

ACCESS NUMBER	REF NUMBER	FILE TYPE	PROJ CODE	INST PLAT	CRUISE NO	CRUISE START	CRUISE END	NUM STA	NUM REC
9300046	TW4939	F022		0910	09FA	12/04/85	12/17/85	59	6,229
9300046	TW4940	F022		0910	09FA	11/05/86	11/19/86	72	8,222
9300046	TW4941	F022		0910	09FA	01/27/87	02/16/87	79	9,802
9300046	TW4942	F022		0910	09FA	03/12/87	03/27/87	108	13,673
9300046	TW4943	F022		0910	09FA	06/03/87	06/22/87	57	4,153
9300046	TW4944	F022		0910	09FA	08/04/87	09/05/87	116	11,847
9300046	TW4945	F022		0910	09FA	10/04/87	11/20/87	200	12,226
9300046	TW4946	F022		0910	09FA	01/05/89	02/06/89	564	7,809
9300046	TW4947	F022		0910	09FA	03/12/89	03/12/89	5	40
9300046	TW4948	F022		0910	09FA	03/23/89	03/29/89	183	1,466
9300046	TW4949	F022		0910	09FA	05/11/89	05/29/89	74	3,820
9300046	TW4950	F022		0910	09FA	07/04/89	07/09/89	43	1,494
9300046	TW4951	F022		0910	09FA	08/15/89	09/26/89	163	40,175
9300046	TW4952	F022		0910	09FA	11/04/89	12/06/89	166	3,229
9300046	TW4953	F022		0910	09FA	01/11/90	01/29/90	87	12,298
9300046	TW4954	F022		0910	09FA	02/26/90	04/06/90	143	35,876
9300046	TW4955	F022		0910	09FA	05/11/90	05/22/90	110	2,709

2,229 175,068

ACCESSION NO. 9300046FILETYPE ~~CH~~

F022 TRACK NO. _____

PROJECT
IDENTIFICATION _____

TW 4938-4955

EP	DATE	INIT.	TAPE OR DISK DSN	NO. FILES	NO. RECL	BLK SIZE	NO. RECORDS
ORIG. TAPE EXOBYTE (UNIX)	3-5-93	FJM	A01662 (D02883)	32	?	?	LOTS
PLICATE TAPE JAMOS DISK	5-10-93	FJM	*	32 22	185	224	LOTS
FORMATTED TAPE	6-28-93	R.P.S.	W73895 **	1	120	12000	175,068
FORMATTED DISK							
RST MULCHEK							
NAL MULCHEK							
D75 OR F022							
TA SET FINALIZED							

ERRORS REPORTED TO PRINCIPAL INVESTIGATOR:

* = See LIST ATTACHED
** LABEL: DNODE * AUSCTDOUT.

ADDITIONAL ERRORS/CORRECTIONS (NOT REPORTED TO P.I.)

ENTRIES (TRACKS DELETED, FIELDS DELETED, ETC.)

DAMUS DISK FILE NAMES:

104-1060	AUTOCHART(DAT) R	15775	F8506. ✓ 144	F8609. ✓ 144	F8703. ✓ 144
	F8704. ✓ 144		F8706. ✓ 144	F8707. ✓ 144	F8708. ✓ 144
	F8709. ✓ 144		✓ F8710. ✓ 108	F8907. ✓ 92	F8908. ✓ 92
108	F8910. ✓		✓ F8912. ✓ 92	F8913. ✓ 92	✓ F9001. ✓ 92
	F9002. ✓ 108		✓ F9004. ✓ 92	FR8901CTD. ✓ 188	FR8901XBT. ✓ 80
	FR8902CTD. ✓ 188		FR8903CTD. ✓ 188	FR8903XBT. ✓ 80	FR8904CTD. ✓ 188
	FR8906CTD. ✓ 188		FR8907XBT. ✓ 80	FR8910XBT. ✓ 80	FR8913XBT. ✓ 80
	FR9002XBT. ✓ 80		FR9004XBT. ✓ 80	FR9006XBT. ✓ 80	FR9007XBT. ✓ 80

= 32 FILES =

Royal Australian Navy

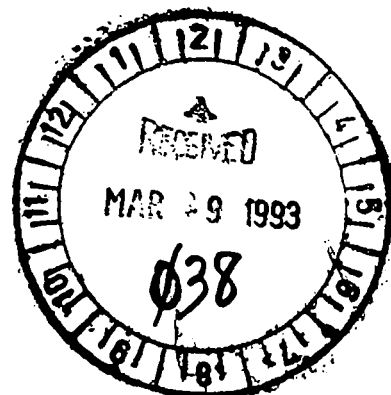
Australian Oceanographic Data Centre

5th Floor
118 Walker Street
North Sydney, NSW
Tel (02) 925-4230

Correspondence to:
Hydrographic Office, RAN
PO Box 1332
North Sydney, NSW 2059

AODC 18/93
AH 43/147
22 February 1993

Bruce Douglas
Director
National Oceanographic Data Centre
National Oceanic and Atmospheric Administration
Washington, D.C. 2035
U.S.A.



Reference: AODC letter 80/91, file 43/3, dated 5 July 1991

Dear Bruce,

Please find enclosed an Exabyte tape containing AODC Autochart XBT and RV Franklin XBT and CTD data in tar format. This data is also to be made available to WDC-A.

This data set comprises of an update of the now releasable Franklin data. A set of Franklin data was previously sent to NODC with the reference. The data also includes XBTs digitised at AODC on the Autochart system between 1979 and 1988. It is the possible that several years ago some of the Autochart data was sent to NODC. So some duplicate checking may be required before addition to the database.

Also enclosed are details of the data formats, sample data printouts and a AODC cruise number inventory of the Autochart XBT data.

Note that the 1990 Franklin CTD data enclosed (FR90*.ARC files) uses the International Temperature Scale ITS-90 details of which are enclosed. CTD data prior to 1990 uses ITS-68.

The enclosed 8500 mode Exabyte tape can be unloaded on a UNIX machine by using the command:

`tar xvf /dev/[device name]`

A directory called AODC-UPDATE will be created which contains all the relevant files for which you will find a listing enclosed.

9300046

Ad 1662

I trust that you will have no problem in reading these files and if you have any queries about this matter please contact us at the email address andrew@aodc20.aodc.gov.au.

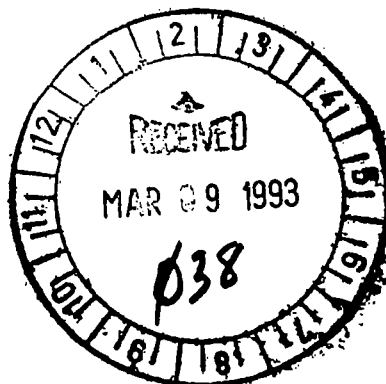
Regards to all at NODC.

A. Walsh

A. Walsh
A/Head, Data Management Section
Australian Oceanographic Data Centre

Enclosed:

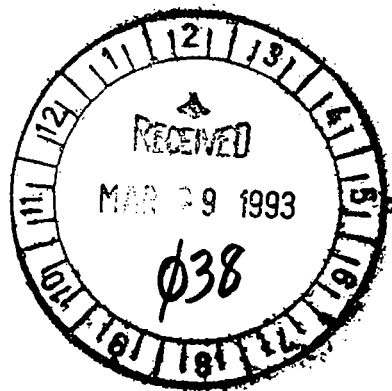
1 8500 mode Exabyte tape
Autochart XBT format and sample printout.
RV Franklin XBT and CTD formats and sample printouts.
Autochart XBT cruise number summary.
Listing of data files on tape.
ITS-90 Technical Note.
Acknowledgment receipt form.



9300046

AODC Expendable Bathythermograph Format

Element Name and Level	Position Unit	No. Unit		Usage and Meaning of Element
FILE I.D.	1-2	Byte 2	Byte	Char(2) File I.D.
QUADRT	3	1		Char(1) WMO 3333
TEN SQ	4-6	3		Char(3) Ten Degree Square (WMO)
FIVE SQ	7	1		Char(1) Five Degree Square
TWO SQ	8-9	2		Char(2) Two Degree Square
ONE SQ	10-11	2		Char(2) One Degree Square
DATE				
YEAR	12-15	4		Char(4) Prefix '19'
MONTH	16-17	2		Char(2) 01-12
DAY	18-19	2		Char(2) 01-31
TIME				
HOUR	20-21	2		Char(2) 00-23
MIN	22-23	2		Char(2) 00-59
REF. I.D.				
CNTRY	24-26	3		Char(3) NODC CODES
REF. NO.	27-31	5		Char(5)
CONSEC	32-34	3		Char(3)
SHIP	35-40	6		Char(6)
LATITUDE				
LAT. DEG	41-42	2		Char(2) 00-90
LAT. MIN	43-44	2		Char(2) 00-59
LAT. HEM	45	1		Char(1) N or S
LONGITUDE				
LONG DEG	46-48	3		Char(3) 000-179
LONG MIN	49-50	2		Char(2) 00-59
LONG HEM	51	1		Char(1) E or W
NODC CODES				
BOTTOM	52	1		Char(1) B = probe hit bottom, blank = did not
DIGMTH	53-54	2		Char(2) Method of digitisation
INTER	55-56	2		Char(2) Interval of digitisation
TRESTO	57-58	2		Char(2) Method of treatment & storage of initial points
OPERATOR				
INIT	59-61	3		Char(3) Operator's Initials
TRIAL	62	1		Char(1) Number of attempts at digitising trace
CALDEP	63-65	3		Char(3) Depth of calibration tick in units of analog grid
CALTEM	66-68	3		Char(3) Temperature of calibration tick in units of analog grid
INSTRUMENT	69	1		Char(1) 1=XBT, 2=HXBT, 3= SXBT, 4=AXB
GRID/3	70	1		Char(1) Grid modes of instrument 1-9
ORIG OR NO	71-78	8		Char(8) Originators cruise number
DNP	79	1		Char(1) Declared National Program
SKIP	80	1		Char(1) Blank
LENGTH	81-84	4		Char(4) Number of temperature values
DEPTH & TEMP				
SURTEM	85-88	4		Char(4) Temperature at zero depth
DEPTH 1	89-92	4		Char(4) First depth to whole metres
TEMP 1	93-96	4		Char(4) Temperature at first depth
DEPTH 2	97-100	4		Char(4) Second depth
TEMP 2	101	4		Char(4) Temperature at second depth
DEPTH (N)		4		Char(4) Last depth, Position = (N-1) + 8
TEMP (N)		4		Char(4) Last temperature, Position = (N-1) + 8



Fmt_no. FORMAT(4(F7.0,2F7.3,I7,2F6.3))

The first record of profile data written is the first record with data in it, so the depth of this record can vary from station to station

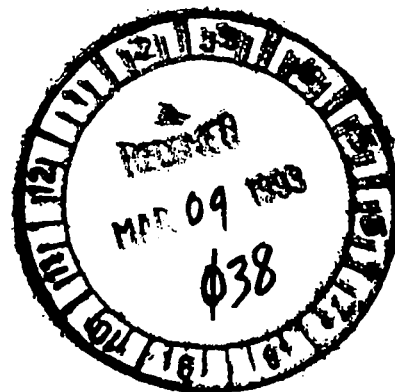
RV Franklin XBT data format

All the drops for a cruise are in one file and the format is as follows :

For each drop there is a header record (see example below) and a series of data records.
The header record format is:

FRaabbccddeeffffghhijkkllmnnnoo_pp.ppq_rrr_ss.sst98

where	:	^	denotes a blank
	:	FR	is the vessel code for RV Franklin
	:	aa	is the cruise number
	:	bbbb	is the drop or XBT number
	:	cc	is the year
	:	dd	is the month
	:	ee	is the day
	:	ffff	is the time (24 hour clock)
	:	g	is the time zone (= 'Z' - UTC)
	:	hh	is the whole degrees of latitude
	:	ii	is the minutes of latitude
	:	j	is the hemisphere (= 'N' or 'S')
	:	kkk	is the whole degrees of longitude
	:	ll	is the minutes of longitude
	:	m	is the hemisphere (= 'E' or 'W')
	:	nnnn	is the bottom depth (in metres) if available (blank otherwise)



If a corrected position is available, it is inserted in the header record as follows :

:	oo	is the whole degrees of latitude
:	pp.pp	is the minutes and hundredth's of minutes of latitude
:	q	is the hemisphere (= 'N' or 'S')
:	rrr	is the whole degrees of longitude
:	ss.ss	is the minutes and hundredth's of minutes of longitude
:	t	is the hemisphere (= 'E' or 'W')

otherwise these fields are left blank. If these fields contain a position, this position will be more accurate than the other position in the header, which should be ignored.

After the header record, there are as many data records as are required. The first data record contains the temperatures at 0,5,10,15,...,95 metres. The second record contains the temperatures at 100,105,110,...,195 metres, and so on. Blanks indicate that there is no temperature for that depth. (The surface (0 metre) value is left blank because of large surface transients).

The format of the i-th data record is:

```
.....aaabbbcccddeefffggghhhiiijjjkkllmmnnnooppqqrrrrssttt.....uu
```

where

:	^	denotes a blank
:	aaa	is 10 times the temperature at (i-1)X100 metres
:	bbb	is 10 times the temperature at (i-1)X100+5 metres
:	ccc	is 10 times the temperature at (i-1)X100+10 metres
:	.	
:	.	
:	.	
:	ttt	is 10 times the temperature at (i-1)X100-5 metres
:	u	= i+2

(The FORTRAN format to read this is (10X,20I3,8X,I2).)

Thus in the first example below (drop number 24 from cruise Fr 4/87, at 17:37 on the 16th of March, 1987), the temperature at 5 metres is 22.9°C, the temperature at 100 metres is 18.4°C, and at 105 metres it is 18.1°C. The deepest temperature (5.8°C) is at 760 metres.

Sample of XBT data :

```
FR0400248703161737Z2900S11235E4000      29 00.43S  112 35.89E      98
      229230229229229229229225221219210206202199197192189187      3
184181179178176174172168167166164163162161159157154152151149      4
148146144143142139138137135134132131130129128127126125123122      5
120119117116114113113112111110109108107106106105104103103103      6
102101101101101100100 99 99 98 98 98 97 97 96 96 95 95 95 95      7
 94 94 94 94 93 93 93 92 92 91 91 90 90 90 90 89 89 89 88 88      8
 87 87 86 86 85 84 84 82 82 82 81 80 79 78 77 76 74 74 73 72      9
 71 70 69 68 66 66 65 64 62 61 60 59 58                                10
FR0400258703170053Z2828S11217E3600      28 28.32S  112 15.94E      98
      234234238238239239239239238233228224219216212208205202200      3
197194192190188186184182181179179177176173171170169168166165      4
163162160159157156156153152151149148146143142141139137134132      5
131127124122118114111108104103100100 99 99 97 96 95 94 94 94      6
 94 93 92 91 91 91 91 90 90 90 89 88 88 86 86 84 83 83 82 81      7
 80 80 79 78 77 77 76 76 76 74 73 72 71 71 70 68 67 67 65 65      8
 64 63 62 61 61 60 59 58 57 57 56 55 55 55 54 54 54 53 53 53      9
 53 52 52 51 51 51 51 50 50 49 49 49 48                                10
```

Sample of Autochart (AODC) XBT format

1732113849419800117120000900017029DERWEN2942S11406E 020224 -0316514
00642316000123160022231200282299002922870032225000412230005521810067217200682153
00692143007521170104206801052058011120420124199601291990014119790144197001471937
01521897015418810164182901711813017218070176178301851749018617340188171601931672
02001662020216490205163402121576021315640216153902241524022715070237149002391477
02451442025114210254141102591382026413720270134802741328028912800292127102971256
03121233032012100338117003421160036011070365109803761065037810590385103803911027
04150997043609750449095804580949046209421221000130210019523520101241010000000

171 84686919810717030000900017017BRISBA0607N08906E 020224 -0116714
00492248000122480007222700222227004622450079224000892218009222060094220800992214
01072175011221430114209001152076011820170120199601211976012219110125178201271742
01321662013716230139159401401580014115410155150201601481016514460167143001691385
01731364017713440180132701831294018712420192122002031143021011200216109702261071
02491018025810040281096103010926034408810359086203780839040608000431077304600752
1240200920289026727820000224010000000

171 93606019810717104300900017018BRISBA0606N09036E 020224 -0116714
00412204000822040050220300652183006921600072211800732073007519840087195500931961
00941955009819260100188101061732010916870110168101141633012315810126156701331494
01361462014513860148133801561301016012910162128301671258017012460177120601821167
01851131018911170192109402031073021410140218100602320965023909490244094002710892
03020850032308311290400810244023927220000253010000000

Processed CTD data format

There is one file for an entire cruise. File names are in the format of VVYYCCCTD.DAT, where VV is the Vessel code (G9= RV Sprightly and FR = RV Franklin), YY is the year of the cruise and CC is the cruise number within that year. Each file consists of a CRUISE HEADER section, which has a station listing and processing notes included and a DETAILS SECTION for each station. All dates and times are UTC and South latitude is negative. Each station has information in its individual DETAILS SECTION as to which variables have been included for the station and the field widths of the data for each variable within each data cycle or depth and the number of data cycles within each station.

An example Cruise Header and Station Header is:

[illegible]

VESSEL CODE = FR YEAR = 85 CRUISE IDENTIFIER = 05

VESEL NAME - R.V. FRANKLIN

START DATE OF CRUISE = 01-OCT-85

END DATE OF CRUISE - 05-NOV-85

CRUISE LEADER = Dr. M.J. Furnas

DATA PROCESSED BY - D.J.Vaudrey

DATE ARCHIVED - 11-MAY-87

MINIMUM LATITUDE IN DATA = -20.985

MAXIMUM LATITUDE IN DATA = -9.895

MINIMUM LONGITUDE IN DATA = 145.020

MAXIMUM LONGITUDE IN DATA = 166.407

MAXIMUM SAMPLE PRESSURE IN DATA - 4788

ARCHIVE PROGRAM VERSION NUMBER = 0

2222222222222222222222 CRUISE COMMENTS 2222222222222222222222

1	0445	1-OCT-85	16:47.70S	146:07.09E	49	46
---	------	----------	-----------	------------	----	----

2	0719	1-OCT-85	16:37.40S	146:16.00E	100	90
---	------	----------	-----------	------------	-----	----

```

| 3 | 1928 1-OCT-85 14:53.80S 146:26.36E 1899 | 1502 |

```

...A full station listing detailing station number, time and date (UTC) bottom depth and maximum cast pressure...

