Logistics of data acquisition in tropical, rugged terrain – the airborne geophysical surveys of the PNG highlands and Papuan Peninsula.

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Between 2005 to 2008 two areas of the PNG highlands and the Papuan Peninsula were surveyed in the world’s largest helicopter magnetic and radiometric survey. Three major factors affected in the planning of this survey; the extreme terrain, the remoteness and the climatic conditions. This survey ranged in altitude from sea level to the top of Mt Wilhelm (approx 14,500ft or 4,509m) and thus a high performance helicopters were needed.

Prevailing weather conditions resulted in need to split the survey lines into smaller segmented sections and fly areas on an opportunistic basis when conditions were suitable. Area 1 consisting of some 1262 survey lines was flown in 10,500 separate line segments. Software was developed for monitoring and processing of individual line segments. The extreme nature of the country and the variable, rapidly changing, weather and remoteness of the survey operations required dedicated Search and Rescue (SAR) planning and aircraft monitoring.

Survey bases were located as close as possible to the area being flown. This enabled the local weather to be closely monitored and also made the daily test-lines more representative of the local survey area. As the survey drew to a close the last remaining sections were in the most difficult areas. The final 200 km took almost one month and the last 5 km a week to complete. Despite all difficulties of working in this mountainous region the detailed planning resulted in the survey being completed in less than the projected timeframe.