

Logistics Report

for a

DETAILED AIRBORNE MAGNETIC, RADIOMETRIC AND DIGITAL ELEVATION SURVEY

for the

FANNY CREEK PROJECT

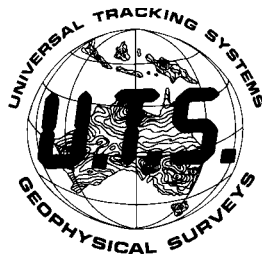
carried out on behalf of

CAMECO AUSTRALIA PTY LTD

by

UTS GEOPHYSICS

(UTS Job #A397)



VALENTINE ROAD, PERTH AIRPORT
PO BOX 126, BELMONT WA 6104
Telephone +61 8 9479 4232 Facsimile +61 8 9479 7361
A.B.N. 31 058 054 603

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1 GENERAL SURVEY INFORMATION

In September 2000, UTS Geophysics conducted a low level airborne geophysical survey approximately 90km north-east of Jabiru for Cameco Australia.

This report summarises the logistics, survey parameters and processing details of the survey.

The survey commenced on the 4th September 2000 and was completed on the 10th September 2000.

UTS Geophysics provided the described survey for the following company:

Cameco Australia Pty Ltd
66 Winnellie Road
WINNELLIE, NT 0820

2 SURVEY LOCATION

The area surveyed was approximately 150km south of Jabiru in the Northern Territory. A survey location map is provided in Appendix C of this report.

The survey was flown using the AMG84 coordinate system (a Universal Transverse Mercator projection) derived from the Australian Geodetic Datum and was contained within zone 53 with a central meridian of 135 degrees. Details of the datum and projection system are provided in Appendix B of this report.

3 AIRCRAFT AND SURVEY EQUIPMENT

The UTS navigation flight control computer, data acquisition system and geophysical sensors were installed into a specialised geophysical survey aircraft.

The list of geophysical and navigation equipment used for the survey is as follows:

General Survey Equipment

- FU24-954 fixed wing survey aircraft.
- UTS proprietary flight planning and survey navigation system.
- UTS proprietary high speed digital data acquisition system.
- Novatel 3951R, 12 channel precision navigation GPS.
- Satellite transmitted differential GPS correction receiver.
- UTS LCD pilot navigation display and external track guidance display.
- UTS post mission data verification and processing system.
- Bendix King KRA-405 radar altimeter.

Magnetic Data Acquisition Equipment

- UTS tail stinger magnetometer installation.
- Scintrex Cesium Vapour CS-2 total field magnetometer.
- Fluxgate three component vector magnetometer.
- RMS Aeromagnetic Automatic Digital Compensator (AADC II).
- Diurnal monitoring magnetometer (Scintrex Envimag).

Radiometric Data Acquisition Equipment

- Exploranium GR-820 gamma ray spectrometer.
- Exploranium gamma ray detectors.
- Barometric altimeter (height and pressure measurements).
- Temperature and humidity sensor.

3.1 Survey Aircraft

The aircraft used was a FU24-954 fixed wing survey aircraft owned by UTS Geophysics, registration VH-HVP.

Power Plant

- Engine Type Single engine, Lycoming, IO-720
- Brake Horse Power 400 bhp
- Fuel Type AV-GAS

Performance

- Cruise speed 105 Kn
- Survey speed 100 Kn
- Stall speed 45 Kn
- Range 970 Km
- Endurance (no reserves) 5 hours
- Fuel tank capacity 490 litres



3.2 Data Positioning and Flight Navigation

Survey data positioning and flight line navigation was derived using real-time differential GPS (Global Positioning System).

Navigation was provided through a UTS designed and built electronic pilot navigation system providing computer controlled digital navigation instrumentation mounted in the cockpit as well as an externally mounted track guidance system.

GPS derived positions were used to provide both aircraft navigation and survey data location information.

The GPS systems used for the survey were:

- Aircraft GPS Model Novatel 3951R
- GPS satellite tracking channels 12 parallel
- Typical differentially corrected accuracy 2-3 metres (horizontal)
- Real-time differential service RACAL Landstar

3.3 UTS Data Acquisition System and Digital Recording

All geophysical sensor data and positional information measured during the survey was recorded using a UTS developed, high speed, precision data acquisition system. Survey data was downloaded onto magnetic tape on completion of each survey flight.

Instrument synchronisation times were measured and removed in real-time by the UTS data acquisition system.

