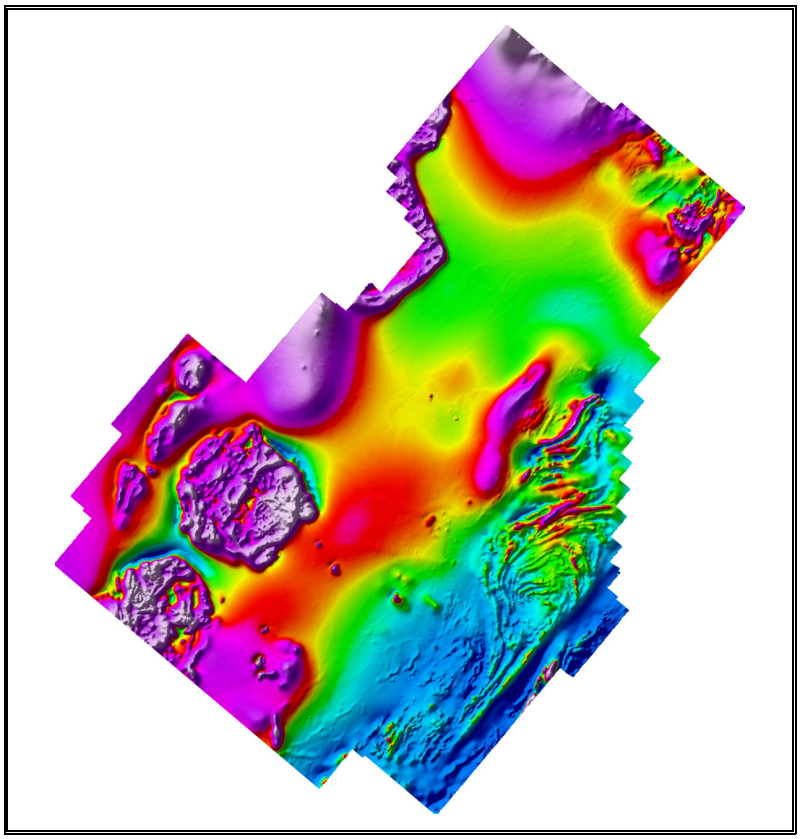
GEO DATA SOLUTIONS Inc.

GEOLOGICAL SURVEY OF NEWFOUNDLAND AND LABRADOR DEPARTMENT OF NATURAL RESOURCES

HIGH RESOLUTION AEROMAGNETIC SURVEY FINAL TECHNICAL REPORT

CORNER BROOK AREA, WESTERN NEWFOUNDLAND

June 2009



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HIGH RESOLUTION AEROMAGNETIC SURVEY

CORNER BROOK AREA, WESTERN NEWFOUNDLAND

FINAL TECHNICAL REPORT

By

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1.0 INTRODUCTION

On October 15th, 2008 GEO DATA SOLUTIONS GDS INC. was awarded contract number 08-041 by the GEOLOGICAL SURVEY OF NEWFOUNDLAND AND LABRADOR. The contract required the execution and compilation of digitally-recorded, high sensitivity, airborne total magnetic field and transverse gradient survey near Corner Brook, Western Newfoundland.

Traverse lines were oriented 130° with a spacing of 200 metres while control lines were oriented 40° with a spacing of 2000 metres. The survey was flown with a nominal terrain clearance of 90 metres. The survey block is shown on figure 1 and table 1 defines its co-ordinates.

Excluding calibration and test flights, a total of 49 flights were needed to cover the survey area. Bad weather conditions kept the aircraft on the ground or reduced the survey time per flight. The first production flight began on November 25th , 2008 and the last flight ended on March 27th, 2009. One Navajo aircraft (C-GKSA) was used during the survey period. The total number of line-km needed to cover the survey area was 25,219 km (table 2).

This report describes the survey procedures and data verification, which were carried out on the daily basis, and final data processing, which followed at the office.

Table 1: Corner Brook Area, Survey Boundaries

(NAD83, UTM Zone 21N)

	Easting	Northing		Easting	Northing		Easting	Northing
1	456256	5411630	16	423092	5453296	31	458298	5438994
2	449222	5403200	17	424561	5452021	32	455341	5435473
3	447636	5404522	18	430906	5459558	33	456872	5434181
4	431210	5384943	19	427874	5462121	34	455210	5432166
5	420516	5393976	20	428896	5463356	35	456753	5430860
6	415956	5388407	21	425826	5465904	36	454921	5428747
7	382202	5416922	22	427248	5467599	37	456447	5427464
8	387407	5423243	23	425752	5468867	38	454522	5425169
9	384334	5425811	24	441254	5487403	39	456066	5423858
10	391193	5433927	25	455011	5475808	40	453866	5421266
11	389652	5435231	26	456174	5477179	41	455410	5419976
12	399508	5446959	27	471579	5464171	42	453484	5417675
13	407157	5440535	28	457310	5447145	43	455019	5416379
14	417059	5452339	29	460386	5444540	44	453210	5414232
15	420155	5449777	30	456780	5440270			

Table 2: Total Line-Kilometre Flown

Block	Line Type	Calculated Line-Km
Corner Brook	Traverse	22,754
	Control	2,465
	Total	**25,219**

