COMPAGNIE GÉNÉRALE DE GÉOPHYSIQUE

FLINDERS PETROLEUM N.L.

AEROMAGNETOMETRIC SURVEY

VAN DIEMEN GULF

Northern Territory

July 1969

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0P167

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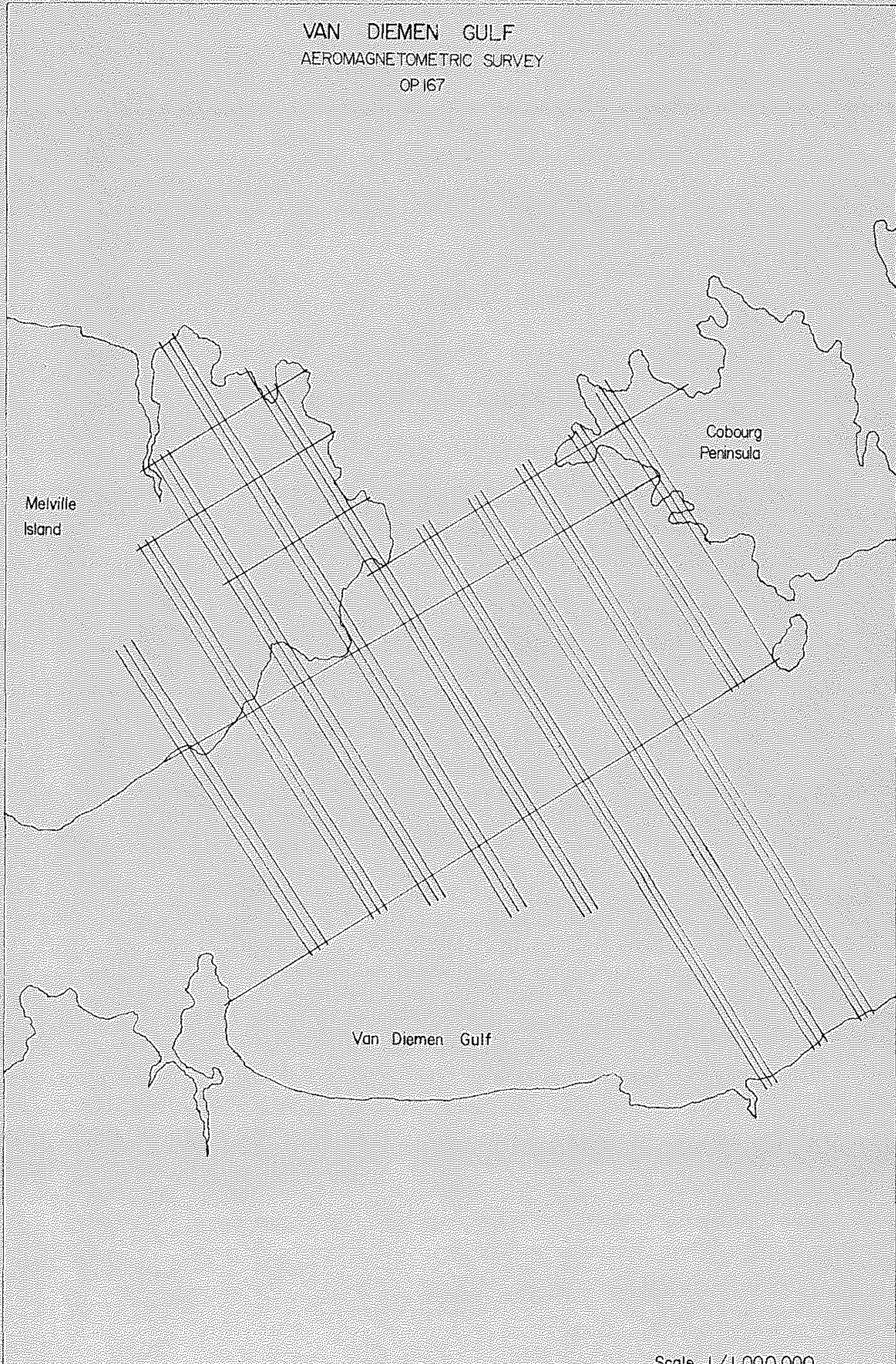


VAN DIEMEN GULF
AEROMAGNETOMETRIC SURVEY
OP 167
Melville Island
Cobourg Peninsula
Van Diemen Gulf
Scale 1/1,000,000

INTRODUCTION

The following is the final report of the airborne magnetometric survey carried out in June 1969 by COMPAGNIE GENERALE DE GEOPHYSIQUE for FLINDERS PETROLEUM N.L. over the OP-167 in the NORTHERN TERRITORY.