3.4 *Altitude Readings*

Accurate survey heights above the terrain were measured using a King radar altimeter installed in the aircraft. The height of each survey data point was measured by the radar altimeter and stored by the UTS data acquisition system.

- | | |
|-------------------------|--------------------------------------|
| • Radar altimeter model | King KRA-405, twin antenna altimeter |
| • Accuracy | 0.3 metres |
| • Resolution | 0.1 metres |
| • Range | 0 - 500 metres |
| • Sample rate | 0.1 Seconds (10Hz) |

3.5 *UTS Stinger Mounted Magnetometer System*

The installation platform used for the acquisition of magnetic data was a tail mounted stinger. This proprietary stinger system was constructed of carbon fibre and designed for maximum rigidity and stability.

Both the total field magnetometer and three component vector magnetometer were located within the tail stinger.



3.6 *Total Field Magnetometer*

Total field magnetic data readings for the survey were made using a Scintrex Cesium Vapour CS-2 Magnetometer. This precision sensor has the following specifications:



- | | |
|---------------------|--|
| • Model | Scintrex Cesium Vapour CS-2 Magnetometer |
| • Sample Rate | 0.1 seconds (10Hz) |
| • Resolution | 0.001nT |
| • Operating Range | 15,000nT to 100,000nT |
| • Temperature Range | -20°C to +50°C |

3.7 Aircraft Magnetic Compensation

At the start of the survey, the system was calibrated for reduction of magnetic heading error. The heading and manoeuvre effects of the aircraft on the magnetic data was removed using an RMS Automatic Airborne Digital Compensator (AADC II).

Calibration of the aircraft heading effects were measured by flying a series of pitch, roll and yaw manoeuvres at high altitude while monitoring changes in the three axis magnetometer and the effect on total field readings. A 26 term model of the aircraft magnetic noise covering permanent, induced and eddy current fields was determined. These coefficients were then applied to the data collected during the survey in real-time.

UTS static compensation techniques were also employed to reduce the initial magnetic effects of the aircraft upon the survey data.

3.8 Diurnal Monitoring Magnetometer



A base station magnetometer was located in a low gradient area beyond the region of influence by any man made interference to monitor diurnal variations during the survey.

The specifications for the magnetometer used are as follows:

- Model Scintrex Envimag
- Resolution 0.1 nT
- Sample interval 10 seconds (0.1Hz)
- Operating range 20,000nT to 90,000nT
- Temperature -20°C to +50°C

3.9 Barometric Altitude

An Air DB barometric altimeter was installed in the aircraft so as to record and monitor barometric height and pressure. The data was recorded at 0.33 second intervals and is used for the reduction of the radiometric data.

- | | |
|-------------------------------|-----------------------------|
| • Model | Air DB barometric altimeter |
| • Accuracy | 2 metres |
| • Height resolution | 0.1 metres |
| • Height range | 0 - 3500 metres |
| • Maximum operating pressure: | 1,300 mb |
| • Pressure resolution: | 0.01 mb |
| • Sample rate | 3 Hz |

3.10 Temperature and Humidity

Temperature and humidity measurements were made during the survey at a sample rate of 10Hz. Ambient temperature was measured with a resolution of 0.1 degree Celsius and ambient humidity to a resolution of 0.1 percent.

3.11 Radiometric Data Acquisition

The gamma ray spectrometer used for the survey was capable of recording 256 channels and was self stabilising in order to minimise spectral drift. The detectors used contain thallium activated sodium iodide crystals.

Thorium, cesium and uranium source measurements were made each survey day to monitor system resolution and sensitivity. A calibration line was also flown at the start and end of each survey day to monitor ground moisture levels and system performance.

- | | |
|----------------------|-------------------|
| • Spectrometer model | Exploranium GR820 |
| • Detector volume | 50 litres |



4 PERSONNEL

4.1 *Field Operations*

UTS Geophysics operator and data processor	Leslie Preney
UTS Geophysics Survey Pilot	Stephen Ingham Troy Wilhelmi

4.2 *Project Management*

Cameco Australia Pty Ltd	Geoff Beckitt
UTS Geophysics Perth Office	Neil Goodey

5 SURVEY PARAMETERS

The survey data acquisition specifications for each area flown are specified in the following table:

PROJECT NAME	LINE SPACING	LINE DIRECTION	TIE LINE SPACING	TIE LINE DIRECTION	SENSOR HEIGHT	TOTAL LINE KM
Fanny Creek Project	400m	000-180	4000m	090-270	60m	1,961
TOTAL						1,961

The total number of line kilometres of survey data collected over the survey areas specified in the above table was 1,195.