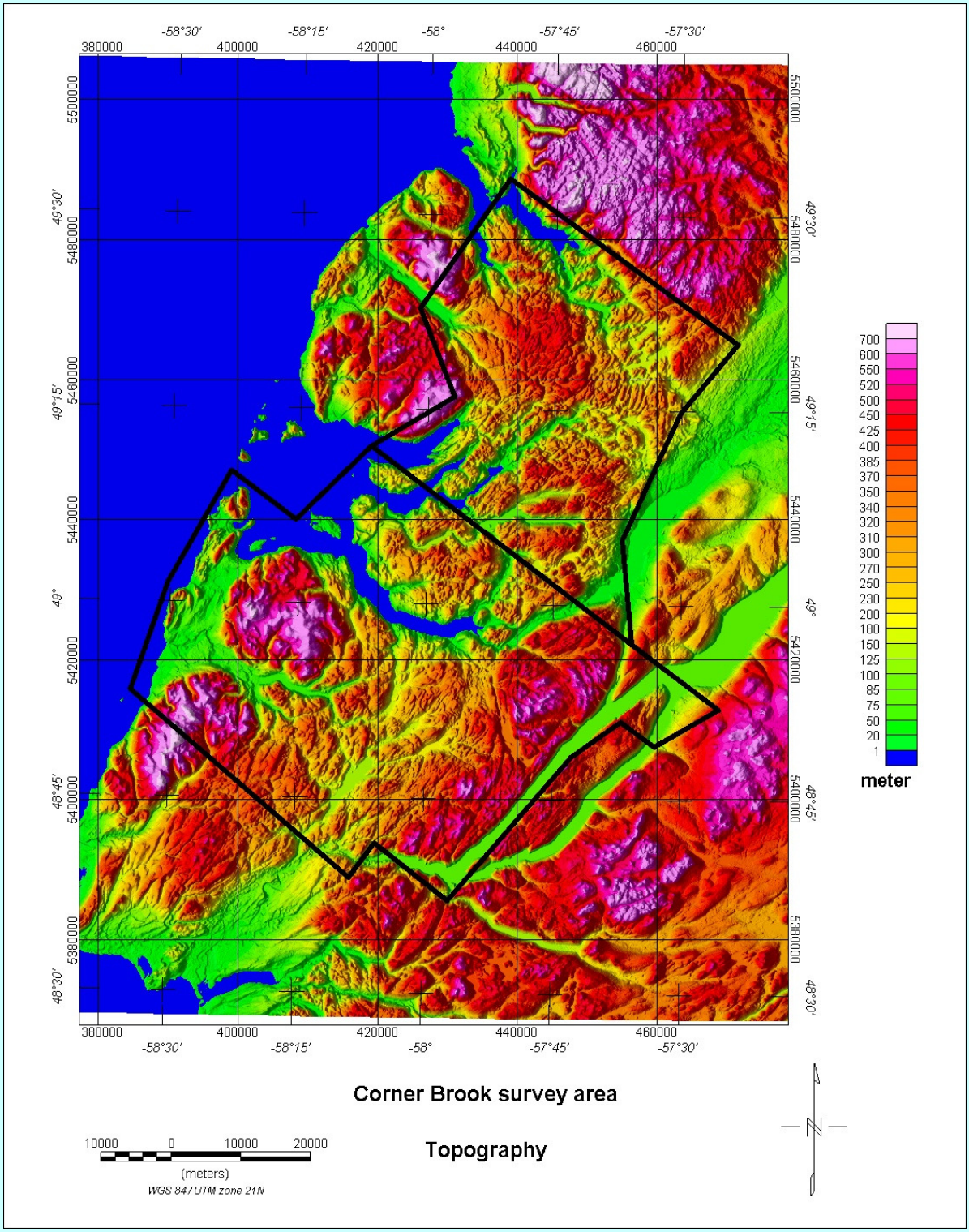


Figure 1: Topographic relief of Corner Brook Area

2.0 RECONNAISSANCE OF PROJECT

Unstable weather conditions (wind, fog, rain) were present during the execution of the entire survey. Daylight periods were between 8 and 12 hours a day. In terms of topography, the terrain in the area may be classed as medium (figure 1). **GDS** used a 3D-Drape navigation software to fly a smooth drape surface with a rate of climb of 5%. Use of this technique minimizes Tie/Traverse high intersection differences at the risk of not achieving optimal ground clearance in some areas of steep topography.

GDS set up its base of operations in the Town of Deer Lake, which is located close to the North-East corner of the block, approximately 40 km from the block centre. As such, the range capability of the aircraft (Navajo PA-31) to fly the survey was suitable to collect large volumes of data on each flight.

A magnetic base station and associated GPS system was set up in a quiet environment near the base of operations.

3.0 CALIBRATIONS AND TESTS

The following is a summary of all the tests performed before or during survey production. Results are presented in annexes C.

3.1 Magnetometer Tests:

On November 18th, 2008, the aircraft proceeded to the Bourget Test Site (Ontario) for the calibration of the magnetometer. This calibration included a measurement of the heading error. Two passes in each of the North, South, East and West directions were flown to obtain sufficient statistical data to complete the standard form. Test results plus video coverage of flight path were submitted to the Technical Inspector for approval before demobilization from the survey area.

Also, we determined the effects of aircraft manoeuvres (roll, pitch and yaw) and submitted the results of this test to the Technical Inspector. The test was performed over a magnetically quiet zone, at a high altitude. It consisted of flying $\pm 10^{o}$ rolls, $\pm 5^{o}$ pitches and $\pm 5^{o}$ yaws peak to peak along North, South, East and West headings over periods of 4-5 seconds. A compensation Figure of Merit (FOM) for the aircraft was calculated by summing up the peak-to-peak amplitudes of the 12 magnetic signatures. FOM results were included in the weekly progress reports. The FOM did not exceed **1.5 nT** for the rear magnetic sensor, and **2.0 nT** for the wing sensors.

3.2 Altimeter Tests

A radar and barometer calibrations were performed on November 26th, 2008 by flying a range of altitudes representative of the survey area conditions, above and below the designated survey altitude. These altitudes covered the minimum and maximum range at 8 different altitudes. Typically, these levels were determined by the real time GPS-Z and barometric altimeter above the elevation of the base airstrip.

3.3 Lag Tests

Prior to the initial commencement of survey production and with any major survey equipment alteration or replacement on the aircraft, the aircraft performed a lag test to ascertain the time difference between the magnetometer readings and the positioning devices. The test was carried out by flying in opposite directions at the normal survey height over a distinct anomaly and over a known point to determine any lag in the digitally recorded navigational data. Test results were submitted to the Technical Inspector with the next weekly report. The values used for the tail and wing sensors are 0.7 and 0.6 sec respectively.

4.0 TIMING

GDS started calibration and tests in mid-November, 2008. The crew and aircraft mobilized to Deer Lake on November 22nd, 2008. The first production flight began on November 25th and the last flight ended on March 27th, 2009. For Christmas holiday, the crew demobilized on December 21st to re-mobilized on January 2nd. Preliminary results were sent to the Technical Inspector progressively during the flying phase while final maps and data were sent at the end of June.

5.0 QUALITY CONTROL - FIELD

All work was performed to the satisfaction and subject to the acceptance of the Technical Inspector. A copy of the Technical Specifications was available to **GDS**'s personnel responsible in the execution of the contract.

The field processing system consisted of a computer equipped with commercial and custom software including that for GPS processing (WayPoint), profile and flight path plots (GEOSOFT Montaj), and all processing software necessary to calculate intersections, and to carry out preliminary levelling and gridding.

Digital data were verified daily to ensure the recorded parameters meet the contract specifications. Checks were performed to verify the accuracy of the differentially corrected flight path positions independent of base maps.

5.1 GPS Data

Navigation and positioning were achieved through real time differential GPS using three Novatel Satellite navigation receivers. After each flight, the raw GPS positions were differentially corrected using our base station data and merged into the database. The base station data were also amalgamated periodically. The GPS data were differentially processed, using Waypoint software. Navigational data were also plotted in XY plan format. Errors were noted and re-flights called where necessary.

Verification on the positioning included a calculation of a digital elevation model (DEM), using the differentially corrected GPS altitude and radar data. The DEM was gridded and plotted. A plot of the flight path was made from the digital electronic flight path data with appropriate latitude and

longitude labelled registration markers to permit verification relative to NTS map co-ordinates. GPS receivers generated latitudes and longitudes, and UTM Conformal Northing and Easting, according to the WGS 84 datum.

5.2 Grid Specifications

GDS verified that the lines flown outside the following positioning tolerances were re-flown at its own cost:

	Traverse line	**Control line**
Bearing	N130°E	N040°E
Spacing	200 m	2000 m
Allowed min/max separation	150 / 250 m	

The survey height was controlled according to a pre-defined smooth drape surface. The nominal terrain clearance was 90 metres except in areas where Transport Canada regulations prevent flying at this eight. In areas where obstacles or topography conflicted with the drape surface, the pilot's judgement prevailed within reason. Traverse lines and control lines were flown at the same altitude at points of intersection. The altitude tolerance was limited to no more than 15 metres difference between traverse lines and control lines.