The survey was made with a very precise C.S.F. magnetometer by the CGG party 501-26-35 and represented 1,893 profile miles.

The present report accounts for the execution of these flights, the compilation of the data leading to the residual field maps, and the interpretation including:

- the plotting of all the anomalies on the "Calcomps" and their transfer to the interpretation map.
- the quantitative interpretation by the method of the Intersection of the Tangents of Inflection (ITI and ITI gamma) of all the anomalies whose width and intensity allowed the tangents to be drawn accurately.
- the drawing of the magnetic basement depth-contours and the synthesis of the qualitative and quantitative interpretations.

CHAPTER I

TECHNICAL SPECIFICATIONS OF THE SURVEY

1. LOCATION OF THE SURVEY AREA - FLIGHT GRID

The survey area, as shown in figure 1, is, for all practical purposes, off-shore, and consists essentially of the Van Diemen Gulf.

The flight grid consists of 30 Northwest-Southeast flight lines, arranged in 10 sets of triplets, and six Northeast-Southwest tie-lines. The spacing within the triplets was 1.0 mile and between triplets 4.0 miles (statute).

The flight altitude was 2,000 feet a.s.l.

2. PERSONNEL AND EQUIPMENT

(a) Aircraft and Crew

The aircraft was a twin-engined DC-3, Australian Registry VHP-WM.

The crew was composed of:

One senior pilot

One first officer

One ground engineer

(b) CGG's Personnel

One party chief

One airborne magnetometer operator

One Doppler navigator technician

One dataman/ground station operator

(c) Equipment

Aircraft Equipment

One CSF Cesium Vapour magnetometer enabling the total field to be recorded digitally in increments of 1/100th of a gamma.

One ROCHAR frequencymeter delivering second-by-second digital and analog versions of the CSF-measured total field.

One COTELEC digital recorder.

One TEXAS INSTRUMENTS analog recorder, vertical sensitivity

5 gammas/cm permitting a constant surveillance of the correct operation of the measurement system.

One MARCONI AD-560 Doppler Navigator, comprising a Transmitter/Receiver and a down-track and off-track computer.

One CAMEMATIC 35 mm Doppler-data recording camera.

One ROSEMOUNT capacitive barometric altimeter.

One MOSELY analog recorder (for the altimeter).

One AEROPATH 35 mm film strip camera.

One CAMEMATIC frame-by-frame flight path recovery camera.

Ground Equipment

One CSF Cesium vapor magnetometer.

One ROCHAR frequencymeter.

One SERVOGOR analog recorder.