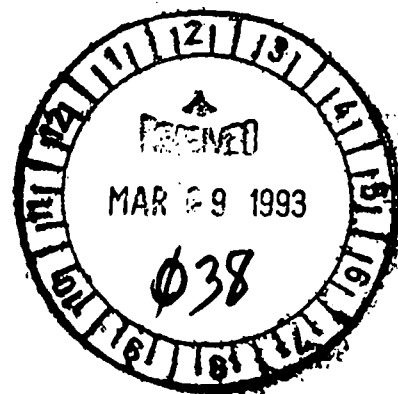
CTD Processing Notes:

D.J.Vaudrey and N.J.White:

Fr0585:

General:

Data Quality was poor to fair. Many problems were encountered with Unit 1 as previously discovered during Fr0485. Too few samples were collected



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Sample of Franklin XBT Format

```
FR0300018903160929Z3819S13851E3150      38 17.85S  138 51.50E      98
      175174174174174174174174174167165159149143139135      3
FR0300028903160942Z3817S13853E3150      38 15.90S  138 53.52E      98
      175175175175175175175175175170166165157142136129128127126128      3
      128127129130130129130128128128127125124122121120119119118117      4
      117115115114114113112111111109109108107105105104104103103103      5
      102102101      6
FR0300038903162306Z3757S13848E2359      37 56.45S  138 48.31E      98
      176176176176176176176176176175173157153145133130126126125      3
      124125124124124122121121119117117116115114114113114112111110      4
      109108109107107106106105105105104104103103103102101101100100      5
      99 99 98 98 97 97 96 96 95 95 95 94 94 94 93 93 93 93 92 92      6
      92 92 92 91 91 91 91 91 91 90 90 90 89 89 89 89 89 88 88 88      7
      88 87 87 87 86 86 86 85 85 85 85 84 84 84 83 83 82 82 82      8
      81 80 80 79 79 79 78 78 77 77 77 76 76 75 75 74 74 73 73 72      9
      72 71 70 70 69 69 68 68 67 66 66 65 64      10
FR0300048903170156Z3729S13908E0490      37 28.22S  139 07.85E      98
      170170170170170169169169169168168168167161154      3
FR0300058903170206Z3727S13908E0466      37 26.58S  139 08.29E      98
      169169169169169169169169169169168164155153151147146141140      3
      139138136136135135135135134134133132132132132131131130129128      4
      126126126125125124123118118117116115115115114113113112109107      5
      105104103102102101100 99 99 99 99 98 98 98 97 97 96 96 96 95      6
      95 94 94 94 93 93 93 92 92 92 92 92 91 88      7
FR0300068903180923Z3731S13926E0168      37 30.21S  139 25.12E      98
      177177177177176176176175162154146140139137137137138138137      3
      137136136      4
```

```

VESSEL CODE = FR YEAR = 89 CROISE ID = 11 STATION ID = 000003 DIP # = 01
START DATE - TIME = 02-DEC-88 19:31:00
BOTTOM DATE - TIME = 02-DEC-88 19:50:00
END DATE - TIME = 02-DEC-88 20:29:00
START POSITION = -45 01.100148 25.280
BOTTOM POSITION = -45 01.130148 25.090
END POSITION = -45 01.250148 24.760
LEPETH TO BOTTOM = 4078
MAXIMUM SAMPLE PRESSURE = 798
NUMBER OF VARIABLES PER DATA CYCLE = 6
NUMBER OF DATA CYCLES ON STATION = 399
DATE STATION ARCHIVED = 17-JAN-90 CTD INSTRUMENT NUMBER = 2
ARCHIVE PROGRAM VERSION NUMBER = 0
55555555555555555555 VARIABLE DESCRIPTIONS 55555555555555555555
VAR = 01 NAME AND UNITS = PRESSURE (db) FIELD WIDTH = 7
VAR = 03 NAME AND UNITS = TEMPERATURE (DEGREES C) FIELD WIDTH = 7
VAR = 05 NAME AND UNITS = SALINITY (PSU) FIELD WIDTH = 7
VAR = 54 NAME AND UNITS = NO. OBS. PRESSURE FIELD WIDTH = 7
VAR = 51 NAME AND UNITS = S.D. OF TEMPERATURE FIELD WIDTH = 6
VAR = 53 NAME AND UNITS = S.D. CONDUCTIVITY FIELD WIDTH = 6
66666666666666666666 THERE ARE NO STATION COMMENTS 66666666666666666666
77777777777777777777 END OF STATION HEADER 77777777777777777777
014w
2. 11.176 34.556 100 0.003 0.002 4. 11.177 34.557 86
G.001 0.001 6. 11.169 34.557 128 0.005 0.004 8. 11.164 34.5
58 106 0.005 0.004
10. 11.145 34.561 131 0.016 0.011 12. 11.113 34.569 115
0.010 0.009 14. 11.030 34.567 128 0.030 0.026 16. 10.973 34.5
75 123 0.012 0.011
18. 10.949 34.575 92 0.007 0.007 20. 10.929 34.573 89
0.005 0.005 22. 10.910 34.572 108 0.007 0.007 24. 10.880 34.5
70 117 0.017 0.016
26. 10.811 34.573 88 0.030 0.013 28. 10.777 34.581 91
0.011 0.009 30. 10.761 34.588 64 0.004 0.003 32. 10.750 34.5
90 52 6.010 0.008
34. 10.730 34.591 38 0.007 0.007 36. 10.683 34.588 46
0.018 0.018 38. 10.641 34.586 104 0.010 0.010 40. 10.607 34.5
85 44 0.004 0.004
42. 10.543 34.574 36 0.062 0.066 44. 10.218 34.552 36
0.094 0.092 46. 9.943 34.542 38 0.058 0.054 48. 9.799 34.5
39 84 0.029 0.027
50. 9.732 34.533 49 0.025 0.020 52. 9.729 34.549 27
0.017 0.020 54. 9.695 34.546 24 0.019 0.018 56. 9.689 34.5
53 37 0.013 0.015
58. 9.816 34.608 96 0.058 0.078 60. 9.949 34.641 65
0.061 0.065 62. 10.106 34.672 30 0.022 0.024 64. 10.126 34.6
77 28 0.002 0.003
66. 10.138 34.679 31 0.003 0.004 68. 10.173 34.694 46
0.023 0.030 70. 10.224 34.708 80 0.008 0.010 72. 10.259 34.7
17 36 0.006 0.007
74. 10.277 34.721 30 0.001 0.002 76. 10.278 34.721 31
0.000 0.001 78. 10.292 34.726 29 0.005 0.005 80. 10.295 34.7
28 29 0.002 0.005
82. 10.341 34.742 36 0.008 0.009 84. 10.347 34.744 67
0.002 0.002 86. 10.351 34.745 44 0.002 0.002 88. 10.356 34.7
4~ 29 0.002 0.002
90. 10.390 34.764 26 0.019 0.022 92. 10.433 34.776 27
0.009 0.012 94. 10.460 34.783 37 0.006 0.008 96. 10.477 34.7
88 44 0.002 0.002
98. 10.514 34.800 40 0.028 0.033 100. 10.555 34.807 39
0.001 0.002 102. 10.554 34.807 41 0.002 0.003 104. 10.530 34.8
34.807 104. 10.530 34.8

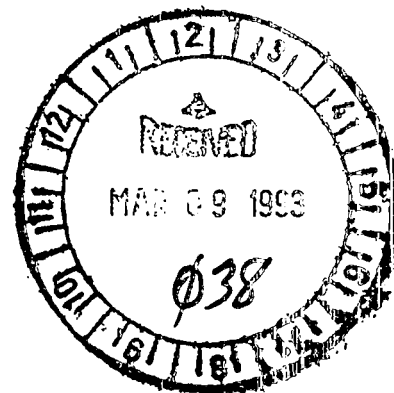
```

[illegible]

Listing of data files for submission to NODC

total 57206

-rw-rw-rw-	1	andrew	9916381	Nov 25 11:11	AUTOCHART.DAT
-rw-rw-rw-	1	edwina	1748508	Feb 16 14:34	F8506.ARC
-rw-rw-rw-	1	edwina	2191118	Feb 16 14:34	F8609.ARC
-rw-rw-rw-	1	edwina	2715643	Feb 16 14:34	F8703.ARC
-rw-rw-rw-	1	edwina	3785513	Feb 16 14:34	F8704.ARC
-rw-rw-rw-	1	edwina	1179214	Feb 16 14:34	F8706.ARC
-rw-rw-rw-	1	edwina	3113057	Feb 16 14:35	F8707.ARC
-rw-rw-rw-	1	edwina	195732	Feb 16 14:35	F8708.ARC
-rw-rw-rw-	1	edwina	2289125	Feb 16 14:35	F8709.ARC
-rw-rw-rw-	1	edwina	1174143	Feb 16 14:35	F8710.ARC
-rw-rw-rw-	1	edwina	729489	Feb 16 14:35	F8907.ARC
-rw-rw-rw-	1	edwina	390921	Feb 16 14:35	F8908.ARC
-rw-rw-rw-	1	edwina	10867563	Feb 16 14:35	F8910.ARC
-rw-rw-rw-	1	edwina	235992	Feb 16 14:35	F8912.ARC
-rw-rw-rw-	1	edwina	679647	Feb 16 14:35	F8913.ARC
-rw-rw-rw-	1	edwina	2921109	Feb 16 14:35	F9001.ARC
-rw-rw-rw-	1	edwina	9677706	Feb 16 14:36	F9002.ARC
-rw-rw-rw-	1	edwina	711897	Feb 16 14:36	F9004.ARC
-rw-rw-rw-	1	edwina	324973	Feb 16 14:54	FR8901CTD.DAT
-rw-rw-rw-	1	edwina	1128	Feb 16 14:55	FR8901XBT.DAT
-rw-rw-rw-	1	edwina	2137646	Feb 16 14:54	FR8902CTD.DAT
-rw-rw-rw-	1	edwina	18344	Feb 16 14:54	FR8903CTD.DAT
-rw-rw-rw-	1	edwina	2175	Feb 16 14:55	FR8903XBT.DAT
-rw-rw-rw-	1	edwina	553840	Feb 16 14:54	FR8904CTD.DAT
-rw-rw-rw-	1	edwina	243794	Feb 16 14:54	FR8906CTD.DAT
-rw-rw-rw-	1	edwina	45307	Feb 16 14:55	FR8907XBT.DAT
-rw-rw-rw-	1	edwina	111132	Feb 16 14:55	FR8910XBT.DAT
-rw-rw-rw-	1	edwina	38746	Feb 16 14:55	FR8913XBT.DAT
-rw-rw-rw-	1	edwina	97568	Feb 16 14:36	FR9002XBT.DAT
-rw-rw-rw-	1	edwina	16130	Feb 16 14:36	FR9004XBT.DAT
-rw-rw-rw-	1	edwina	69211	Feb 16 14:36	FR9006XBT.DAT
-rw-rw-rw-	1	edwina	109850	Feb 16 14:36	FR9007XBT.DAT



The International Temperature Scale of 1990, ITS-90

The International Committee for Weights and Measures at its meeting in September 1989 approved the above temperature scale. It replaces the International Practical Temperature Scale of 1968 (IPTS-68) and will take effect from 1st January 1990. [Note that the term practical is dropped from the title.] ITS-90 takes advantage of technological advances and more closely approximates the thermodynamic temperature scale than previous scales (IPTS-68, IPTS-48 etc).

Of particular interest to oceanographers are the properties of ITS-90 in the range -2°C to $+35^{\circ}\text{C}$. The single most important property is that the triple point of water remains unchanged at 273.16 K or 0.010°C ; however at standard atmospheric pressure the boiling point of water falls to 99.974°C . Consequently in the interval 0 - 100°C temperatures measured on the ITS-90 scale are lower than values measured on the IPTS-68 scale. But below 0°C they are higher. The differences are expressed in the following table.

$t_{90}/^{\circ}\text{C}$	-10	0	10	20	30	40
$t_{90}-t_{68}/^{\circ}\text{C}$	.002	.000	-.002	-.005	-.007	-.010

Over this range (although slightly nonlinear) the relation between the temperature scales can be adequately represented by the expression

$$t_{90} = 0.99976 t_{68}$$

Initially it is expected that oceanographers will employ the above expression to correct temperatures measured on the IPTS-68 scale but new calibration procedures will be introduced in National Standards Laboratories commencing 1990 and it is hoped these practices will rapidly spread to oceanographic calibration facilities. The value for the fixed points on the ITS-90 scale and the instruments and interpolation equations to be employed for the measurement of temperature are described in a text to be published in the journal *Metrologia*, early in 1990.

Although the impact of the new temperature scale on ocean temperature measurements and their climatology is likely to be small (or even negligible), unfortunately this is not true for its knock-on effects. Corrections will be required for the computation of salinity and other state properties of sea water.

It is imperative that in the determination of derived oceanographic quantities, where t_{90} is used as an entry to standard algorithms (UNESCO Technical papers in Marine Science, 1988 volume 44) that the first executable statement be

$$t_{68} = 1.00024 t_{90}$$

The algorithms will then utilise the temperature scale employed in their formulation.

Recognising that there will be a period within which the IPTS-68 scale will remain in use, it is recommended that

- (1) for the near future all temperatures reported in the literature be labelled t_{90} or t_{68} as appropriate, and
- (2) oceanographers adopt the ITS-90 scale as soon as possible.

P M Saunders
Chairman WHP sub-group on standards and calibration

ACCESS NUMBER	REF NUMBER	FILE TYPE	PROJ CODE	INST	PLAT	CRUISE NO	CRUISE START	CRUISE END	NUM STA	NUM REC
9300046	047182	C125		0910	09FA 01		01/10/89	01/11/89	3	3
9300046	047183	C125		0910	09FA 03		03/16/89	03/18/89	6	6
9300046	047184	C125		0910	09FA 07		05/16/89	06/03/89	67	67
9300046	047185	C125		0910	09FA 10		08/15/89	09/25/89	162	162
9300046	047186	C125		0910	09FA 13		11/12/89	12/03/89	67	67
9300046	047187	C125		0910	09FA 02		02/26/90	04/05/90	140	140
9300046	047188	C125		0910	09FA 04		05/17/90	05/19/90	35	35
9300046	047189	C125		0910	09FA 06		07/06/90	08/01/90	103	103
9300046	047190	C125		0910	09FA 07		09/10/90	09/28/90	155	155

738 738

ACCESSION NO. 9300046FILETYPE C125TRACK NO. 047182 -
047190PROJECT
IDENTIFICATION _____

TEP	DATE	INIT.	TAPE OR DISK DSN	NO. FILES	NO. LRECL	BLK SIZE	NO. RECORDS
ORIG. TAPE EXOBYTE (UNIX)	3-5-93	FJM	A01662(D02883)	32	?	?	LOTS
DUPLICATE TAPE DAMUS DISK	5-10-93	FJM	*	9 ^{no}	105	512	LOTS
EFORMATTED TAPE	6-25-93	R.P.S.	W73974 **	1	✓	✓	738
EFORMATTED DISK							
IRST MULCHEK							
INAL MULCHEK							
PD75 OR F022							
ATA SET FINALIZED							

~~ERRORS REPORTED TO PRINCIPAL INVESTIGATOR:~~

* = SEE ATTACHED

** = DNRDC * AUSSIE/BTOUT1.

ADDITIONAL ERRORS/CORRECTIONS (NOT REPORTED TO P.I.)

COMMENTS (TRACKS DELETED, FIELDS DELETED, ETC.)

DAMUS DISK FILE NAMES:

104-1060 AUTOCHART DAT. R	15775 F8506. ✓ 144	F8609. ✓ 144	F8703. ✓ 144
F8704. ✓ 144	F8706. ✓ 144	F8707. ✓ 144	F8708. ✓ 144
F8709. ✓ 144	✓ F8710. ✓ 108	F8907. ✓ 92	F8908. ✓ 92
108 F8910. ✓	✓ F8912. ✓ 92	F8913. ✓ 52	✓ F9001. ✓ 92
F9002. ✓ 108	✓ F9004. ✓ 92	✓ FR8901CTD. ✓ 188	FR8901XBT. ✓ 80
FR8902CTD. ✓ 188	FR8903CTD. ✓ 188	FR8903XBT. ✓ 80	FR8904CTD. ✓ 188
FR8906CTD. ✓ 188	FR8907XBT. ✓ 80	FR8910XBT. ✓ 80	FR8913XBT. ✓ 80
FR9002XBT. ✓ 80	FR9004XBT. ✓ 80	FR9006XBT. ✓ 80	FR9007XBT. ✓ 80

= 32 FILES =

80/chev = xBT

185 = CTD
chev

Royal Australian Navy

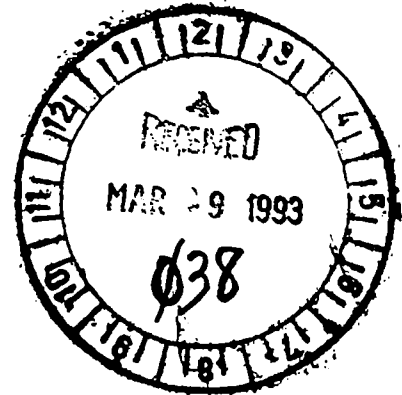
Australian Oceanographic Data Centre

5th Floor
118 Walker Street
North Sydney, NSW
Tel (02) 925-4230

Correspondence to:
Hydrographic Office, RAN
PO Box 1332
North Sydney, NSW 2059

AODC 18/93
AH 43/147
22 February 1993

Bruce Douglas
Director
National Oceanographic Data Centre
National Oceanic and Atmospheric Administration
Washington, D.C. 2035
U.S.A.



Reference: AODC letter 80/91, file 43/3, dated 5 July 1991

Dear Bruce,

Please find enclosed an Exabyte tape containing AODC Autochart XBT and RV Franklin XBT and CTD data in tar format. This data is also to be made available to WDC-A.

This data set comprises of an update of the now releasable Franklin data. A set of Franklin data was previously sent to NODC with the reference. The data also includes XBTs digitised at AODC on the Autochart system between 1979 and 1988. It is the possible that several years ago some of the Autochart data was sent to NODC. So some duplicate checking may be required before addition to the database.

Also enclosed are details of the data formats, sample data printouts and a AODC cruise number inventory of the Autochart XBT data.

Note that the 1990 Franklin CTD data enclosed (FR90*.ARC files) uses the International Temperature Scale ITS-90 details of which are enclosed. CTD data prior to 1990 uses ITS-68.

The enclosed 8500 mode Exabyte tape can be unloaded on a UNIX machine by using the command:

tar xvf /dev/[device name]

A directory called AODC-UPDATE will be created which contains all the relevant files for which you will find a listing enclosed.

9300046

A 1662

I trust that you will have no problem in reading these files and if you have any queries about this matter please contact us at the email address andrew@aodc20.aodc.gov.au.

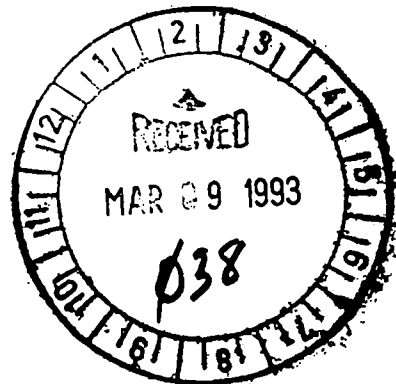
Regards to all at NODC.

A. Walsh

A. Walsh
A/Head, Data Management Section
Australian Oceanographic Data Centre

Enclosed:

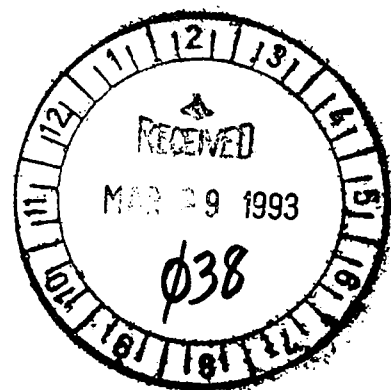
1 8500 mode Exabyte tape
Autochart XBT format and sample printout.
RV Franklin XBT and CTD formats and sample printouts.
Autochart XBT cruise number summary.
Listing of data files on tape.
ITS-90 Technical Note.
Acknowledgment receipt form.



