DONE. 9 RECORDS WRITTEN. UNIQUE'S 179789 THRU 179797 . B70347
INVENTORYRecord foundord 7462 on screenOTA ENTRY INFORMATION SYSTEMJ798DATA ENTRY INFORMATION SYSTEM(DATASET INVENTORY)
DATE OF ENTRY: 01/03/89
REFERENCE NUMBER: -313464 ACCESSION NUMBER: 8700347 FORMER REFERENCE NUMBER: FORMER ACCESSION NUMBER: (RESUB ONLY)
INVENTORY MEDIA-IN: 01 - Digital Magnetic Tape DINDB CODE 09 EXCHANGE (FORMAT): E003 - Ocean Station Data (SD2-112 Byte) PROCESSING (FORMAT): C100 - Ocean Station Data (SD2 Format)
* NOTE * If data is F022, create an additional record for C022.
INSTITUTE (COUNTRY AND INSTITUTE CODES): 3109 PLATFORM (COUNTRY AND PLATFORM CODES): 31T3 PLATFORM TYPE: 5 - Ice Island DINDB CODE 05
ORIGINATORS FILE ID: ORIGINATORS CRUISE ID: T3 CRUISE START DATE: 10/09/68 CRUISE END DATE: 04/22/74 Press PgDn PROJECT CODE: DATA USE CODE (DUC): 3 to continue F2ENTER F3VIEW F4EXIT F5FORM CLR F6FLD CLR F7DELETE F8MODIFY F9REPORT F10MULTI
ENTORY
VOLUME - NUMBER OF STATIONS: 114 NUMBER OF RECORDS: 3,486 If STA/REC counts are not appropriate then enter -
AVERAGE REC SIZE: 112 MBYTES: 0.390432
OCEAN AREA CODE 1: 17 MEANING: Arctic Ocean CODE 2: MEANING: CODE 3: MEANING:
DINDB TRACK TRANSACTION GENERATED: / /

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F2ENTER F3VIEW F4EXIT F5FORM CLR F6FLD CLR F7DELETE F8MODIFY F9REPORT F10MULTI

ACCESSION NO. 8700347 FILETYPE CLOO



STEP	DATE	INIT.	TAPE OR . DISK DSN	NO. FILES	LRECL	BLK SIZE	NO: RECORD:
ORIG. TAPE	11 30 87	CMIT	AD0 589	33	RO	3000	
DUPLICATE TAPE	11/30/81	CMA	W00829 *	3	120	3000	5503
REFORMATTED TAPE	12.27-89	R.P.S.	W15090 * *	1	112	11200	3482
REFORMATTED DISK		· · ·	·				
FIRST MULCHEK			· ·				1
FINAL MULCHEK							
MPD75 OR F022							
DATA SET FINALIZED			· ·				
ERRORS REPORTED TO PR	INCIPAL INVES	TIGATOR:	97K, SL, 1600 bp; DNODC #8700347	-01.			

ADDITIONAL ERRORS/CORRECTIONS (NOT REPORTED TO P.I.) ** LANEL = DNUDC * WASNOUT

COMMENTS (TRACKS DELETED, FIELDS DELETED, ETC.)

USLR NAME PHONE # ORG/TASK # DATE DATE DUE BIN # SUBMITTED Cirle Hartler EGILDOEN3HH9 673-5636 09 ASAP PREFORMED EUDIÉNÉŘT USED AND FUNCTION TO BE to a'w't only take Scan INPUT MEDIUM OUTPUT MEDIUM DISK TAPE PRINT Q TAPE CARD PAPER CARD DISK PLOT OTHER (SPECIFY) DISKETTE DISKETTE OTHER (SPECIFY) TAPE/DISKETTE INFORMATION TRK DENSITY PARITY LABEL RECORD RECORD MAX. BLOCK # OF-TAPE #/ D.SLOT # TYPE TYPE LENGTH DISKETTE SIZE FILES FB C A00589 3900 120 1600 ODD NL \mathbb{R} DATA SET NAME SECTOR EXCHANGE CODE: PURGE ASCII SDF .-BCD SIZE TYPE DATE OTHER (SPECIFY) INPUT # OF TAPE #/ SLOT # TRK | DENSITY PARITY LABEL RECORD RECORD HAX. BLOCK TYPE DISKETTE TYPE LENGTH SIZE FILES EXCHANGE CODE: DATA SET NAME PURGE SECTUR ASCII SDF BCD SIZE TYPE EBCDIC DATE OTHER (SPECIFY) MAX. BLOCK TAPE #/ SLOT # TRK | DENSITY LABEL RECORD PARITY RECORD # OF DISKETTE TYPE TYPE TYPE LENGTH SIZE FILES 9 020 SL 3000 3 1600 FB 120 NL0829 OUTPUT DATA SET NAME SECTOR EXCHANGE CODE PURGE SIZE TYPE ASCILDEBCDIC BCD SDF DATE DNODC#8700347-01. **OTHER(SPECIFY)** SPECIAL INSTRUCTIONS ESTIMATED Please send in tape to Asheville, n.C. EXECUTION TIME D731 USE ONLY J08 # DEVICES USED, NUMBER OF TAPE MOUNTS, LINES PRINTED DATE JOB PRIORITY START END DISKETTES USED, CARDS PUNCHED, CARDS KEYVERIFIED COMPLETED TIME TIME 13667 11/36/87 \$830 D8:25 C COMPLETED BY J.S. COMMENTS