FIG. 2

FLIGHT GRID - GEOLOGY AND MAGNETISM

SCALE : 1/1.000.000

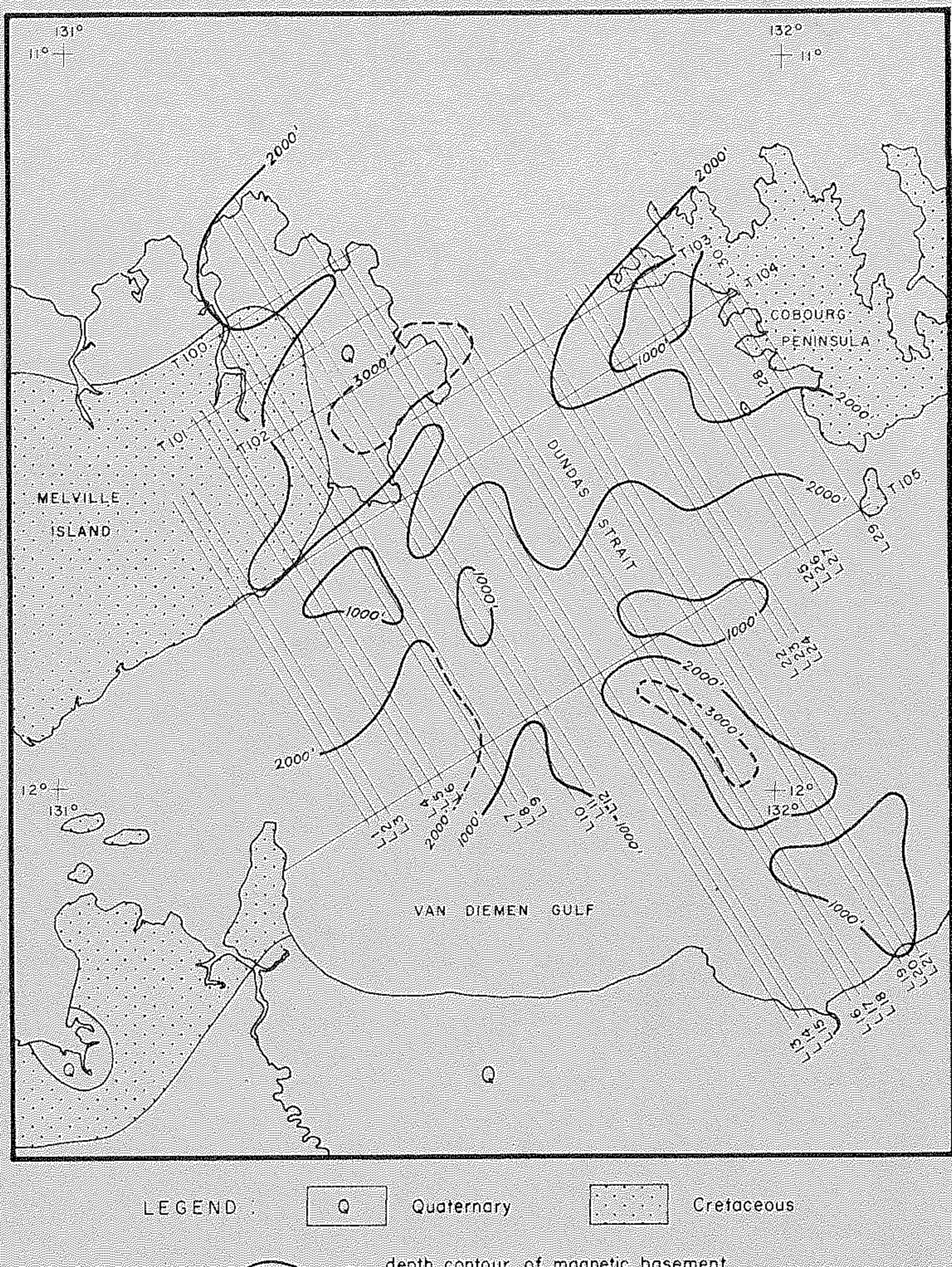
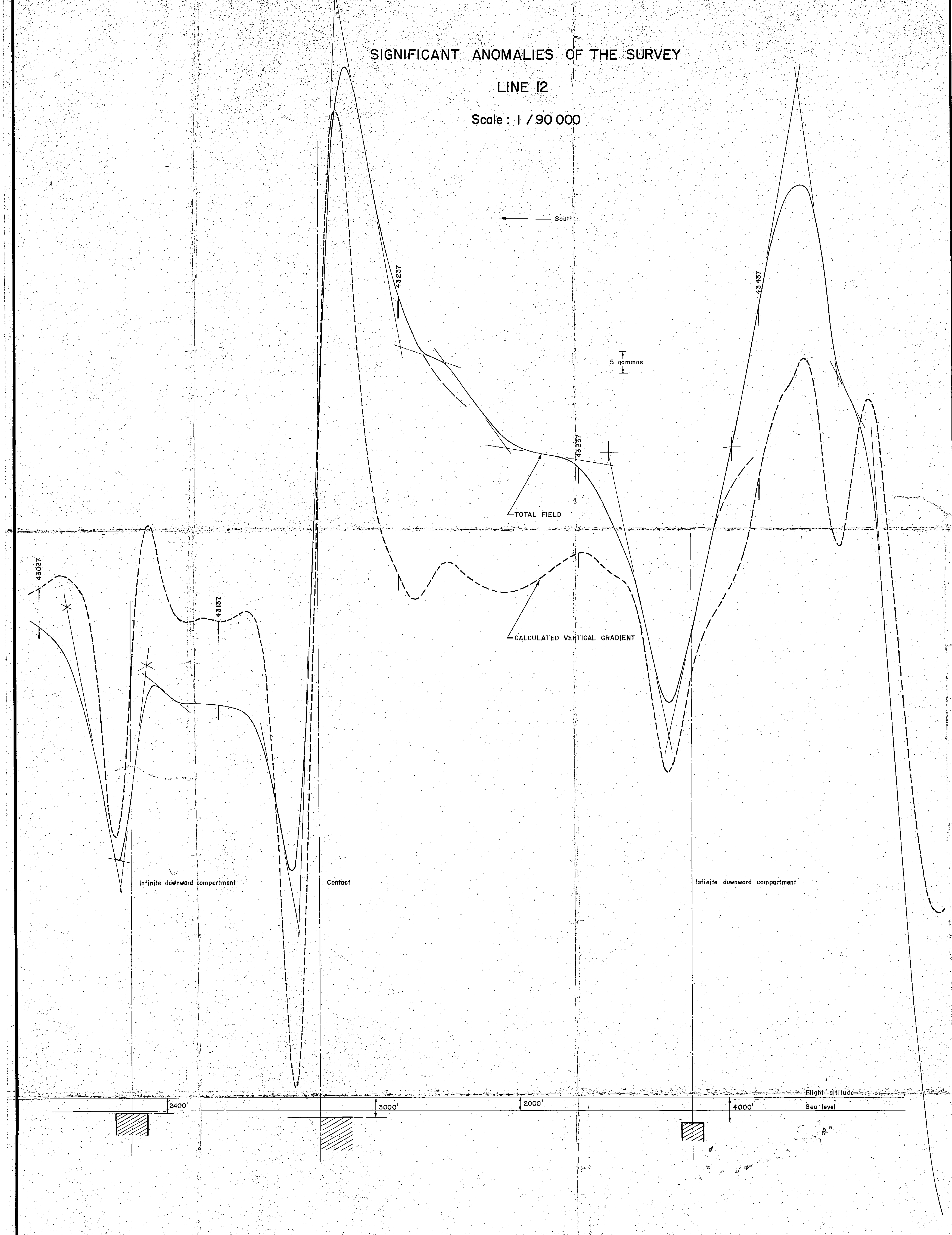