Part of traverse lines reflown to complete a traverse line crossed control lines at either end and joined the original traverse line at a low angle at a point where the data conformed to the technical specifications. All segments of a traverse line began and ended by crossing control lines. Conversely, segments of a control line started and ended by crossing a common traverse line. All traverse lines intersected a minimum of 2 control lines. Outside survey boundaries, all traverse lines started or ended by intersecting a control line. No gaps were accepted in the final products.

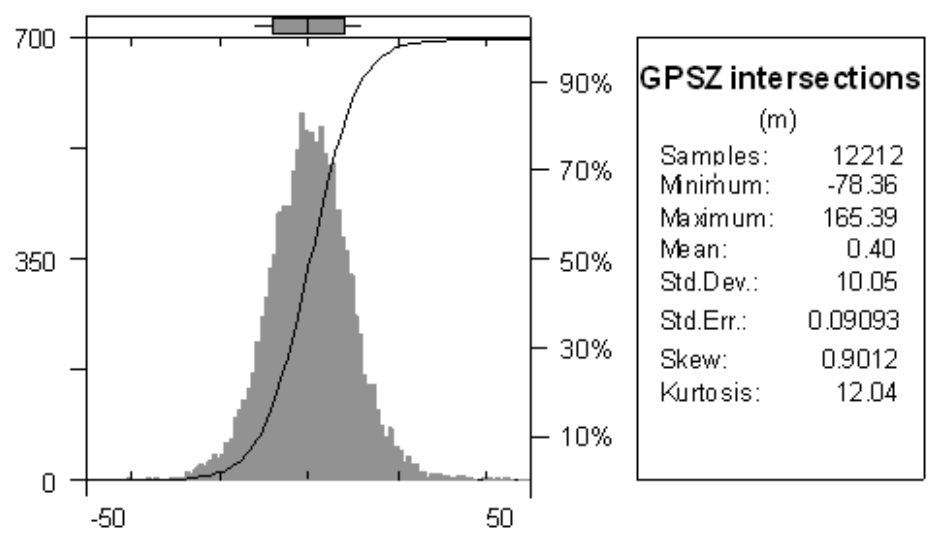


Figure 2: Traverse/Tie Altitude difference

For each survey flight, adjacent lines were flown consecutively and in opposite directions. Racetrack flying pattern was not permitted.

5.3 Diurnal Specifications

Diurnal magnetic variations were monitored and recorded using a magnetic base stations. Base station time and aircraft acquisition time were synchronized via GPS time. A maximum tolerance of 3.0 nT (peak to peak) deviation from a long chord equivalent to a period of one minute was respected. An additional maximum tolerance of 0.5 nT (peak to peak) deviation from a long chord equivalent to a period of 15 seconds was also respected. These specifications were verified in the field prior to demobilization.

5.4 Maintenance of speed and sampling

The pilot maintained a slower, economic cruising speed for the aircraft, which reduced fuel consumption and the time required for repositioning between survey lines, while increasing the sampling density. The pilot was instructed to fly this survey so as to achieve a ground speed in the range of 250 to 290 kilometres per hour. As shown in figure 3 below, the aircraft minimum, maximum and average ground speed have been respectively of 53.6m/s (193km/h), 102.9m/s (370km/h) and 77.3 m/s (285km/h).

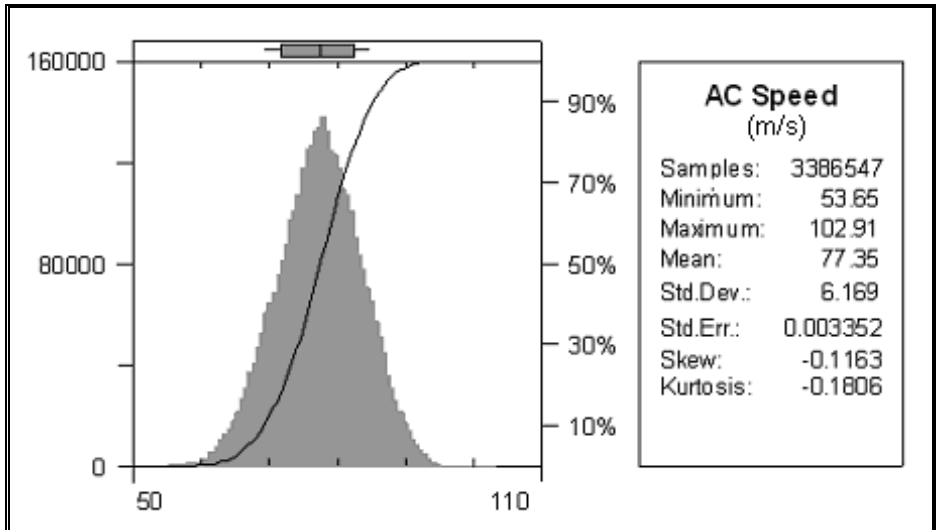


Figure 3: Aircraft speed

5.5 Magnetic data

Magnetic data recorded in flight were checked for noise by an inspection of the fourth difference trace. When enough and adequate data were accumulated, magnetic values for traverse/tie line intersections were calculated and preliminary magnetic levelling carried out. Finally, grids and preliminary magnetic contours were produced, to ensure the completeness and veracity of the data.

6.0 DATA PROCESSING - OFFICE

Essentially the office processing system has all of the capabilities of the field system, plus additional presentation and colour plotting facilities. Since the data had been edited and processed in the field, it was not expected that additional serious problems will be encountered in the office. Nevertheless, with the increased capacity, personnel and time available, editing and compilation procedures were carried out to detect and correct any remaining isolated errors, to refine the positioning, carry out levelling and gridding through to final contours. Processing was monitored closely by the Project Leader. All requirements of the Solicitation were met. Data and preliminary and final products were submitted to the Technical Inspector for checking according to the contract specifications.

Upon receipt of digital data from the field, the magnetic values were checked by calculating fourth differences and preparing an error list. Single bad magnetometer values were corrected automatically. The noise spikes were removed without making any changes in the neighbouring magnetic measurements as opposed to linear smoothing or filtering routines that would mix good and bad values indiscriminately. More complex errors were corrected manually, on the basis of the fourth differences, before proceeding.

Tests were applied by a geophysicist to determine whether systematic corrections should be applied as follows:

- Lag: The lag test data were analyzed to see if the magnetometer data should be time-shifted to ensure proper synchronization with the flight path.
- Air minus ground: The airborne magnetic data were corrected for diurnal drift. Tests showed that subtraction of ground from airborne magnetometer data didn't deteriorate the overall quality.

The long wavelength component of the diurnal signal was extracted through low pass filtering using a 8th-order low-pass Butterworth filter with 20 000 m cut-off wavelength. Finally, a mean diurnal value was subtracted from the continuous diurnal variations and then subtracted from the airborne magnetic data as a pre-levelling step. The mean diurnal values used in drift calculation were as follow:

Flight 01-16 : **53042 nT**
Flight 17-51 : **53050 nT**

Tie line intercept methods were employed. Intersections of each line and control line were calculated from the flight path data. Differences in total magnetic intensity from the two measurements, on line and tie line, were calculated, and automatically analyzed to produce a pattern of smooth adjustments to level the data together. The computer program used a repetitive routine, first to establish datum shifts for whole line and tie lines, and then to introduce a variable shift along each one. In areas of steep magnetic gradient and/or of rugged topographic relief, the intersection adjustments could be deleted or an appropriate adjustment assigned to the traverse line.