The specified sensor height for the magnetic samples is as stated in the above table. This sensor height may be varied where topographic relief or laws pertaining to built up areas do not allow this altitude to be maintained, or where the safety of the aircraft and equipment is endangered.

The coordinate boundaries for the survey area flown are detailed in Appendix C.

6 SURVEY LOGISTICS

The base location used for operating the aircraft and performing in-field quality control and data processing of the survey data was the ERA Contactors Camp at Jabiru in the Northern Territory. The aircraft was operated from the Jabiru Airport.

6.1 Survey Flight Summary

The following table summarises the flight logs for the survey area flown:

Flight Date	Area No	Flight No	Area Name / Survey Details	Lines Flown	Line Km Flown
04/09/00	01	01	Fanny Creek – Traverse Lines 100470-100650	18	526
05/90/00	01	02	Fanny Creek – Traverse Lines 100460-100360, 100660	12	332
06/09/00			No Flying		
07/09/00			No Flying		
08/09/00	01	03	Fanny Creek – Traverse Lines 100220-100350	14	384
09/09/00	01	04	Fanny Creek – Traverse Lines 100100-100210	13	332
10/09/00	01	T1	Fanny Creek – Tie Lines 190010-190070	7	157
	01	05	Fanny Creek – Traverse Lines 100010-100090	9	230
TOTAL					1,961

A complete survey kilometre report is contained in Appendix G of this report.

6.2 *Diurnal Magnetometer Locations*

The following table contains the approximate locations where the diurnal base station magnetometer was located for each survey area.

Area Name	Period	Base Station ID	Location
Fanny Creek	04/09/00-10/09/00	41	2km from the Jabiru Airstrip

6.3 *Spectrometer Calibration Results*

Appendix E of this report contains the results of the daily spectrometer resolution and sensitivity tests performed during the survey.

7 DATA PROCESSING PROCEDURES

7.1 *Magnetic Data Processing*

The raw magnetic survey data was loaded from the field tapes and the recorded data trimmed to the correct survey boundary extents. Lines subsequently reflowed were removed from the data. System parallax was removed from the raw data using corrections measured by the acquisition system.

The diurnal base station data was loaded, checked and suitably filtered for correction of the aircraft magnetic data. The filtered diurnal measurements were subtracted from the diurnal base field and the residual corrections applied to the survey data by synchronising the diurnal data time and the aircraft survey time.

The regional magnetic gradient was subtracted from the survey data by application of the IGRF model extrapolated to the date of the survey and interpolated on the survey position.

The data was then corrected to remove any residual parallax errors. Tie line levelling was applied to the parallax corrected data by measuring tie line crossover points with the survey traverse line data.

Final microlevelling techniques were then applied to the tie line leveled data to remove minor residual variations in profile intensities.

Located and gridded data were generated from the final processed magnetic data.

7.2 *Radiometric Data Processing*

The raw radiometric survey data was loaded from the field tapes and the recorded data trimmed to the correct survey boundary extents. Lines subsequently reflowed were removed from the data. System parallax was removed from the raw data using corrections measured by the acquisition system.

Statistical noise reduction of the 256 channel data was performed using the Maximum Noise Fraction (MNF) method described by Dickson and Taylor (1998). This method constructs a noise covariance model from the survey data, which is then decorrelated and re-scaled so that the model has unit variance and no channel-to-channel correlation.

A principal component transformation of the noise-whitened data is performed, and the number of components to be saved is determined by ranking the eigenvectors by signal-to-noise ratio. The signal-rich components are retained, and the spectral data reconstructed without the noise fraction. Typically, 32-42 MNF components are retained during this process.

Channels 30-250 only are noise-cleaned, as these contain the regions of interest and are not dominated by the lower end of the Compton continuum. The energy spectrum between the potassium and thorium peaks was recalibrated from the noise-cleaned 256 channel measurements.

The 256 channel data was then windowed to the 5 primary channels of total count, potassium, uranium, thorium and low-energy uranium. Dead time corrections were then applied to the data.

Cosmic and aircraft background corrections were applied. Radon background removal was performed using the Minty Spectral Ratio method (1992). Spectral stripping was then applied to the windowed data.

The radar altimeter data was corrected to standard temperature and pressure. Height corrections based on the STP radar altimeter were then performed to remove any altitude variation effects from the data (refer to Appendix E for stripping ratios and equations).