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03:18			Hillind	# OR(G/14SK ∄		D.	ATE	DATE DUE	blR ∉
Cliff	Harth	أ إ م	673-	-5636 E(312008	N3H		UBMITTED	ASAP	09
EQUIPMENT	TO BE OSE	o and for	TION	TO BE PREI	ORMED		1_	1-1-1-		
Please scan files 1-3, of this tape										
INPUT MEDIUM										
PAPER CARD DISK TAPE DISKETTE OTHER(SPECIFY) CARD DISK PRINT TAPE PLOT DISKETTE OTHER(SPECIFY)										
TAPE/UISKETTE INFORMATION										
. (TAPE #/	DSLOT #	TRK	DENSITY	PARITY	LABEL TYPE	RECORD	RECORD	MAX. BLOCK	# OF - FILES
	A00589		9	1600					• • - •	<u> </u>
·	SECTOR - SIZE	EXCHANGE TYPE	CODE ASCI OTHE	E EBCDIC	BCD S	DF	DATA SE	T NAME	I	PURGE DATE
INPUT	TAPE #/ DISKETTE	SLOT #	TRK	DENSITY	PARITY	LABEL TYPE	RECORD TYPE	RECORD LENGTH	NAX. BLOCK SIZE	# OF FILES
		} .						•		ł
	SECTOR EXCHANGE CODE: SIZE TYPE ASCII EBCDIC BCD SDF OTHER(SPECIEX)							•	PURGE DATE	
	TAPE #/	SLOT #	TRK	DENSITY	PARITY	LABEL	RECORD	RECORD	MAX. BLOCK	# OF
• • • • • • • • • • • • • • • • • • •							-	EL.IGITI		
OUTPUT	SECTOR	EXCHANGE	CODE				DATA SE	TNAME		PURGE
1	SIZE	· TYPE	ASCI	I EBCDIC	BCD S	DF	-		•	DATE
SPECIAL IN	STRUCTIONS	retur	r. 1	ape	AOD	58	9	E E T	STIMATED XECUTION IME	
<u>+0</u> .	Bin	09_		/		-		-		
D731 USE 0	NLY							، هو چيز خو هو که 20 کو کو کو ک	و راہ کہ ذاہ ہے خوا کے حد اند ان ک	یو کو ختا خار خو کو بوا دور ر
JOB #	DATE JOB Completed	START E TIME 1	ND IME	PRIORITY	DEVICES DISKETT	USED, ES USED	NUMBER OF	F TAPE M PUNCHED,	DUNTS,LINES CARDS KEYVE	PRINTED RIFIED
3 ¹¹¹ 10 0 ⁴³	11/17/87	¢8:55 Ø	7.00	C	ComPi	ETED	BY	J.S		

10-26-87 CLIFF!

Plusse MAKE TWO FOLDERS; #FILES 1-3 LABOL = DNODC+8700347-01. FILES 4-5 4 + 8700347-02.

	#3\$6/14-8-87
NOÀA FORM 24-5 18-731	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
TRANSMITTAL AND (Please sign and return carbon)	D RECEIPT RECORD n copy acknowledging receipt)
TO: NOAA/NESDIS/NODC 1825 Connecticut Ave NW Hashington DC 20225	REFER TO
THE ITEM(S) LISTED BELOW WERE FORWARDED TO YOU BY	E/OC13, Dr. Anthony R. Picciolo
ORDINARY REGISTERED AIR A CERTI MAIL MAIL MAIL	FIED GOVERNMENT BY HAND GOTHER TRUCK Cert. no. 523153
Enclosed, find documentation (including and data formats) and one (1) magnetic files of the Fletchers Ice Island T-3 h productivity data as received from Drs. Postel, UW, oceanography dept.	g 28 DDF's, printouts of the digital data, data tape containing a total of five (5) hydrographic, chlorophylls and primary Rita Hornér, Karl Banse and Mr. Jim
, Tape layout	· · · ·
Files 1-3 contain the hydrographic (sta File 4 is the chlorophyll data. File 5 is the primary productivity data	ation, physical oceanographic) data.
**Please refer to the enclosed cover let regarding both the tape layout and tap	ter, it contains complete information e specifications.
cc: Dr. Rita Horner, UW, oceanography	
8700347	- 2 - 9
FORWARDED BY (Signature)	DATE FORWARDED
Sid Stillwaugh NODC	Liaison Officer, Seattle 10-05-87
FRANCIS MITCHEL	DATE PECEIVED

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#346/10-8-87

School of Oceanography, WB-10 University of Washington Seattle, Washington 98195 August 31, 1987

Mr. Sid Stillwaugh Northwest Liaison Office NOAA/NESDIS/NODC Bin C15700/Building 1 7600 Sand Point Way NE Seattle, Washington 98115

Dear Sid:

Enclosed are the file format descriptions to accompany the data tape I created on the University of Washington CYBER 180-855 computer with Tom English's hydrographic, chlorophyll, and productivity data from Ice Island T-3.

There are five separate files on the magnetic tape. The first three files contain hydrographic data in the "Station Data I File" format (Attachment A). (I have left the various 'flag' columns blank for NODC to fill in after they read and accept the data.). There are three files of hydrographic data just because that gave me convenient file sizes to use on the CYBER. The fourth file contains chlorophyll data in the format specified in Attachment B. The fifth file contains the productivity data in the format specified in Attachment C. If there are any questions about these formats I will be happy to clarify them for you.

For ease in writing this tape for you, I wrote all files as though the record length was 120 characters, resulting in a lot of blank columns in the chlorophyll and the productivity files. The first four files start right out with the data. The productivity file starts out with four comment lines that tells you that the station names cannot be matched directly with station names in the other two file types because Tom's group kept different station sequences for each data type.