The differences at the intersection points were tabulated by a printed output from the computer program in a readily comprehensible form. Differences at all intersections were carefully analyzed and distributed proportionally along the control lines and the traverse lines to yield an identical final total field value for both lines at the given intersection.

Final values were then assigned to the traverse profiles at the appropriate intersections and used as corrections to the digitally-recorded values along the traverse lines. A graphical plot of the final total field level adjustments along the traverse lines was produced.

Levelling was done using the following procedures and parameters:

Pass	Filter	Tie	Line
1	Trend(0)	x	x
2	Trend(0)	x	x
3	Trend(0)	x	x
4	Trend(1)	x	x
5	Trend(1)	x	x
6	Butterworth(25000,4)	x	x
7	Butterworth(15000,5)	x	
8	Butterworth(7000,5)		x
9	Butterworth(3000,7)	x	
10	Butterworth(1500,7)		x

Interceptions out of the "model" were removed in every step.

GDS used Geosoft software packages to do detailed visual analysis of the total field and calculated vertical gradient magnetic grids to create image quality final magnetic. Programs that perform microlevelling, which can remove minor imperfections visible in shadow images, were also used. These produce grids of exceptional aesthetic quality with no degradation of the high frequency content of the data. The decorrugation grid was calculated using a combination of Butterworth (800 m, 7 orders, HighPass) and Directional Cosine (130°, 1.5 orders, Pass). Error was clipped at 3 nT and then filtered using a Butterworth (1500 m, 4 order, LowPass).

A square grid was calculated from the levelled traverse line data. The grid-cell size was 40 metres. Gridding was carried out using the minimum curvature technique, which honours all traverse line data while producing a surface for which the total curvature is minimised.

Residual Magnetic Intensity was then calculated removing the IGRF with a constant date (Jan 21st, 2009) and altitude (500m).

Transversal and Longitudinal Gradients were obtained from the wing tips and tail sensors using the following formulas:

Transversal Gradient:	gradHorz = (rightsensor-leftsensor)/14.77
Longitudinal Gradient:	gradLon = ((rightsensor+leftsensor)/2 - tailsensor)/10.11

After Horizontal Gradients were computed, the Median was calculated for each line and then removed to eliminate the bias from line to line. After that, some local microlevelling was applied around strong anomalies to produce the final data.

In short, diurnal correction was applied, data were tie-line levelled after checking for any noise or spikes and then microlevelled.

7.0 FIELD AND OFFICE CREW

The general management of the project was monitored offsite by Mr. Mouhamed Moussaoui. Mr. Carlos Cortada was responsible for the field data processing. Final data evaluation and processing was carried out at the GDS office by Carlos Cortada. Field and office personnel are listed in table 3 and presented on figure 4.

Table 3: Field and Office Crew

Position	Name
Project Manager	Mr. Mouhamed Moussaoui
Data Quality Control	Mr. Carlos Cortada
Field Manager	Mr. Saleh Elmoussaoui
Field Instrument Operators	Mr. Jean-Yves Bernier
Professional Pilots	Mr. Charles Matteau / Sébastien Gandon
Final Processing	Mr. Carlos Cortada
CAD Specialist (Drawing Products)	Mr. Albert Sayegh
Survey Report	Mr. Camille St-Hilaire

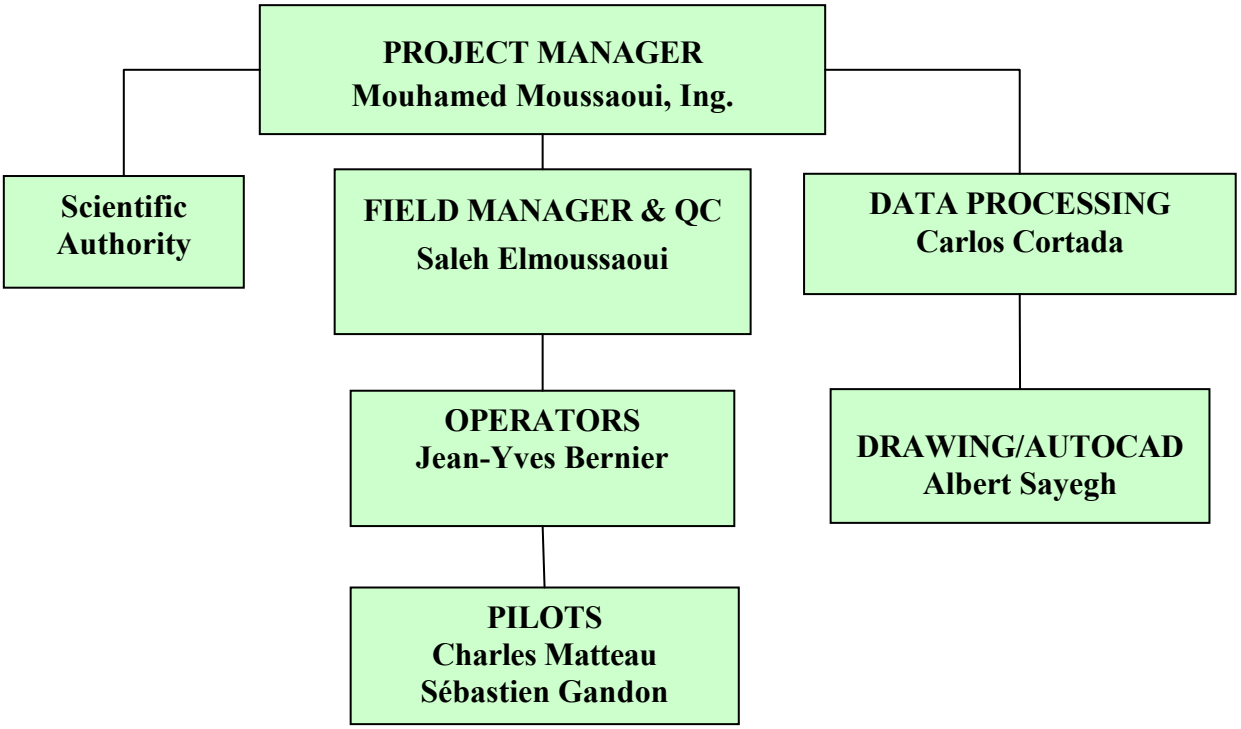


Figure 4: Field and Office Crew

8.0 AIRCRAFT AND EQUIPMENT

8.1 Aircraft

A Piper Navajo PA-31 twin engine turbocharge aircraft (C-GKSA) fully equipped allowed to fly the geophysical survey (figure 5). The aircraft is Transport Canada approved to carry out this particular type of survey. The main characteristics of the aircraft are presented below:

Figure 5: The Piper Navajo PA-31 Twin-Engine Turbocharge

Aircraft characteristics:

Type	Piper Navajo PA-31
Power (one engine):	2 310 HP
Empty Weight:	1710 kg
Max. Charge:	2950 kg
Ceiling:	8320 metres
Rate of climb:	7.1 metre/sec.
Max. Climb. Gradient:	12.8%
Speed Survey:	75 m/sec.
Fuel Type:	AVGAS
Fuel Consumption:	110 litres/hr.
Oil Consumption:	Negligible
FOM:	lower than 1.5 nT

8.2 Magnetometers and Digital Acquisition Systems

8.2.1 Airborne magnetometer

The following table describes the airborne magnetometers. Two transverse sensors were rigidly attached to the aircraft (wing tip), oriented to the direction of flight with a minimum separation of 14 metres. A third sensor was mounted in a stinger rigidly attached to the aircraft tail.