The corrected count rate data was then converted to ground concentrations for potassium, uranium and thorium. Final microlevelling of the total count, potassium, uranium and thorium data was then applied to remove minor residual variations in profile intensities.

For further information concerning the survey flown, please contact the following office:

Head Office Address:

UTS Geophysics
Valentine Road, Perth Airport
REDCLIFFE WA 6104

Tel: +61 8 9479 4232
Fax: +61 8 9479 7361

Postal Address:

UTS Geophysics
P.O. Box 126
BELMONT WA 6104

Quoting reference number: A397

APPENDIX A - LOCATED DATA FORMATS

MAGNETIC LOCATED DATA

FIELD	FORMAT	DESCRIPTION	UNITS
1	I6	LINE NUMBER	
2	I5	FLIGHT/AREA NUMBER	AAFF (Area/Flight)
3	I8	DATE	YYMMDD
4	F11.1	TIME	sec
5	I8	FIDUCIAL NUMBER	
6	I3	UTM/AMG ZONE	
7	F10.2	EASTING (AMG84)	metres
8	F11.2	NORTHING (AMG84)	metres
9	F13.7	LATITUDE (WGS84)	degrees
10	F13.7	LONGITUDE (WGS84)	degrees
11	F10.2	EASTING (MGA94)	metres
12	F11.2	NORTHING (MGA94)	metres
13	F7.1	RADAR ALTIMETER HEIGHT	metres
14	F7.1	GPS HEIGHT (WGS84)	metres
15	F7.1	TERRAIN HEIGHT (WGS84)	metres
16	F10.2	RAW MAGNETIC INTENSITY	nT
17	F10.2	DIURNAL CORRECTION	nT
18	F10.2	LEVELLED MAGNETIC INTENSITY	nT
19	F10.2	IGRF CORRECTION	nT
20	F10.2	LEVELLED, IGRF CORRECTED	nT

RADIOMETRIC LOCATED DATA

FIELD	FORMAT	DESCRIPTION	UNITS
1	I6	LINE NUMBER	
2	I5	FLIGHT/AREA NUMBER	AAFF (Area/Flight)
3	I8	DATE	YYMMDD
4	F11.1	TIME	sec
5	I8	FIDUCIAL NUMBER	
6	I3	UTM/AMG ZONE	
7	F10.2	EASTING (AMG84)	metres
8	F11.2	NORTHING (AMG84)	metres
9	F13.7	LATITUDE (WGS84)	degrees
10	F13.7	LONGITUDE (WGS84)	degrees
11	F10.2	EASTING (MGA94)	metres
12	F11.2	NORTHING (MGA94)	metres
13	F7.1	RADAR ALTIMETER HEIGHT	metres
14	F7.1	GPS HEIGHT (WGS84)	metres
15	I5	LIVE TIME	milli sec
16	F7.1	PRESSURE	hPa
17	F5.1	TEMPERATURE	Degrees Celcius
18	F8.1	TOTAL COUNT (RAW)	Counts/sec
19	F7.1	POTASSIUM (RAW)	Counts/sec
20	F7.1	URANIUM (RAW)	Counts/sec
21	F7.1	THORIUM (RAW)	Counts/sec
22	F7.1	COSMIC (RAW)	Counts/sec
23	F7.1	URANIUM LOW (RAW)	Counts/sec
24	F7.1	URANIUM UP (RAW)	Counts/sec
25	F8.1	TOTAL COUNT (CORRECTED)	Counts/sec
26	F7.1	POTASSIUM (CORRECTED)	Counts/sec
27	F7.1	URANIUM (CORRECTED)	Counts/sec
28	F7.1	THORIUM (CORRECTED)	Counts/sec
29	F7.3	POTASSIUM GRND CONCENTRATION	%
30	F7.3	URANIUM GRND CONCENTRATION	ppm
31	F7.3	THORIUM GRND CONCENTRATION	ppm

DIGITAL TERRAIN MODEL LOCATED DATA

FIELD	FORMAT	DESCRIPTION	UNITS
1	I6	LINE NUMBER	
2	I8	FIDUCIAL NUMBER	
3	I3	UTM/AMG ZONE	
4	F10.2	EASTING (AMG84)	metres
5	F11.2	NORTHING (AMG84)	metres
6	F13.7	LATITUDE (WGS84)	degrees
7	F13.7	LONGITUDE (WGS84)	degrees
8	F10.2	EASTING (MGA94)	metres
9	F11.2	NORTHING (MGA94)	metres
10	F7.1	RADAR ALTIMETER HEIGHT	metres
11	F7.1	GPS HEIGHT (WGS84)	metres
12	F7.1	TERRAIN HEIGHT (WGS84)	metres

GRIDDED DATASET FORMATS

Gridding was performed using a bicubic spline algorithm.

