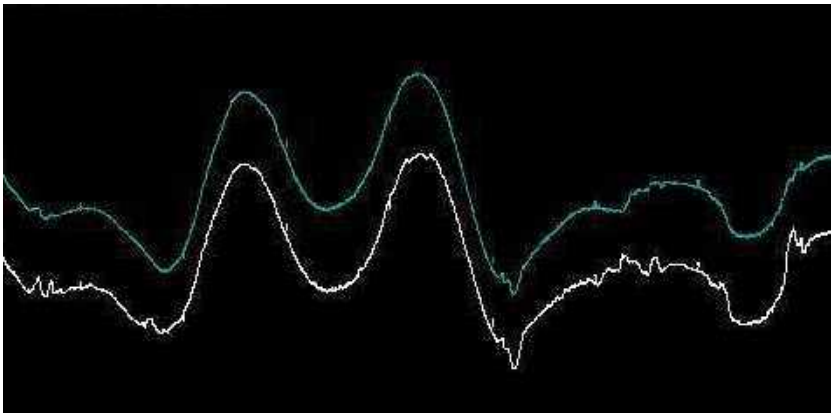
PRJ

GEOMETRICS

AIRBORNE MAGNETIC COMPENSATION SYSTEM

- ✔ Post-Acquisition Airborne Compensator with Flexible Orientation Inputs
- ✔ Multiple Source Sensor Inputs from AC Generators, Control Surfaces, Gyros
- ✔ Save Weight , Power and Space using Post-Acquisition Processing



Actual USGS Airborne data with PRJ compensation algorithm applied.

Pearson, de Ridder and Johnson together with Geometrics, Inc. now offer a powerful new option in airborne aircraft compensation solution. This cost effective and flexible compensation scheme is employed in a post-acquisition mode so that the actual acquired data is preserved as well as the aircraft orientation information.

In post-processing compensation, the output from a three-axis fluxgate system and other optional sensor signals are recorded along with the magnetometer data. Compensation is performed as part of the magnetic data processing flow, using algorithms similar to those in the real-time compensators. The major difference between post-processing compensation and the real-time compensator is the location of the computer. In our experience, quite adequate compensations can be obtained using this method, with an overall accuracy in the range of a few tenths of a nT.

A major advantage of post-processing compensation is that since it is pure software, it can be reconfigured relatively easily to accommodate difficult installation or survey situations not envisaged by the standard interference model. For example, monitoring changes in alternator balance between the two engines on a twin-engine aircraft and support for additional terms dependant on the position of aircraft control surfaces are possible. It also allows a compass and vertical gyro system to be substituted for the fluxgate magnetometers, and has provisions for systems with rate gyros, which give much better bandwidth than the signal obtained by a time-differentiated fluxgate magnetometer output. The possibilities for further reconfiguration are limited only by the ability to instrument the interfering object's magnetic effect and to model the response. This offers the user a more flexible and powerful solution to today's airborne compensation problems.