Manufacturer:	Geometrics
Type and Model:	G822
Ambient Range (nT):	20 000 - 100 000
Sensitivity (nT):	± 0.010
Absolute Accuracy (nT):	± 10
Noise Envelope (nT):	0.10
Sampling Rate (Hz):	10
Sampling Interval:	0.1 sec
Heading effect:	<2.0 nT

The cesium CS-3 sensor is a versatile and highly sensitive means of accurately measuring the Earth's total magnetic field intensity. Based upon the principle of optical pumping and monitoring, the cesium sensor is capable of resolving millisecond variations as small as 0.005 nT (gamma) or 1 part of 10,000,000 of the Earth's magnetic field. This unique process involves the interaction of the magnetic moment and angular momentum of the valence electron of cesium with the ambient magnetic field to produce an oscillation whose frequency is dependent on the magnetic field intensity. The sensor, operating on an atomic process, contains no moving parts and is inherently simple, rugged, and accurate.

8.2.2 Magnetic Compensator and Data Acquisition System

The magnetic field generated by the aircraft was compensated using a RMS DAARC500 Automatic Aeromagnetic Digital Compensator system.

The DAARC500 is an instrument used to compensate or correct in real time for the magnetic interference caused by the aircraft itself and aircraft maneuvering in the Earth's magnetic field, when using inboard-mounted high sensitivity magnetometers. The compensation accounts for the effects of permanent magnetism, induced magnetism, Eddy currents and also removes the heading errors caused by the sensors themselves. It provides a frequency bandwidth of DC to 0.9 Hz, the frequencies of most interest to the geophysicist. Other bandwidths are optionally available. The signal(s) from the magnetometer(s) are digitized faithfully without aliasing or phase distortion.

The DAARC500 is based on many years of research and development on automatic aeromagnetic compensation by the National Aeronautical Establishment (NAE), a division of the National Research Council of Canada. Following the transfer of technology, RMS Instruments continued with the development resulting in an instrument which is extremely reliable, capable of accepting the Larmor frequencies of up to four high sensitivity magnetometers, and is based on a sophisticated compensation algorithm which is extremely robust.

The DAARC500 incorporate a sophisticated and flexible data acquisition system. Geophysical instruments and sensors may be directly connected to the AARC500, via 8 Outputs and Inputs high speed RS232 digital ports and 16 analogic Inputs ports. Incoming data are real time processed via serial ports.

Table 4: Recording Specifications

AIRBORNE RECORDING		
	ACCURACY	RECORDING INTERVAL
Magnetic total field	0.01 nT	0.1 sec
Radar Altimeter	3 m	0.1 sec
Barometric Altimeter	3 m	0.1 sec
Time	0.01 sec	0.1 sec
GPS	3 m	0.2 sec
GROUND RECORDING		
	ACCURACY	RECORDING INTERVAL
Magnetic total field	0.01 nT	1.0 sec
Time	0.01 sec	1.0 sec
GPS	1.0 m	1.0 sec

8.3 Ground Base Station Magnetometer

The following table describes the base station magnetometer:

Manufacturer:	GEM System
Type:	Overhauser
Model:	GSM-19 w/ GPS
Dynamic Range (nT):	20 000 - 100 000
Sensitivity (nT):	± 0.01
Sampling Rate (Hz):	1
Noise Level (nT)	0.10

The ground magnetometer operated continuously throughout the survey production. The magnetometer was recording the magnetic field once per second. Records, including GPS time, were dumped digitally on a PC. The base station data was merged with airborne data and plotted daily. This base station was set up at a magnetic noise-free location, away from magnetic objects, vehicles and DC electrical power lines near the airport at the following coordinates:

Lat: 49.2131812° N Lon: 57.3963112° W

GSM-19 v7.0
Overhauser
Magnetometer /
Gradiometer / VLF

8.4 Positioning Cameras, Navigation and Flight Path Systems

8.4.1 Video system

The following table describes the video system installed in the aircraft:

Camera Manufacturer:	Panasonic WVCO484
Mounting:	Vertical
Video Recorder:	DVD System
Format:	NTSC Color
Recording Speed:	Standard Play
Resolution:	S-VHS
Lens Angle:	62º by 48º
Iris Exposure:	Automatic

The vertically-mounted, continuous-recording video camera, with a wide angle lens to maximize ground coverage at survey altitude, operated at all times while aircraft was surveying. Data, which were displayed alphanumerically in the top portion of each frame, included UTC time, GPS generated Longitude/Latitude co-ordinates, GPS altitude, distance to go before end of line. Data and video were available for review immediately after each flight with no further processing.

8.4.2 Differential GPS and Navigation System

Three dual frequency GPS antennas were mounted in a non-collinear configuration on the aircraft. They were separated from each other by at least 6 metres. The following table describes the airborne differential GPS system, which obtained a complete coverage and provided both real-time navigation and flight-path recovery:

GPS:	3 Novatel receivers
Model:	L1/L2 DL-V3
Precision (m):	1 m
Number of Channels:	12
Sampling Interval:	1 to 10 Hz
Navigation System:	AGNAV (LiNav)

Post-flight differential correction of the raw GPS data was done using ground GPS base station data (Dual frequency Novatel receiver) for all flights. This base station was located as follow:

GPS base station locations			
	Latitude	**Longitude**	**Z (ellipsoid)**
Flight 01 – 06	49.10.07.0140° N	57.25.58.476° W	25.850 m
Flight 07 – 16	49.10.07.7484° N	57.25.55.020° W	33,624 m
Flight 17 – 51	49.10.07.7448° N	57.25.55.020° W	33.616 m

8.4.3 Radar altimeter

Frequency-modulated radio altimeters were used for measuring accurately the distance between aircraft and ground. Whole survey data were covered using this kind of radar. The following table presents its technical characteristics:

Manufacturer:	King
Model:	KRA-10A
Minimum Range:	0 to 800 metres
Accuracy:	5%
Sensitivity:	10 mV/m
Sampling rate:	5/sec
Temperature Range:	-54° + 71°C

8.4.4 Barometric altimeter

The following table describes the barometric altimeter with digital output, which was installed in each aircraft:

Manufacturer:	Honeywell PPT
Pressure Ranges	0-500 psi
Accuracy:	0.1 %FS
Resolution:	0.02 %
Recording Interval:	1.0 second
Temperature:	-40°C – +85°C

9.0 FINAL PRODUCTS

9.1 Compilation Specifics

Map Scale, projection:	1:50 000 (NAD83 UTM)
Digital bases available:	1:50 000 (NAD83 UTM)
Grid cell size:	40 metres

9.2 Final Products

Processed parameters

The following parameters were processed:

- Total Field Magnetic data
- Horizontal measured gradients (longitudinal and transversal)
- Residual Total Field Magnetic data
- First Vertical Derivative of the Magnetic Field data
- Second Vertical Derivative of the Magnetic Field data
- Digital Elevation Model data

Maps

The following maps were delivered. All final map products were also delivered in both Geosoft map and PDF formats at resolution suitable to accurately reproduce the plotted products.