9300046

AODC Expendable Bathythermograph Format

Element Name and Level	Position Unit	No. Unit	Usage and Meaning of Element	
FILE I.D.	1-2	Byte 2	Byte	Char(2) File I.D.
QUADRT	3	1		Char(1) WMO 3333
TEN SQ	4-6	3		Char(3) Ten Degree Square (WMO)
FIVE SQ	7	1		Char(1) Five Degree Square
TWO SQ	8-9	2		Char(2) Two Degree Square
ONE SQ	10-11	2		Char(2) One Degree Square
DATE				
YEAR	12-15	4		Char(4) Prefix '19'
MONTH	16-17	2		Char(2) 01-12
DAY	18-19	2		Char(2) 01-31
TIME				
HOURL	20-21	2		Char(2) 00-23
MIN	22-23	2		Char(2) 00-59
REF. I.D.				
CNTRY	24-26	3		Char(3) NODC CODES
REF. NO.	27-31	5		Char(5)
CONSEC	32-34	3		Char(3)
SHIP	35-40	6		Char(6)
LATITUDE				
LAT. DEG	41-42	2		Char(2) 00-90
LAT. MIN	43-44	2		Char(2) 00-59
LAT, HEM	45	1		Char(1) N or S
LONGITUDE				
LONG DEG	46-48	3		Char(3) 000-179
LONG MIN	49-50	2		Char(2) 00-59
LONG HEM	51	1		Char(1) E or W
NODC CODES				
BOTTOM	52	1		Char(1) B = probe hit bottom, blank = did not
DIGMTH	53-54	2		Char(2) Method of digitisation
INTER	55-56	2		Char(2) Interval of digitisation
TRESTO	57-58	2		Char(2) Method of treatment & storage of initial points
OPERATOR				
INIT	59-61	3		Char(3) Operator's Initials
TRIAL	62	1		Char(1) Number of attempts at digitising trace
CALDEP	63-65	3		Char(3) Depth of calibration tick in units of analog grid
CALTEM	66-68	3		Char(3) Temperature of calibration tick in units of analog grid
INSTRUMENT	69	1		Char(1) 1=XBT, 2=HXBT, 3= SXBT, 4=AXBT
GRID/3	70	1		Char(1) Grid modes of instrument 1-9
ORIG OR NO	71-78	8		Char(8) Originators cruise number
DNP	79	1		Char(1) Declared National Program
SKIP	80	1		Char(1) Blank
LENGTH	81-84	4		Char(4) Number of temperature values
DEPTH & TEMP				
SURTEM	85-88	4		Char(4) Temperature at zero depth
DEPTH 1	89-92	4		Char(4) First depth to whole metres
TEMP 1	93-96	4		Char(4) Temperature at first depth
DEPTH 2	97-100	4		Char(4) Second depth
TEMP 2	101	4		Char(4) Temperature at second depth
DEPTH (N)		4		Char(4) Last depth, Position = (N-1) + 8
TEMP (N)		4		Char(4) Last temperature, Position = (N-1) + 8



Fmt_no. FORMAT(4(F7.0,2F7.3,I7,2F6.3))

The first record of profile data written is the first record with data in it, so the depth of this record can vary from station to station

RV Franklin XBT data format

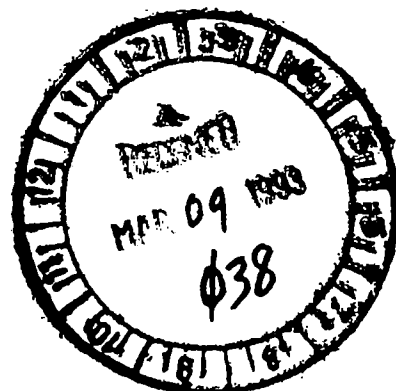
All the drops for a cruise are in one file and the format is as follows :

For each drop there is a header record (see example below) and a series of data records.
The header record format is:

```
FRaabbccddeeffffghhijkkkllmnnnn.....oo_pp.ppq...rrr_ss.sst.....98
```

where :

- : ^ denotes a blank
- : FR is the vessel code for RV Franklin
- : aa is the cruise number
- : bbbb is the drop or XBT number
- : cc is the year
- : dd is the month
- : ee is the day
- : ffff is the time (24 hour clock)
- : g is the time zone (= 'Z' - UTC)
- : hh is the whole degrees of latitude
- : ii is the minutes of latitude
- : j is the hemisphere (= 'N' or 'S')
- : kkk is the whole degrees of longitude
- : ll is the minutes of longitude
- : m is the hemisphere (= 'E' or 'W')
- : nnnn is the bottom depth (in metres) if available (blank otherwise)



If a corrected position is available, it is inserted in the header record as follows :

- : oo is the whole degrees of latitude
- : pp.pp is the minutes and hundredth's of minutes of latitude
- : q is the hemisphere (= 'N' or 'S')
- : rrr is the whole degrees of longitude
- : ss.ss is the minutes and hundredth's of minutes of longitude
- : t is the hemisphere (= 'E' or 'W')

otherwise these fields are left blank. If these fields contain a position, this position will be more accurate than the other position in the header, which should be ignored.

After the header record, there are as many data records as are required. The first data record contains the temperatures at 0,5,10,15,...,95 metres. The second record contains the temperatures at 100,105,110,...195 metres, and so on. Blanks indicate that there is no temperature for that depth. (The surface (0 metre) value is left blank because of large surface transients).

The format of the i-th data record is:

```
.....aaabbbcccddeeefffggghhhiiijjjkkllmmnnnooppqqrrrssttt.....uu
```

where : ^ denotes a blank
 : aaa is 10 times the temperature at (i-1)X100 metres
 : bbb is 10 times the temperature at (i-1)X100+5 metres
 : ccc is 10 times the temperature at (i-1)X100+10 metres
 : .
 : .
 : .
 : ttt is 10 times the temperature at (i-1)X100-5 metres
 : u =i+2

(The FORTRAN format to read this is (10X,20I3,8X,I2).)

Thus in the first example below (drop number 24 from cruise Fr 4/87, at 17:37 on the 16th of March, 1987), the temperature at 5 metres is 22.9°C, the temperature at 100 metres is 18.4°C, and at 105 metres it is 18.1°C. The deepest temperature (5.8°C) is at 760 metres.

Sample of XBT data :

```
FR040024870316173722900S11235E4000       29 00.43S 112 35.89E       98
229230229229229229227225221219210206202199197192189187       3
184181179178176174172168167166164163162161159157154152151149       4
148146144143142139138137135134132131130129128127126125123122       5
1201191171161141131113112111110109108107106105104103103103       6
102101101101101100100 99 99 98 98 98 97 97 96 96 95 95 95 95       7
94 94 94 94 93 93 93 92 92 91 91 90 90 90 89 89 89 88 88       8
87 87 86 86 85 84 84 82 82 82 81 80 79 78 77 76 74 74 73 72       9
71 70 69 68 66 66 65 64 62 61 60 59 58       10
FR040025870317005322828S11217E3600       28 28.32S 112 15.94E       98
234234238238239239239238233228224219216212208205202200       3
197194192190188186184182181179179177176173171170169168166165       4
163162160159157156156153152151149148146143142141139137134132       5
131127124122118114111108104103100100 99 99 97 96 95 94 94 94       6
94 93 92 91 91 91 90 90 90 89 88 88 86 86 84 83 83 82 81       7
80 80 79 78 77 77 76 76 76 74 73 72 71 71 70 68 67 67 65 65       8
64 63 62 61 61 60 59 58 57 57 56 55 55 55 54 54 53 53 53       9
53 52 52 51 51 51 51 50 50 49 49 49 48       10
```

Sample of Autochart (AODC) XBT format

1732113849419800117120000900017029DERWEN2942S11406E 020224 -0316514
00642316000123160022231200282299002922870032225000412230005521810067217200682153
00692143007521170104206801052058011120420124199601291990014119790144197001471937
01521897015418810164182901711813017218070176178301851749018617340188171601931672
02001662020216490205163402121576021315640216153902241524022715070237149002391477
02451442025114210254141102591382026413720270134802741328028912800292127102971256
03121233032012100338117003421160036011070365109803761065037810590385103803911027
04150997043609750449095804580949046209421221000130210019523520101241010000000

171 84686919810717030000900017017BRISBA0607N08906E 020224 -0116714
0049224800012248000722270022227004622450079224000892218009222060094220800992214
01072175011221430114209001152076011820170120199601211976012219110125178201271742
01321662013716230139159401401580014115410155150201601481016514460167143001691385
01731364017713440180132701831294018712420192122002031143021011200216109702261071
02491018025810040281096103010926034408810359086203780839040608000431077304600752
1240200920289026727820000224010000000

171 93606019810717104300900017018BRISBA0606N09036E 020224 -0116714
00412204000822040050220300652183006921600072211800732073007519840087195500931961
00941955009819260100188101061732010916870110168101141633012315810126156701331494
01361462014513860148133801561301016012910162128301671258017012460177120601821167
01851131018911170192109402031073021410140218100602320965023909490244094002710892
03020850032308311290400810244023927220000253010000000

Processed CTD data format

There is one file for an entire cruise. File names are in the format of VVYYCCCTD.DAT, where VV is the Vessel code (G9= RV Sprightly and FR = RV Franklin), YY is the year of the cruise and CC is the cruise number within that year. Each file consists of a CRUISE HEADER section, which has a station listing and processing notes included and a DETAILS SECTION for each station. All dates and times are UTC and South latitude is negative. Each station has information in its individual DETAILS SECTION as to which variables have been included for the station and the field widths of the data for each variable within each data cycle or depth and the number of data cycles within each station.

An example Cruise Header and Station Header is:

```
1111111111111111111111111111 START CRUISE HEADER 111111111111111111111111
```

VESSEL CODE = FR YEAR = 85 CRUISE IDENTIFIER = 05

VESSEL NAME - R.V. FRANKLIN

START DATE OF CRUISE = 01-OCT-85

END DATE OF CRUISE = 05-NOV-85

CRUISE LEADER = Dr. M.J. Furnas

DATA PROCESSED BY - D.J.Vaudrey

DATE ARCHIVED - 11-MAY-87

MINIMUM LATITUDE IN DATA = -20.985

MAXIMUM LATITUDE IN DATA = -9.895

MINIMUM LONGITUDE IN DATA = 145.020

MAXIMUM LONGITUDE IN DATA - 166.407

MAXIMUM SAMPLE PRESSURE IN DATA - 4788

ARCHIVE PROGRAM VERSION NUMBER = 0

222222222222222222 CRUISE COMMENTS 2222222222222222

1	1	0445	1-OCT-85	16:47.70S	146:07.09E	49	46
---	---	------	----------	-----------	------------	----	----

```
| 2 | 0719 1-OCT-85 16:37.40S 146:16.00E 100 | 90 |
```

3	1928	1-OCT-85	14:53.80S	146:26.36E	1899	1502
---	------	----------	-----------	------------	------	------

...A full station listing detailing station number, time and date (UTC) bottom depth and maximum cast pressure...

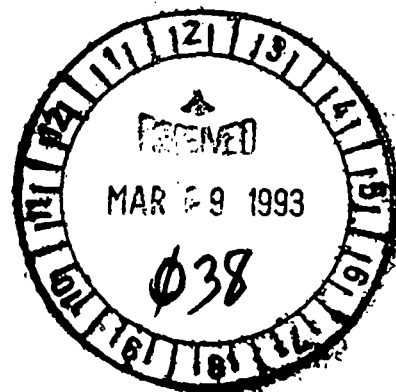
CTD Processing Notes:

D.J.Vaudrey and N.J.White:

Fr0585:

General:

Data Quality was poor to fair. Many problems were encountered with Unit 1 as previously discovered during Fr0485. Too few samples were collected



with the rosette for a good ...
.....which includes calibration

.....which includes calibration and offset details...

```
.333333333333333333 END OF CRUISE HEADER 333333333333333333
```

Which is followed by the first station header and the Data:

44444444444444444444 START STATION HEADER 44444444444444444444

VESSEL CODE = FR YEAR = 85 CRUISE ID = 05 STATION ID = 000001 DIP# = 01

START DATE - TIME =

BOTTOM DATE - TIME = 01-OCT-85 04:45:00

END DATE - TIME =

START POSITION = -16 47.700146 07.090

BOTTOM POSITION =

END POSITION =

DEPTH TO BOTTOM = 49

MAXIMUM SAMPLE PRESSURE = 48

NUMBER OF VARIABLES PER DATA CYCLE - 6

NUMBER OF DATA CYCLES ON STATION = 23

DATE STATION ARCHIVED = 11-MAY-87 CTD INSTRUMENT NUMBER = 1

ARCHIVE, PROGRAM VERSION NUMBER = 0

```
.55555555555555555555 VARIABLE DESCRIPTIONS 5555555555555555
```

VAR = 01 NAME AND UNITS = PRESSURE (db) FIELD WIDTH = 7

VAR = 03 NAME AND UNITS = TEMPERATURE (DEGREES C) FIELD WIDTH = 7

VAR = 05 NAME AND UNITS = SALINITY (PSU) FIELD WIDTH = 7

VAR = 54 NAME AND UNITS = NO. OBS. PRESSURE FIELD WIDTH = 7

VAR = 51 NAME AND UNITS = S.D. OF TEMPERATURE FIELD WIDTH = 6

VAR = 53 NAME AND UNITS = S.D. CONDUCTIVITY FIELD WIDTH = 6

66666666666666666666 THERE ARE NO STATION COMMENTS 66666666666666666666

```
777777777777777777 END OF STATION HEADER 7777777777777777
```

```
2. 19.688 36.214 95 0.004 0.008 4. 19.696 36.215 106 0.004 0.006...
```

```
... 8. 19.690 36.214 105 0.003 0.004
```

10. 19.697 36.215 83 0.001 0.002 12. 19.692 36.212 109 0.003 0.007...

```
... 16. 19.686 36.212 100 0.000 0.000
```

....Data continues to Maximum sample pressure and then the next
Station Header...

44444444444444444444 START STATION HEADER 44444444444444444444

The data file record length is an integer multiple of the sum of the data variable field widths for each cycle, the total of which is less than or equal to 216 characters. In the above case there are 4 data cycles per record and a FORTRAN Format statement would read.

READ(Data_file,Fmt_no.)(P(i),T(i),S(i),No(i),SDT(i),SDC(i),i=1,4)

Sample of Franklin XBT Format

```
FR0300018903160929Z3819S13851E3150      38 17.85S  138 51.50E      98
      175174174174174174174174167165159149143139135      3
FR0300028903160942Z3817S13853E3150      38 15.90S  138 53.52E      98
      175175175175175175175175170166165157142136129128127126128      3
      128127129130130129130128128127125124122121120119119118117      4
      117115115114114113112111111109109108107105105104104103103103      5
      102102101      6
FR0300038903162306Z3757S13848E2359      37 56.45S  138 48.31E      98
      176176176176176176176176175173157153145133130126126125      3
      124125124124124122121121119117117116115114114113114112111110      4
      109108109107107106106105105105104104103103103102101101100100      5
      99 99 98 98 97 97 96 96 95 95 95 94 94 94 93 93 93 93 92 92      6
      92 92 92 91 91 91 91 91 91 90 90 90 89 89 89 89 88 88 88      7
      88 87 87 87 86 86 86 85 85 85 85 84 84 84 83 83 82 82 82      8
      81 80 80 79 79 79 78 78 77 77 77 76 76 75 75 74 74 73 73 72      9
      72 71 70 70 69 69 68 68 67 66 66 65 64      10
FR0300048903170156Z3729S13908E0490      37 28.22S  139 07.85E      98
      170170170170170169169169169168168168167161154      3
FR0300058903170206Z3727S13908E0466      37 26.58S  139 08.29E      98
      169169169169169169169169169168164155153151147146141140      3
      139138136136135135135135134134133132132132132131131130129128      4
      126126126125125124123118118117116115115115114113113112109107      5
      105104103102102101100 99 99 99 99 98 98 98 97 97 96 96 96 95      6
      95 94 94 94 93 93 93 92 92 92 92 92 91 88      7
FR0300068903180923Z3731S13926E0168      37 30.21S  139 25.12E      98
      177177177177176176176175162154146140139137137137138138137      3
      137136136      4
```

```

VESSEL CODE = FR      YEAR = 88      CRUISE ID = 11      STATION ID = 000003    DIP # = 01
START DATE - TIME = 02-DEC-88 19:31:00
BOTTOM DATE - TIME = 02-DEC-88 19:50:00
END DATE - TIME = 02-DEC-88 20:29:00
START POSITION       = -45 01.100148 25.280
BOTTOM POSITION      = -45 01.130148 25.090
END POSITION         = -45 01.250148 24.760
LEPETH TO BOTTOM    = 4076
MAXIMUM SAMPLE PRESSURE = 798
NUMBER OF VARIABLES PER DATA CYCLE = 6
NUMBER OF DATA CYCLES ON STATION = 399
DATE STATION ARCHIVED = 17-JAN-90 CTD INSTRUMENT NUMBER = 2
ARCHIVE PROGRAM VERSION NUMBER = 0
55555555555555555555 VARIABLE DESCRIPTIONS 55555555555555555555
VAR = 01 NAME AND UNITS = PRESSURE (db) FIELD WIDTH = 7
VAR = 03 NAME AND UNITS = TEMPERATURE (DEGREES C) FIELD WIDTH = 7
VAR = 05 NAME AND UNITS = SALINITY (PSU) FIELD WIDTH = 7
VAR = 54 NAME AND UNITS = NO. OBS. PRESSURE FIELD WIDTH = 7
VAR = 51 NAME AND UNITS = S.D. OF TEMPERATURE FIELD WIDTH = 6
VAR = 53 NAME AND UNITS = S.D. CONDUCTIVITY FIELD WIDTH = 6
66666666666666666666 THERE ARE NO STATION COMMENTS 66666666666666666666
77777777777777777777 END OF STATION HEADER 77777777777777777777
C14w
2. 11.176 34.556 100 0.003 0.002 4. 11.177 34.557 86
0.001 0.001 6. 11.169 34.557 128 0.005 0.004 8. 11.164 34.557
58 106 0.005 0.004
10. 11.145 34.561 131 0.016 0.011 12. 11.113 34.569 115
0.010 0.009 14. 11.030 34.567 128 0.030 0.026 16. 10.973 34.567
75 123 0.012 0.011
18. 10.949 34.575 92 0.007 0.007 20. 10.929 34.573 89
0.005 0.005 22. 10.910 34.572 108 0.007 0.007 24. 10.880 34.572
70 117 0.017 0.016
26. 10.811 34.573 88 0.030 0.013 28. 10.777 34.581 91
0.011 0.009 30. 10.761 34.588 64 0.004 0.003 32. 10.750 34.588
30 52 0.010 0.008
34. 10.730 34.591 38 0.007 0.007 36. 10.683 34.588 46
0.015 0.018 38. 10.641 34.586 104 0.010 0.010 40. 10.607 34.586
55 44 0.004 0.004
42. 10.543 34.574 36 0.062 0.066 44. 10.218 34.552 36
0.094 0.092 46. 9.943 34.542 38 0.058 0.054 48. 9.799 34.542
39 84 0.029 0.027
50. 9.732 34.533 49 0.025 0.020 52. 9.729 34.549 27
0.017 0.020 54. 9.695 34.546 24 0.019 0.018 56. 9.689 34.546
53 37 0.013 0.015
58. 9.816 34.608 96 0.058 0.078 60. 9.949 34.641 65
0.061 0.065 62. 10.106 34.672 30 0.022 0.024 64. 10.126 34.672
77 25 0.002 0.003
66. 10.138 34.679 31 0.003 0.004 68. 10.173 34.694 46
0.023 0.030 70. 10.224 34.708 80 0.008 0.010 72. 10.259 34.708
17 36 0.006 0.007
74. 10.277 34.721 30 0.001 0.002 76. 10.278 34.721 31
0.000 0.001 78. 10.292 34.726 29 0.005 0.005 80. 10.295 34.726
28 29 0.002 0.005
82. 10.341 34.742 36 0.008 0.009 84. 10.347 34.744 67
0.002 0.002 86. 10.351 34.745 44 0.002 0.002 88. 10.356 34.745
47 29 0.002 0.002
90. 10.390 34.764 26 0.019 0.022 92. 10.433 34.776 27
0.009 0.012 94. 10.460 34.783 37 0.006 0.008 96. 10.477 34.776
88 44 0.002 0.002
98. 10.514 34.800 40 0.028 0.033 100. 10.555 34.807 39
0.001 0.002 102. 10.554 34.807 41 0.002 0.003 104. 10.530 34.807

```

[illegible]