FIG.3


SIGNIFICANT ANOMALIES OF THE SURVEY
LINE 12
Scale : 1 / 90 000
South
5 gammas
43 237
43 337
43 437
43037
43 137
TOTAL FIELD
CALCULATED VERTICAL GRADIENT
Infinite downward compartment
Contact
Infinite downward compartment
Flight altitude
Sea level
2400'
3000'
2000'
4000'

CHAPTER II

OBJECT OF THE SURVEY, GEOLOGICAL BACKGROUND AND MAGNETIC MARKERS

A. OBJECT OF THE SURVEY

The object of this survey was to resolve conflicting geophysical evidence as to the thickness of the sedimentary section in the Dundas Strait and the eastern portion of Melville Island. Gravity and aeromagnetics had indicated the possibility of a trough of up to 10,000 feet, whereas a sparker line had indicated only some 3,000.

The control of the former and the low energy of the latter rendered each somewhat suspect, and it was felt that a high-sensitivity magnetometer survey, using Doppler control, was the most viable means of resolving the problem.

B. GEOLOGICAL SKETCH (Fig. 2)

From scattered data (geological maps, various papers, etc.), only the most general features of the surveyed area can be pointed out:

- on the northern Australian coast, mostly overlain by Quaternary sediments, Precambrian rocks crop out here and there. They are a complex assemblage of rocks including intrasediments, gneisses, basic igneous rocks and granite.

- marine Cretaceous sediments (sand and clay) are exposed along the southern coast of Melville Island. In the north, their presence is obscured by Tertiary and Quaternary deposits. From gravity data, most of Melville Island seems to be underlain by relatively shallow bedrock (less than one to two thousand feet below sea level) perhaps shelving gently to the north.

- on Cobourg Peninsula, the same kind of structural pattern can be expected.

C. MAGNETIC MARKERS

Unfortunately the profiles did not cross over the Precambrian exposures, allowing therefore no control on their magnetic behaviour.

However, the profiles show only one magnetic level reflecting most likely the Precambrian formations. The different amplitudes of the anomalies can only be caused by petrographic differentiations.

CHAPTER III

INTERPRETATION TECHNIQUES

The direction, continuity and intensity of the magnetic phenomena shown by the map of the total magnetic field provide information regarding the structural pattern of the area. Narrow anomalies reflect shallow magnetic contrasts. On the contrary, wide anomalies generally give evidence of deep magnetic structures. Strong gradients, shiftings of the anomaly axes and alignments of isogam contour inflections are related to magnetic accidents.

In addition to this qualitative information, the isogam contour map indicates the relative locations and directions of the lines of the magnetic structures and of the magnetic meridian, necessary for the quantitative estimates.

The shape and intensity of an anomaly, such as one presented on the Calcomp records, depend upon the following geometric and magnetic characteristics of the magnetized body:

- depth below the measurement level.
- length, width and thickness.
- dip.
- angle of the structural axis with the magnetic meridian.

- angle of the flight line with the structural axis.
- magnetic susceptibility contrast.
- inclination of the earth's magnetic field.
- remanent magnetization.

Using a computer makes the reconstruction of synthetic anomalies corresponding to known parameters particularly fast and easy.

The inverse problem, which deals directly with the interpretation, i.e. the determination of the magnetized body's parameters through the analysis of the anomalies, is more complex and simplifying hypotheses must be made. In particular, the magnetized bodies are assumed to present simple geometric shapes. These are generally parallelepipeds of infinite length, with plane upper surfaces and either limited or infinite vertical walls.

Three main types of structures and corresponding anomalies are defined in this manner, namely:

- thin sheets.
- infinite downward compartments.
- faults or contacts.