- Shaded Residual Magnetic Total Field (colour and colour interval)
- Shaded Magnetic First Vertical Derivative (colour interval)

Archives

- Archive media: DVD
- One Geosoft format digital archive of the final line data.
- One Geosoft format grid file for each of the processed parameters for the entire survey in NAD83, UTM projection.

Final Report

- Final technical report accompanied by one digital file in PDF format.

All other final products, video cassettes, logs, levelling documents.

10.0 CONCLUSION

Flown from November 25th , 2008 to May 27th, 2009, the aeromagnetic survey was completed inside the time frame allowed by the contract.

All airborne and ground-based records were of excellent quality. Magnetic data acquisition was done in good diurnal conditions. The noise level for the measured Total Magnetic Field was well within the accepted limits, determined from the fourth difference of the lagged, edited airborne magnetic data.

GPS results proved to be of high quality. The flight path was surveyed accurately and the speed checks showed no abnormal jumps in the data.

It is hoped that the information presented in this report, and on the accompanying products, will be useful both in planning subsequent exploration efforts and in the interpretation of related exploration data.

Respectfully Submitted,

Carlos Cortada, B.S.
Senior Geophysicist

ANNEXE A

ARCHIVE DESCRIPTION

Line channel description

Channel	Description	Unit
UTC	UTC time	second
Line	Flight Line Number	-
Flight	Flight Number	-
Date	Calendar Date flown	yyyy/mm/dd
X_nad83	Easting UTM co-ordinate using NAD83 datum	metre
Y_nad83	Northing UTM co-ordinate using NAD83 datum	metre
Long_nad83	Longitude using NAD83 datum	degree
Lat_nad83	Latitude using NAD83 datum	degree
Zgps	Differentially corrected GPS height using NAD83 datum	metre
Heading	Line Heading	degree
Pitch	Pitch angle	degree
Roll	Roll angle	degree
Yaw	Yaw angle	degree
Drape	Drape surface	metre
Radar	Corrected Radar altimeter	metre
DEM	Digital Elevation Model	metre
Mag_base	Corrected magnetic base station data	nT
mFluxX	X component of magnetic field - fluxgate sensor	nT
mFluxY	Y component of magnetic field - fluxgate sensor	nT
mFluxZ	Z component of magnetic field - fluxgate sensor	nT
MLu	Uncompensated magnetic field from left mag sensor	nT
MLc	Compensated raw magnetic field from left mag sensor	nT
MLclc	Compensated and Edited mag. field from left mag sensor	nT
MRu	Uncompensated magnetic field from right mag sensor	nT
MRc	Compensated raw magnetic field from right mag sensor	nT
MRclc	Compensated and Edited mag. field from right mag sensor	nT
MBu	Uncompensated magnetic field from tail mag sensor	nT
MBc	Compensated raw magnetic field from tail mag sensor	nT
MBclc	Compensated and Edited mag. field from tail mag sensor	nT
Drift_LF	Diurnal correction	nT
Magbc	Diurnally-corrected magnetic field from tail sensor	nT
corlvl	Levelling correction	nT
Maglvl	Levelled and diurnally-corrected mag. field from tail sensor	nT
cormicro	Microlevelling correction	nT
Magmicro	Microlevelled-corrected mag. field from tail sensor	nT
IGRF	Local IGRF field	nT
RMI	Residual Magnetic Intensity from tail sensor	nT
ghm	Raw Lateral Horizontal magnetic gradient (wingtip)	nT/m
ghcor	Levelling correction for Horizontal mag. gradient	nT/m
ghfinal	Levelled Lateral Horizontal magnetic gradient (wingtip)	nT/m
glm	Raw Longitudinal Horizontal magnetic gradient	nT/m
glcor	Levelling correction for Longitudinal mag. gradient	nT/m
glfinal	Levelled Longitudinal Horizontal magnetic gradient	nT/m

File names

CornerBrookDB.gdb	Profile Data Base (Geosoft format)
GRIDS	
DEM.grd	Digital Elevation Model (Geosoft Grid format)
TMI.grd	Total Magnetic Intensity
RMI.grd	Residual Magnetic Intensity
1VD.grd	First Vertical Derivative of Residual Magnetic Intensity
2VD.grd	Second Vertical Derivative of Residual Magnetic Intensity
HorGrad.grd	Measured lateral horizontal magnetic gradient
LongGrad.grd	Measured longitudinal horizontal magnetic gradient
MAPS	
MAG12A12.map	Levelled Residual Magnetic field map (Little Grand Lake)
MAG12A12.pdf	
MAG12A13.map	Levelled Residual Magnetic field map (Corner Brook)
MAG12A13.pdf	
MAG12B09.map	Levelled Residual Magnetic field map (Harry's River)
MAG12B09.pdf	
MAG12B16.map	Levelled Residual Magnetic field map (Serpentine)
MAG12B16.pdf	
MAG12G01.map	Levelled Residual Magnetic field map (Bay of Island)
MAG12G01.pdf	
MAG12H04.map	Levelled Residual Magnetic field map (Pasadena)
MAG12H04.pdf	
MAG12H05.map	Levelled Residual Magnetic field map (Lomond)
MAG12H05.pdf	
FVD12A12.map	First Vertical Derivative of Residual Mag. field map (Little Grand Lake)
FVD12A12.pdf	
FVD12A13.map	First Vertical Derivative of Residual Mag. field map (Corner Brook)
FVD12A13.pdf	
FVD12B09.map	First Vertical Derivative of Residual Mag. field map (Harry's River)
FVD12B09.pdf	
FVD12B16.map	First Vertical Derivative of Residual Mag. field map (Serpentine)
FVD12B16.pdf	
FVD12G01.map	First Vertical Derivative of Residual Mag. field map (Bay of Island)
FVD12G01.pdf	
FVD12H04.map	First Vertical Derivative of Residual Mag. field map (Pasadena)
FVD12H04.pdf	
FVD12H05.map	First Vertical Derivative of Residual Mag. field map (Lomond)
FVD12H05.pdf	

ANNEXE B

DAILY REPORT

Daily Report								
	Flight Time			Production (km)				
Date	Total	Survey	Ferry	Flown	Accept	Reject	Flights	Comments
18-Nov-08	00:00	00:00	00:00	0,0	0,0	0,0		Bourget test and FOM in Ottawa.
19-Nov-08	00:00	00:00	00:00	0,0	0,0	0,0		Ferry to Deer Lake
20-Nov-08	00:00	00:00	00:00	0,0	0,0	0,0		Ferry to Deer Lake
21-Nov-08	00:00	00:00	00:00	0,0	0,0	0,0		Ferry to Deer Lake
22-Nov-08	00:00	00:00	00:00	0,0	0,0	0,0		Crew arrived to Deer Lake
23-Nov-08	01:55	00:40	01:15	0,0	0,0	0,0	001	FOM and reconnaissance flight.
24-Nov-08	01:26	00:07	01:19	0,0	0,0	0,0	002	FOM
25-Nov-08	04:00	03:05	00:55	727,9	595,4	132,6	003	Production
26-Nov-08	03:39	03:21	00:18	449,1	449,1	0,0	004 005	Production
27-Nov-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
28-Nov-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
29-Nov-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
30-Nov-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
01-Dec-08	03:38	03:10	00:28	686,9	686,9	0,0	006	
02-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
03-Dec-08	05:30	05:08	00:22	1 001,2	1 001,2	0,0	007	
04-Dec-08	03:14	02:39	00:35	519,2	519,2	0,0	008	
05-Dec-08	01:33	00:54	00:39	177,6	164,3	13,3	009 010	
06-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
07-Dec-08	04:05	03:55	00:10	839,4	839,4	0,0	011	
08-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
09-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
10-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
11-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
12-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
13-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
14-Dec-08	02:54	02:40	00:14	578,1	578,1	0,0	012	
15-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
16-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
17-Dec-08	00:47	00:34	00:13	111,6	91,2	20,4	013	
18-Dec-08	01:22	01:05	00:17	237,2	208,8	28,4	014 015	
19-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
20-Dec-08	04:56	04:43	00:13	996,3	996,3	0,0	016	
21-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
22-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
23-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
24-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
25-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
26-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
27-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
28-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
29-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
30-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
31-Dec-08	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
01-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Holidays
02-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Holidays