Franklin CTD Sample

```

11111111111111111111 START CRUISE HEADER 11111111111111111111
VESSEL CODE = FR YEAR = 88 CRUISE IDENTIFIER = 11
VESSEL NAME           = R.V. FRANKLIN
START DATE OF CRUISE   = 02-DEC-88
END DATE OF CRUISE     = 17-DEC-88
CRUISE LEADER          = PROF M THOMCZAK, OSI, SYD UNI
DATA PROCESSED BY      = D. VAUDREY
DATE ARCHIVED          = 17-JAN-90
MINIMUM LATITUDE IN DATA    = -47.968
MAXIMUM LATITUDE IN DATA    = -42.995
MINIMUM LONGITUDE IN DATA   = 148.421
MAXIMUM LONGITUDE IN DATA   = 164.056
MAXIMUM SAMPLE PRESSURE IN DATA = 1498
ARCHIVE PROGRAM VERSION NUMBER = 0
22222222222222222222 CRUISE COMMENTS 22222222222222222222

```

F.V. Franklin			Cruise : FK11788			
Stat	BOTTOM					Cast
No.	Time	Date	Latitude	Longitude	Bot Depth	Depth
3	1950	2-DEC-88	45:01.13S	148:25.09E	4078	790
4	0211	3-DEC-88	46:00.39S	149:00.14E	4300	790
5	0834	3-DEC-88	47:01.80S	149:31.14E	3230	796
6	2219	3-DEC-88	47:58.17S	149:55.38E	1500	812
7	0535	4-DEC-88	46:58.88S	150:41.77E	4500	792
8	1247	4-DEC-88	46:00.01S	151:27.08E	2500	790
9	2025	4-DEC-88	44:58.50S	152:12.14E	4650	790
10	0318	5-DEC-88	44:00.29S	152:52.56E	4000	800
11	1002	5-DEC-88	42:59.68S	153:33.99E	4650	790
12	1712	5-DEC-88	44:00.12S	154:02.14E	4720	790
13	0059	6-DEC-88	45:00.15S	154:30.89E	4770	792
14	1101	7-DEC-88	45:00.46S	155:43.15E	4627	790
15	1817	7-DEC-88	44:00.73S	156:29.00E	5160	790
16	0104	8-DEC-88	42:59.90S	157:08.29E	4650	790
17	0639	8-DEC-88	43:00.15S	158:16.82E	4500	1490
19	1712	8-DEC-88	44:02.24S	158:46.42E	4950	792
20	2342	8-DEC-88	45:01.83S	159:13.13E	5000	790
21	0548	9-DEC-88	46:00.19S	159:40.61E	4400	790
22	1150	9-DEC-88	46:00.19S	161:06.96E	4800	792
23	1749	9-DEC-88	45:59.46S	162:30.91E	4050	790
24	2440	9-DEC-88	45:59.77S	163:55.35E	4400	790
25	2136	10-DEC-88	44:47.12S	164:02.96E	4800	792
26	0546	11-DEC-88	44:12.48S	163:01.82E	4900	790
27	1306	11-DEC-88	43:30.85S	162:00.63E	4800	790
28	2138	11-DEC-88	43:30.04S	160:39.72E	4850	792
29	0815	12-DEC-88	43:30.55S	159:18.62E	5000	792
30	1818	12-DEC-88	43:29.98S	157:42.35E	4730	790
31	0231	13-DEC-88	43:30.65S	156:16.89E	5100	790
32	0837	13-DEC-88	44:05.03S	155:20.12E	4800	390
33	1116	13-DEC-88	43:51.71S	154:59.78E	4500	390
34	1339	13-DEC-88	43:38.71S	154:39.99E	4600	390
35	1559	13-DEC-88	43:25.84S	154:20.04E	4640	390
36	1821	13-DEC-88	43:13.41S	154:00.24E	4670	390
37	2033	13-DEC-88	43:26.10S	153:39.50E	4650	392
38	2300	13-DEC-88	43:39.23S	154:01.16E	4700	392
39	0116	14-DEC-88	43:51.59S	154:20.61E	4700	390
40	0344	14-DEC-88	44:05.10S	154:40.27E	4500	390

41	0549	14-DEC-88	44:17.87S	154:59.69E	4800	390
42	0815	14-DEC-88	44:31.12S	154:39.72E	4600	390
43	1035	14-DEC-88	44:17.70S	154:19.37E	4700	390
44	1252	14-DEC-88	44:04.50S	153:59.84E	4750	390
45	1513	14-DEC-88	43:51.87S	153:39.48E	4700	390
46	1729	14-DEC-88	43:38.68S	153:18.77E	4650	390
47	1952	14-DEC-88	43:24.96S	152:58.01E	4650	390
48	2210	14-DEC-88	43:39.79S	152:36.64E	4650	390
49	0036	15-DEC-88	43:52.18S	153:01.34E	4650	390
50	0248	15-DEC-88	44:04.62S	153:20.55E	4700	392
51	0503	15-DEC-88	44:18.09S	153:40.12E	4750	388
52	1049	15-DEC-88	44:20.20S	152:19.27E	4600	790
53	1622	15-DEC-88	44:20.74S	151:13.05E	3500	790
54	2223	15-DEC-88	44:39.80S	149:59.92E	3100	792
55	0624	16-DEC-88	44:00.40S	149:05.63E	3400	790

CTD Processing Notes
Fr 11/88
D.J. Vaudrey

General.

This data was collected on a research cruise in the Southern Tasman Sea

to determine the location of the Subtropical Convergence in December 1988. 55 stations were attempted of which 52 were calibrated. Relatively few bottle samples were collected for the number of stations, but results from these stations are of high quality. Out of a total of 334 sample bottles only 6 were rejected from the analyses (apart from those automatically rejected due to proximity to strong gradients). Only one cast exceeded 1000.0 dBar Pressure and a further 20 casts were shallower than 400 dbar.

Problems appeared in the raw Dissolved Oxygen results, where a relatively noisy signal was logged and a high proportion of bad values had crept into the data stream. It appears that the Dissolved Oxygen Data is suspect and may not be able to be calibrated.

Station List.

1. Bottle Test. No down cast logged.
2. Not logged.
18. Not logged.

Calibration Information.

Pressure Offset = +8.80bars

Temperature Coefficients

Temperature Offset = 0.00oC

Conductivity (Cell Factors)

Standard Deviation = 0.00007

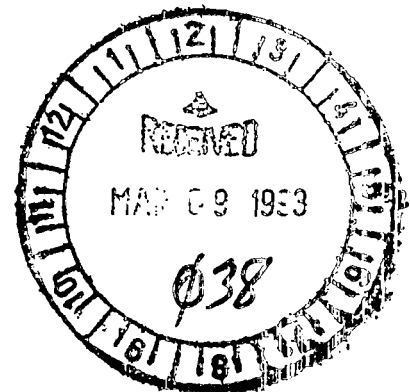
Equivalent S.D Salinity = 0.00257 psu

```
333333333333333333 END OF CRUISE HEADER 333333333333333333  
444444444444444444 START STATION HEADER 444444444444444444
```


Listing of data files for submission to NODC

total 57206

-rw-rw-rw-	1	andrew	9916381	Nov 25 11:11	AUTOCHART.DAT
-rw-rw-rw-	1	edwina	1748508	Feb 16 14:34	F8506.ARC
-rw-rw-rw-	1	edwina	2191118	Feb 16 14:34	F8609.ARC
-rw-rw-rw-	1	edwina	2715643	Feb 16 14:34	F8703.ARC
-rw-rw-rw-	1	edwina	3785513	Feb 16 14:34	F8704.ARC
-rw-rw-rw-	1	edwina	1179214	Feb 16 14:34	F8706.ARC
-rw-rw-rw-	1	edwina	3113057	Feb 16 14:35	F8707.ARC
-rw-rw-rw-	1	edwina	195732	Feb 16 14:35	F8708.ARC
-rw-rw-rw-	1	edwina	2289125	Feb 16 14:35	F8709.ARC
-rw-rw-rw-	1	edwina	1174143	Feb 16 14:35	F8710.ARC
-rw-rw-rw-	1	edwina	729489	Feb 16 14:35	F8907.ARC
-rw-rw-rw-	1	edwina	390921	Feb 16 14:35	F8908.ARC
-rw-rw-rw-	1	edwina	10867563	Feb 16 14:35	F8910.ARC
-rw-rw-rw-	1	edwina	235992	Feb 16 14:35	F8912.ARC
-rw-rw-rw-	1	edwina	679647	Feb 16 14:35	F8913.ARC
-rw-rw-rw-	1	edwina	2921109	Feb 16 14:35	F9001.ARC
-rw-rw-rw-	1	edwina	9677706	Feb 16 14:36	F9002.ARC
-rw-rw-rw-	1	edwina	711897	Feb 16 14:36	F9004.ARC
-rw-rw-rw-	1	edwina	324973	Feb 16 14:54	FR8901CTD.DAT
-rw-rw-rw-	1	edwina	1128	Feb 16 14:55	FR8901XBT.DAT
-rw-rw-rw-	1	edwina	2137646	Feb 16 14:54	FR8902CTD.DAT
-rw-rw-rw-	1	edwina	18344	Feb 16 14:54	FR8903CTD.DAT
-rw-rw-rw-	1	edwina	2175	Feb 16 14:55	FR8903XBT.DAT
-rw-rw-rw-	1	edwina	553840	Feb 16 14:54	FR8904CTD.DAT
-rw-rw-rw-	1	edwina	243794	Feb 16 14:54	FR8906CTD.DAT
-rw-rw-rw-	1	edwina	45307	Feb 16 14:55	FR8907XBT.DAT
-rw-rw-rw-	1	edwina	111132	Feb 16 14:55	FR8910XBT.DAT
-rw-rw-rw-	1	edwina	38746	Feb 16 14:55	FR8913XBT.DAT
-rw-rw-rw-	1	edwina	97568	Feb 16 14:36	FR9002XBT.DAT
-rw-rw-rw-	1	edwina	16130	Feb 16 14:36	FR9004XBT.DAT
-rw-rw-rw-	1	edwina	69211	Feb 16 14:36	FR9006XBT.DAT
-rw-rw-rw-	1	edwina	109850	Feb 16 14:36	FR9007XBT.DAT



The International Temperature Scale of 1990, ITS-90

The International Committee for Weights and Measures at its meeting in September 1989 approved the above temperature scale. It replaces the International Practical Temperature Scale of 1968 (IPTS-68) and will take effect from 1st January 1990. [Note that the term practical is dropped from the title.] ITS-90 takes advantage of technological advances and more closely approximates the thermodynamic temperature scale than previous scales (IPTS-68, IPTS-48 etc).

Of particular interest to oceanographers are the properties of ITS-90 in the range -2°C to $+35^{\circ}\text{C}$. The single most important property is that the triple point of water remains unchanged at 273.16 K or 0.010°C ; however at standard atmospheric pressure the boiling point of water falls to 99.974°C . Consequently in the interval 0 - 100°C temperatures measured on the ITS-90 scale are lower than values measured on the IPTS-68 scale. But below 0°C they are higher. The differences are expressed in the following table.

$t_{90}/^{\circ}\text{C}$	-10	0	10	20	30	40
$t_{90}-t_{68}/^{\circ}\text{C}$	.002	.000	-.002	-.005	-.007	-.010

Over this range (although slightly nonlinear) the relation between the temperature scales can be adequately represented by the expression

$$t_{90} = 0.99976 t_{68}$$

Initially it is expected that oceanographers will employ the above expression to correct temperatures measured on the IPTS-68 scale but new calibration procedures will be introduced in National Standards Laboratories commencing 1990 and it is hoped these practices will rapidly spread to oceanographic calibration facilities. The value for the fixed points on the ITS-90 scale and the instruments and interpolation equations to be employed for the measurement of temperature are described in a text to be published in the journal *Metrologia*, early in 1990.

Although the impact of the new temperature scale on ocean temperature measurements and their climatology is likely to be small (or even negligible), unfortunately this is not true for its knock-on effects. Corrections will be required for the computation of salinity and other state properties of sea water.

It is imperative that in the determination of derived oceanographic quantities, where t_{90} is used as an entry to standard algorithms (UNESCO Technical papers in Marine Science, 1988 volume 44) that the first executable statement be

$$t_{68} = 1.00024 t_{90}$$

The algorithms will then utilise the temperature scale employed in their formulation.

Recognising that there will be a period within which the IPTS-68 scale will remain in use, it is recommended that

- (1) for the near future all temperatures reported in the literature be labelled t_{90} or t_{68} as appropriate, and
- (2) oceanographers adopt the ITS-90 scale as soon as possible.

P M Saunders
Chairman WHP sub-group on standards and calibration

ACCESS NUMBER	REF NUMBER	FILE TYPE	PROJ CODE	INST	PLAT	CRUISE NO	CRUISE START	CRUISE END	NUM STA	NUM REC
9300046	080677	C116		0910	09AA	60337	08/31/84	09/07/84	3	3
9300046	080678	C116		0910	09AA	60337	09/18/84	09/18/84	1	1
9300046	080679	C116		0910	09AA	60337	10/10/84	10/26/84	15	15
9300046	080680	C116		0910	09AA	60353	11/15/84	12/13/84	41	41
9300046	080681	C116		0910	09AA	60544	03/20/87	03/20/87	2	2
9300046	080682	C116		0910	09AA	60544	05/18/87	07/01/87	63	63
9300046	080683	C116		0910	09AD	60173	02/16/82	02/24/82	4	4
9300046	080685	C116		0910	09AD	60180	04/27/82	05/29/82	21	21
9300046	080686	C116		0910	09AD	60268	04/08/83	04/09/83	7	7
9300046	080687	C116		0910	09AD	60268	05/01/83	05/24/83	44	44
9300046	080688	C116		0910	09AD	60268	08/05/83	08/10/83	5	5
9300046	080689	C116		0910	09AD	60565	09/01/87	09/11/87	2	2
9300046	080690	C116		0910	09AE	60225	10/12/82	10/16/82	5	5
9300046	080691	C116		0910	09AE	60225	10/27/82	11/05/82	27	27
9300046	080692	C116		0910	09AE	60225	11/18/82	11/18/82	3	3
9300046	080693	C116		0910	09AE	60225	12/06/82	12/06/82	1	1
9300046	080694	C116		0910	09AE	60239	02/14/83	02/14/83	1	1
9300046	080695	C116		0910	09AE	60239	03/06/83	03/24/83	26	26
9300046	080696	C116		0910	09AE	60239	05/20/83	05/24/83	54	54
9300046	080697	C116		0910	09AE	60239	08/05/83	08/05/83	6	6
9300046	080698	C116		0910	09BB	60212	01/15/81	01/15/81	6	6
9300046	080700	C116		0910	09BS	60069	07/24/79	08/26/79	45	45
9300046	080703	C116		0910	09BS	60079	02/10/80	03/15/80	56	56
9300046	080708	C116		0910	09BS	60132	11/05/80	11/06/80	20	20
9300046	080709	C116		0910	09BS	60157	07/01/81	07/18/81	24	24
9300046	080710	C116		0910	09BS	60157	08/03/81	08/05/81	10	10
9300046	080711	C116		0910	09BS	60176	02/08/82	03/03/82	33	33
9300046	080712	C116		0910	09CA	60191	05/11/82	07/01/82	46	46
9300046	080713	C116		0910	09CA	60266	08/15/83	08/28/83	50	50
9300046	080714	C116		0910	09CA	60278	09/12/83	10/13/83	86	86
9300046	080715	C116		0910	09CA	60284	11/03/83	11/20/83	18	18
9300046	080716	C116		0910	09CA	60297	04/24/84	05/02/84	12	12
9300046	080717	C116		0910	09CA	60349	09/04/84	09/04/84	2	2
9300046	080718	C116		0910	09CA	60349	09/17/84	09/27/84	15	15
9300046	080719	C116		0910	09CA	60349	10/18/84	10/31/84	31	31
9300046	080720	C116		0910	09CB	60181	04/05/82	04/16/82	27	27
9300046	080721	C116		0910	09CB	60181	04/05/83	04/05/83	2	2
9300046	080723	C116		0910	09CP	60285	12/17/82	12/17/82	1	1
9300046	080724	C116		0910	09CP	60285	12/30/82	12/30/82	1	1
9300046	080725	C116		0910	09CP	60285	01/24/83	02/27/83	6	6
9300046	080726	C116		0910	09CP	60285	03/12/83	03/12/83	1	1
9300046	080727	C116		0910	09CP	60285	03/26/83	03/26/83	1	1
9300046	080728	C116		0910	09CP	60285	04/06/83	05/01/83	5	5
9300046	080729	C116		0910	09CP	60285	06/03/83	06/03/83	1	1

5815

5815

9300046	080730	C116	0910	09CP	60302	10/13/83	10/13/83	1	1
9300046	080731	C116	0910	09CP	60302	10/28/83	10/28/83	1	1
9300046	080732	C116	0910	09CP	60302	11/08/83	11/08/83	1	1
9300046	080733	C116	0910	09CP	60302	11/26/83	11/26/83	1	1
9300046	080734	C116	0910	09CP	60302	12/14/83	12/14/83	1	1
9300046	080735	C116	0910	09CP	60302	01/05/84	01/05/84	1	1
9300046	080736	C116	0910	09CP	60302	04/18/84	04/18/84	1	1
9300046	080737	C116	0910	09DE	60026	10/11/76	10/18/76	32	32
9300046	080744	C116	0910	09DE	60034	10/02/78	10/29/78	34	34
9300046	080758	C116	0910	09DE	60108	08/19/80	09/02/80	33	33
9300046	080759	C116	0910	09DE	60129	09/22/80	09/26/80	18	18
9300046	080760	C116	0910	09DE	60129	10/15/80	11/12/80	82	82
9300046	080762	C116	0910	09DM	60248	09/17/71	10/03/71	58	58
9300046	080763	C116	0910	09DM	60111	03/01/72	03/08/72	88	88
9300046	080764	C116	0910	09DM	60335	08/14/72	08/30/72	24	24
9300046	080765	C116	0910	09DM	60112	11/28/72	12/14/72	108	108
9300046	080766	C116	0910	09DM	60113	03/20/73	04/06/73	164	164
9300046	080767	C116	0910	09DM	60006	06/06/73	06/07/73	77	77
9300046	080768	C116	0910	09DM	60116	08/14/75	08/22/75	36	36
9300046	080769	C116	0910	09DM	60117	11/18/75	11/18/75	3	3
9300046	080770	C116	0910	09DM	60117	12/02/75	12/09/75	30	30
9300046	080771	C116	0910	09DM	60119	02/04/76	02/05/76	7	7
9300046	080772	C116	0910	09DM	60119	02/23/76	02/23/76	3	3
9300046	080773	C116	0910	09DM	60011	03/02/78	03/10/78	11	11
9300046	080774	C116	0910	09DM	60009	03/30/78	04/02/78	30	30
9300046	080775	C116	0910	09DM	60020	06/03/78	06/16/78	41	41
9300046	080776	C116	0910	09DM	60035	08/01/78	08/04/78	9	9
9300046	080777	C116	0910	09DM	60078	08/17/78	08/19/78	37	37
9300046	080778	C116	0910	09DM	60035	10/17/78	10/19/78	16	16
9300046	080781	C116	0910	09DM	60126	07/27/79	08/05/79	43	43
9300046	080782	C116	0910	09DM	60088	10/22/79	10/26/79	85	85
9300046	080789	C116	0910	09HO	60032	09/20/78	10/04/78	31	31
9300046	080798	C116	0910	09HO	60080	03/02/80	03/16/80	94	94
9300046	080799	C116	0910	09HO	60080	03/28/80	04/12/80	44	44
9300046	080800	C116	0910	09HO	60104	05/05/80	05/22/80	33	33
9300046	080801	C116	0910	09HO	60104	06/02/80	07/01/80	58	58
9300046	080802	C116	0910	09HO	60192	03/19/82	03/19/82	24	24
9300046	080803	C116	0910	09HO	60208	07/26/82	09/07/82	39	39
9300046	080804	C116	0910	09HO	60208	09/27/82	10/18/82	25	25
9300046	080805	C116	0910	09HO	60232	11/01/82	11/01/82	1	1
9300046	080806	C116	0910	09HO	60232	02/01/83	02/17/83	58	58
9300046	080807	C116	0910	09HO	60232	02/28/83	03/08/83	56	56
9300046	080808	C116	0910	09HO	60232	03/28/83	03/28/83	4	4
9300046	080809	C116	0910	09KG	60089	10/10/79	10/29/79	19	19
9300046	080810	C116	0910	09KG	60089	01/20/80	01/21/80	2	2
9300046	080811	C116	0910	09KG	60099	04/10/80	04/10/80	1	1
9300046	080812	C116	0910	09KG	60099	04/22/80	04/22/80	1	1
9300046	080813	C116	0910	09KG	60099	05/13/80	05/14/80	2	2
9300046	080814	C116	0910	09KG	60099	05/26/80	05/26/80	2	2