The following grid formats have been provided:

- ER-Mapper format

LINE NUMBER FORMATS

Line numbers are identified with a six digit composite line number and have the following format - ALLLLB, where:

A	Survey area number
LLLL	Survey line number 0001-8999 reserved for traverse lines 9001-9999 reserved for tie lines
B	Line attempt number, 0 is attempt 1, 1 is attempt 2 etc..

UTS FILE NAMING FORMATS

Located and gridded data provided by UTS Geophysics uses the following 8 character file naming convention to be compatible with PC DOS based systems.

File names have the following general format - JJJJAABB.EEE, where:

JJJJ	UTS Job number
AA	Area number if the survey is broken into blocks
BB	M Magnetic data R Radiometric data TC Total count data K Potassium counts U Uranium counts Th Thorium counts KC Potassium concentration UC Uranium concentration ThC Thorium concentration DT Digital terrain data
EEE	File name extension LDT Located digital data file FMT Located data format definition file ERS Ermapper gridded data header file Ermapper data portion has no extension GRD Geosoft gridded data file

APPENDIX B - COORDINATE SYSTEM DETAILS

Locations for the survey data are provided in both geographical latitude and longitude and Universal Transverse Mercator metric projection coordinate systems.

WGS84	World Geodetic System 1984
Coordinate Type	Geographical
Semi Major Axis	6378137m
Flattening	1/298.257223563
AMG84	Australian Map Grid 1984
Coordinate Type	Universal Transverse Mercator Projection Grid
Geodetic datum	Australian Geodetic Datum
Semi Major Axis	6378160m
Flattening	1/298.25
MGA94	Map Grid of Australia 1994
Coordinate type	Universal Transverse Mercator Projection Grid
Geodetic datum	Geodetic Datum of Australia
Semi major axis	6378137m
Flattening	1/298.257222101