Daily Report								
	Flight Time			Production (km)				
Date	Total	Survey	Ferry	Flown	Accept	Reject	Flights	Comments
03-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0	017	
04-Jan-09	04:45	04:36	00:09	1 008,3	1 008,3	0,0	018	
05-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
06-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
07-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
08-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
09-Jan-09	01:32	00:23	01:09	84,0	28,0	56,0	019 020	
10-Jan-09	01:35	01:02	00:33	209,8	209,8	0,0	021	
11-Jan-09	03:06	02:40	00:26	531,0	531,0	0,0	022	
12-Jan-09	05:11	04:53	00:18	1 098,0	1 098,0	0,0	023	
13-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
14-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
15-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
16-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
17-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0	024	
18-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
19-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
20-Jan-09	01:34	01:25	00:09	299,4	278,7	20,7	025	
21-Jan-09	02:27	02:10	00:17	458,5	434,0	24,5	026	
22-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
23-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
24-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
25-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
26-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
27-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
28-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
29-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
30-Jan-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
31-Jan-09	05:15	04:47	00:28	890,6	890,6	0,0	027	
01-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
02-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
03-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
04-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
05-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
06-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
07-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0	028	
08-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
09-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
10-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
11-Feb-09	01:05	00:11	00:54	52,2	52,2	0,0	029	
12-Feb-09	07:08	06:50	00:18	1 464,7	1 464,7	0,0	030 031	
13-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
14-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
15-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
16-Feb-09	02:05	01:54	00:11	1 003,4	968,9	34,6	032	
17-Feb-09	07:31	06:48	00:43	1 615,4	1 615,4	0,0	033 034	

Daily Report								
	Flight Time			Production (km)				
Date	Total	Survey	Ferry	Flown	Accept	Reject	Flights	Comments
18-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
19-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
20-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
21-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
22-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
23-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
24-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
25-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
26-Feb-09	08:05	07:08	00:57	1 596,5	1 596,5	0,0	035 036	
27-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
28-Feb-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
01-Mar-09	05:16	04:48	00:28	1 098,3	1 067,9	30,4	037	
02-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
03-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
04-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
05-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
06-Mar-09	06:16	05:02	01:14	1 203,8	1 139,7	64,2	038 039	
07-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
08-Mar-09	05:11	04:14	00:57	990,8	990,8	0,0	040	
09-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
10-Mar-09	05:33	04:09	01:24	915,1	915,1	0,0	041 042	
11-Mar-09	09:13	07:58	01:15	1 717,5	1 625,6	91,9	043 044	
12-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
13-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
14-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
15-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
16-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
17-Mar-09	04:09	03:38	00:31	826,7	826,7	0,0	045	
18-Mar-09	05:10	04:37	00:33	844,2	833,8	10,4	046	
19-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		Bad weather
20-Mar-09	00:52	00:05	00:47	20,0	20,0	0,0	047	Bad weather
21-Mar-09	05:00	04:39	00:21	970,5	908,3	62,2	048	
22-Mar-09	01:14	00:33	00:41	108,2	0,0	108,2	049	
23-Mar-09	04:47	04:23	00:24	551,6	551,6	0,0	050	
24-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		
25-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		
26-Mar-09	00:00	00:00	00:00	0,0	0,0	0,0		
27-Mar-09	03:18	02:46	00:32	646,0	646,0	0,0	051	Last Flight. End

ANNEXE C

CALIBRATION AND TESTS

AIRCRAFT: PIPER NAVAJO PA-31; C-GKSA

AEROMAGNETIC SURVEY SYSTEM CALIBRATION TEST RANGE
AT BOURGET, ONTARIO

Company: GDS Inc.
Aircraft: C-GKSA
Date: 18-Nov-08
Flt altitude: 500 feet

Magnetometer type: Geometrics
DAS type: DAARC500
Compiled by: Carlos Cortada

Dir	Radar (m)	UTC (h:mm:ss.s)	Mag Left	Mag Right	Mag Tail	Diurnal
North	162,88	19:47:09.7	54640,69	54646,14	54649,48	55201,54
South	167,80	19:50:38.9	54638,87	54644,32	54647,68	55199,93
East	165,77	20:09:01.2	54638,66	54644,03	54647,71	55200,60
West	188,55	20:04:42.2	54641,49	54646,83	54650,05	55200,94
North	166,85	19:54:51.8	54639,10	54644,71	54647,97	55200,10
South	164,13	19:58:48.7	54639,59	54645,15	54648,39	55200,67
East	170,22	20:17:57.6	54638,77	54644,16	54647,83	55200,40
West	182,02	20:13:15.1	54640,43	54645,79	54649,01	55200,50

Obs Value	Error Left	Error Right	Error Tail	Heading Left	Heading Right	Heading Tail	Mean Left	Mean Right	Mean Tail
54645,54	-4,84	0,60	3,94						
54643,93	-5,06	0,39	3,75	Ave. North-South Heading					
54644,60	-5,95	-0,58	3,10	0,15	0,17	0,17			
54644,94	-3,45	1,89	5,10				-4,88	0,56	3,93
54644,10	-5,00	0,61	3,88	Ave. East-West Heading					
54644,67	-5,07	0,49	3,72	-2,03	-1,99	-1,54			
54644,40	-5,62	-0,24	3,43						
54644,50	-4,07	1,29	4,51						

FOM Test

Location: Deer Lake
Pilot: Charles Matteau
Operator: Jean-Yves Bernier
Compiled by: Carlos Cortada

Date: 24-Nov-08
Aircraft: C-GKSA
Configuration: Triax
Altitude: 2700m

Sensor1 - Left Wing

NW (310º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		2,663	0,075	35,520
ROLL		3,610	0,100	36,126
YAW		1,342	0,138	9,717
	TOTAL	**7,614**	**0,313**	**24,328**

NE (40º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		2,335	0,121	19,320
ROLL		10,693	0,101	105,678
YAW		1,222	0,346	3,537
	TOTAL	**14,250**	**0,568**	**25,103**

SE (130º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		2,856	0,100	28,483
ROLL		9,840	0,114	86,593
YAW		2,619	0,166	15,756
	TOTAL	**15,315**	**0,380**	**40,288**

SW (220º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		2,551	0,121	21,007
ROLL		2,998	0,142	21,095
YAW		1,016	0,172	5,908
	TOTAL	**6,564**	**0,436**	**15,072**

