

SECTION II (2)

INSTRUMENT DETAILS AND DISCUSSIONS

SECTION II (2)

I. DIGITAL STREAMER DETAILS

LENGTH	3750 m.
GROUP INTERVAL	12.5 m.
LIVE SECTION LENGTH	75 m.
STRETCH SECTION LENGTH	100 m.
SEM MODULE LENGTH	0.46 m.
REPEATER MODULE LENGTH	0.3 m.
STREAMER TRACE MIX	1:1
NO. OF HYDROPHONES PER GROUP	32
HYDROPHONE INTERVAL	LINEAR, 1 PHONE / 0.3906 m.
HYDROPHONE TYPE	TI - ACR
NO. OF STRETCH SECTIONS	1 FRONT 1 TAIL
SKIN TYPE	POLYURETHANE
LOCATION OF DEPTH TRANSDUCERS	IN ALL SEMs
LOCATION OF DEPTH CONTROLLERS - 240 TRACE STREAMER	1, 31, 49, 73, 97, 121, 145, 181, 205, 229, 253, 277 + 289.* SEE DISCUSSION
NEAR GROUP	300
STREAMER SENSITIVITY	53.4 UV/UBAR
NEAR TRACE OFFSET	125.0 METRES

1(A) DIGITAL STREAMER DISCUSSION

AT THE BEGINNING OF THE SURVEY TWO STRETCH SECTIONS WERE INCORPORATED BETWEEN THE VESSEL AND THE LAST ACTIVE SECTION TO ATTENUATE ANY FRONT END JERK AND PROPELLER GENERATED NOISE BURSTS. THE FIRST FRONT-END STRETCH, IN THE WATER, WAS WEIGHTED WITH LEAD TO AID IN FRONT END BALLAST. ANOTHER STRETCH SECTION, ALONG WITH APPROXIMATELY 200 METRES OF ROPE, WAS PLACED BETWEEN THE TAILBUOY AND THE FIRST ACTIVE SECTION TO REDUCE TAILBUOY INDUCED NOISE BURSTS.

ON THE 01ST OF JULY THE FRONT-END CONFIGURATION WAS ALTERED TO ONE STRETCH SECTION PLUS STEEL TOW CABLE. THIS WAS DONE PRIMARILY TO CHANGE THE NEAR-TRACE OFFSET TO APPROXIMATELY 125 METRES. THE OFFSET HAD PREVIOUSLY BEEN APPROXIMATELY 147 METRES USING THE TWO STRETCH SECTIONS.

THE STREAMER DEPTH WAS MAINTAINED BY CORRECT BALLASTING AND THE USE OF DIGICOURSE, MODEL 396/02, COMPASS BIRDS. STREAMER DEPTHS WERE CONSTANTLY MONITORED THROUGHOUT THE SURVEY. THE DEPTH TRANSDUCERS WERE LOCATED IN EVERY SEM AND DIGICOURSE BIRD. THE BIRD DEPTHS WERE DISPLAYED ON THE SCS'S OPERATOR TERMINAL AND RECORDED IN THE OBSERVER'S LOG.

LINE GS88A-25A WAS TERMINATED ON THE 02ND OF JULY WHEN EXCESSIVE PARITY ERRORS WERE EXPERIENCED ON BOTH FIBRES. THE CAUSE OF THE PROBLEM WAS A BROKEN 'A' FIBRE BETWEEN SEMS 18 AND 19. THE PROBLEM WAS SOLVED BY COMMANDING SEM 18 TO TRANSFER DATA ALONG THE 'B' FIBRE THEREBY BYPASSING THE 'A' FIBRE. THE LINE WAS COMPLETED AT A LATER DATE.

THE POSITION OF BIRD NUMBER 5 WAS ALTERED ON THE 04TH OF JULY (0230 LOCAL) WHEN A FAULTY SENSOR COIL, IN THE SECTION, WAS DISCOVERED. THE NEW POSITION WAS ON THE LIVE I OF SEM 9 (TRACE NUMBER 103).

LINE GS88A-03 WAS TERMINATED ON THE 04TH OF JULY WHEN A PROBLEM OCCURRED WITH THE STREAMER. EXCESSIVE PARITY ERRORS WERE EXPERIENCED FOR MORE CONSECUTIVE SHOTPOINTS THAN THE CONTRACT WOULD ALLOW. THE STREAMER WAS 'POWERED DOWN' AND THEN 'POWERED UP' AGAIN WHICH RECTIFIED THE PROBLEM. THE LINE WAS RESURVEYED AT A LATER DATE.