Among the geometric parameters of the anomalies, the horizontal projections of the inflection tangents, between their points of intersection, (ITI) are directly related to the magnetic and geometric characteristics of the structures. A set of mono-logarithmic master curves providing these ratios and corresponding to diverse configurations has been calculated.

Interpreting an anomaly consists of comparing its shape to the theoretical anomalies so as to find out the type of structure, then matching the computed ITI parameters to the master curves.

Furthermore, newly developed digital processing techniques, such as non-linear filtering, vertical-gradient calculation, upward continuation, provide the geophysicist with an aid in elucidating the pattern of the magnetically complex areas.

CHAPTER IV

QUALITATIVE INTERPRETATION

1. THE "CALCOMP" RECORDS (Fig. 3)

The "Calcomps" are presented with a horizontal scale of about 1/100,000. The nominal vertical scales are 1cm for 5 and 20 gammas; nevertheless because of strong anomalies on some profiles, these have been changed to 1cm for 10 and 40 gammas so as to make the quantitative interpretation easier.

The study of these calcomps shows generally narrow anomalies of different amplitudes; these range between 5 and 150 gammas, except for the profiles L19 to L27 where the anomaly amplitude reaches about 1,000 gammas.

Weak anomalies (5 to 30 gammas) are assumed to reflect thin plates, whilst the more intense anomalies are interpreted as being due to infinite downward compartments. Single flank or reverse flank anomalies are accounted for by faults or contacts.

As mentioned before, the different amplitudes are due more to petrographic differentiations than to different magnetic levels.

2. TOTAL FIELD CONTOUR MAP (Plates 1 to 9)

The isogam contour map was drawn with variable contour spacing according to the intensity of the field.

To the north, on Melville Island and the Cobourg Peninsula, the anomalies are well defined because of the restitution of the flight lines which is undoubtedly better than in the south. Therefore, the magnetic characteristics of the area are more available in this part.

Relatively narrow and elongated anomalies give the map a strong relief, particularly inland or near the coast (where the basement is probably shallow).

The general trend of the anomaly axes is NE-SW.

Towards the south, except where the strong anomaly is intersected by the tie-line T105 and lines L19 to L29, the trends of the contour lines are very doubtful, due to the lack of accuracy of the navigational system (Doppler). Therefore, quantitative interpretation on profiles is the only tool for studying the figure of the magnetic basement.

In fact, this survey is of "a mining type" and the distance between profiles does not allow the definition of the very narrow anomalies which mark this Total field.

3. MAGNETIC LINEATIONS (Plate 9)

It has been possible to determine magnetic discontinuities in the most well defined parts of the survey, i.e. in the areas of Melville Island and Cobourg Peninsula.

Discontinuities corresponding to shiftings of anomaly axes and alignment of isogam contour inflections trend north-south.

Strong gradients are NE-SW. To the north of tie-line T104, one crosses the entire survey. In the neighbourhood of T105, a strong gradient marks the southern flank of the strong anomaly (up to 1,500 gammas).

These two directions seem to be noticeable structural features of the survey according to the known structural pattern of northern Australia.

CHAPTER V

QUANTITATIVE INTERPRETATION

1. PECULIAR FEATURES OF THE SURVEYED AREA

A. In the surveyed area, the magnetic inclination (magnetic dip) is about 40° South. If the trend of the anomaly is not east-west, the "apparent inclination" is defined by:

$$\tan i' = \frac{\tan i}{\cos \Phi}$$

with i = magnetic inclination

i' = apparent magnetic inclination

Φ = angle of the anomaly axis with the east-west direction.

In this survey, some anomaly axes are east-west and for the others, the angle is between 20° and 35°, thus the $\tan i' = 0.98$ and $i' = 45^{\circ}$.

B. The inclination of the area (in this case 40° South) fixes the theoretical form of magnetic anomalies oriented east-west. The negative portion of the anomaly is preponderant and the structure's axis is to be located between the minimum of the anomaly and the inflection point (to the North).

In the absence of a remanent field and assuming vertically walled structures, east-west anomalies of the total field should follow this rule. In actual fact, an examination of the recordings shows that the form of the measured anomalies can differ from the theoretical case (due to non vertical structures, remanent fields, and the anomaly axis direction with respect to magnetic north).

C. Most of the anomalies are mutually interfering. Therefore, the vertical gradient has been computed and has been of considerable help in separating qualitatively these anomalies. (Fig. 3).

2. INTERPRETATION MAP (Plate 10)

Contouring the isobaths of the magnetic basement is the main object of the interpretation map.

The first noticeable feature brought out by the depth estimates is the shallowness of the basement everywhere in the survey. Nevertheless an attempt at drawing depth-contours has been done, in order to define the areas where the basement seems to deepen.