Uncomp. mag (nT)	**Comp. mag (nT)**	**Improv. Ratio**
43,744	**1,696**	**25,787**

FOM Test

Location: Deer Lake
Pilot: Charles Matteau
Operator: Jean-Yves Bernier
Compiled by: Carlos Cortada

Date: 24-Nov-08
Aircraft: C-GKSA
Configuration: Triax
Altitude: 2700m

Sensor2 - Right Wing

NW (310º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		0,388	0,104	3,728
ROLL		1,702	0,049	35,071
YAW		0,310	0,120	2,573
	TOTAL	**2,400**	**0,273**	**8,791**

NE (40º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		0,617	0,092	6,698
ROLL		4,681	0,070	66,473
YAW		0,457	0,091	5,025
	TOTAL	**5,755**	**0,253**	**22,704**

SE (130º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		1,583	0,045	34,835
ROLL		2,104	0,059	35,520
YAW		0,663	0,049	13,497
	TOTAL	**4,350**	**0,154**	**28,283**

SW (220º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		0,837	0,056	14,942
ROLL		3,727	0,071	52,398
YAW		0,752	0,115	6,523
	TOTAL	**5,315**	**0,242**	**21,930**

Uncomp. mag (nT)	**Comp. mag (nT)**	**Improv. Ratio**
17,821	**0,923**	**19,313**

FOM Test

Location: Deer Lake
Pilot: Charles Matteau
Operator: Jean-Yves Bernier
Compiled by: Carlos Cortada

Date: 24-Nov-08
Aircraft: C-GKSA
Configuration: Triax
Altitude: 2700m

Sensor3 - Tail Stinger

NW (310º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		1,240	0,030	41,838
ROLL		0,524	0,025	20,765
YAW		0,442	0,052	8,546
	TOTAL	**2,206**	**0,107**	20,701

NE (40º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		1,010	0,041	24,766
ROLL		0,715	0,021	34,496
YAW		0,435	0,031	14,152
	TOTAL	**2,160**	**0,092**	23,414

SE (130º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		0,449	0,051	8,887
ROLL		0,671	0,032	21,233
YAW		0,200	0,025	8,103
	TOTAL	**1,321**	**0,107**	12,357

SW (220º)	Fid range	Uncompensated mag (nT)	Compensated mag (nT)	Improv. Ratio
PITCH		0,096	0,036	2,690
ROLL		0,335	0,027	12,426
YAW		0,137	0,030	4,627
	TOTAL	**0,568**	**0,092**	6,161

Uncomp. mag (nT)	**Comp. mag (nT)**	**Improv. Ratio**
6,256	0,398	**15,720**

terrain clearance (ft)	zgps (m)	radar (mV)	radarB (mV)	baro (mV)
100	52,09	0,40	0,79	1026,36
200	72,47	0,64	1,28	1023,92
300	141,70	1,54	3,07	1015,06
400	183,91	2,01	4,02	1009,59
600	256,02	2,90	5,80	1000,66
800	303,27	3,41	6,82	994,88
1000	356,10	3,89	7,79	988,65
1200	447,57	4,73	9,46	977,37

Test Results	
BM= -8,06024 BC= 8321,127	Baro
RM= 89,32825 RC= -15,909	Radar
RBM= 44,66412 RBC= -15,909	RadarB

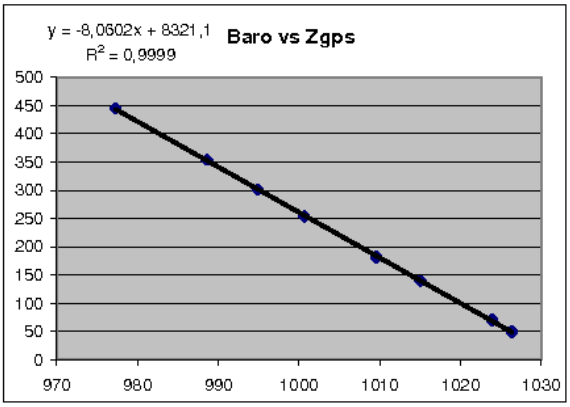
Geo Data Solutions

ALTIMETER CALIBRATION

Location: Deer Lake
Pilot: Charles Matteau
Operator: Jean-Yves Bernier

Date: 26-Nov-08
Aircraft: C-GKSA
Compiled by: Carlos Cortada

Airport alt (m): 22,2 Antenna Height (m): 2,5

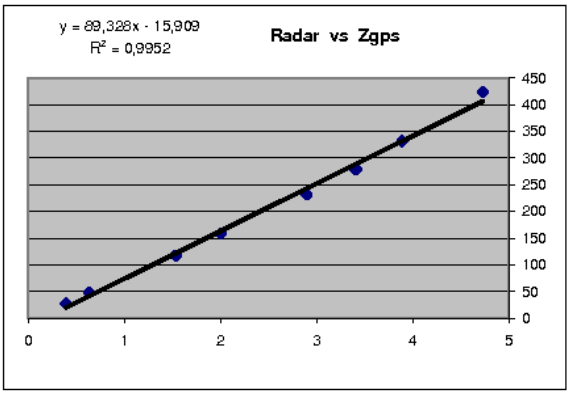
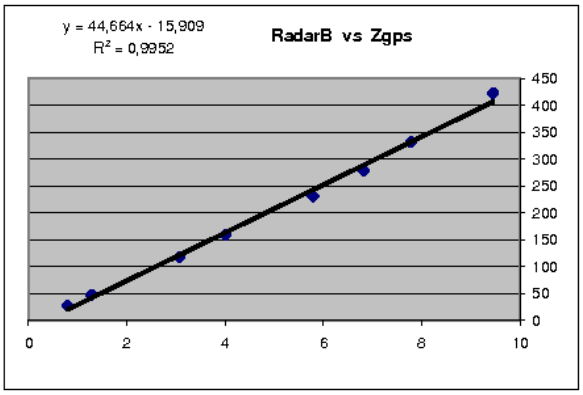


Baro vs Zgps

baro (mV)	zgps (m)	Test Baro (m)	Error
1026,36	49,59	48,46	-1,13
1023,92	69,97	68,13	-1,85
1015,06	139,20	139,52	0,32
1009,59	181,41	183,59	2,18
1000,66	253,52	255,56	2,05
994,88	300,77	302,17	1,41
988,65	353,60	352,41	-1,19
977,37	445,07	443,28	-1,79
			0,00

Radar vs Zgps

radar (mV)	Z-Airport alt(m)	Test Radar (m)	Error	
0,40	27,42	19,42	-8,00	90
0,64	47,80	41,39	-6,41	157
1,54	117,02	121,42	4,40	384
2,01	159,23	163,61	4,38	522
2,90	231,34	243,01	11,66	759
3,41	278,59	288,63	10,04	914
3,89	331,43	331,82	0,40	1087
4,73	422,90	406,43	-16,46	1387
			0,00	

RadarB vs Zgps

radar (mV)	Z-Airport alt(m)	Test Radar (m)	Error
0,79	27,42	19,42	-8,00
1,28	47,80	41,39	-6,41
3,07	117,02	121,42	4,40
4,02	159,23	163,61	4,38
5,80	231,34	243,01	11,66
6,82	278,59	288,63	10,04
7,79	331,43	331,82	0,40
9,46	422,90	406,43	-16,46
			0,00