

6 Conclusions

The goal of this project was to demonstrate the feasibility of the Glidersonde concept. Toward that goal, a design approach was developed and shown viable through the construction of a simple prototype vehicle and the subsequent flight tests. The developed navigation system was shown capable of separating the vehicle from the launch balloon and successfully navigating the glider back to the home location. The prototype vehicle was shown to return successfully in average winds up to 21 knots.

A low-cost telemetry system was developed and shown to function effectively in the real-time monitoring the position, altitude, heading, and speed of the glidersonde. The telemetry system is considered a necessary element in the glidersonde instrumentation. The meteorological instrumentation could easily be integrated into the telemetry system to further reduce costs of the system.

The achievement of altitudes up to 20 or 25 thousand feet should be relatively simple with the current system. Higher altitude will require more development because of the low temperatures encountered at the higher altitudes and the use of a higher speed vehicle because of the high-speed winds encountered at altitudes above 25000 ft. However the design approach developed in this report indicate that such a vehicle is well within the limits of existing technology.