The following information will aid in reading this tape. Attributes as expressed in FORTRAN. Responsible Computer Specialist: James R. Postel (206) 543-6141 or (206) 543-5093 School of Oceanography, WB-10 -University of Washington Seattle, WA 98195 Recording Mode: EBCDIC Number of Tracks: Nine Parity: Odd Density: 1600 bpi Length of inter-record gap: 3/4 inch End of File Mark: Tape Mark Record Length: 120 characters Block Length: 3000 characters (25 records/block) Paper Label: VSN = NDCENG; T3 DATA TO NODC (5 files); Originator = T.S. English & K. Banse

James R. Postel. James R. Postel

#-3146/14-8-87

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Fage <u>1</u> of <u>10</u> 2

RICK RINN

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Code: D763 Date: MARCH 1980 .

RECORD DESCRIPTION

Revision 3

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STATION DATA I FILE FILE NAME:

RECORD NAME: MASTER RECORD

RELATION OF RECORD TO THE FILE:

ATTACHMENT A

We we we

DIEDIT NM	E/LOCATION/IT	IGII /	ATTRIEUTES:		
AID LEVEL		PEFEAT	TYPE, BASE.	USAGE AND MEANING	CONDITION
	2 2 5	S FACTCR	TOLL LAURA	Z OF ELEMENT	CONDITIONS
•	AT AT AT	T.			
	<u>1-2 CHAR 2</u>	BYTE	<u> CHAR (2)</u>	Uriginator's Nationality	NODC Country Code
	3-4 2	<u> </u>	<u> (2)</u>	IShip Name	INUUC Ship Code
		<u>, , , , , , , , , , , , , , , , , , , </u>	$\frac{1}{1-\frac{1}{2}}$	Latitude Hemisphere	<u> </u>
		1 1	$\frac{1}{1}$	Degrees of Latitude	
, 		· · · · · · · · · · · · · · · · · · ·	$\frac{3}{1-1}$	Iminutes of Latitude	10 - 00, pos 10 biank or tentns
		<u> </u>	$\left \frac{1}{2} \right $	Dogroop of Longitude	0 100
·	$\frac{12-14}{16}$ 3	÷	$\frac{1}{1}$	· Migutos of Longitude	10 - 100
	<u>10-17. ; 5</u>	· · · · · · · · · · · · · · · · · · ·		Mansdon Squano	io - ou, pos 17 brank of centris .
			1	Rlank	
	<u> 12 7 1 1 1 7 1 7 1 7 1 7 1 7 1 7 1 7 1 </u>	<u> </u>			1000 'to Duccost
	24-25: " 2	· · · · · ·	· (2)	Nonth	01 12
	26-27 1 2	· · · · · · · · · · · · · · · · · · ·	{		
	28-30: " 3	· · · · · · · · · · · · · · · · · · ·		iStation Time	1000 - 99 9 on blank
	31-33' " 3	·····	$\frac{1}{3}$	Originator's Cruise ID	Alphanumeric
	34-42 " 9	······································	<u> </u>	Originator's Station ID	·Alphanumeric
• •	43-47 1 5	<u></u>	1 1 (5)	iDepth to Bottom	Meters
·· ···································	148 1 1	1 10	(1)	Data Use Code	11 - 5 blank
	49-50: " 12		<u> </u>	No. of Observations	No. of Observed depth levels
}					ber station
į- <u></u>	51-52: " ; 2		(2)	Water Color	Forel-Ule Scale (00-21)
[53-54; " i 2	i u i	·····(2)	Water Transparency	Secchi Disc-Meters (00-99)
· · ·	55-56, 2	i " i	(2)	Wave Direction	WMO Codes 0885 + 0887
	57 + 1	1 11 1	" (1)	Wave Height	WMO Code 1555
	158 ; " 1	i "	" (1)	Wave Amount	WMO Code 3700
	;59 ; " ; 1	1 " 1	" (1)	Wave Period	WMO Code 3155
*	60-61 2	1 "	" (2)	Wind Direction	WMO Code 0885 + 0887
	62 " 1	н	" (1)	Wind Indicator	'F'-(Beaufort) or 'K'-(Knots)
L	62 " 1	H	<u> </u>	Wind Indicator	<u> 'F'-(Beaufort) or 'K'-(Knots)</u>