APPENDIX C - SURVEY BOUNDARY DETAILS

Job ID code: A39701

Client: Cameco Australia Pty Ltd

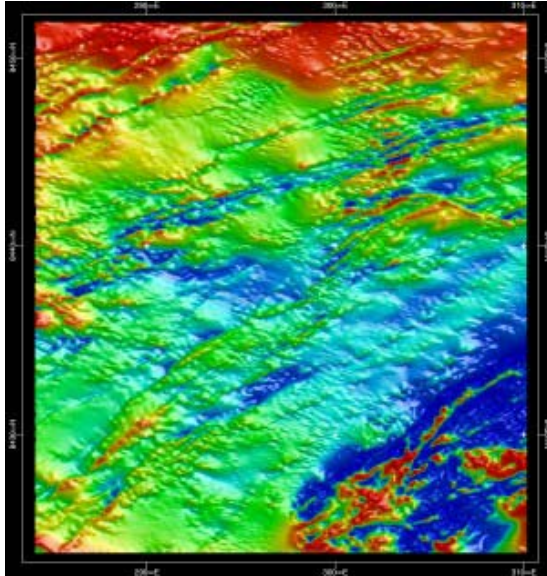
Job: Marligur Fanny Creek

Coordinate System AMG84 Grid Zone: 53

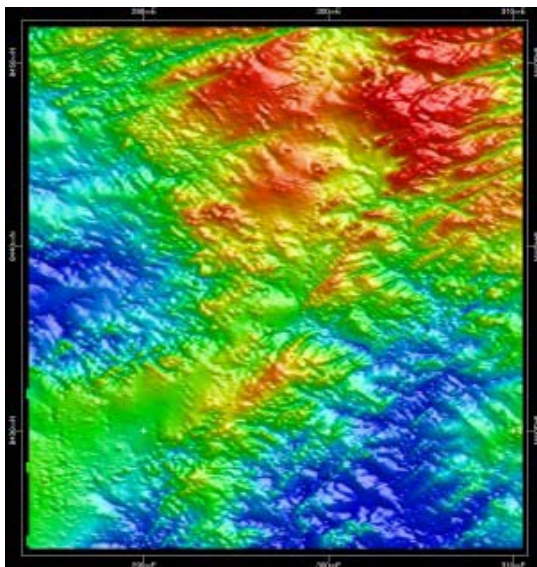
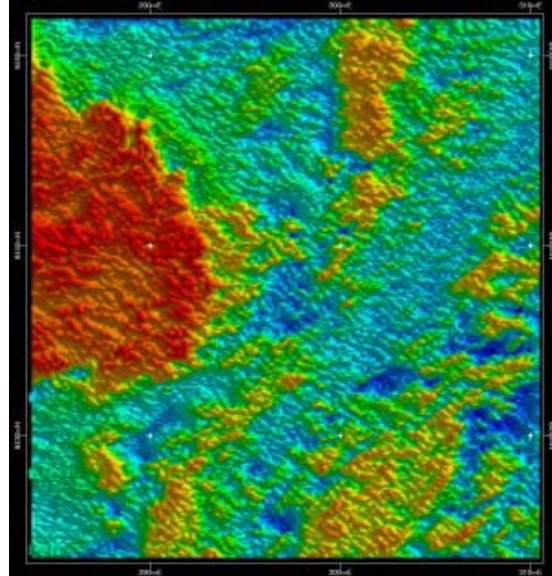
310059.000	8451563.000
283815.000	8451378.000
284214.000	8423691.000
310266.000	8423902.000

APPENDIX D - PROJECT DATA OVERVIEW

Fanny Creek Project 1



Total Magnetic Intensity
Radiometric Total Count



Digital Terrain Model

APPENDIX E – RADIOMETRIC CALIBRATION RESULTS

APPENDIX F – DATA PROCESSING PARAMETERS

Magnetic Data

Fanny Creek Project

IGRF date	2000.70
IGRF mean value	47399.3 nT
Magnetic inclination	-43.067 deg
Magnetic declination	4.115 deg
Diurnal base value	46455 nT

Radiometric Data

Stripping Ratios

α	0.312
β	0.462
γ	0.945
a	0.070
b	0.000
c	0.000

Height Attenuation Coefficients

Total Count	-0.0055
Potassium	-0.0072
Uranium	-0.0063
Thorium	-0.0054

Final Reduction - All data reduced to STP height datum 60m

Stripping Equations

α	=	$\alpha + \text{STPHeight} * 0.00049$
β	=	$\beta + \text{STPHeight} * 0.00065$
γ	=	$\gamma + \text{STPHeight} * 0.00069$
tho`	=	$(\text{tho} - (a * \text{ura})) / (1 - (a * \alpha))$
ura`	=	$(\text{ura} - (\alpha * \text{tho})) / 1 - (a * \alpha)$
pot`	=	$\text{pot} - (\beta * \text{tho`}) - (\gamma * \text{ura`})$

