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1983 GENIE SURVEY OF CAB GRID  
-COMSTAFF (~~D B TRUSSELL~~)

*Mt. Rampany (EL5/63)*

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AUSTRALIAN ANGLO AMERICAN LIMITED

Incorporated in the State of Victoria

REPORT A15  
1983 GENIE EM SURVEY  
OF CAB GRID - COMSTAFF

By: Devin Trussell  
January 1984

INTRODUCTION

The GENIE method was selected to establish the location of the CAB EM anomaly found in the 1975 INPUT SURVEY. A significant portion of the area covered by the old WOW grid was also surveyed.

WORK DONE

The amplitudes at three frequencies 337 Hz, 1012 Hz and 3037 Hz were measured and normalised to a base frequency of 112 Hz. All lines were covered using a 100m coil separation at a station interval of 20m. The following lines were surveyed using these parameters.

Line	4300N	4010E	-	5150E
	4400N	4030E	-	5150E
	4500N	4030E	-	5130E
	4600N	4030E	-	5150E
	4700N	3810E	-	5150E
	4800N	3830E	-	5150E
	4900N	3830E	-	5150E
	5000N	3850E	-	5150E
	5100N	3850E	-	5150E
	5200N	3870E	-	5050E
	5300N	3850E	-	5050E
	5400N	4470E	-	5050E
	5500N	4490E	-	5050E
	5600N	4450E	-	5050E
	5700N	4430E	-	5050E
	5800N	4430E	-	5050E
	5900N	4450E	-	5050E

50m coil spacing and a 10m station interval was used on:-

Line	4800N	3985E	-	4335E
	4900N	3935E	-	4305E
	5000N	3945E	-	4315E
	5100N	3905E	-	4305E

70m coil spacing and a 20m station interval was used on:-

Line	5700N	4700E	-	5040E
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RESULTS

The quality of the data is adequate. The peak to peak noise level is approximately  $2^{\circ}$  for all three normalised frequencies on all lines. Two strong conductors, two weak conductors, and a very weak response were discovered by the survey.

Conductor A

This is due to a highly conductive (10 Siemens) east dipping ( $60^{\circ}$ ?) near surface (less than 10m) source. The anomalies comprising this conductor are located on:-

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Line	5100N	at	4280E
	5000N	at	4240E
	4900N	at	4190E
	4800N	at	4140E
	4700N	at	4100E

The responses on lines 4800N, 4900N and 5000N are the strongest. Lines 5100N and 4700N may lie off the end of the conductor. A second anomaly is located on line 4700N at 4225E. It may be a faulted off portion of conductor A (or B).

#### Conductor B

This is due to a low conductivity (3 Siemens) east dipping ( $40^{\circ}$  to  $60^{\circ}$ ) near surface (less than 10m) source. The anomalies comprising this conductor are located on:-

Line	4900N	at	4090E
	5000N	at	4110E
	5100N	at	4150E
	5200N	at	4155E
	5300N	at	4165E

The conductor is open to the north but is closed off to the south by line 4800N. There may be an E-W fault between 5000N and 5100N which generates the shift in anomaly position (from 4100E in the south to 4150E in the north).

#### Conductor C

This weak anomaly is located on line 4500N at 4760E. The dip is  $60^{\circ}$  to the east. The source is highly conductive since there is very little decrease in amplitude with frequency. The depth of burial is estimated to be 75m. There is no response on the adjacent lines.

#### Conductor D

This weak anomaly is located on line 5700N at 4825E. The source appears to be dipping  $30^{\circ}$  to  $45^{\circ}$  to the east. It has a  $\rho$  of 3-6 Siemens and a depth of burial of 40-50m. There is no response on the adjacent lines.

#### Conductor E

A very weak EM response may occur at 4600E on line 5200N.

#### RECOMMENDATIONS

The source of Conductors A and B are sufficiently close to the surface that geochemistry results should establish if further work is warranted.

Conductors C and D are not well resolved. IP work using a dipole array with an 80m dipole is recommended. A single transmitter set up on each line should give sufficient coverage. Alternatively a deeper penetration EM method such as Crone PEM may be tried. Response E should be covered if IP or more advanced EM work is done on lines 4500N and 5700N. Anomaly C may be an artifact of the topography.