ELATICI GF RECORD TO THE 63-64 ILETIT LUF/LOCATION/I AND LEVEL 65-67 CHAP 68 " 1 69-71 " 3 72 " 1 73-75 " 3 76-77 " 2 1 1 78 " 1 79 " 1 80-82 " 3	E FILE:	ATTRIBUTES: TYPE, BASE, MODE, LANGACE, PRECISION, ETC. CHAR (3) " (1) ~ " (3)	Wind Speci USAGE AND MEANING OF ELEMENT Barometric Pressure Dry Bulb Temp. Sign	CCNDITIONS Millibars to 1/10
63-64 ELE TIT ::::F/IOCATIO::/ I ATO LEVEL 65-67 CHAP 68 " 1 69-71 " 3 72 " 1 73-75 " 3 76-77 " 2 	Image: Second	ATTRIBUTES: TYPE, BASE, MODE, LANGLACE, PRECISION, ETC.	Wind Specy USAGE AND MEANING OF SLEWENT Barometric Pressure Dry Bulb Temp. Sign	CONDITIONS Millibars to 1/10
Image: Second state sta	A REFEA A SO SO	ATTRIBUTES: TYPE, BASE, MODE, LANGACE, PRECISION, ETC. CHAR (3) " (1) ~ " (3)	USACE AND MEANING CF SLEWENT Barometric Pressure Dry Bulb Temp, Sign	CCNDITIONS Millibars to 1/10
65-67 CHAF 3 68 " 1 69-71 " 3 72 " 1 73-75 " 3 76-77 " 2 1 1 1 1 1 1 1 78 1 79 1 3 80-82 " 3	3 BYTE 1 " 3 " 1 " 2 "	CHAR (3) " (1) ~ " (3)	Barometric Pressure	Millibars to 1/10
68 " 1 69-71 " 3 72 " 1 73-75 " 3 76-77 " 2 i i i i i 1 78 " 79 1 80-82 "	1 " 3 " 1 " 2 "	" (<u>1</u>) <i>ν</i> " (<u>3</u>)	Dry Bulb Temp, Sign	
69-71 " 3 72 " 1 73-75 " 3 76-77 " 2 . . .	3 " 1 " 2 "	<u>" (3)</u>		'+' or '-'
72 " 1 73-75 " 3 76-77 " 2 I I	1 "		Dry Bulb_Temperature	Centigrade
73-75 " 3 76-77 " 2 ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! ! !	2 14	" (1)	Wet Bulb Temp. Sign	'+' or '-'
76-77 " 2 i i)	(3)	Wet Bulb Temperature	Centigrade ·
i i i i i i i i i i i i i i i i i i i	2 "		Weather Code	WMO Codes 4677 + 4501
i i				When position 76 contains
i i :78 " 1 :79 " 1 : 80-82 " 3				an 'X' and a digit appears
 .78 " 1 79 " 1 . 80-82 " 3			,	in position 77 - WMO Code
			•	4501 was used.
79 " 1 - 80-82 " 3	1 "	" (1)	Cloud Type Code	WMO Code 0500 ·
• 80-82 " 3	1 "	" (1)	Cloud Amount Code	WMO Code 2700
	3 "	" (3)	Blank .	
83-86 4	4 .	<u> </u>	NODC Reference No.	Assigned by NODC
87-90 " 4	4 "	(4)	NODC Station ID No.	Assigned by NODC
· 91 " 1	1	· · · · (1)	Cruise Flag-	'l' = Cruise number differs
				from PARM field on
· · · · · · · · · · · · · · · · · · ·				control card. (Fatal)
92 " 1	1 " .	(1)	Ship Flag	'1' = Ship Code differs from
			· · · · · · · · · · · · · · · · · · ·	preceding stations.
:93 " 1	1 "	" (1)	Consec Flag	'I' = Any blank or over-
				punch in consecutive
·····			· · · · · · · · · · · · · · · · · · ·	number (Fatal)
:94 ⁿ 1	1 "	" (1)	Date-Time Flag	'1' = Date + Time are less
		· · ·	· · ·	than those on preceding
	•			station

Fege 2 of 10

RECORD DESCRIPTION

Code: D763 Date: MARCH 1980 Revision 3

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7630	3	• 	oĩ	10

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		_		-

Code: D763 Date: MARCH 1980

RECORD DESCRIPTION

Revision 3

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FILE MACE: ____ STATION DATA I FILE

MASTER RECORD (continued) RECORD NAME:

RELATION OF RECORD TO THE FILE:

ELECTRE LAU AND LEVEL		ATION	humber	CTT STAT	REFEAT FACTOR	ATTRIBUTES: TYPE, BASE, MODE, LANGLACE, PRECISION, ETC.	USAGE AND MEANING OF Element	CONDITIONS
• _ ; }	95	CHAR		BYTE		CHAR (1)	Month Flag	1'1'=Blank in month or month
· · · · · · · · · · · · · · · · · · ·	1		<u> </u>		<u> </u>			greater than 12 or less
· · · · · · · · · · · · · · · · · · ·	1.	<u> </u>	1	1		Ì	•	than Ol or overpunched (fatal)
	96	: CHAR	1	BYTE		· CHAR (1)	Day Flag	'1'=One Blank in day (but not
	!	i				ļ	•	all blank) or day greater
		!	1	1				than 28 Thru 31 depending
	1	<u> </u>	1	1	ļ			on month or overpunch in
:	i	<u> </u>		1	<u> </u>			day. (Fatal)
	: 97	CHAR	$\begin{bmatrix} 1 \end{bmatrix}$	BYTE		(1)	Obs. Flag	1'1'=Number of observed records
i			<u> </u>	<u> </u>	<u> </u>	<u> </u>	· · · · · · · · · · · · · · · · · · ·	does not equal number in
	1	1		<u> .</u>	<u> </u>			master record.
i	98	CHAR	1 1	BYTE	 	<u>CHAR (1)</u>	Hour Flag	<u>'1'=First two positions of</u>
·		<u> </u>	<u> </u>	·	<u> </u>	 	· · · · · · · · · · · · · · · · · · ·	<u>time blank but not all blank.</u>
·		<u> </u>	<u> </u>	<u> </u>		!) 	Overpunch in field or time
L		1	<u> </u>	0.00			• • • • • • • • • • • • • • • • • • •	greater than 23.9. (Fatal)
l	99	CHAR	<u>i 1</u>	BAIF	[CHAR (1)	LL Minutes Flag	'1'=Greater than 60 or
1	<u> </u>	<u> </u>	<u>[</u>	<u> </u>	<u> </u>	1	· · · · · · · · · · · · · · · · · · ·	one blank in minutes of lat.
· · · · · · · · · · · · · · · · · · ·	<u> </u>	ļ	<u> </u>	<u> </u>	<u> </u>	<u> </u>		and/or long. Overpunch in
·	1	1	<u> .</u>	1	<u> </u>	[tens or tenths. (Fatal)
	100	CHAR	11	BYTE	1	CHAR (1)	LL Degrees Flag	<u>'1'=Blank or overpunch in</u>
L	<u> </u>	<u> </u>	<u> </u>		ļ	· · · · · · · · · · · · · · · · · · ·		<u>lat. and/or long. degrees.or</u>
ļ		<u> </u>	ļ	<u> </u>	<u> </u>	!	· · · · · · · · · · · · · · · · · · ·	lat. greater than 90 or
·	1		1	1	1	1	· · · · · · · · · · · · · · · · · · ·	long. greater than 180. (Fata)
f	101	CHAR	<u>i 1</u>	BALE	<u> </u>	; CHAR (1)	Year Flag	11'=one blank or overpunch
ļ	<u> </u>	<u> </u>	÷	1	<u> </u>	<u> </u>		in field (Fatal)
l 		<u> </u>	<u> </u>		 			
<u> </u>	1		. <u></u>	J	<u> </u>	<u> </u>		