II. RECORDING SYSTEM DETAILS

RECORDING SYSTEM	FIELD COMPUTER SYSTEM III
SOFTWARE VERSION	G.S.I. SYS 27
TAPE FORMAT	SEG D. 2.5 BYTE GROUP CODED RECORDING 6250 B.P.I.
TAPE SPEED	125 I.P.S.
CHANNELS (ON TAPE)	312 (INCLUDES 12 AUXILIARY)
GAIN CONTROL MODE	I.F.P.
SAMPLE INTERVAL	2 MS.
RECORD LENGTH	6 SECS.
RECORDING DELAY	0 SECS.
PREAMPLIFIER GAIN	0.535
FINAL GAIN	88 DB
DYNAMIC RANGE	115 DB (REFERRED TO INPUT NOISE.)
FILTERS LOW CUT HIGH CUT	OUT * SEE DISCUSSION 128 HZ @ 72 DB/OCTAVE
POLARITY	POSITIVE PRESSURE GIVES NEGATIVE NUMBER ON TAPE AS PER SEG CONVENTION

II(A) RECORDING SYSTEM DISCUSSION

ON COMPLETION OF A SEISMIC LINE THE FIRST AND LAST MAGNETIC DATA TAPES WERE PARTIALLY REPLAYED TO ENSURE READABILITY AND DATA INTEGRITY. A RECORD HEADER WAS ALSO DECODED AND ANALYSED AFTER EVERY LINE AS A CONFIRMATION OF CORRECT SYSTEM SET UP AND Q.C. DATA TRANSFER TO TAPE.

AT THE COMMENCEMENT OF THE SURVEY LOW-CUT FILTERS WERE NOT USED. THIS WAS DONE AT CLIENT REQUEST. HOWEVER, THEY WERE USED FROM THE 02ND OF JULY (LINE GS88A-25) TO THE END OF THE SURVEY. THE LOW-CUTS USED WERE 8Hz/18dB SLOPE.

LINE GS88A-025 WAS TERMINATED ON THE 02ND OF JULY WHEN COMMUNICATION ERRORS OCCURRED (DUE TO SOFTWARE PROBLEMS) BETWEEN THE TITAN AND THE CMS. THIS WAS THE FIRST TIME THAT THE NEW TITAN SOFTWARE WAS USED. THE SOFTWARE WAS RELOADED AND THE LINE RESURVEYED.

III. SERVO PROFILER DETAILS

MANUFACTURER	EPC LABS
MODEL	3200
SERIAL NUMBER	252
SOURCE	TRACE NUMBER 296
RECORD LENGTH	4 SECS.
GAIN MODE	PGC
FILTERS	PRODUCTION FILTERS

III(A) SERVO PROFILER DISCUSSION

AN EVENT MARK APPEARED ON THE PROFILER RECORDS AT A 50 SHOTPOINT INTERVAL WITH THE RELEVANT SHOTPOINT NUMBER ANNOTATED ON THAT MARK. THIS WAS DONE TO AID INTERPRETATION.

IV. FATHOMETER DETAILS

MANUFACTURER	SIMRAD
MODEL	EA
WATER VELOCITY VALUE	1492 M/SEC.
TRANSDUCER (1) POSITION	2.40 M. FORWARD
TRANSDUCER (2) POSITION (WITH RESPECT TO CNP)	11.99 M. AFT, 10 M. TO STARBOARD
DRAFT CORRECTION (SAME FOR BOTH TRANSDUCERS)	3.7 M.
CALIBRATED	29TH JUNE 1988.

IV(A) FATHOMETER DISCUSSION

AT A 50 SHOTPOINT INTERVAL AN EVENT MARK WAS LOGGED TO THE FATHOMETER STRIP CHART WITH THE RELEVANT SHOTPOINT NUMBER AND WATER DEPTH ANNOTATED ALONGSIDE THE MARK. ON ANY OCCASION WHERE IT BECAME NECESSARY TO CHANGE THE FATHOMETER SCALE, THE SHOTPOINT NUMBER AND NEW SCALE WOULD BE LOGGED ON THE CHART.

ON THE 16TH OF JANUARY A FAULT OCCURRED IN THE FATHOMETER WHICH REQUIRED THE REPLACEMENT OF THE ELECTRONICS AND DIGITIZER. THIS WAS CARRIED OUT AND NO FURTHER PROBLEMS WERE ENCOUNTERED.

PROBLEMS DEVELOPED WITH THE FATHOMETER'S TRACKING ON THE 05TH OF MAY DUE TO A COMBINATION OF ROUGH SEAS AND DEEP WATER DEPTHS. THE LINES AFFECTED WERE AS FOLLOWS: GF88C-91, GF88C-93, GF88C-95 AND GF88C-97.

THE FATHOMETER WAS OPERATIONAL FOR ALL RECORDED SEISMIC LINES. TRANSDUCER 1 WAS USED THROUGHOUT THE SURVEY.

