became horizontal, with a good level of thickness, on contact with the ground, resulting in a wave-type upflow that enabled the aircraft to avoid ground contact, climb and escape.

To better understand the mechanics of that particular air movement one could watch the movement of a descending, surging wave at the beach, not a vertical dunking one but a 45° sliding wave which then flows forward and rises to another crest.

Air is a fluid too and will flow in a similar manner to water. Thank goodness nothing was projecting up into the airflow and the subsequent flight path of the aircraft! A very pertinent lesson learned by a very fortunate pilot.

*John Freeman has 44 years experience in low-level flying operations. He is the chief flying instructor of Low Level Aviation in South Australia and author of Flight at Lower Levels – Safety Through Awareness.*