RELATION OF RECORD TO THE FILE:	CONDITIONS
TIE ENT LA P'LOCATION IEIGIA AND LEVEL OF A ST AN ST AN FACTOR REFEAT TYPE, BASE, USAGE AND MEANING MODE, LANGAGE, OF ELEMENT OF ELEMENT	CONDITIONS
IIF FUT LA F/LOCATION/IELGTH ATTRIBUTES: TYPE, BASE, MODE, LANGLACE, ST ST S	CONDITIONS
AND LEVEL ATTRIBUTES: AND LEVEL OF A STATE REFEAT REFEAT REFEAT MODE, LANGACE, OF ELEMENT	CONDITIONS
AND LEVEL OF A ST ST REFEAT TYPE, BASE, USAGE AND MEANING ST ST ST ST ST REFEAT TYPE, BASE, USAGE AND MEANING MODE, LANGAGE, OF ELEMENT ST ST S	CONDITIONS
AT A A FACTOR PRECISION, ETC.	'1'=No observed record
	11'=No observed record
	'1'=No observed record
102 CHAR 1 BYTE CHAR (1) · Card Type 3 or 4 Flag	types 3 or 4 (Fatal)
103 CHARI 1 BYTE I CHAR (1) Country Flag	'l'=Any blank in country
	·code. (Fatal)
104 CHAR! 1 BYTE I I CHAR (1) DNP Flag	'1'=Invalid entry for DNP Code
105-106 CHAR; 2 BYTE CHAR (2) . Max Day Flag	Two byte code giving maximum
	no. of days in month: 00=29,
	01=30, 10-31, 11=28.
107 CHARI 1 BYTE CHAR (1) Dep to Bot Flag	' 1'=Any blank in Depth to
	bottom or overpunch in last
	1 3 positions. (Fatal)
108 CHAR I BYTE CHAR (1) Fatal Flag	1'1'=Station contains an
	l error which must be correcte
	I or blanked out before it car
	! be finalized.
109 CHAR! 1 BYTE CHAR (1) Sequence Flag	'l'=Consec No. not one greate
	I than preceding no.
110-111 CHAR 2 BYTE CHAR (2) Rate of Speed	Knots If speed between
	stations is greater than
	;30,31 knots is shown.
112 CHAR 1 BYTE CHAR (1) i Record Type	Always 'l'

RECORD DESCRIPTION

Prie 4 of 10

STATION DATA T ETLE

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MASTER RECORD (continued)

BECORD NAME:

Revision 3

Code: D763 Date: MARCH 1980

Page 5 of 10

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Coče:	D763	Date:	MARCH 1980	
-		•	Revision 3	

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RECORD DESCRIPTION

FILE NAME: STATION DATA I FILE

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RECORD NAME: OBSERVED RECORD (#3 or #4)

RELATION OF RECORD TO THE FILE:_

LIENTY NAM	E/LCC	Cintes	Martine .	Untes 1	PEFEAT FACTOR	ATTRIA TYPE, MODE, PRECIS	SUTES: BASE LANGIÁCE, SION, ETC.	USAGE AND MEANING OF ELEMENT	CONDITIONS
·····	1-27	CHAR	27	BYTE		i CHAR	(27)	Duplicates first 27 charaters o	f Master Record
	28-30	11	3	<u>i "</u>	۰.	- 11	(3)	Messenger Time or Cast No.	100.0-99.9 or blank (GMT)
· ·				<u> </u>	İ				<u>i(If messenger time not given, '</u>
·	<u>i </u>	<u> </u>		<u></u>			•	·	<u>individual casts (1-9) are</u>
, 	<u> </u>			!	ļ			 	<u>identified in position 30)</u>
	31-36		6	; ."	<u> ·</u>	i "	_(6)	Depth of Sample	<u>Meters to Tenths - position</u>
					1			 	131 blank or 'T' for thermo-
·						ļ			imetric depth, position 36
• • ••••	1						· · · · · · · · · · · · · · · · · · ·		inumeric or blank
	13/ 1		<u> </u>	<u> </u>		} "	(1)	Depth Quality Indicator	16 - 9
·····	<u> </u>			<u>.</u>	<u> </u>	l .	•	l	10'=Uncorrected "Wire out"
، 	<u> </u>		<u></u>	1		ļ		l	i depth
· -	<u> </u>			<u>.</u>	<u> </u>				'/'=Implausible depth as
			!	<u> </u>	1	1		L	marked by NULL
<u> </u>					<u>i</u>	! 		<u> </u>	18 = Doubtrui depth as
	_			<u> </u>	<u> </u> ,	!		 	marked by originator
				<u>i</u>	<u> </u>	<u> </u>	······································		19"=Blank depth of sample
·	38-42		i 5.	<u> </u>		"	(5)	Temperature	-2.4 -44.0 Celcius position
L		i	<u> </u>	<u>.</u>	<u></u>	ļ		1	<u>1 38 is minus sign if negative</u>
·				i		<u> </u>			<u>lelse numeric value if positive</u>
· ·	43	i	<u> </u>			<u> </u>	(1)	Temp. Quality Indicator	17-9 (see Depth Indicator)
1 	44-48	<u> </u>	1 5	<u> </u>			(5)	Salinity	0.0-45.000 parts/thousand
·	49	· · · · · ·	i 1	i "		ļ	<u>(1)</u>	Salinity Quality Indicator	<u>17-9 (See Depth Indicator)</u>
!	1 30	1	ند ز جمعیات	<u> </u>	ļ	<u> </u>	(1)	Sigma- Sign	pius (+) or minus (-)
۱ 	51-54		4	i "	· <u> </u>	¹⁴	_(4)	Sigma-T	1-4.00 -45.00
۱ 	55-58	. " 	. 4	1 "	<u></u>	<u> </u>	(4)	Sound Velocity	1300.0 - 1600.0 meters/sec
l	<u> </u>	4	<u>; 4</u>			<u>"</u>	_(4)	l Uxygen	<u>00.0-14.00 milliliters/liter</u>