Conversion to Concentrations

% K	=	k.cps / 238.1
ppm U	=	u.cps / 21.7
ppm Th	=	th.cps / 13.4

APPENDIX G – SURVEY KILOMETRE REPORT

LINE KM REPORT FOR a39701m.ltd

LINE	FLT	DATE	START COORDINATE		END COORDINATE		LINE KM
190060	191	000910	283808	8449998	310149	8450001	26.3
190050	191	000910	310120	8446000	283807	8446002	26.3
190040	191	000910	283921	8441997	310194	8442000	26.3
190030	191	000910	310192	8438058	283948	8438000	26.3
190020	191	000910	284028	8433992	310270	8433994	26.2
190010	191	000910	310234	8429996	284045	8430000	26.2
190110	202	000916	284160	8426000	310333	8425998	26.2
190120	202	000916	283504	8435993	310499	8435998	27.0
190130	202	000916	310495	8440001	283504	8440000	27.0
190140	202	000916	283504	8443997	310498	8443997	27.0
190150	202	000916	310496	8448003	283502	8448002	27.0
390080	392	001024	283505	8451999	310497	8452000	25.5
390090	392	001024	283502	8424001	310495	8423997	27.0
390100	392	001024	310495	8428003	283501	8427999	27.0
100650	101	000904	283503	8432000	310497	8432001	27.0
100640	101	000904	284596	8451412	284599	8423616	27.8
100630	101	000904	284994	8423680	285000	8451459	27.8
100620	101	000904	285400	8451435	285396	8423625	27.8
100610	101	000904	285801	8423659	285805	8451464	27.8
100600	101	000904	286206	8451422	286199	8423619	27.8
100590	101	000904	286593	8423682	286601	8451483	27.8
100580	101	000904	287000	8451447	287003	8423628	27.8
100570	101	000904	287400	8423690	287404	8451485	27.8
100560	101	000904	287802	8451453	287805	8423645	27.8
100550	101	000904	288193	8423700	288200	8451495	27.8
100540	101	000904	288599	8451459	288600	8423650	27.8
100530	101	000904	289006	8423702	289002	8451493	27.8
100520	101	000904	289410	8451459	289400	8423649	27.8
100510	101	000904	289802	8423697	289810	8451486	27.8
100500	101	000904	290202	8451470	290201	8423656	27.8
100490	101	000904	290606	8451455	290597	8423666	27.8
100480	101	000904	290982	8423718	291003	8451497	27.8
100470	101	000904	291414	8451464	291407	8423679	27.8
100660	102	000905	291784	8423725	291801	8451505	27.8
100460	102	000905	284202	8423679	284203	8451456	27.8
100450	102	000905	292203	8451471	292201	8423689	27.8
100440	102	000905	292587	8423731	292600	8451508	27.8
100430	102	000905	293006	8451481	293002	8423680	27.8
100420	102	000905	293400	8423721	293404	8451524	27.8
100410	102	000905	293794	8451498	293800	8423681	27.8
100400	102	000905	294207	8423736	294209	8451532	27.8
100390	102	000905	294593	8451480	294599	8423708	27.8
100380	102	000905	294990	8423751	295003	8451532	27.8
100370	102	000905	295394	8451484	295399	8423710	27.8
100360	102	000905	295799	8423742	295803	8451528	27.8
100350	103	000908	296199	8451510	296204	8423715	27.8
100340	103	000908	296609	8423747	296599	8451543	27.8
100330	103	000908	297011	8451500	297000	8423709	27.8
100320	103	000908	297386	8423762	297396	8451540	27.8
100310	103	000908	297794	8451508	297799	8423719	27.8
100300	103	000908	298185	8423783	298200	8451560	27.8
100290	103	000908	298609	8451509	298597	8423743	27.8
100280	103	000908	298997	8423788	299002	8451568	27.8
100270	103	000908	299396	8451528	299400	8423750	27.8
100260	103	000908	299794	8423767	299800	8451551	27.8
100250	103	000908	300202	8451519	300199	8423743	27.8
100240	103	000908	300598	8423784	300591	8451582	27.8
100230	103	000908	300984	8451522	301000	8423758	27.8
100220	103	000908	301383	8423788	301400	8451586	27.8
100210	104	000909	301803	8451538	301801	8423751	27.8
100200	104	000909	302199	8451550	302199	8423769	27.8
100190	104	000909	302593	8423800	302600	8451599	27.8
100180	104	000909	303000	8451556	303002	8423772	27.8
100170	104	000909	303393	8423825	303399	8451581	27.8
100160	104	000909	303800	8451549	303797	8423769	27.8
100150	104	000909	304184	8423815	304203	8451605	27.8
100140	104	000909	304598	8451538	304597	8423789	27.8
100130	104	000909	305001	8423830	304999	8451614	27.8
100120	104	000909	305397	8451570	305398	8423785	27.8
100110	104	000909	305790	8423839	305802	8451619	27.8
100100	104	000909	306214	8451576	306204	8423795	27.8