9300046	080816	C116	0910	09KI	60276	12/08/74	12/08/74	2	2
9300046	080817	C116	0910	09KI	60246	02/14/75	02/17/75	16	16
9300046	080818	C116	0910	09KI	60246	03/17/75	03/20/75	25	25
9300046	080820	C116	0910	09KI	60012	03/01/78	03/13/78	9	9
9300046	080822	C116	0910	09KI	60037	11/05/78	11/10/78	29	29
9300046	080829	C116	0910	09KI	60110	09/15/80	09/20/80	57	57
9300046	080830	C116	0910	09KI	60316	07/25/84	07/28/84	26	26
9300046	080842	C116	0910	09MO	60167	08/27/80	08/28/80	4	4
9300046	080844	C116	0910	09MO	60165	10/06/81	10/12/81	4	4
9300046	080845	C116	0910	09MO	60165	11/12/81	11/22/81	34	34
9300046	080846	C116	0910	09MO	60197	03/05/82	04/01/82	39	39
9300046	080847	C116	0910	09MO	60242	10/26/82	11/16/82	27	27
9300046	080848	C116	0910	09MO	60243	05/22/83	06/06/83	30	30
9300046	080849	C116	0910	09MO	60243	06/20/83	07/20/83	73	73
9300046	080850	C116	0910	09MO	60281	09/28/83	09/28/83	2	2
9300046	080851	C116	0910	09MO	60281	11/01/83	11/03/83	12	12
9300046	080852	C116	0910	09MO	60324	06/18/84	07/13/84	13	13
9300046	080853	C116	0910	09MO	60324	07/24/84	08/08/84	40	40
9300046	080854	C116	0910	09ND	60146	12/06/78	12/21/78	54	54
9300046	080855	C116	0910	09ND	60146	01/03/79	01/20/79	64	64
9300046	080856	C116	0910	09ND	60146	02/02/79	02/12/79	30	30
9300046	080857	C116	0910	09ND	60146	02/28/79	03/09/79	65	65
9300046	080858	C116	0910	09ND	60146	11/11/79	11/19/79	60	60
9300046	080859	C116	0910	09ND	60146	12/21/79	01/02/80	52	52
9300046	080860	C116	0910	09ND	60146	01/23/80	01/28/80	30	30
9300046	080861	C116	0910	09ND	60183	10/17/81	10/25/81	13	13
9300046	080862	C116	0910	09ND	60184	11/09/81	11/12/81	10	10
9300046	080863	C116	0910	09ND	60182	01/01/82	03/14/82	112	112
9300046	080864	C116	0910	09ND	60286	01/05/83	01/05/83	1	1
9300046	080865	C116	0910	09ND	60286	01/05/84	01/09/84	30	30
9300046	080866	C116	0910	09ND	60286	02/04/84	02/12/84	6	6
9300046	080867	C116	0910	09PA	60166	11/09/81	11/09/81	1	1
9300046	080869	C116	0910	09PA	60178	03/01/82	03/04/82	14	14
9300046	080870	C116	0910	09PA	60178	03/15/82	03/18/82	6	6
9300046	080871	C116	0910	09PA	60178	04/20/82	04/21/82	2	2
9300046	080872	C116	0910	09PA	60332	09/12/84	09/21/84	3	3
9300046	080873	C116	0910	09PE	60010	02/07/78	02/15/78	9	9
9300046	080874	C116	0910	09PE	60010	02/27/78	03/07/78	32	32
9300046	080875	C116	0910	09PE	60014	04/03/78	04/22/78	38	38
9300046	080878	C116	0910	09PE	60031	09/19/78	10/13/78	61	61
9300046	080885	C116	0910	09PE	60128	05/07/80	05/07/80	1	1
9300046	080886	C116	0910	09PE	60128	05/27/80	07/02/80	60	60
9300046	080887	C116	0910	09PE	60128	07/16/80	08/06/80	50	50
9300046	080889	C116	0910	09PE	60128	10/01/80	11/11/80	141	141
9300046	080890	C116	0910	09PE	60138	11/28/80	12/10/80	24	24
9300046	080891	C116	0910	09PE	60317	07/11/84	07/26/84	17	17
9300046	080892	C116	0910	09PE	60375	05/13/85	06/11/85	62	62
9300046	080893	C116	0910	09PE	60375	08/08/85	08/08/85	2	2
9300046	080894	C116	0910	09SH	60355	10/11/84	10/24/84	37	37

9300046	080895	C116	0910	09SH	60355	11/12/84	11/21/84	5	5
9300046	080900	C116	0910	09ST	60022	06/27/78	07/24/78	22	22
9300046	080901	C116	0910	09ST	60022	08/04/78	08/20/78	31	31
9300046	080902	C116	0910	09ST	60039	10/11/78	10/11/78	1	1
9300046	080903	C116	0910	09ST	60039	10/27/78	11/16/78	27	27
9300046	080905	C116	0910	09ST	60282	10/12/83	10/13/83	8	8
9300046	080906	C116	0910	09ST	60282	11/07/83	12/15/83	47	47
9300046	080907	C116	0910	09ST	60290	03/05/84	03/20/84	16	16
9300046	080909	C116	0910	09SW	60008	02/09/78	02/16/78	5	5
9300046	080910	C116	0910	09SW	60008	02/28/78	03/07/78	16	16
9300046	080911	C116	0910	09SW	60008	03/20/78	04/05/78	23	23
9300046	080912	C116	0910	09SW	60036	08/21/78	09/07/78	54	54
9300046	080913	C116	0910	09SW	60036	09/20/78	12/13/78	104	104
9300046	080928	C116	0910	09SW	60179	02/16/82	03/02/82	47	47
9300046	080929	C116	0910	09SW	60179	03/20/82	04/26/82	110	110
9300046	080930	C116	0910	09SW	60420	12/08/85	12/11/85	13	13
9300046	080931	C116	0910	09SW	60420	01/20/86	01/20/86	1	1
9300046	080932	C116	0910	09SY	60211	07/16/82	07/17/82	14	14
9300046	080933	C116	0910	09TR	60005-	12/05/07	12/15/07 ⁷⁷	19	19
9300046	080934	C116	0910	09TR	60005-	01/08/08	01/09/08 ⁷⁸	2	2
9300046	080935	C116	0910	09TR	60043	10/26/08	10/28/08 ⁷⁸	5	5
9300046	080937	C116	0910	09TR	60005	01/09/78	01/23/78	19	19
9300046	080938	C116	0910	09TR	60005-	02/05/78	02/16/78	13	13
9300046	080939	C116	0910	09TR	60005-	02/27/78	03/10/78	34	34
9300046	080950	C116	0910	09TR	60074	10/06/79	11/08/79	142	142
9300046	080951	C116	0910	09TR	60085	11/22/79	12/02/79	34	34
9300046	080955	C116	0910	09TR	60137	11/20/80	12/13/80	31	31
9300046	080957	C116	0910	09TR	60151	04/01/81	04/08/81	21	21
9300046	080958	C116	0910	09TR	60151	05/07/81	06/03/81	41	41
9300046	080959	C116	0910	09TR	60156	06/20/81	06/22/81	9	9
9300046	080960	C116	0910	09TR	60156	07/09/81	07/10/81	3	3
9300046	080961	C116	0910	09TR	60156	07/22/81	07/23/81	3	3
9300046	080962	C116	0910	09TR	60204	01/20/82	02/02/82	10	10
9300046	080963	C116	0910	09TR	60280	09/12/83	10/13/83	71	71
9300046	080964	C116	0910	09TR	60280	11/03/83	11/19/83	41	41
9300046	080965	C116	0910	09TR	60548	05/25/87	06/03/87	25	25
9300046	080966	C116	0910	09TR	60548	06/24/87	07/23/87	40	40
9300046	080967	C116	0910	09TR	60548	08/05/87	08/05/87	2	2
9300046	080972	C116	0910	09VA	60030	08/29/78	09/08/78	6	6
9300046	080977	C116	0910	09VA	60065	05/22/79	06/20/79	75	75
9300046	080982	C116	0910	09VA	60164	10/27/81	11/12/81	24	24
9300046	080983	C116	0910	09VA	60224	01/10/83	01/21/83	22	22
9300046	080984	C116	0910	09VE	60007	06/21/74	06/26/74	61	61
9300046	080985	C116	0910	09VE	60017	02/06/78	02/16/78	16	16
9300046	080986	C116	0910	09VE	60017	02/27/78	03/08/78	35	35
9300046	080987	C116	0910	09VE	60017	04/03/78	04/05/78	5	5
9300046	080990	C116	0910	09VE	60038	10/23/78	10/31/78	35	35
9300046	080991	C116	0910	09VE	60040	11/20/78	12/10/78	27	27
9300046	080995	C116	0910	09VE	60027	08/11/79	08/11/79	1	1

9300046	080996	C116	0910	09Y5	60210	11/06/81	11/06/81	3	3
9300046	080997	C116	0910	09Y5	60210	11/21/81	11/21/81	4	4
9300046	080998	C116	0910	09Y6	60136	10/17/80	10/18/80	10	10
9300046	080999	C116	0910	09Y6	60136	11/01/80	11/18/80	32	32
9300046	081001	C116	0910	09YA	60340	02/23/78	02/23/78	2	2
9300046	081002	C116	0910	09YA	60340	03/06/78	03/17/78	24	24
9300046	081003	C116	0910	09YA	60340	05/08/78	05/25/78	40	40
9300046	081004	C116	0910	09YA	60341	06/07/78	06/18/78	24	24
9300046	081006	C116	0910	09YA	60063	04/03/79	05/02/79	68	68
9300046	081009	C116	0910	09YA	60098	02/28/80	03/15/80	23	23
9300046	081010	C116	0910	09YA	60098	05/10/80	06/03/80	37	37
9300046	081018	C116	0910	09YA	60240	05/02/83	05/06/83	18	18
9300046	081019	C116	0910	09YA	60240	05/27/83	05/28/83	5	5
9300046	081020	C116	0910	09YA	60240	06/23/83	07/04/83	9	9
9300046	081021	C116	0910	315I	60095	05/18/77	05/19/77	10	10
9300046	081022	C116	0910	315I	60096	11/25/77	11/27/77	8	8
9300046	081023	C116	0910	32BB	60144	10/13/76	10/30/76	44	44
9300046	081025	C116	0910	49KY	60215	07/20/82	07/22/82	15	15
9300046	081026	C116	0910	49KY	60253	10/15/82	10/21/82	25	25
9300046	081030	C116	0910	61CA	60145	10/23/76	10/26/76	20	20
9300046	081033	C116	0910	61CA	60493	11/19/84	12/06/84	11	11
9300046	081034	C116	0910	61OT	60143	06/12/76	06/20/76	8	8
9300046	081036	C116	0910	61TI	60124	10/04/77	10/08/77	19	19
9300046	081037	C116	0910	61WA	60478	02/15/85	02/22/85	11	11

=====

ACCESSION NO. 9300046 FILETYPE C116

TRACK NO. "Bogus" #1's PROJECT IDENTIFICATION _____

= AUTOCHART =

TEP	DATE	INIT.	TAPE OR DISK DSN	NO. FILES	NO. RECL	BLK SIZE	NO. RECORD
ORIG. TAPE	3-9-93	FJM	- EXOBYTE CASSETTE	1	✓	✓	
DUPLICATE TAPE							
REFORMATTED TAPE	10-14-93	RPS	WS2537 *	1	✓	224	9,862
REFORMATTED DISK	10-26-93	RPS ✓	WS6959 *	1	✓	224	5815
FIRST MULCHEK							
FINAL MULCHEK							
PD75 OR F022							
DATA SET FINALIZED							

~~ERRORS REPORTED TO PRINCIPAL INVESTIGATOR:~~ * = DNODC * AUTOOUT.

ADDITIONAL ERRORS/CORRECTIONS (NOT REPORTED TO P.I.)

COMMENTS (TRACKS DELETED, FIELDS DELETED, ETC.)

MAR 5 REC'D

E

Royal Australian Navy

Australian Oceanographic Data Centre

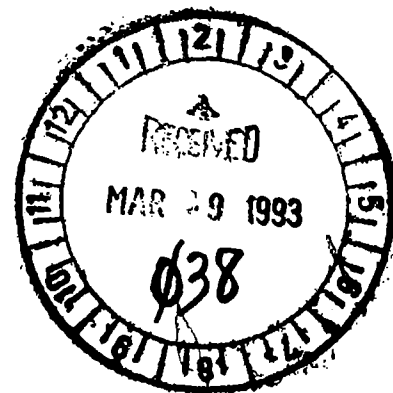
09/18

5th Floor
118 Walker Street
North Sydney, NSW
Tel (02) 925-4230

Correspondence to:
Hydrographic Office, RAN
PO Box 1332
North Sydney, NSW 2059

AODC 18/93
AH 43/147
22 February 1993

Bruce Douglas
Director
National Oceanographic Data Centre
National Oceanic and Atmospheric Administration
Washington, D.C. 2035
U.S.A.



Reference: AODC letter 80/91, file 43/3, dated 5 July 1991

Dear Bruce,

Please find enclosed an Exabyte tape containing AODC Autochart XBT and RV Franklin XBT and CTD data in tar format. This data is also to be made available to WDC-A.

This data set comprises of an update of the now releasable Franklin data. A set of Franklin data was previously sent to NODC with the reference. The data also includes XBTs digitised at AODC on the Autochart system between 1979 and 1988. It is possible that several years ago some of the Autochart data was sent to NODC. So some duplicate checking may be required before addition to the database.

Also enclosed are details of the data formats, sample data printouts and a AODC cruise number inventory of the Autochart XBT data.

09/18A

Note that the 1990 Franklin CTD data enclosed (FR90*.ARC files) uses the International Temperature Scale ITS-90 details of which are enclosed. CTD data prior to 1990 uses ITS-68.

The enclosed 8500 mode Exabyte tape can be unloaded on a UNIX machine by using the command:

`tar xvf /dev/[device name]`

A directory called AODC-UPDATE will be created which contains all the relevant files for which you will find a listing enclosed.

9300046

I trust that you will have no problem in reading these files and if you have any queries about this matter please contact us at the email address andrew@aodc20.aodc.gov.au.

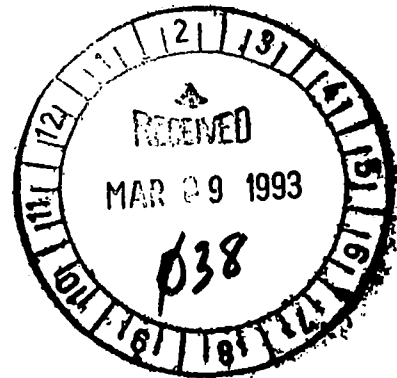
Regards to all at NODC.

A Walsh

A. Walsh
A/Head, Data Management Section
Australian Oceanographic Data Centre

Enclosed:

1 8500 mode Exabyte tape
Autochart XBT format and sample printout.
RV Franklin XBT and CTD formats and sample printouts.
Autochart XBT cruise number summary.
Listing of data files on tape.
ITS-90 Technical Note.
Acknowledgment receipt form.



Royal Australian Navy

Australian Oceanographic Data Centre

5th Floor
118 Walker Street
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Reference: AODC letter 80/91, file 43/3, dated 5 July 1991

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Also enclosed are details of the data formats, sample data printouts and a AODC cruise number inventory of the Autochart XBT data.

Note that the 1990 Franklin CTD data enclosed (FR90*.ARC files) uses the International Temperature Scale ITS-90 details of which are enclosed. CTD data prior to 1990 uses ITS-68.

The enclosed 8500 mode Exabyte tape can be unloaded on a UNIX machine by using the command:

tar xvf /dev/[device name]

A directory called AODC-UPDATE will be created which contains all the relevant files for which you will find a listing enclosed.

9300046

A 1662

D 02883

I trust that you will have no problem in reading these files and if you have any queries about this matter please contact us at the email address andrew@aodc20.aodc.gov.au.

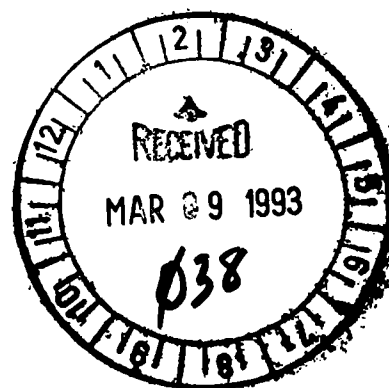
Regards to all at NODC.

A. Walsh

A. Walsh
A/Head, Data Management Section
Australian Oceanographic Data Centre

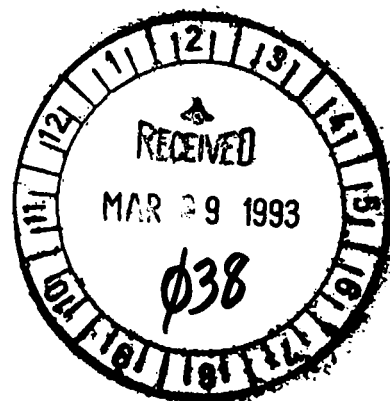
Enclosed:

1 8500 mode Exabyte tape
Autochart XBT format and sample printout.
RV Franklin XBT and CTD formats and sample printouts.
Autochart XBT cruise number summary.
Listing of data files on tape.
ITS-90 Technical Note.
Acknowledgment receipt form.