RICK RINN

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Fage <u>6</u> of <u>10</u>

Code: 0763 Date: MARCH 1980

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Revision 3

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RECORD DESCRIPTION

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FILE NAME: STATION DATA I FILE

RECORD NAME: OBSERVED RECORD (continued)

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RELATION OF RECORD TO THE FILE:

AND LEVEL	1100 1100 1100	Chit's		UNY 58	PEFEAT FACTCR	ATTRIE TYPE, I MODE, I PRECISI	ASE ASE ACTACE IOIT, ETC.	USAC	5 AND MEANING F Element	CONDITIONS
· · · · · · · · · · · · · · · · · · ·	63	CHAR	. 1	BYTE		CHAR	(1)	Oxygen Qual	ity Indicator	'8'=Doubtful as marked by
					•					originator'9'=Blank oxygen fiel
· · · · · · · · · · · · · · · · · · ·	64-60	5 "	<u>, 3</u>	: "		11	(3)	Inorganic	Phosphate	microgram-atoms/liter to
	1	<u> </u>	<u>i </u>	1						Hundreths (See Note)
·	67-69	} "	! 3	(II			(3)	Total Phos	phorus	microgram-atoms/liter to
	1	<u> </u>	i	<u>i .</u>	· ·				<u> </u>	Hundreths (See Note)
	70-72	<u> </u>	3	· · · · ·	i	L	(3)	<u> Nitrite - !</u>	Nitrogen	<u>microgram-atoms/liter to</u>
	!		<u>i</u>				·	i		Hundreths (See Note)
•	73-7	<u> </u>	; 3				(3)	Nitrate - N	Nitrogen	microgram-atoms/liter to
		<u> </u>	i	·	l			L	<u> </u>	Tenths (See Note)
· · · · · · · · · · · · · · · · · · ·	16-79	<u>+ "</u>	: 4	, " <u> </u>	l <u>··</u>		(4)	Silicate -	Silicon	microgram-atoms/liter to
	i	i	1	1		1				Tenths (See Note)
•	80-85	-1	; 3				(3)	pH		to Hundreths
	83-9	0 "	: 8	1 11		U U	(8)	Duplicates	positions 83-90 f	rom Master Record
	; 91		; 1				(1)	Last Depth	Flag	'1'=Depth of last observed
	i	1	1		1			i		card exceeded depth to
•		i		:	•					bottom shown on master
	!	Cont	tinuec	i on n	ext page	<u>5)</u>	•	1		record by over 10%
·		<u>i</u>	1 ·					i	· · · · · · · · · · · · · · · · · · ·	
: 	<u> </u>	1	<u> </u>	1	<u> </u>					
NOTE:	<u>: A11</u>	<u> chem</u>	istri	<u>es wil</u>	<u>l conta</u>	<u>in their</u>	appropr	<u>niate numeri</u>	<u>c values or the al</u>	<u>pha characters 'TRC' for trace</u>
1 	lor	'EXC'	ifor	excess	<u> </u>	1		1		·
	<u> </u>		<u>i</u>	<u>i</u>	<u> </u>	<u> </u>			•	
i	<u> </u>	<u> </u>	1	<u>i</u>	1	1		i 		
•	1		<u>.</u>	<u>.</u>	<u> </u>			ļ		
ا 	<u>i</u>	<u> </u>	1	<u>i</u>		<u> </u>		<u> </u>		· · · · · · · · · · · · · · · · · · ·
!	1	1	<u> </u>	<u> </u>	L	L		<u> </u>		

Code: D763 Date: MARCH 1

•MARCH 1980 Revision 3

RECORD DESCRIPTION

FILE MAR: STATION DATA I FILE

RECORD MANE: OBSERVED RECORD (continued)

RELATION OF RECORD TO THE FILE:

ELECTIT 1.4 AND LEVIL	A CC	ATION STA	Humber	CTT STIT	PEFEAT FACTOR	ATTRIBUTES: TYPE, BASE, MODE, LANGAGE, PRECISION, ETC.	USAGE AND MEANING OF SLEVENT	CONDITIONS
	; 92	CHAR	1	BYTE	·	CHAR (1)	Record ID Flag	1'1'= Positions 1 to 27
	1	1	Ι.				•	and 83 to 90 of detail
· · · · · · · · · · · · · · · · · · ·	i.		I		i		1	! card do not match those of
	1		l				• • •	i master record. Common care
	1	i				l		i of detail records is not
			i	!	1			edited or altered except the
د ور مو _{معر} مندانی ونتیجوروی و مرد ویرز		1	<u>i</u>	1	<u> </u>	 	<u> </u>	first position of cruise nu
, 	<u> </u>		1	<u> </u>	1	1		(pos. 83) is made zero if
		<u> </u>	<u> </u>	<u> </u>	i		·	blank. (Fatal)
i 	<u>93</u>	CHAR	<u>! 1</u>	BYTE	1	CHAR_(1)	Decreasing Depth Flag	<u>'1'=depths in detail records</u>
· · · · · · · · · · · · · · · · · · ·	<u> </u>	<u> </u>	<u> </u>	<u> </u>	1			<u>do not increase. (Fatal)</u>
<u>}</u>	94	CHAR	<u>! 1</u>	BYTE	<u>}</u>	<u>CHAR (1)</u>	PO4 Flag	<u> 1'=Phosphate (PO4-P) is</u>
İ		<u> </u>	<u> </u>		ļ		(greater than 4.00
	95	CHAR	$\frac{1}{1}$	BYTE	<u> </u>	<u>CHAR (1)</u>	Total P Flag	1 1 = lotal phosphorus is less
	<u> </u>		<u> </u>	<u> </u>	<u> </u>	 	•	than PU4-P. Compared 1f bo
	_ <u>_</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> .</u>		are present on same detail
	<u> </u>	·	<u> </u>	<u> </u>	<u> </u>	<u> </u>	ſ <u></u>	than TPC
<u></u>			<u> </u>		<u> </u>			
<u></u>	. 30			1 I I	<u> </u>			/STO2 Si) groaton than 3 OF
	07	I CHAD	1 1	IONTE	┟╼╌╍╼╼			
<u></u>			<u> 4</u>					
	1 08	CHAR	1	BYTE	1	CHAP (1)	NO3 Flag	$111 = Nitrato_nitragon$
	<u></u>	1	<u></u>	1				(NO3-N) greater than 45 00
·	. 99	CHAR	$\frac{1}{1}$	BYTE	<u> </u>	CHAR (1)	nH Flag	i^{1} = PN loss than 7 40 cm
·		1	<u></u>	1	;	1		1 more than 8 50
•[·		1	+	1	<u>†</u>			
		_		and the second sec			والمحاصي والمساجر والمشافلة والمحاجب والمحاجب والمحاج و	

	671	TTON				RECOR		
THE RACE!	<u> 51A</u>	TUN	UATA	I FILE		······	RECORD NAME : OBSER	VED_RECORD_(continued)
	Fecor	OT Ċ	THE 3	FILE:		•		
	1	•	•	-				
·								
:	e/toc	ATION	/=	त्त्राम		ATTRIBUTES:	· ·	i .
AND LEVEL					REFEAT	MODE LANGUAR	USAGE AND MEANING	COUNTRITONS
•	2	50 X	2	x ²	FACTOR	PRECISION ETC.	OF ELEMENT	CONDITIONS
	J.	5	.3	5				
	100	CHAR	i 1	BYTE	<u> </u>	CHAP (1) :	Plack Depth Flag	'1'=Embedded blank in
* <u>*</u>	1		i		<u></u>			field of detail reco
· · · · · · · · · · · · · · · · · · ·	101	CHAR	1	BYTE		i CHAR (1)	Temperature Flag	'l'=Blank in first 3
t t	1		l	1 ·		1		of temperature or te
	1	i	1				•	than - 2.4 degrees of
	ŀ		<u> </u>	1				than 44.0 (Fatal)
دو داو هوهمیشمبه والبرای های «هن خوم	102	<u>: CHAR</u>	1	BYTE	l	<u> CHAR (1)</u>	Salinity Flag	<u> </u>
<u>.</u>	<u> .</u>	<u>, </u>	<u> </u>	<u> ·</u>			1	positions of salinit
; 	· <u>·</u> ······	<u> </u>	 	<u> </u>	 /	1	 	AS O (Sating greater that
,	102	<u> </u>	1 9	DVTC	l		Coot Time Elen	45.0 (Fatal)
	<u>. 103</u>	LHAK	<u>'</u>	· BYIE			last lime_riag	positions of cast ti
· · ·	104	CHAR	1	BYTE	[CHAR (1)	Denth Quality Flag	'1'=Ouality indicator
}	1		<u> </u>		<u> </u>			depth is not a numbe
	1	Ī	i	1	1	· ·	•	or 'P', 'O' or 'Z'
1	105	I CHAR	1	BYTE	1	. CHAR (1)	Temp, Quality Flag	'1'=Quality indicator
1	i	1		1	1	1		temp. is not a numbe
) ; ;	!	<u> </u>	1	1		<u>}</u>	·	blank, or 'P' or 'Q'
ļ	<u>.106</u>	<u>CHAR</u>	<u>"_1_</u>	BYTE	<u>ļ</u>	<u> CHAR (1)</u>	Salinity Quality Flag	U1'=Quality indicator
	<u> </u>	<u> </u>	<u> </u>	- <u> </u>	<u> </u>	1	1	sainnity is not a nu
	1	1	<u> </u>	<u> </u>	¦		I.	j Diank, or 'P' or 'Q'
!	1107							
[:107	CHAR	<u> 1</u>	BYTE	1	<u> </u>	I I I I I I I I I I I I I I I I I I I	I -DIANK IN INSU CW
·	:107 !			BYTE	<u> </u> 	<u> CHAR (1).</u> 		positions of oxygen

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field of detail record. (Fat: 'l'=Blank in first 3 position of temperature or temp less than - 2.4 degrees or greater

'1'=One blank in first 2 positions of cast time '1'=Quality indicator for depth is not a number, blank