To the north, on Melville Island, the basement, very shallow under the Cretaceous (about 1,500 feet under sea level), would deepen gently down to 3,000 feet along the northeastern coast.

On Cobourg Peninsula, the picture of the basement is much the same. The basement dips down to 2,000 feet (off-shore). Between these two coasts, the average basement depth is about 2,500 feet.

The NE-SW elongation of the depth contour 2,000 feet, the typical direction of the area, can be noted.

South of the depth contour 2,000 feet, the basement is more or less flat, between 1,000 and 2,000 feet, with some uplifts (up to 400 feet), in particular, those defined by the strong and elongated anomaly intersected by the profiles L19 to L29. Moreover, this anomaly is related to a different marker (different in petrographic nature; perhaps quartzite with magnetite).

CONCLUSION

Intrusive and metamorphic Precambrian formations constitute the magnetic basement of the survey.

Following the geological hypothesis of northern Australia, the basement may be considered as a platform overlain by very thin deposits (Cretaceous, Tertiary and Quaternary). From other geophysical data such as gravity and seismic measurements, the basement depth in Van Diemen Gulf does not reach 3,000 feet.

According to these informations, the magnetic results show a shallow and rather flat basement.

Such a figure does not seem favourable for further oil research in the surveyed area.

N Fabre

N. FABRE

MASSY, 20th. October, 1969.

ANNEX

SUMMARY OF PREVIOUS GEOPHYSICAL WORK IN THE SURVEY AREA

(extracts from a review by G.C. Campe, of CUNDILL, MEYERS and ASSOCIATES Pty. Ltd., commissioned by Flinders Petroleum N.L.)

NOTE: COMMENTS AND CONCLUSIONS EXPRESSED IN THIS ANNEX ARE THOSE OF CUNDILL, MEYERS AND ASSOCIATES, AND ARE NOT TO BE HELD AS NECESSARILY REPRESENTING THE VIEWS OF COMPAGNIE GENERALE DE GEOPHYSIQUE

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1. GEOLOGY

The known geology of the area of Bathurst and Melville Islands and mainland Australia marginal to Dundas Strait and Van Diemen Gulf is restricted to surface exposures of rocks of Tertiary, Cretaceous and Precambrian age, and to the section penetrated in wells and auger holes drilled on Bathurst Island.

The outcrop on the cliff faces of Bathurst and Melville Islands consists dominantly of Cretaceous marine sediments. Inland and on the cliffs the Cretaceous sediments are generally overlain by a thin cover of Tertiary and Post Tertiary lacustrine sediments. On the mainland of Australia, in the Darwin area, Cretaceous rocks rest unconformably on

Precambrian schistose rocks. No sediments older than Cretaceous and younger than Precambrian are known from the immediate area of Bathurst and Melville Islands, though in the Bonaparte Gulf Basin, to the west and south west, a considerable thickness of Cretaceous to Cambrian sediments are present.

Results of Bathurst Island Nos. 1 and 2 Wells drilled along the south coast of the island show thicknesses of 826 feet and 993 feet respectively of marine Cretaceous (Cenomanian-Turonian) sediments. Both wells were still in Cretaceous sediments when abandoned.

2. STRATIGRAPHY

2-1 TERTIARY

On Bathurst Island between 0 and 120+ feet of Tertiary sands and clays are present. Where the contact is visible they unconformably overly the Cretaceous rocks. On Melville Island similar sediments are present but no drilling has been done to determine their thickness. The Tertiary sediments occur as infilling in valleys, and as a surface veneer.

2-2 CRETACEOUS

Cretaceous rocks outcrop along the coast of both islands, both as cliffs and as wave cut rock platforms. Outcrop in the hinterland of the islands is restricted due to Tertiary cover but several sections have been examined in washouts, along creeks and beneath the laterite capping on some of the hills. Daily (in Sprigg, 1957) measured sections of the Cretaceous on both islands and collected fossils from these sections. He established the age of the Cretaceous sections and was able to give an outline of the structure in the Cretaceous. Daily concluded that, based on palaeontological and lithological evidence, the maximum possible thickness of exposed Cretaceous rocks was almost 625 feet. As mentioned above, 993 feet of Cretaceous sediments, essentially flat lying, were penetrated in drilling the Bathurst Island No. 1 Well. Palaeontological studies of the Cretaceous on both Melville and Bathurst Islands and the nearby Australian mainland indicate that the sediments are Upper Cretaceous in age (Turanian to Upper lower to lower middle Cenomanian). Lower Cretaceous Albian and Albian fossils have been recognised on Bathurst Island, in a locality where these older rocks have probably been bought to the surface by faulting. Neocomian fossils have not been recognised on either the two islands or the adjacent mainland. Lithological and palaeontological studies indicate that the Cretaceous sediments are more marine in deposition outwards from the present mainland coastline.