AODC Expendable Bathythermograph Format

Element Name and Level	Position Unit	No. Unit	Usage and Meaning of Element		
FILE I.D.	1-2	Byte 2	Byte	Char(2)	File I.D.
QUADRT	3	1		Char(1)	WMO 3333
TEN SQ	4-6	3		Char(3)	Ten Degree Square (WMO)
FIVE SQ	7	1		Char(1)	Five Degree Square
TWO SQ	8-9	2		Char(2)	Two Degree Square
ONE SQ	10-11	2		Char(2)	One Degree Square
DATE					
YEAR	12-15	4		Char(4)	Prefix '19'
MONTH	16-17	2		Char(2)	01-12
DAY	18-19	2		Char(2)	01-31
TIME					
HOUR	20-21	2		Char(2)	00-23
MIN	22-23	2		Char(2)	00-59
REF. I.D.					
CNTRY	24-26	3		Char(3)	NODC CODES
REF. NO.	27-31	5		Char(5)	
CONSEC	32-34	3		Char(3)	
SHIP	35-40	6		Char(6)	
LATITUDE					
LAT. DEG	41-42	2		Char(2)	00-90
LAT. MIN	43-44	2		Char(2)	00-59
LAT. HEM	45	1		Char(1)	N or S
LONGITUDE					
LONG DEG	46-48	3		Char(3)	000-179
LONG MIN	49-50	2		Char(2)	00-59
LONG HEM	51	1		Char(1)	E or W
NODC CODES					
BOTTOM	52	1		Char(1)	B = probe hit bottom, blank = did not
DIGMTH	53-54	2		Char(2)	Method of digitisation
INTER	55-56	2		Char(2)	Interval of digitisation
TRESTO	57-58	2		Char(2)	Method of treatment & storage of initial points
OPERATOR					
INIT	59-61	3		Char(3)	Operator's Initials
TRIAL	62	1		Char(1)	Number of attempts at digitising trace
CALDEP	63-65	3		Char(3)	Depth of calibration tick in units of analog grid
CALTEM	66-68	3		Char(3)	Temperature of calibration tick in units of analog grid
INSTRUMENT	69	1		Char(1)	1=XBT, 2=HXBT, 3= SXBT, 4=AXBT
GRID/3	70	1		Char(1)	Grid modes of instrument 1-9
ORIG OR NO	71-78	8		Char(8)	Originators cruise number
DNP	79	1		Char(1)	Declared National Program
SKIP	80	1		Char(1)	Blank
LENGTH	81-84	4		Char(4)	Number of temperature values
DEPTH & TEMP					
SURTEM	85-88	4		Char(4)	Temperature at zero depth
DEPTH 1	89-92	4		Char(4)	First depth to whole metres
TEMP 1	93-96	4		Char(4)	Temperature at first depth
DEPTH 2	97-100	4		Char(4)	Second depth
TEMP 2	101	4		Char(4)	Temperature at second depth
DEPTH (N)		4		Char(4)	Last depth, Position = (N-1) + 8
TEMP (N)		4		Char(4)	Last temperature, Position = (N-1) + 8



Fmt_no. FORMAT(4(F7.0,2F7.3,I7,2F6.3))

The first record of profile data written is the first record with data in it, so the depth of this record can vary from station to station

RV Franklin XBT data format

All the drops for a cruise are in one file and the format is as follows :

For each drop there is a header record (see example below) and a series of data records.
The header record format is:

FRaabbccddeeffffghhijkkllmnnn.....oo_pp.ppq_rrr_ss.sst.....98

where	:	^	denotes a blank
	:	FR	is the vessel code for RV Franklin
	:	aa	is the cruise number
	:	bbbb	is the drop or XBT number
	:	cc	is the year
	:	dd	is the month
	:	ee	is the day
	:	ffff	is the time (24 hour clock)
	:	g	is the time zone (= 'Z' - UTC)
	:	hh	is the whole degrees of latitude
	:	ii	is the minutes of latitude
	:	j	is the hemisphere (= 'N' or 'S')
	:	kkk	is the whole degrees of longitude
	:	ll	is the minutes of longitude
	:	m	is the hemisphere (= 'E' or 'W')
	:	nnnn	is the bottom depth (in metres) if available (blank otherwise)



If a corrected position is available, it is inserted in the header record as follows :

:	oo	is the whole degrees of latitude
:	pp.pp	is the minutes and hundredth's of minutes of latitude
:	q	is the hemisphere (= 'N' or 'S')
:	rrr	is the whole degrees of longitude
:	ss.ss	is the minutes and hundredth's of minutes of longitude
:	t	is the hemisphere (= 'E' or 'W')

otherwise these fields are left blank. If these fields contain a position, this position will be more accurate than the other position in the header, which should be ignored.

After the header record, there are as many data records as are required. The first data record contains the temperatures at 0,5,10,15,...,95 metres. The second record contains the temperatures at 100,105,110,...195 metres, and so on. Blanks indicate that there is no temperature for that depth. (The surface (0 metre) value is left blank because of large surface transients).

The format of the i -th data record is:

aaabbbccdddeefffggghhhiii jjjkkklllmmnnnooppqqrrrrsstt uu

where

: ^	denotes a blank
: aaa	is 10 times the temperature at (i-1)X100 metres
: bbb	is 10 times the temperature at (i-1)X100+5 metres
: ccc	is 10 times the temperature at (i-1)X100+10 metres
:	
:	
:	
: ttt	is 10 times the temperature at (i-1)X100-5 metres
: u	= i+2

(The FORTRAN format to read this is (10X,20I3,8X,I2).)

Thus in the first example below (drop number 24 from cruise Fr 4/87, at 17:37 on the 16th of March, 1987), the temperature at 5 metres is 22.9°C, the temperature at 100 metres is 18.4°C, and at 105 metres it is 18.1°C. The deepest temperature (5.8°C) is at 760 metres.

Sample of XBT data :

FR0400248703161737Z2900S11235E4000	29 00.43S 112 35.89E	98
229230229229229229227225221219210206202199197192189187		3
184181179178176174172168167166164163162161159157154152151149		4
148146144143142139138137135134132131130129128127126125123122		5
120119117116114113113112111110109108107106106105104103103103		6
102101101101101100100 99 99 98 98 98 97 97 96 96 95 95 95 95		7
94 94 94 94 93 93 93 92 92 91 91 90 90 90 90 89 89 89 88 88		8
87 87 86 86 85 84 84 82 82 82 81 80 79 78 77 76 74 74 73 72		9
71 70 69 68 66 66 65 64 62 61 60 59 58		10
FR0400258703170053Z2828S11217E3600	28 28.32S 112 15.94E	98
234234238238239239239239238233228224219216212208205202200		3
197194192190188186184182181179179177176173171170169168166165		4
163162160159157156156153152151149148146143142141139137134132		5
131127124122118114111108104103100100 99 99 97 96 95 94 94 94		6
94 93 92 91 91 91 91 90 90 90 89 88 88 86 86 84 83 83 82 81		7
80 80 79 78 77 77 76 76 76 74 73 72 71 71 70 68 67 67 65 65		8
64 63 62 61 61 60 59 58 57 57 56 55 55 55 54 54 54 53 53 53		9
53 52 52 51 51 51 51 50 50 49 49 49 48		10

Sample of Autochart (AODC) XBT format

1732113849419800117120000900017029DERWEN2942S11406E 020224 -0316514
00642316000123160022231200282299002922870032225000412230005521810067217200682153
00692143007521170104206801052058011120420124199601291990014119790144197001471937
01521897015418810164182901711813017218070176178301851749018617340188171601931672
02001662020216490205163402121576021315640216153902241524022715070237149002391477
02451442025114210254141102591382026413720270134802741328028912800292127102971256
03121233032012100338117003421160036011070365109803761065037810590385103803911027
04150997043609750449095804580949046209421221000130210019523520101241010000000

171 84686919810717030000900017017BRISBA0607N08906E 020224 -0116714
0049224800012248000722270022227004622450079224000892218009222060094220800992214
01072175011221430114209001152076011820170120199601211976012219110125178201271742
01321662013716230139159401401580014115410155150201601481016514460167143001691385
01731364017713440180132701831294018712420192122002031143021011200216109702261071
02491018025810040281096103010926034408810359086203780839040608000431077304600752
1240200920289026727820000224010000000

171 93606019810717104300900017018BRISBA0606N09036E 020224 -0116714
00412204000822040050220300652183006921600072211800732073007519840087195500931961
00941955009819260100188101061732010916870110168101141633012315810126156701331494
01361462014513860148133801561301016012910162128301671258017012460177120601821167
01851131018911170192109402031073021410140218100602320965023909490244094002710892
03020850032308311290400810244023927220000253010000000

Processed CTD data format

There is one file for an entire cruise. File names are in the format of VVYYCCCTD.DAT, where VV is the Vessel code (G9= RV Sprightly and FR = RV Franklin), YY is the year of the cruise and CC is the cruise number within that year. Each file consists of a CRUISE HEADER section, which has a station listing and processing notes included and a DETAILS SECTION for each station. All dates and times are UTC and South latitude is negative. Each station has information in its individual DETAILS SECTION as to which variables have been included for the station and the field widths of the data for each variable within each data cycle or depth and the number of data cycles within each station.

An example Cruise Header and Station Header is:

[illegible]

VESSEL CODE = FR YEAR = 85 CRUISE IDENTIFIER = 05

VESSEL NAME - R.V. FRANKLIN

START DATE OF CRUISE = 01-OCT-85

END DATE OF CRUISE = 05-NOV-85

CRUISE LEADER = Dr. M.J. Furnas

DATA PROCESSED BY - D.J.Vaudrey

DATE ARCHIVED - 11-MAY-87

MINIMUM LATITUDE IN DATA = -20.985

MAXIMUM LATITUDE IN DATA = -9.895

MINIMUM LONGITUDE IN DATA = 145.020

MAXIMUM LONGITUDE IN DATA - 166.407

MAXIMUM SAMPLE PRESSURE IN DATA = 4788

ARCHIVE PROGRAM VERSION NUMBER = 0

22222222222222222222 CRUISE COMMENTS 22222222222222222222

1	0445	1-OCT-85	16:47.70S	146:07.09E	49	46
---	------	----------	-----------	------------	----	----

2	0719	1-OCT-85	16:37.40S	146:16.00E	100	90
---	------	----------	-----------	------------	-----	----

3	1928	1-OCT-85	14:53.80S	146:26.36E	1899	1502
---	------	----------	-----------	------------	------	------

...A full station listing detailing station number, time and date (UTC) bottom depth and maximum cast pressure...

CTD Processing Notes:

D.J.Vaudrey and N.J.White:

Fr0585:

General:

Data Quality was poor to fair. Many problems were encountered with Unit 1 as previously discovered during Fr0485. Too few samples were collected



.....which includes calibration and offset details...

Which is followed by the first station header and the Data:

oxygen (micromoles/dm³ x 3)

```

2. 19.688 36.214 95 0.004 0.008 4. 19.696 36.215 106 0.004 0.006...
... 8. 19.690 36.214 105 0.003 0.004
10. 19.697 36.215 83 0.001 0.002 12. 19.692 36.212 109 0.003 0.007...
... 16. 19.686 36.212 100 0.000 0.000

```

[illegible]

READ(Data file,Fmt no.)(P(i),T(i),S(i),No(i),SDT(i),SDC(i),i=1,4)

Sample of Franklin XBT Format

FR0300018903160929Z3819S13851E3150	38 17.85S 138 51.50E	98
175174174174174174174174174167165159149143139135		3
FR0300028903160942Z3817S13853E3150	38 15.90S 138 53.52E	98
175175175175175175175175170166165157142136129128127126128		3
128127129130130129130128128128127125124122121120119119118117		4
117115115114114113112111111109109108107105105104104103103103		5
102102101		6
FR0300038903162306Z3757S13848E2359	37 56.45S 138 48.31E	98
176176176176176176176176176175173157153145133130126126125		3
124125124124124122121121119117117116115114114113114112111110		4
109108109107107106106105105105104104103103103102101101100100		5
99 99 98 98 97 97 96 96 95 95 95 94 94 94 93 93 93 93 92 92		6
92 92 92 91 91 91 91 91 91 90 90 90 89 89 89 89 89 88 88 88		7
88 87 87 87 86 86 86 85 85 85 85 84 84 84 83 83 82 82 82		8
81 80 80 79 79 79 78 78 77 77 77 76 76 75 75 74 74 73 73 72		9
72 71 70 70 69 69 68 68 67 66 66 65 64		10
FR0300048903170156Z3729S13908E0490	37 28.22S 139 07.85E	98
170170170170170169169169169168168168167161154		3
FR0300058903170206Z3727S13908E0466	37 26.58S 139 08.29E	98
169169169169169169169169169168164155153151147146141140		3
139138136136135135135135134134133132132132131131130129128		4
126126126125125124123118118117116115115115114113113112109107		5
105104103102102101100 99 99 99 99 98 98 98 97 97 96 96 96 95		6
95 94 94 94 93 93 93 92 92 92 92 92 91 88		7
FR0300068903180923Z3731S13926E0168	37 30.21S 139 25.12E	98
177177177177176176176175162154146140139137137137138138137		3
137136136		4

```

VESSEL CODE = FR  YEAR = 88  CRUISE ID = 11  STATION ID = 000003  DIP # = 01
START DATE - TIME = 02-DEC-88 19:31:00
BOTTOM DATE - TIME = 02-DEC-88 19:50:00
END DATE - TIME = 02-DEC-88 20:29:00
START POSITION = -45 01.100148 25.280
BOTTOM POSITION = -45 01.130148 25.090
END POSITION = -45 01.250148 24.760
DEPTH TO BOTTOM = 4078
MAXIMUM SAMPLE PRESSURE = 798
NUMBER OF VARIABLES PER DATA CYCLE = 6
NUMBER OF DATA CYCLES ON STATION = 399
DATE STATION ARCHIVED = 17-JAN-90  CTD INSTRUMENT NUMBER = 2

```

```

ARCHIVE PROGRAM VERSION NUMBER = 0
555555555555555555 VARIABLE DESCRIPTIONS 555555555555555555
VAR = 01 NAME AND UNITS = PRESSURE (db) FIELD WIDTH = 7
VAR = 03 NAME AND UNITS = TEMPERATURE (DEGREES C) FIELD WIDTH = 7
VAR = 05 NAME AND UNITS = SALINITY (PSU) FIELD WIDTH = 7
VAR = 54 NAME AND UNITS = NO. OBS. PRESSURE FIELD WIDTH = 7
VAR = 51 NAME AND UNITS = S.D. OF TEMPERATURE FIELD WIDTH = 6
VAR = 53 NAME AND UNITS = S.D. CONDUCTIVITY FIELD WIDTH = 6
66666666666666666666 THERE ARE NO STATION COMMENTS 66666666666666666666
777777777777777777 END OF STATION HEADER 777777777777777777

```

END OF STATION HEADER											
014w	2.	11.176	34.556	100	0.003	0.002	4.	11.177	34.557	86	
0.001	0.001	6.	11.169	34.557		128	0.005	0.004	8.	11.164	34.5
58	106	0.005	0.004								
0.010	10.	11.145	34.561	131	0.016	0.011	12.	11.113	34.569	115	
75	0.009	14.	11.030	34.567		128	0.030	0.026	16.	10.973	34.5
0.005	18.	10.949	34.575	92	0.007	0.007	20.	10.929	34.573	89	
70	0.005	22.	10.910	34.572		108	0.007	0.007	24.	10.880	34.5
0.011	26.	10.811	34.573	88	0.030	0.013	28.	10.777	34.581	91	
90	0.009	30.	10.761	34.588		64	0.004	0.003	32.	10.750	34.5
0.018	34.	10.730	34.591	38	0.007	0.007	36.	10.683	34.588	46	
85	0.018	38.	10.641	34.586		104	0.010	0.010	40.	10.607	34.5
0.094	42.	10.543	34.574	36	0.062	0.066	44.	10.218	34.552	36	
39	0.092	46.	9.943	34.542		38	0.058	0.054	48.	9.799	34.5
0.017	50.	9.732	34.533	49	0.025	0.020	52.	9.729	34.549	27	
53	0.020	54.	9.695	34.546		24	0.019	0.018	56.	9.689	34.5
0.061	58.	9.816	34.608	96	0.058	0.078	60.	9.949	34.641	65	
77	0.065	62.	10.106	34.672		30	0.022	0.024	64.	10.126	34.6
0.023	66.	10.138	34.679	31	0.003	0.004	68.	10.173	34.694	46	
17	0.030	70.	10.224	34.708		80	0.008	0.010	72.	10.259	34.7
0.000	74.	10.277	34.721	30	0.001	0.002	76.	10.278	34.721	31	
28	0.001	78.	10.292	34.726		29	0.005	0.005	80.	10.295	34.7
0.002	82.	10.341	34.742	36	0.008	0.009	84.	10.347	34.744	67	
17w	0.002	86.	10.351	34.745		44	0.002	0.002	88.	10.356	34.7
0.009	90.	10.390	34.764	26	0.019	0.022	92.	10.433	34.776	27	
38	0.012	94.	10.460	34.783		37	0.006	0.008	96.	10.477	34.7
0.001	98.	10.514	34.800	40	0.028	0.033	100.	10.555	34.807	39	
0.002	0.002	102.	10.554	34.807		41	0.002	0.003	104.	10.530	34.6

[illegible]

Franklin CTD Sample

```

11111111111111111111 START CRUISE HEADER 11111111111111111111
VESSEL CODE = FR YEAR = 88 CRUISE IDENTIFIER = 11
VESSEL NAME           = R.V. FRANKLIN
START DATE OF CRUISE   = 02-DEC-88
END DATE OF CRUISE     = 17-DEC-88
CRUISE LEADER          = PROF M THOMCZAK, OSI, SYD UNI
DATA PROCESSED BY      = D. VAUDREY
DATE ARCHIVED          = 17-JAN-90
MINIMUM LATITUDE IN DATA = -47.968
MAXIMUM LATITUDE IN DATA = -42.995
MINIMUM LONGITUDE IN DATA = 148.421
MAXIMUM LONGITUDE IN DATA = 164.056
MAXIMUM SAMPLE PRESSURE IN DATA = 1498
ARCHIVE PROGRAM VERSION NUMBER = 0
22222222222222222222 CRUISE COMMENTS 22222222222222222222

```

R.V. Franklin				Cruise : FR11/88			
Stat	BOTTOM						Cast
No.	Time	Date	Latitude	Longitude	Bot Depth	Depth	
3	1950	2-DEC-88	45:01.13S	148:25.09E	4078		790
4	0211	3-DEC-88	46:00.39S	149:00.14E	4300		790
5	0834	3-DEC-88	47:01.80S	149:31.14E	3230		796
6	2219	3-DEC-88	47:58.17S	149:55.38E	1500		812
7	0535	4-DEC-88	46:58.88S	150:41.77E	4500		792
8	1247	4-DEC-88	46:00.01S	151:27.08E	2500		790
9	2025	4-DEC-88	44:58.50S	152:12.14E	4650		790
10	0318	5-DEC-88	44:00.29S	152:52.56E	4000		800
11	1002	5-DEC-88	42:59.68S	153:33.99E	4650		790
12	1712	5-DEC-88	44:00.12S	154:02.14E	4720		790
13	0059	6-DEC-88	45:00.15S	154:30.89E	4770		792
14	1101	7-DEC-88	45:00.46S	155:43.15E	4627		790
15	1817	7-DEC-88	44:00.73S	156:29.00E	5160		790
16	0104	8-DEC-88	42:59.90S	157:08.29E	4650		790
17	0639	8-DEC-88	43:00.15S	158:16.82E	4500		1490
19	1712	8-DEC-88	44:02.24S	158:46.42E	4950		792
20	2342	8-DEC-88	45:01.83S	159:13.13E	5000		790
21	0548	9-DEC-88	46:00.19S	159:40.61E	4400		790
22	1150	9-DEC-88	46:00.19S	161:06.96E	4800		792
23	1749	9-DEC-88	45:59.46S	162:30.91E	4050		790
24	2340	9-DEC-88	45:59.77S	163:55.35E	4400		790
25	2136	10-DEC-88	44:47.12S	164:02.96E	4800		792
26	0546	11-DEC-88	44:12.48S	163:01.82E	4800		790
27	1306	11-DEC-88	43:30.85S	162:00.63E	4800		790
28	2138	11-DEC-88	43:30.04S	160:39.72E	4850		792
29	0815	12-DEC-88	43:30.55S	159:18.62E	5000		792
30	1818	12-DEC-88	43:29.98S	157:42.35E	4730		790
31	0231	13-DEC-88	43:30.65S	156:16.89E	5100		790
32	0837	13-DEC-88	44:05.03S	155:20.12E	4800		390
33	1116	13-DEC-88	43:51.71S	154:59.78E	4500		390
34	1339	13-DEC-88	43:38.71S	154:39.99E	4600		390
35	1559	13-DEC-88	43:25.84S	154:20.04E	4640		390
36	1821	13-DEC-88	43:13.41S	154:00.24E	4670		390
37	2033	13-DEC-88	43:26.10S	153:39.50E	4650		392
38	2300	13-DEC-88	43:39.23S	154:01.16E	4700		392
39	0116	14-DEC-88	43:51.59S	154:20.61E	4700		390
40	0344	14-DEC-88	44:05.10S	154:40.27E	4500		390

41	0549	14-DEC-88	44:17.87S	154:59.69E	4800	390
42	0815	14-DEC-88	44:31.12S	154:39.72E	4600	390
43	1035	14-DEC-88	44:17.70S	154:19.37E	4700	390
44	1252	14-DEC-88	44:04.50S	153:59.84E	4700	390
45	1513	14-DEC-88	43:51.87S	153:39.48E	4750	390
46	1729	14-DEC-88	43:38.68S	153:18.77E	4650	390
47	1952	14-DEC-88	43:24.96S	152:58.01E	4650	390
48	2210	14-DEC-88	43:39.79S	152:36.64E	4650	390
49	0036	15-DEC-88	43:52.18S	153:01.34E	4650	390
50	0248	15-DEC-88	44:04.62S	153:20.55E	4700	392
51	0503	15-DEC-88	44:18.09S	153:40.12E	4750	388
52	1049	15-DEC-88	44:20.20S	152:19.27E	4600	790
53	1622	15-DEC-88	44:20.74S	151:13.05E	3500	790
54	2223	15-DEC-88	44:39.80S	149:59.92E	3100	792
55	0624	16-DEC-88	44:00.40S	149:05.63E	3400	790

CTD Processing Notes

FI 11/88
D.J. Vaudrey

General.