100090	105	000910	306602	8423846	306601	8451605	27.8
100080	105	000910	307005	8451568	306999	8423796	27.8
100070	105	000910	307390	8423848	307401	8451616	27.8
100060	105	000910	307799	8451589	307800	8423803	27.8
100050	105	000910	308186	8423846	308201	8451639	27.8
100040	105	000910	308609	8451597	308601	8423822	27.8
100030	105	000910	309001	8423871	308997	8451632	27.8
100010	105	000910	309404	8451589	309400	8423821	27.8
100020	105	000910	310194	8451706	310202	8423835	27.9
101400	132	000823	309781	8423861	309803	8451643	27.8
101390	132	000823	283997	8451999	283996	8423505	28.5
101380	136	000905	284400	8423503	284400	8451996	28.5
101370	137	000905	284801	8451998	284803	8423501	28.5
101360	138	000906	285199	8423501	285198	8451996	28.5
101350	138	000906	285602	8451995	285599	8423503	28.5
101340	140	000908	286002	8423502	286000	8451998	28.5
101330	141	000908	286395	8451999	286400	8423503	28.5
101321	144	000909	286800	8423505	286803	8451995	28.5
101310	144	000909	287197	8451996	287199	8423504	28.5
101301	146	000910	287601	8423505	287605	8451997	28.5
101290	146	000910	288004	8451999	288001	8423502	28.5
101281	148	000910	288398	8423502	288402	8451998	28.5
101270	148	000910	288796	8451995	288802	8423501	28.5
101220	153	000916	289199	8423500	289198	8451999	28.5
101221	154	000916	291198	8451995	291195	8440824	11.2
101210	154	000916	291195	8440847	291199	8423502	17.4
101200	156	000917	291599	8423505	291604	8451997	28.5
101190	156	000917	291997	8451998	292000	8423502	28.5
101180	160	000924	292402	8423500	292405	8451997	28.5
101170	160	000924	292798	8451998	292802	8423504	28.5
101160	162	000924	293200	8423504	293199	8451996	28.5
101150	162	000924	293600	8451996	293601	8423501	28.5
101140	163	000925	293996	8423504	294001	8451996	28.5
101130	163	000925	294397	8451998	294402	8423504	28.5
101110	165	000925	294795	8423501	294803	8451998	28.5
101121	165	000925	295602	8451995	295597	8423503	28.5
101100	166	000926	295203	8423502	295204	8452000	28.5
101090	166	000926	296002	8451995	295997	8423504	28.5
101070	168	000926	296400	8423501	296400	8451995	28.5
101081	168	000926	297198	8451996	297202	8423500	28.5
101060	170	000928	296801	8423502	296802	8451995	28.5
101050	170	000928	297603	8452000	297600	8423501	28.5
101040	172	000929	297998	8423500	297999	8451995	28.5
101030	172	000929	298400	8451997	298400	8423503	28.5
101020	174	000930	298800	8423500	298801	8451997	28.5
101010	174	000930	299198	8451996	299199	8423504	28.5
101000	178	001002	299601	8423502	299602	8451998	28.5
100990	178	001002	299998	8451998	299999	8423504	28.5
100980	178	001002	300401	8423501	300399	8451995	28.5
100970	178	001002	300800	8452000	300800	8423502	28.5
100960	180	001003	301197	8423503	301198	8451998	28.5
100950	180	001003	301598	8451995	301600	8423504	28.5
100940	180	001003	302002	8423502	301997	8451995	28.5
100930	180	001003	302404	8451998	302397	8423504	28.5
100920	182	001005	302798	8423504	302795	8451996	28.5
100910	182	001005	303201	8451996	303200	8423505	28.5
100900	182	001005	303604	8423501	303601	8451997	28.5
100890	182	001005	303997	8451998	304001	8423502	28.5
100880	184	001006	304401	8423502	304402	8451995	28.5
100870	184	001006	304800	8451995	304796	8423505	28.5
100860	184	001006	305196	8423500	305197	8451995	28.5
100850	184	001006	305601	8451999	305605	8423505	28.5
100840	186	001007	305992	8423502	306001	8451999	28.5
100830	186	001007	306402	8451995	306399	8423503	28.5
100820	186	001007	306801	8423501	306804	8451995	28.5
100810	186	001007	307202	8451994	307203	8423503	28.5
100800	188	001008	307600	8423504	307605	8451998	28.5
100770	188	001008	308002	8451995	307999	8423504	28.5
100760	192	001017	309209	8423504	309201	8451996	28.5
101241	195	001022	309602	8451996	309598	8423504	28.5
101231	196	001022	290399	8423501	290402	8451995	28.5
100791	197	001022	290796	8451998	290801	8423503	28.5
100781	197	001022	308398	8451997	308401	8423500	28.5
101251	198	001024	308800	8423502	308800	8451998	28.5
300740	302	001025	290005	8451997	289999	8423504	28.5
300750	302	001025	310401	8451995	310402	8423501	28.5
301260	304	001026	310001	8423500	310002	8451996	28.5
301260	304	001026	289600	8451997	289602	8423503	28.5

TOTALS BY FLIGHT

FLIGHT	LINE KM
1	528.3
2	525.5
3	389.1
4	361.9
5	250.1
32	57.0
36	28.5
37	28.5
38	57.0
40	28.5
41	28.5
44	57.0
46	57.0
48	57.0
53	11.2
54	45.9
56	57.0
60	57.0
62	57.0
63	57.0
65	57.0
66	57.0
68	57.0
70	57.0
72	57.0
74	57.0
78	114.0
80	114.0
82	114.0
84	114.0
86	114.0
88	57.0
91	183.8
92	109.5
95	28.5
96	28.5
97	57.0
98	28.5
TOTAL	4143.5