

THE AEROSONDE PROJECT: STATUS, PLANS, AND PROSPECTS FOR ECONOMICAL SOUNDINGS OVER THE OCEANS

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The Insitu Group and the Australian Bureau of Meteorology are collaborating in development of a novel and powerful tool for meteorological data-gathering: a long-range autonomous aircraft. Such aircraft have not previously been practicable for nonmilitary applications, but new developments in computing, navigation, and communications have widened possibilities dramatically. Miniaturisation is a key factor. It is now possible for aircraft weighing less than 15 kg to carry avionics and fuel sufficient for autonomous sounding missions of several thousand kilometres and several days duration, with precise navigation anywhere on the globe, and timely reporting back to a monitoring site. Such aircraft will combine high performance with the benefits of small size, including low costs of manufacture and use; easy shipment; assembly and operation by a single person; opportunistic basing; and independence of elaborate facilities. They promise to make previously impractical missions economical on a wide scale. For example, they should allow continuous and comprehensive severe-weather surveillance across the North West Pacific at a cost below US\$3M per year.

Aerosonde development has been underway since 1992. To date we have built three prototypes and demonstrated the components necessary for long-range autonomous operations. Over the coming year we plan to build an initial operational version of the aircraft, working toward first trials in the Maritime Continent Thunderstorm Experiment off Australia in November 1995. More trials should follow in 1996, possibly including the South China Sea Monsoon Experiment and a typhoon-reconnaissance series. Design and operating techniques will be refined over time, with wide-scale service possible late in the decade.

References

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