This data was collected on a research cruise in the Southern Tasman Sea

to determine the location of the Subtropical Convergence in December 1988. 55 stations were attempted of which 52 were calibrated. Relatively few bottle samples were collected for the number of stations, but results from these stations are of high quality. Out of a total of 334 sample bottles only 6 were rejected from the analyses (apart from those automatically rejected due to proximity to strong gradients). Only one cast exceeded 1000.0 dBar Pressure and a further 20 casts were shallower than 400 dBar.

Problems appeared in the raw Dissolved Oxygen results, where a relatively noisy signal was logged and a high proportion of bad values had crept into the data stream. It appears that the Dissolved Oxygen Data is suspect and may not be able to be calibrated.

Station List.

- Station List:
1. Bottle Test. No down cast logged.
 2. Not logged.
 18. Not logged.

Calibration Information.

Pressure Offset = +8.8dBars

Temperature Coefficients

Temperature Offset = 0.00oC

Conductivity (Cell Factors)

Standard Deviation = 0.00007

Equivalent S.D Salinity = 0.00257 psu

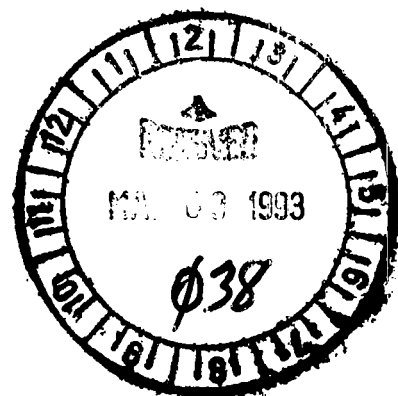
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Listing of data files for submission to NODC

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The International Temperature Scale of 1990, ITS-90

The International Committee for Weights and Measures at its meeting in September 1989 approved the above temperature scale. It replaces the International Practical Temperature Scale of 1968 (IPTS-68) and will take effect from 1st January 1990. [Note that the term practical is dropped from the title.] ITS-90 takes advantage of technological advances and more closely approximates the thermodynamic temperature scale than previous scales (IPTS-68, IPTS-48 etc).

Of particular interest to oceanographers are the properties of ITS-90 in the range -2°C to $+35^{\circ}\text{C}$. The single most important property is that the triple point of water remains unchanged at 273.16 K or 0.010°C ; however at standard atmospheric pressure the boiling point of water falls to 99.974°C . Consequently in the interval 0 - 100°C temperatures measured on the ITS-90 scale are lower than values measured on the IPTS-68 scale. But below 0°C they are higher. The differences are expressed in the following table.

$t_{90}/^{\circ}\text{C}$	-10	0	10	20	30	40
$t_{90}-t_{68}/^{\circ}\text{C}$	.002	.000	-.002	-.005	-.007	-.010

Over this range (although slightly nonlinear) the relation between the temperature scales can be adequately represented by the expression

$$t_{90} = 0.99976 t_{68}$$

Initially it is expected that oceanographers will employ the above expression to correct temperatures measured on the IPTS-68 scale but new calibration procedures will be introduced in National Standards Laboratories commencing 1990 and it is hoped these practices will rapidly spread to oceanographic calibration facilities. The value for the fixed points on the ITS-90 scale and the instruments and interpolation equations to be employed for the measurement of temperature are described in a text to be published in the journal *Metrologia*, early in 1990.

Although the impact of the new temperature scale on ocean temperature measurements and their climatology is likely to be small (or even negligible), unfortunately this is not true for its knock-on effects. Corrections will be required for the computation of salinity and other state properties of sea water.

It is imperative that in the determination of derived oceanographic quantities, where t_{90} is used as an entry to standard algorithms (UNESCO Technical papers in Marine Science, 1988 volume 44) that the first executable statement be

$$t_{68} = 1.00024 t_{90}$$

The algorithms will then utilise the temperature scale employed in their formulation.

Recognising that there will be a period within which the IPTS-68 scale will remain in use, it is recommended that

- (1) for the near future all temperatures reported in the literature be labelled t_{90} or t_{68} as appropriate, and
- (2) oceanographers adopt the ITS-90 scale as soon as possible.

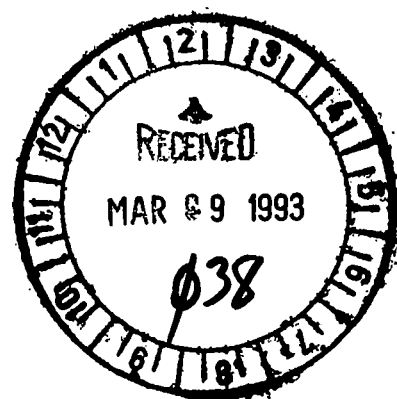
P M Saunders
Chairman WHP sub-group on standards and calibration

Cruise number summary for NODC/WDCA of 'Autochart' XBTS

AODC Ship No
Cruise of
No XBT Shipname/Country (if not clear)

00017 DERWEN 3
00019 PERTH 1
00063 YARRA 3
60004 STUART 60
60005 TORREN 75
60006 DIAMAN 77
60007 VENDET 61
60008 SWAN 44
60009 DIAMAN 30
60010 PERTH 41
60011 D'TINA 11
60012 KIMBLA 8
60013 STUART 23
60014 PERTH 77
60015 STUART 123
60016 YARRA 59
60017 VENDET 56
60018 FLINDE 60
60019 TORREN 161
60020 DIAMAN 41
60021 DERWEN 84
60022 STAURT 53 mis-spelt - STUART
60023 KIMBLA 16
60024 KIMBLA 29
60025 HOBART 62
60026 DERWEN 32
60027 VENDET 66
60028 VAMPIR 14
60029 VAMPIR 16
60030 VAMPIR 2
60031 PERTH 22
60032 HOBART 7
60034 DERWEN 34
60035 DIAMAN 31
60036 SWAN 140
60037 KIMBLA 29
60038 VENDET 35
60039 STUART 28
60040 VENDET 27
60041 VAMPIR 6
60042 HOBART 55
60043 TORREN 84
60044 KIMBLA 23
60045 PERTH 96
60046 SWAN 18
60047 MORESB 8
60048 DERWEN 75
60049 MORESB 2
60050 VAMPIR 29
60051 PERTH 32
60052 SWAN 63
60053 HOBART 31
60054 DIAMAN 4
60055 TORREN 27
60056 SWAN 60
60057 DERWEN 28
60058 KIMBLA 39
60059 VAMPIR 26
60060 HOBART 27
60061 MORESB 77

2551



60062	VENDET	25	
60063	YARRA	79	
60064	DERWEN	77	
60065	VAMPIR	75	
60066	PERTH	66	
60067	DIAMAN	73	
60068	DIAMAN	101	
60069	BRISBA	28	
60070	TORREN	117	
60071	DERWEN	42	
60072	PERTH	23	
60073	HOBART	107	
60074	TORREN	112	
60075	DERWEN	62	
60076	BRISBA	86	
60077	VAMPIR	27	
60078	DIAMAN	31	
60079	BRISBA	122	
60080	HOBART	169	
60081	SWAN	68	
60082	DERWEN	80	
60083	MORESB	32	
60084	MORESB	28	
60085	TORREN	127	
60086	YARRA	59	
60087	KIMBLA	38	
60088	DIAMAN	85	
60089	JBMR	21	Kunghamaris
60090	SWAN	47	
60091	DERWEN	11	
60092	TORREN	68	
60093	SWAN	44	
60094	DERWEN	12	
60095	MIZAR	10	
60096	MIZAR	8	
60097	CAPE	142	Cape Pillar
60098	YARRA	60	
60099	STRJB	6	Kunghamaris
60100	VAMPIR	44	
60101	VAMPIR	46	
60102	MORESB	2	
60103	DERWEN	30	
60104	HOBART	91	
60105	SWAN	67	
60106	KIMBLA	4	
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60115	KIMBLA	107	
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60137 TORREN 52
60138 PERTH 147
60139 SWAN 53
60143 OTAGO 8 New Zealand
60144 BARBEY 44 USS Barbey
60145 CANTER 20 New Zealand
60146 NELLA 355 Nella Dan
60151 TORREN 62
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60157 BRISBA 32
60159 YARRA 21
60164 VAMPIR 24
60165 MORESB 38
60166 PARRAM 15
60167 MORESB 4
60169 MORESB 10
60173 ADELAI 4
60176 BRISBA 33
60178 PARRAM 22
60179 SWAN 157
60180 ADELAI 9
60181 COOK 29
60182 NELLA 112 Nella Dan
60183 NELLA 13 Nella Dan
60184 NELLA 10 Nella Dan
60186 KYOSEI 22 Kyosei Maru (Japanese FRV?)
60188 ADELAI 16
60191 CANBER 46
60192 HOBART 24
60197 MORESB 39
60204 TORREN 10
60208 HOBART 61
60210 FREMAN 7
60211 SPRIGH 14 Sprightly
60212 BOMBAR 6 Bombard
60215 KYOSEI 7 Kyosei Maru
60224 VAMPIR 22
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60249 MORESB 48
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60268 ADELAI 56
60276 KIMBLA 2
60278 CANBER 86
60280 TORREN 112
60281 MORESB 14
60282 STUART 25
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60285 PILLAR 17 Cape Pillar
60286 NELLA 37
60290 STUART 46
60297 CANBER 12
60302 CAPE 7 Cape Pillar
60316 KIMBLA 26
60317 PERTH 17
60324 MORESB 53
60332 PARRAM 3
60335 DIAMAN 24

2717

60336 TARANA 5 Taranaki (New Zealand)
60337 DARWIN 17
60340 YARRA 66
60341 YARRA 24
60349 CANBER 48
60353 DARWIN 43
60355 SYDNEY 42
60375 PERTH 64
60400 STUART 106
60420 SWAN 14
60463 CANTER 1 Canterbury (New Zealand)
60474 WAIKAT 14 Waikato (New Zealand)
60475 WAIKAT 10 Waikato (New Zealand)
60478 WAIKAT 1 Waikato (New Zealand)
60488 CANTER 6 Canterbury (New Zealand)
60490 SOUTHL 13 Southland (New Zealand)
60491 CANTER 5 Canterbury (New Zealand)
60493 CANTER 10 Canterbury (New Zealand)
60544 DARWIN 65
60548 TORREN 68
60565 ADELAI 2
Total number = 9863 in 213 cruises

624

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9300046	C116	080799	9999	0910	09HO	1980/03/28	60080	212787
9300046	C116	080802	9999	0910	09HO	1982/03/19	60192	212788
9300046	C116	080809	9999	0910	09KG	1979/10/10	60089	212667
9300046	C116	080810	9999	0910	09KG	1980/01/20	60089	212668
9300046	C116	080811	9999	0910	09KG	1980/04/10	60099	212669
9300046	C116	080812	9999	0910	09KG	1980/04/22	60099	212670
9300046	C116	080813	9999	0910	09KG	1980/05/13	60099	212671
9300046	C116	080814	9999	0910	09KG	1980/05/26	60099	212672
9300046	C116	080816	9999	0910	09KI	1974/12/08	60276	212673
9300046	C116	080817	9999	0910	09KI	1975/02/14	60246	212674
9300046	C116	080818	9999	0910	09KI	1975/03/17	60246	212675
9300046	C116	080822	9999	0910	09KI	1978/11/05	60037	212676
9300046	C116	080829	9999	0910	09KI	1980/09/15	60110	212677
9300046	C116	080830	9999	0910	09KI	1984/07/25	60316	212678
9300046	C116	080820	9999	0910	09KI	1978/03/01	60012	212789
9300046	C116	080842	9999	0910	09MO	1980/08/27	60167	212679
9300046	C116	080844	9999	0910	09MO	1981/10/06	60165	212680
9300046	C116	080845	9999	0910	09MO	1981/11/12	60165	212681
9300046	C116	080846	9999	0910	09MO	1982/03/05	60197	212682
9300046	C116	080847	9999	0910	09MO	1982/10/26	60242	212683
9300046	C116	080848	9999	0910	09MO	1983/05/22	60243	212684
9300046	C116	080849	9999	0910	09MO	1983/06/20	60243	212685
9300046	C116	080850	9999	0910	09MO	1983/09/28	60281	212686
9300046	C116	080851	9999	0910	09MO	1983/11/01	60281	212687
9300046	C116	080852	9999	0910	09MO	1984/06/18	60324	212688
9300046	C116	080853	9999	0910	09MO	1984/07/24	60324	212689
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9300046	C116	080856	9999	0910	09ND	1979/02/02	60146	212692
9300046	C116	080857	9999	0910	09ND	1979/02/28	60146	212693
9300046	C116	080858	9999	0910	09ND	1979/11/11	60146	212694
9300046	C116	080859	9999	0910	09ND	1979/12/21	60146	212695
9300046	C116	080860	9999	0910	09ND	1980/01/23	60146	212696
9300046	C116	080861	9999	0910	09ND	1981/10/17	60183	212697
9300046	C116	080862	9999	0910	09ND	1981/11/09	60184	212698
9300046	C116	080863	9999	0910	09ND	1982/01/01	60182	212699
9300046	C116	080864	9999	0910	09ND	1983/01/05	60286	212700
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9300046	C116	080866	9999	0910	09ND	1984/02/04	60286	212702
9300046	C116	080867	9999	0910	09PA	1981/11/09	60166	212703
9300046	C116	080869	9999	0910	09PA	1982/03/01	60178	212704
9300046	C116	080870	9999	0910	09PA	1982/03/15	60178	212705
9300046	C116	080871	9999	0910	09PA	1982/04/20	60178	212706
9300046	C116	080872	9999	0910	09PA	1984/09/12	60332	212707
9300046	C116	080873	9999	0910	09PE	1978/02/07	60010	212708
9300046	C116	080874	9999	0910	09PE	1978/02/27	60010	212709
9300046	C116	080885	9999	0910	09PE	1980/05/07	60128	212710
9300046	C116	080886	9999	0910	09PE	1980/05/27	60128	212711

9300046	C116	080890	9999	0910	09PE	1980/11/28	60138	212712
9300046	C116	080891	9999	0910	09PE	1984/07/11	60317	212713
9300046	C116	080892	9999	0910	09PE	1985/05/13	60375	212714
9300046	C116	080893	9999	0910	09PE	1985/08/08	60375	212715
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9300046	C116	080878	9999	0910	09PE	1978/09/19	60031	212791
9300046	C116	080887	9999	0910	09PE	1980/07/16	60128	212792
9300046	C116	080889	9999	0910	09PE	1980/10/01	60128	212793
9300046	C116	080894	9999	0910	09SH	1984/10/11	60355	212716
9300046	C116	080895	9999	0910	09SH	1984/11/12	60355	212717
9300046	C116	080900	9999	0910	09ST	1978/06/27	60022	212718
9300046	C116	080901	9999	0910	09ST	1978/08/04	60022	212719
9300046	C116	080902	9999	0910	09ST	1978/10/11	60039	212720
9300046	C116	080903	9999	0910	09ST	1978/10/27	60039	212721
9300046	C116	080905	9999	0910	09ST	1983/10/12	60282	212722
9300046	C116	080906	9999	0910	09ST	1983/11/07	60282	212723
9300046	C116	080907	9999	0910	09ST	1984/03/05	60290	212724
9300046	C116	080909	9999	0910	09SW	1978/02/09	60008	212725
9300046	C116	080910	9999	0910	09SW	1978/02/28	60008	212726
9300046	C116	080911	9999	0910	09SW	1978/03/20	60008	212727
9300046	C116	080912	9999	0910	09SW	1978/08/21	60036	212728
9300046	C116	080928	9999	0910	09SW	1982/02/16	60179	212729
9300046	C116	080929	9999	0910	09SW	1982/03/20	60179	212730
9300046	C116	080930	9999	0910	09SW	1985/12/08	60420	212731
9300046	C116	080931	9999	0910	09SW	1986/01/20	60420	212732
9300046	C116	080913	9999	0910	09SW	1978/09/20	60036	212794
9300046	C116	080932	9999	0910	09SY	1982/07/16	60211	212733
9300046	C116	080933	9999	0910	09TR	1907/12/05	60005	212734
9300046	C116	080934	9999	0910	09TR	1908/01/08	60005	212735
9300046	C116	080935	9999	0910	09TR	1908/10/26	60043	212736
9300046	C116	080937	9999	0910	09TR	1978/01/09	60005	212737
9300046	C116	080938	9999	0910	09TR	1978/02/05	60005	212738
9300046	C116	080951	9999	0910	09TR	1979/11/22	60085	212739
9300046	C116	080958	9999	0910	09TR	1981/05/07	60151	212740
9300046	C116	080959	9999	0910	09TR	1981/06/20	60156	212741
9300046	C116	080960	9999	0910	09TR	1981/07/09	60156	212742
9300046	C116	080961	9999	0910	09TR	1981/07/22	60156	212743
9300046	C116	080962	9999	0910	09TR	1982/01/20	60204	212744
9300046	C116	080963	9999	0910	09TR	1983/09/12	60280	212745
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9300046	C116	080982	9999	0910	09VA	1981/10/27	60164	212750
9300046	C116	080983	9999	0910	09VA	1983/01/10	60224	212751
9300046	C116	080972	9999	0910	09VA	1978/08/29	60030	212799
9300046	C116	080977	9999	0910	09VA	1979/05/22	60065	212800
9300046	C116	080984	9999	0910	09VE	1974/06/21	60007	212752
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9300046	C116	080986	9999	0910	09VE	1978/02/27	60017	212754
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9300046	C116	080990	9999	0910	09VE	1978/10/23	60038	212756
9300046	C116	080991	9999	0910	09VE	1978/11/20	60040	212757
9300046	C116	080995	9999	0910	09VE	1979/08/11	60027	212758
9300046	C116	080996	9999	0910	09Y5	1981/11/06	60210	212759
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9300046	C116	080998	9999	0910	09Y6	1980/10/17	60136	212761
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9300046	C116	081001	9999	0910	09YA	1978/02/23	60340	212763
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9300046	C116	081009	9999	0910	09YA	1980/02/28	60098	212767
9300046	C116	081010	9999	0910	09YA	1980/05/10	60098	212768
9300046	C116	081018	9999	0910	09YA	1983/05/02	60240	212769
9300046	C116	081019	9999	0910	09YA	1983/05/27	60240	212770
9300046	C116	081020	9999	0910	09YA	1983/06/23	60240	212771
9300046	C116	081006	9999	0910	09YA	1979/04/03	60063	212801
9300046	C116	081021	9999	0910	315I	1977/05/18	60095	212772
9300046	C116	081022	9999	0910	315I	1977/11/25	60096	212773
9300046	C116	081023	9999	0910	32BB	1976/10/13	60144	212802
9300046	C116	081026	9999	0910	49KY	1982/10/15	60253	212774
9300046	C116	081025	9999	0910	49KY	1982/07/20	60215	212803
9300046	C116	081030	9999	0910	61CA	1976/10/23	60145	212804
9300046	C116	081033	9999	0910	61CA	1984/11/19	60493	212805
9300046	C116	081034	9999	0910	61OT	1976/06/12	60143	212775
9300046	C116	081036	9999	0910	61TI	1977/10/04	60124	212776
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(258 rows affected)