2-3 PRECAMBRIAN

Precambrian rocks from the mainland consist of granite; schists and gneisses and sandstones and quartzites. They are considered as economic basement in the area though the sandstones, further to the east in Arnhem Land, are often porous and could act as reservoir rocks. However, it is not thought that these sandstones, which belong to the upper part of the Proterozoic section, would be present in the application area.

3. GEOPHYSICS

3-1 GRAVITY SURVEYS

Several gravity surveys have been carried out in the area covered by this report in the period 1956 to 1967. Broadly a gravity ridge, the Wangites Regional Gravity Ridge, runs roughly north-south through Bathurst Island. Further to the south this ridge represents the eastern edge of sedimentation of most units of the Bonaparte Gulf Basin. West of this Ridge on Bathurst Island is the Bonaparte Regional Gravity Depression which corresponds with the Bonaparte Gulf Basin. East of the Ridge the Bouger values decrease steadily to Van Diemen Gulf where there is a local gravity "low". North of the islands is the West Arafura Regional Gravity Platform, an area of gentle gravity gradients that may partly reflect a thick sedimentary section. The local gravity "low" in Van Diemen Gulf is thought to be related to basement features rather than to the post Precambrian sedimentary section, though it may be indicative of a thin Cretaceous cover.

3-2 MAGNETIC SURVEYS

Two aeromagnetic surveys - one over Bathurst and Melville Islands and to the west of Bathurst Island by Alliance Oil Development N.L.; and a second over Arafura Sea, including Coburg Peninsula, Dundas Strait and the northern half of Melville Island, by Shell Development (Aust.) Pty. Ltd. A ship borne magnetic survey was carried out for the Bureau of Mineral Resources over the Timor Sea, Dundas Strait and Van Diemen Gulf and the western portion of the Arafura Sea.

The aeromagnetic survey by Shell Development indicated less than 5,000 feet of section overlying magnetic basement in the area applied for by Flinders Petroleum N.L. The survey also indicated a thickening of non magnetic section to the north. This section may contain non magnetic Precambrian (Upper Proterozoic) rocks.

The Alliance Oil Development N.L. survey indicated that magnetic basement on Bathurst and Melville Islands is relatively shallow (less than 3,000 feet) and that the non magnetic section thickens possibly slightly to the west (Bonaparte Gulf Basin) and to the north. In the area of Melville Island adjacent to Van Diemen Gulf and Dundas Strait depth estimates to magnetic basement (with an accuracy of ± 30%) range from 2,200 feet to 3,200 feet, whilst other depth estimates (with an accuracy unknown) range from 1,400 feet to 11,000 feet. It is considered that the more reliable readings represent the thickness of post Precambrian (Cretaceous and possibly thin Tertiary) of sediments present. Several faults were shown by this survey (Faults B and C), and it is probable that these are basement faults and they may continue to the south east across Van Diemen Gulf.

3-3 SEISMIC SURVEYS

One on-shore refraction seismic survey and three off-shore reflection seismic surveys have been carried out the area applied for and adjoining areas.

A refraction survey for Oil Development N.L. was carried out on Bathurst Island. Five refraction lines were shot and indicated from 1,160 feet to 2,980 feet of probable Cretaceous sediments having a velocity of 6,100 feet/sec. to 6,400 feet/sec. underlain by a basement (probable Proterozoic or older) refractor having a velocity of between 17,300 feet/sec. and 19,800 feet/sec. The interface of the high and low velocity layers is sharp and no layers of intermediate velocity exist. This basement refractor is correlated with magnetic basement in the area. The refraction survey indicated a thickening in section from 1,160 feet in the south east of Bathurst Island to 2,050 feet in the south west, and to 2,980 feet in the north west. The survey also indicated depths to basement of about 2,000 feet and 1,700 feet respectively at the Bathurst Island Nos. 1 and 2 Wells.

Anacapa Corporation carried out a marine seismic reflection survey off the north and north east coast of Melville Island. The survey showed a low velocity layer (6-7,000 feet/sec.) increasing in thickness to the north east, this layer being underlain by high velocity basement. The low velocity layer is correlated with the Cretaceous of Bathurst and Melville Islands. This Cretaceous section thickens from 760 milliseconds 2 way reflection time to 1,150 milliseconds (1.15 seconds). These times indicate a maximum thickness of between 4,000 feet and 5,000 feet. An upper horizon within the Cretaceous was also mapped on this survey and the two horizons appear to be conformable. The contour map of the lower horizon is presented on the map accompanying this report.

