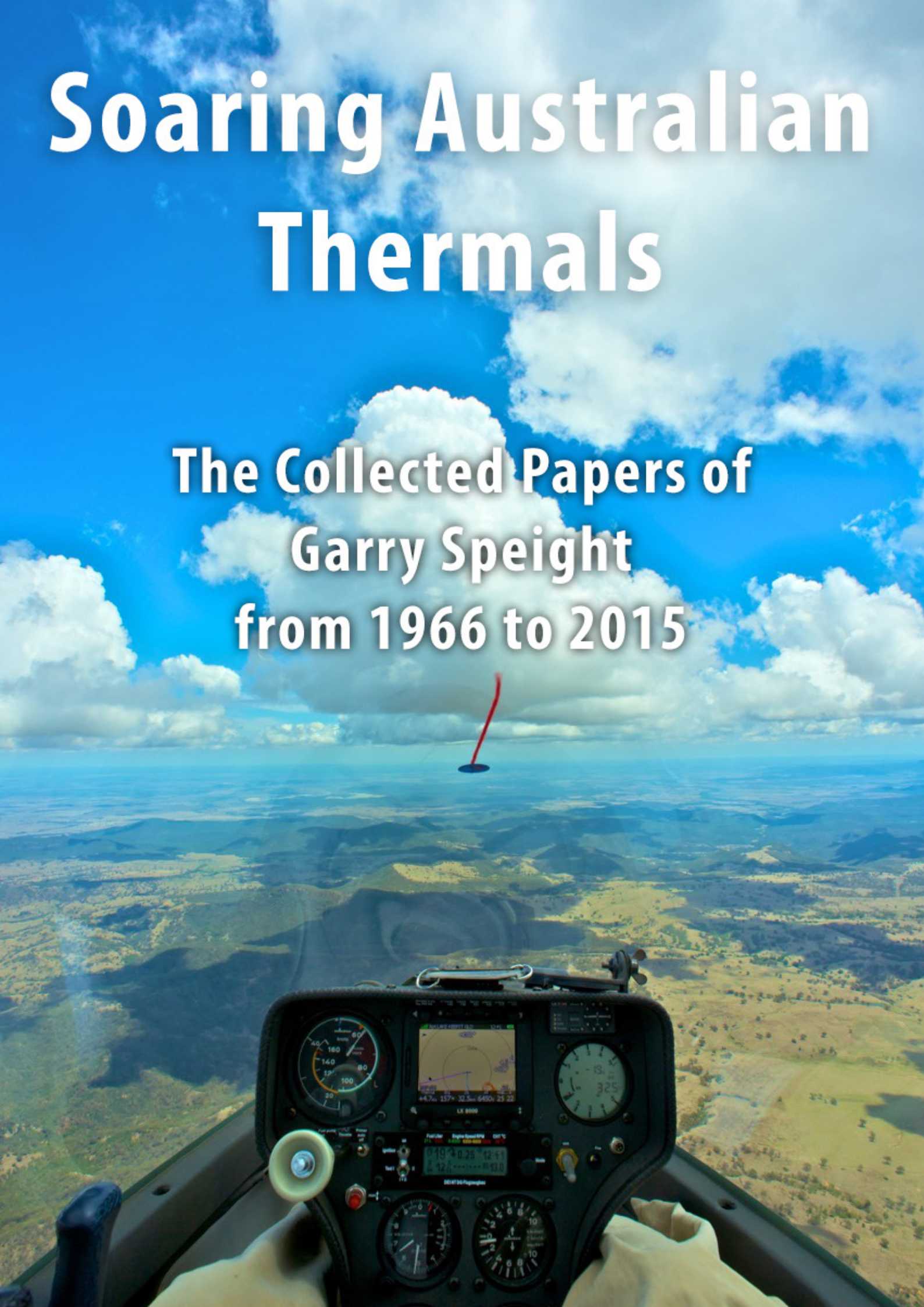
Soaring Australian Thermals

The Collected Papers of Garry Speight from 1966 to 2015



Thermal Density

By Maurie Bradney

Originally published in Australian Gliding, March 1983

Dear Sir,

I must congratulate Garry Speight on his excellent article in September 'A.G.' on water ballast.

However, I believe he has made an error where he discounts the benefits in the dolphin soaring area. In his 2nd paragraph, 1st column, page 20 he says:

"This shows a substantially greater benefit for the ballasted glider when dolphin soaring is possible, amounting to more than 7%. even in rather weak lift conditions, provided that the thermal density is 50% or more.

"Unfortunately I cannot agree that Herbert Pirker's analysis accurately represents the sky. My barograph traces indicate very low thermal densities. 1 estimate a typical value of 4%.

"Perhaps truly skilled pilots can push the figure up to 10%, but I am sure that the influence of thermal density on decisions to load up or dump ballast must be very small."

This is one area where I believe Australian pilots fall down badly. We have been using the "straight" McCready system for so long we are blind to the alternatives. On the first ever completed 1000 km triangle Hans Werner Grosse covered the first 300 kms all below 3,000 ft. and averaging over 100 kph. He did this mostly by dolphin soaring, with only occasional circles in the stronger cores.

Having had the pleasure of flying with him in the two-seater and also in company in single seat sailplanes, he uses this technique extensively to make excellent speeds, particularly on the lower ceiling days.

An aid to achieving this is a good Netto variometer. It is used more in the negative sense, that is to avoid sinking areas, rather than as a thermal finder. The result is that it usually does lead one to thermals.

A good knowledge of cloud and ground reading for thermal sources and triggers also helps.

In this manner we at Waikerie have found it possible to increase thermal density consistently to 20%, which more than offsets the small additional distances covered.

Also, on good days it is possible to achieve speeds faster than the MacCready indicates is possible. I believe this is an area where there is a large amount of knowledge to be gained for the improvement and enjoyment of our sport.

Maurie Bradney, Waikerie, SA