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9300046	C116	080679	09AA	15	NULL	84/10/10	84/10/26
9300046	C116	080680	09AA	41	NULL	84/11/15	84/12/13
9300046	C116	080681	09AA	2	NULL	87/03/20	87/03/20
9300046	C116	080682	09AA	63	NULL	87/05/18	87/07/01
9300046	C116	080683	09AD	4	NULL	82/02/16	82/02/24
9300046	C116	080687	09AD	44	NULL	83/05/01	83/05/24
9300046	C116	080688	09AD	5	NULL	83/08/05	83/08/10
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9300046	C116	080685	09AD	21	NULL	82/04/27	82/05/29
9300046	C116	080686	09AD	7	NULL	83/04/08	83/04/09
9300046	C116	080690	09AE	5	NULL	82/10/12	82/10/16
9300046	C116	080691	09AE	27	NULL	82/10/27	82/11/05
9300046	C116	080692	09AE	3	NULL	82/11/18	82/11/18
9300046	C116	080693	09AE	1	NULL	82/12/06	82/12/06
9300046	C116	080694	09AE	1	NULL	83/02/14	83/02/14
9300046	C116	080695	09AE	26	NULL	83/03/06	83/03/24
9300046	C116	080696	09AE	54	NULL	83/05/20	83/05/24
9300046	C116	080697	09AE	6	NULL	83/08/05	83/08/05
9300046	C116	080698	09BB	6	NULL	81/01/15	81/01/15
9300046	C116	080708	09BS	20	NULL	80/11/05	80/11/06
9300046	C116	080709	09BS	24	NULL	81/07/01	81/07/18
9300046	C116	080710	09BS	10	NULL	81/08/03	81/08/05
9300046	C116	080711	09BS	33	NULL	82/02/08	82/03/03
9300046	C116	080700	09BS	45	NULL	79/07/24	79/08/26
9300046	C116	080703	09BS	56	NULL	80/02/10	80/03/15
9300046	C116	080712	09CA	46	NULL	82/05/11	82/07/01
9300046	C116	080713	09CA	50	NULL	83/08/15	83/08/28
9300046	C116	080714	09CA	86	NULL	83/09/12	83/10/13
9300046	C116	080715	09CA	18	NULL	83/11/03	83/11/20
9300046	C116	080716	09CA	12	NULL	84/04/24	84/05/02
9300046	C116	080717	09CA	2	NULL	84/09/04	84/09/04
9300046	C116	080718	09CA	15	NULL	84/09/17	84/09/27
9300046	C116	080719	09CA	31	NULL	84/10/18	84/10/31
9300046	C116	080720	09CB	27	NULL	82/04/05	82/04/16
9300046	C116	080721	09CB	2	NULL	83/04/05	83/04/05
9300046	C116	080723	09CP	1	NULL	82/12/17	82/12/17
9300046	C116	080724	09CP	1	NULL	82/12/30	82/12/30
9300046	C116	080725	09CP	6	NULL	83/01/24	83/02/27
9300046	C116	080726	09CP	1	NULL	83/03/12	83/03/12
9300046	C116	080727	09CP	1	NULL	83/03/26	83/03/26
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9300046	C116	080730	09CP	1	NULL	83/10/13	83/10/13
9300046	C116	080731	09CP	1	NULL	83/10/28	83/10/28
9300046	C116	080732	09CP	1	NULL	83/11/08	83/11/08
9300046	C116	080733	09CP	1	NULL	83/11/26	83/11/26
9300046	C116	080734	09CP	1	NULL	83/12/14	83/12/14
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9300046	C116	080736	09CP	1	NULL	84/04/18	84/04/18
9300046	C116	080737	09DE	32	NULL	76/10/11	76/10/18
9300046	C116	080744	09DE	34	NULL	78/10/02	78/10/29
9300046	C116	080759	09DE	18	NULL	80/09/22	80/09/26
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9300046	C116	080762	09DM	58	NULL	71/09/17	71/10/03
9300046	C116	080763	09DM	88	NULL	72/03/01	72/03/08
9300046	C116	080764	09DM	24	NULL	72/08/14	72/08/30
9300046	C116	080765	09DM	108	NULL	72/11/28	72/12/14
9300046	C116	080766	09DM	164	NULL	73/03/20	73/04/06
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9300046	C116	080768	09DM	36	NULL	75/08/14	75/08/22
9300046	C116	080769	09DM	3	NULL	75/11/18	75/11/18
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9300046	C116	080772	09DM	3	NULL	76/02/23	76/02/23
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9300046	C116	080774	09DM	30	NULL	78/03/30	78/04/02
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9300046	C116	080777	09DM	37	NULL	78/08/17	78/08/19
9300046	C116	080782	09DM	85	NULL	79/10/22	79/10/26
9300046	C022	099116	09FA	87	172	90/01/11	90/01/29
9300046	C022	099117	09FA	143	302	90/02/26	90/04/06
9300046	C022	099118	09FA	110	121	90/05/11	90/05/22
9300046	F022	TW4946	09FA	564	7809	89/01/05	89/02/06
9300046	F022	TW4947	09FA	5	40	89/03/12	89/03/12
9300046	F022	TW4948	09FA	183	1466	89/03/23	89/03/29
9300046	F022	TW4949	09FA	74	3810	89/05/11	89/05/29
9300046	F022	TW4950	09FA	43	1486	89/07/04	89/07/09
9300046	F022	TW4951	09FA	163	40120	89/08/15	89/09/26
9300046	F022	TW4952	09FA	166	3182	89/11/04	89/12/06
9300046	F022	TW4953	09FA	87	12261	90/01/11	90/01/29
9300046	F022	TW4954	09FA	143	35829	90/02/26	90/04/06
9300046	F022	TW4955	09FA	110	2675	90/05/11	90/05/22
9300046	F022	TW4945	09FA	200	12200	87/10/04	87/11/20
9300046	C022	099108	09FA	200	286	87/10/04	87/11/20
9300046	C125	047182	09FA	3	3	89/01/10	89/01/11
9300046	C125	047183	09FA	6	6	89/03/16	89/03/18
9300046	C125	047184	09FA	67	66	89/05/16	89/06/03
9300046	C125	047185	09FA	162	162	89/08/15	89/09/25
9300046	C125	047186	09FA	67	67	89/11/12	89/12/03
9300046	C125	047187	09FA	140	140	90/02/26	90/04/05
9300046	C125	047188	09FA	35	35	90/05/17	90/05/19
9300046	C125	047189	09FA	103	103	90/07/06	90/08/01
9300046	C125	047190	09FA	155	155	90/09/10	90/09/28
9300046	C022	099109	09FA	564	598	89/01/05	89/02/06
9300046	C022	099110	09FA	5	5	89/03/12	89/03/12
9300046	C022	099111	09FA	183	184	89/03/23	89/03/29
9300046	C022	099112	09FA	74	104	89/05/11	89/05/29
9300046	C022	099113	09FA	43	67	89/07/04	89/07/09
9300046	C022	099114	09FA	163	339	89/08/15	89/09/26
9300046	C022	099115	09FA	166	183	89/11/04	89/12/06
9300046	C022	099102	09FA	59	6229	85/12/04	85/12/17
9300046	C022	099103	09FA	72	8222	86/11/05	86/11/19
9300046	C022	099104	09FA	79	9802	87/01/27	87/02/16
9300046	C022	099105	09FA	108	13673	87/03/12	87/03/27
9300046	C022	099106	09FA	57	4153	87/06/03	87/06/22
9300046	C022	099107	09FA	116	11847	87/08/04	87/09/05
9300046	F022	TW4939	09FA	59	6229	85/12/04	85/12/17
9300046	F022	TW4940	09FA	72	8222	86/11/05	86/11/19
9300046	F022	TW4941	09FA	79	9802	87/01/27	87/02/16
9300046	F022	TW4942	09FA	108	13673	87/03/12	87/03/27

9300046	F022	TW4943	09FA	57	4153	87/06/03	87/06/22
9300046	F022	TW4944	09FA	116	11847	87/08/04	87/09/05
9300046	C116	080800	09HO	33	NULL	80/05/05	80/05/22
9300046	C116	080801	09HO	58	NULL	80/06/02	80/07/01
9300046	C116	080803	09HO	39	NULL	82/07/26	82/09/07
9300046	C116	080804	09HO	25	NULL	82/09/27	82/10/18
9300046	C116	080805	09HO	1	NULL	82/11/01	82/11/01
9300046	C116	080806	09HO	58	NULL	83/02/01	83/02/17
9300046	C116	080807	09HO	56	NULL	83/02/28	83/03/08
9300046	C116	080808	09HO	4	NULL	83/03/28	83/03/28
9300046	C116	080789	09HO	31	NULL	78/09/20	78/10/04
9300046	C116	080798	09HO	94	NULL	80/03/02	80/03/16
9300046	C116	080799	09HO	44	NULL	80/03/28	80/04/12
9300046	C116	080802	09HO	24	NULL	82/03/19	82/03/19
9300046	C116	080809	09KG	19	NULL	79/10/10	79/10/29
9300046	C116	080810	09KG	2	NULL	80/01/20	80/01/21
9300046	C116	080811	09KG	1	NULL	80/04/10	80/04/10
9300046	C116	080812	09KG	1	NULL	80/04/22	80/04/22
9300046	C116	080813	09KG	2	NULL	80/05/13	80/05/14
9300046	C116	080814	09KG	2	NULL	80/05/26	80/05/26
9300046	C116	080816	09KI	2	NULL	74/12/08	74/12/08
9300046	C116	080817	09KI	16	NULL	75/02/14	75/02/17
9300046	C116	080818	09KI	25	NULL	75/03/17	75/03/20
9300046	C116	080822	09KI	29	NULL	78/11/05	78/11/10
9300046	C116	080829	09KI	57	NULL	80/09/15	80/09/20
9300046	C116	080830	09KI	26	NULL	84/07/25	84/07/28
9300046	C116	080820	09KI	9	NULL	78/03/01	78/03/13
9300046	C116	080842	09MO	4	NULL	80/08/27	80/08/28
9300046	C116	080844	09MO	4	NULL	81/10/06	81/10/12
9300046	C116	080845	09MO	34	NULL	81/11/12	81/11/22
9300046	C116	080846	09MO	39	NULL	82/03/05	82/04/01
9300046	C116	080847	09MO	27	NULL	82/10/26	82/11/16
9300046	C116	080848	09MO	30	NULL	83/05/22	83/06/06
9300046	C116	080849	09MO	73	NULL	83/06/20	83/07/20
9300046	C116	080850	09MO	2	NULL	83/09/28	83/09/28
9300046	C116	080851	09MO	12	NULL	83/11/01	83/11/03
9300046	C116	080852	09MO	13	NULL	84/06/18	84/07/13
9300046	C116	080853	09MO	40	NULL	84/07/24	84/08/08
9300046	C116	080854	09ND	54	NULL	78/12/06	78/12/21
9300046	C116	080855	09ND	64	NULL	79/01/03	79/01/20
9300046	C116	080856	09ND	30	NULL	79/02/02	79/02/12
9300046	C116	080857	09ND	65	NULL	79/02/28	79/03/09
9300046	C116	080858	09ND	60	NULL	79/11/11	79/11/19
9300046	C116	080859	09ND	52	NULL	79/12/21	80/01/02
9300046	C116	080860	09ND	30	NULL	80/01/23	80/01/28
9300046	C116	080861	09ND	13	NULL	81/10/17	81/10/25
9300046	C116	080862	09ND	10	NULL	81/11/09	81/11/12
9300046	C116	080863	09ND	112	NULL	82/01/01	82/03/14
9300046	C116	080864	09ND	1	NULL	83/01/05	83/01/05
9300046	C116	080865	09ND	30	NULL	84/01/05	84/01/09
9300046	C116	080866	09ND	6	NULL	84/02/04	84/02/12
9300046	C116	080867	09PA	1	NULL	81/11/09	81/11/09
9300046	C116	080869	09PA	14	NULL	82/03/01	82/03/04
9300046	C116	080870	09PA	6	NULL	82/03/15	82/03/18
9300046	C116	080871	09PA	2	NULL	82/04/20	82/04/21
9300046	C116	080872	09PA	3	NULL	84/09/12	84/09/21
9300046	C116	080873	09PE	9	NULL	78/02/07	78/02/15
9300046	C116	080874	09PE	32	NULL	78/02/27	78/03/07
9300046	C116	080885	09PE	1	NULL	80/05/07	80/05/07
9300046	C116	080886	09PE	60	NULL	80/05/27	80/07/02

9300046	C116	080890	09PE	24	NULL	80/11/28	80/12/10
9300046	C116	080891	09PE	17	NULL	84/07/11	84/07/26
9300046	C116	080892	09PE	62	NULL	85/05/13	85/06/11
9300046	C116	080893	09PE	2	NULL	85/08/08	85/08/08
9300046	C116	080875	09PE	38	NULL	78/04/03	78/04/22
9300046	C116	080878	09PE	61	NULL	78/09/19	78/10/13
9300046	C116	080887	09PE	50	NULL	80/07/16	80/08/06
9300046	C116	080889	09PE	141	NULL	80/10/01	80/11/11
9300046	C116	080894	09SH	37	NULL	84/10/11	84/10/24
9300046	C116	080895	09SH	5	NULL	84/11/12	84/11/21
9300046	C116	080900	09ST	22	NULL	78/06/27	78/07/24
9300046	C116	080901	09ST	31	NULL	78/08/04	78/08/20
9300046	C116	080902	09ST	1	NULL	78/10/11	78/10/11
9300046	C116	080903	09ST	27	NULL	78/10/27	78/11/16
9300046	C116	080905	09ST	8	NULL	83/10/12	83/10/13
9300046	C116	080906	09ST	47	NULL	83/11/07	83/12/15
9300046	C116	080907	09ST	16	NULL	84/03/05	84/03/20
9300046	C116	080909	09SW	5	NULL	78/02/09	78/02/16
9300046	C116	080910	09SW	16	NULL	78/02/28	78/03/07
9300046	C116	080911	09SW	23	NULL	78/03/20	78/04/05
9300046	C116	080912	09SW	54	NULL	78/08/21	78/09/07
9300046	C116	080928	09SW	47	NULL	82/02/16	82/03/02
9300046	C116	080929	09SW	110	NULL	82/03/20	82/04/26
9300046	C116	080930	09SW	13	NULL	85/12/08	85/12/11
9300046	C116	080931	09SW	1	NULL	86/01/20	86/01/20
9300046	C116	080913	09SW	104	NULL	78/09/20	78/12/13
9300046	C116	080932	09SY	14	NULL	82/07/16	82/07/17
9300046	C116	080933	09TR	19	NULL	07/12/05	07/12/15
9300046	C116	080934	09TR	2	NULL	08/01/08	08/01/09
9300046	C116	080935	09TR	5	NULL	08/10/26	08/10/28
9300046	C116	080937	09TR	19	NULL	78/01/09	78/01/23
9300046	C116	080938	09TR	13	NULL	78/02/05	78/02/16
9300046	C116	080951	09TR	34	NULL	79/11/22	79/12/02
9300046	C116	080958	09TR	41	NULL	81/05/07	81/06/03
9300046	C116	080959	09TR	9	NULL	81/06/20	81/06/22
9300046	C116	080960	09TR	3	NULL	81/07/09	81/07/10
9300046	C116	080961	09TR	3	NULL	81/07/22	81/07/23
9300046	C116	080962	09TR	10	NULL	82/01/20	82/02/02
9300046	C116	080963	09TR	71	NULL	83/09/12	83/10/13
9300046	C116	080964	09TR	41	NULL	83/11/03	83/11/19
9300046	C116	080965	09TR	25	NULL	87/05/25	87/06/03
9300046	C116	080966	09TR	40	NULL	87/06/24	87/07/23
9300046	C116	080967	09TR	2	NULL	87/08/05	87/08/05
9300046	C116	080939	09TR	34	NULL	78/02/27	78/03/10
9300046	C116	080950	09TR	142	NULL	79/10/06	79/11/08
9300046	C116	080955	09TR	31	NULL	80/11/20	80/12/13
9300046	C116	080957	09TR	21	NULL	81/04/01	81/04/08
9300046	C116	080982	09VA	24	NULL	81/10/27	81/11/12
9300046	C116	080983	09VA	22	NULL	83/01/10	83/01/21
9300046	C116	080972	09VA	6	NULL	78/08/29	78/09/08
9300046	C116	080977	09VA	75	NULL	79/05/22	79/06/20
9300046	C116	080984	09VE	61	NULL	74/06/21	74/06/26
9300046	C116	080985	09VE	16	NULL	78/02/06	78/02/16
9300046	C116	080986	09VE	35	NULL	78/02/27	78/03/08
9300046	C116	080987	09VE	5	NULL	78/04/03	78/04/05
9300046	C116	080990	09VE	35	NULL	78/10/23	78/10/31
9300046	C116	080991	09VE	27	NULL	78/11/20	78/12/10
9300046	C116	080995	09VE	1	NULL	79/08/11	79/08/11
9300046	C116	080996	09Y5	3	NULL	81/11/06	81/11/06
9300046	C116	080997	09Y5	4	NULL	81/11/21	81/11/21

9300046	C116	080998	09Y6	10	NULL	80/10/17	80/10/18
9300046	C116	080999	09Y6	32	NULL	80/11/01	80/11/18
9300046	C116	081001	09YA	2	NULL	78/02/23	78/02/23
9300046	C116	081002	09YA	24	NULL	78/03/06	78/03/17
9300046	C116	081003	09YA	40	NULL	78/05/08	78/05/25
9300046	C116	081004	09YA	24	NULL	78/06/07	78/06/18
9300046	C116	081009	09YA	23	NULL	80/02/28	80/03/15
9300046	C116	081010	09YA	37	NULL	80/05/10	80/06/03
9300046	C116	081018	09YA	18	NULL	83/05/02	83/05/06
9300046	C116	081019	09YA	5	NULL	83/05/27	83/05/28
9300046	C116	081020	09YA	9	NULL	83/06/23	83/07/04
9300046	C116	081006	09YA	68	NULL	79/04/03	79/05/02
9300046	C116	081021	315I	10	NULL	77/05/18	77/05/19
9300046	C116	081022	315I	8	NULL	77/11/25	77/11/27
9300046	C116	081023	32BB	44	NULL	76/10/13	76/10/30
9300046	C116	081026	49KY	25	NULL	82/10/15	82/10/21
9300046	C116	081025	49KY	15	NULL	82/07/20	82/07/22
9300046	C116	081030	61CA	20	NULL	76/10/23	76/10/26
9300046	C116	081033	61CA	11	NULL	84/11/19	84/12/06
9300046	C116	081034	61OT	8	NULL	76/06/12	76/06/20
9300046	C116	081036	61TI	19	NULL	77/10/04	77/10/08
9300046	C116	081037	61WA	11	NULL	85/02/15	85/02/22

(258 rows affected)