The Bureau of Mineral Resources combined reflection seismic, magnetic and gravity survey was carried out in 1967. The complete results and interpretation of this survey are not yet available. Relevant records and maps were examined in Canberra during March 1969 and some of the information gathered is presented on the map accompanying this report. Broadly this survey indicated:

(a) A thickening of the Mesozoic, and in places, Palaeozoic section northwards from Bathurst and Melville Islands.

(b) A gradual thickening of the sedimentary section to the west of the Bonaparte Gulf Basin.

(c) A relatively thin sedimentary section south of Melville Island.

One traverse (Line 81) was run across part of Van Diemen Gulf and Dundas Strait. Record quality on this traverse was good with generally sharp reflections were recorded from the unconformity at the top of the high velocity ?Precambrian basement. The section overlying basement is a low velocity (6-7,000 feet/sec.) lay of dominantly Cretaceous sediments. Reflections from the Cretaceous section indicate that horizons within the section are probably conformable. The profile of Traverse 81 shows a gradual thickening from the south (300 milliseconds - about 1,100 feet) to the north, (800 milliseconds - about 3,000 feet) at Station 811150. Further to the north a reversal occurs with its culmination in the vicinity of Station 811210. After corrections for water depths there appears to be about 20 milliseconds (about 150 feet) of closure on the structure.

The structure is evident on the seismic records from 400 to 690 milliseconds 2 way reflection time and there does not appear to be any appreciable thinning over the structure. Further to the north the profile shows a continuing thickening. It is possible that the structure may be the result of sedimentation over a buried basement high but the lack of appreciable thinning over the structure does not indicate this. The structure was only crossed in one direction and it is not known if it is a closed structure.

A seismic record of part of Traverse 81, in the area south of Melville Island, was also examined. The profile for this record was not available for inclusion on the accompanying map. The record indicated a thin section (about 1,000 feet or less) of Cretaceous rocks overlying basement. No appreciable thickening was noted on the record.

Additional profiles, to the west and north west of Bathurst Island, are included on the accompanying map.

A marine seismic survey by Shell Development (Australia) Pty. Ltd. did not overlap any of the area applied for by Flinders Petroleum N.L. This survey, and the B.M.R. survey, indicated that the probable Cretaceous section thickens to the north; and that to the north, about 50 miles and more from Melville Island, a wedge of Mesozoic sediments is present. This wedge thickens to the north and has a velocity similar to that of the Cretaceous on Bathurst Island.

In the area north of Melville Island it is probable that Cainozoic sediments are present and that they also thicken regionally to the north. Jones in his interpretation report of the B.M.R. survey states 'The "Mesozoic" appears to thicken rapidly north of Coburg Peninsual reaching a maximum depth of 15,000 feet north of Melville and Bathurst Islands. It seems likely that the "Mesozoic" section here will start to include Palaeozoic under the "Mesozoic" and this area can be considered as part of the north eastern extension of the offshore Bonaparte Gulf Basin, the section thickening to the north and west'.

It is probable, that in both the Anacapa and B.M.R. seismic surveys, that a thickenss of Tertiary sediments overlies the Cretaceous sediments. It is also probable that the Tertiary section would show a regional thickening to the north.

4. CONCLUSIONS

Based on available geological and geophysical evidence several conclusions may be made.

These are:

1. Bathurst and Melville Islands are underlain by up to 3,000 feet of Cretaceous marine mudstone, glauconitic sandstone and clay.

2. The Cretaceous is covered by a thin section of Tertiary and post Tertiary sands and clays.

3. Beneath the islands, immediately to the north and west of the islands, and to the south and east of the islands, The Cretaceous section rests unconformably on a high velocity, probably Proterozoic or older, basement.

4. The sedimentary section thickens regionally to the north, with Cretaceous sediments only present in the thinner areas and with probable Palaeozoic sediments also in the thicker areas.

5. The sedimentary section in the Van Diemen Gulf - Dundas Strait area appears relatively thin (up to 3,000 feet), though thickening may be present in unsurveyed areas.

6. A structure of possible tectonic origin exists in the northern part of Dundas Strait, to the north of the area applied for by Flinders Petroleum N.L., though it is not known whether the structure is closed. However, the

presence of structure up dip from a regionally thickening section could trap hydrocarbons migrating up dip from the thicker (deeper) part of the offshore basin.

7. The occurrence of a minor gas show in the Bathurst Island No. 1 Well and the marine mudstones from the Cretaceous section indicate that the rocks have some hydrocarbon forming potential.

8. As seismic evidence has shown that the Cretaceous section is probably conformable within itself, a complete Cretaceous section examined by drilling should indicate if potential reservoir rocks are present and if present these may extend over a large area.

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