V. MULTI-TRACE PLOTTER DETAILS

MANUFACTURER	GEO SPACE
MODEL	GS-622
NUMBER OF CHANNELS	300
PLOT RATE	1.0" PER SEC.
TIMING LINE PERIODS	LIGHT LINES :- 20 MSEC MEDIUM LINES :- 100 MSEC HEAVY LINES :- 1 SEC
TRACE # ANNOTATION	EVERY 12 TRACES STARTING AT #12
DISPLAY MODE	"ON LINE" :- VARIABLE WIGGLE "NOISE STRIPS" :- WIGGLE ONLY
TRACES PER INCH	"ON LINE" :- 20 "NOISE STRIPS" :- 10
POLARITY	POSITIVE PRESSURE DOWNBREAK.

V(A) PLOTTER DISCUSSION

DURING NORMAL "ON-LINE" OPERATION PLOTS WERE PRODUCED APPROXIMATELY EVERY 40 SHOTPOINTS. THESE RECORDS INCLUDED A HEADER LABEL, PROVIDING FIELDS CONTAINING THE FOLLOWING INFORMATION :-

0	FILE NUMBER (SEISMIC DATA TAPE)
0	GMT TIME
0	SEISMIC TAPE REEL NUMBER
0	JULIAN DATE

DURING THE PERIOD OF SURVEY EXECUTION THE FIELDS AVAILABLE FOR SHOTPOINT NUMBER, LINE NUMBER AND CREW NUMBER WERE NOT SUPPORTED BY THE "WESTREN" SOFTWARE VERSION IN USE AND SO THE LINE NUMBER WAS MANUALLY INPUT, VIA THE CONTROLLER TERMINAL, INTO THE COMMENTS FIELD.

VARIOUS DISPLAY PARAMETERS, INCLUDING OVERALL GAIN AND PROGRAM GAIN CONTROL VALUES, WERE ADJUSTED FROM TIME TO TIME TO PROVIDE THE BEST DISPLAY CHARACTERISTICS FOR THE DIFFERENT AREA DEPENDENT GRAPHIC PROFILES.

VI. MAGNETOMETER DETAILS

GEOMETRICS G-803 PROTON-FREE PRECESSION MAGNETOMETER

DATA RATE : 5 SECONDS
SENSITIVITY : 1 GAMMA
CHART SPEED : 2 CM./SEC.
CHART SCALE : 2 GAMMA/SMALL DIVISION
100 GAMMA FULL SCALE
RED PEN : SIGNAL AND EVERY 150TH SHOTPOINT

VI (A) MAGNETOMETER DISCUSSION

THE MAGNETOMETER WAS OPERATIONAL FOR ALL LINES WHERE MAGNETOMETER DATA WAS REQUESTED BY THE CLIENT IN PERMITS VIC/P21 AND VIC/P28.

THE MAGNETOMETER FISH WAS TOWED APPROXIMATELY 200 METRES FROM THE STERN OF THE VESSEL RUNNING BETWEEN THE INNER AND OUTER GUN-STRINGS ON THE STARBOARD SIDE. THE FISH WAS APPROXIMATELY 125 METRES FROM THE NEAREST AIR-GUN.

VII. ENERGY SOURCE DETAILS

2180 CU. IN. CONVENTIONAL TOW SLEEVE AIRGUN ARRAY

OPERATING VOLUME	2180 CU. INS.
OPERATING PRESSURE	1800 P.S.I.
OPERATING DEPTH	6.0 M. +/- 1.0 M.
TIMING CONTROL	TIGER II
FIRING DELAY	51.2 MS.
COMPRESSORS	3 SULLAIR (1 SPARE) 5 PB-44 (2 SPARE)
DISTANCE FROM CNP TO CENTRE OF ARRAY	116.79 M. (27-06-88 > 28-06-88) 96.79 M. (02-07-88 > END OF SURVEY)
DISTANCE FROM STERN TO CENTRE ARRAY	87.0 M. (27-06-88 > 28-06-88) 67.0 M. (02-07-88 > END OF SURVEY)

VII(A) ENERGY SOURCE DISCUSSION

DURING THE SHELL BASS STRAIT SURVEY THE CONVENTIONAL TOW ARRAY WAS UTILISED WITH A SPREAD OF 25 METRES BETWEEN THE OUTER ARRAYS. AT THE COMMENCEMENT OF THE SURVEY THE DISTANCE FROM THE STERN OF THE VESSEL TO THE FIRST GUN OF EACH SUB-ARRAY WAS 80 METRES. HOWEVER, THIS WAS ALTERED TO 60 METRES ON THE 02ND OF JULY AND REMAINED THIS DISTANCE UNTIL THE END OF THE SURVEY.

THE AIRGUNS WERE MAINTAINED BY GSI PERSONNEL ON LINE CHANGES SO THAT THROUGHOUT THE SURVEY THE AIRGUNS WERE OPERATING WITHIN SPECIFICATIONS. WHILST SURVEYING, USING 25 METRE SHOTPOINT INTERVALS, TWO SULLAIR AND THREE PB-44 COMPRESSORS WERE UTILIZED.

THE AIRGUNS OPERATED VERY SATISFACTORILY FOR THE DURATION OF THE SURVEY.