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Coce: D763 Date: MARCH 1980

Revisión 3

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RECORD DESCRIPTION

FILE MANE: STATION DATA I FILE

RECORD NAME: OBSERVED RECORD (continued)

RELATION OF RECORD TO THE FILE:

AND TENTEL PRETAT TYPE, PASS (MODE_LARCACCE PRECISION, ETC. USAGE AND MEANING OF SLEMENT CONDITIONS 008 CHAR 1 RYTE CHAR (1) Blank Chemistry Flag 11"=Blank in first two positions of one or more fields of chemistry, but whole field is not blank 009 CHAR 1 BYTE CHAR (1) Sigma-T Anomaly Flag '1"=Sigma-T decreases 1 1 1 1 1 Whole field is not blank 109 CHAR 1 BYTE CHAR (1) Sigma-T Anomaly Flag '1"=Sigma-T decreases 110 1 1 1 1 1 1 111 CHAR 1 BYTE CHAR (1) Record Type '3' or '4' 112 CHAR 1 BYTE CHAR (1) Record Type '3' or '4' 112 CHAR 1 BYTE CHAR (1) Record Type '3' or '4' 112 CHAR 1 1 1 1 1 113 1 1 1 1 1 114 1 1 1 1 1 113 1 1 1 1 1 114 1 1 1 1 1 115 1 1 1 1	1			ATIO	70	:CTH	/	ATTRIBUTES:	•	· · · · · · · · · · · · · · · · · · ·
	1	dievel. .:	· 57	216	under.	11 ts	REFEAT FACTOR	TYPE, BASE, MODE, LANGACE, PRECISION, ETC.	USAGE AND MEANING OF ELEMENT	CONDITIONS
108 CHAR (1) Blank Chemistry Flag 112 Elank in first two 1 1 1 1 positions of one or more 1 1 1 1 whole field is not blank 109 CHAR 1 BYTE CHAR (1) Sigma-T Anomaly Flag '1'=Sigma-T decreases 109 CHAR 1 BYTE CHAR (2) BLANK by more than 0.02 110-111 CHAR 2 BYTE CHAR (1) Record Type '3' or *4' 112 CHAR 1 BYTE CHAR (1) Record Type '3' or *4' 112 CHAR 1 BYTE CHAR (1) Record Type '3=Normal Observed Record 112 CHAR 1 I I Interature Record Interature Record I I Interature Record Interature Record Interature Record Interature Record I Interature Interature Interature Record Interature Record Interature Record Interature Record I Interature Interature Interature Interature Interature Interature I Interature	ļ		**	12.	<u> </u>	12.	ļ			
Image: Second	•		108	<u>. CHAR</u>	<u> </u>	BYTE	<u> </u>	CHAR_(1) `	Blank Chemistry Flag	·1'=Blank in first two
Image: Second				<u> </u>	!	<u>!</u>		<u> </u>	· · · · · · · · · · · · · · · · · · ·	positions of one or more
Image: Image:			┟╧━━━	1	ļ	<u> </u>	<u> </u>		- <u></u>	fields of chemistry, but
109 CHAR 1 SYTE CHAR (1) Stigma-1 Anomaly Flag 1 = 5tigma-1 decreases 110-111 CHAR 2 BYTE CHAR (2) BLANK by more than 0.02 112 CHAR 1 BYTE CHAR (1) Record Type '3' or '4' 112 CHAR 1 BYTE CHAR (1) Record Type '3' or '4' 12 CHAR 1 BYTE CHAR (1) Record Type '3' or '4' 12 CHAR 1 BYTE CHAR (1) Record Type '3' or '4' 12 CHAR 1 BYTE CHAR (1) Record Type '3' or '4' 12 I I I Image: State of the state of t				1	<u> </u>		¦			whole field is not blank
110-111 CHAR (2) BLANK 112 CHAR (1) Record Type '3' or '4' 112 CHAR (1) Record Type '3' or '4' 112 CHAR (1) Record Type '3' or '4' 111 111 111 '3=Normal Observed Record 111 111 111 '3 111 111 111 '3 111 111 111 '3 111 111 111 '3 111 111 111 '3 111 111 111 '3 111 111 111 '3 111 111 111 '3 111 111 111 '3 111 111 111 <td< td=""><td></td><td></td><td><u>109</u></td><td>CHAR</td><td><u>; 1</u></td><td>BYIE</td><td>· · · · · · · · · · · · · · · · · · ·</td><td>CHAR (I)</td><td>Sigma-I Anomaly Flag</td><td>1 = Sigma - L decreases</td></td<>			<u>109</u>	CHAR	<u>; 1</u>	BYIE	· · · · · · · · · · · · · · · · · · ·	CHAR (I)	Sigma-I Anomaly Flag	1 = Sigma - L decreases
III0-III CHAR (2) BLANK II2 CHAR (1) BYTE II2 CHAR (1) Record Type II2 CHAR (1) III II2 CHAR (1) Record Type II2 CHAR (1) IIII IIII (IIIII) IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII			 	1	<u> </u>	1	 			by more than 0.02
112 CHAR 1 BY1E CHAR 1 Sort 4 1 1 1 1 Sort 4 Sort 4 1 1 1 1 Sort 4 1 1 1 Sort 4 1 1 </td <td><u></u></td> <td></td> <td><u>+111</u></td> <td>CHAR</td> <td>2</td> <td>BYIE</td> <td>1</td> <td>1 CHAR (2)</td> <td>BLANK</td> <td></td>	<u></u>		<u>+111</u>	CHAR	2	BYIE	1	1 CHAR (2)	BLANK	
	<u>.</u>		<u>µ12</u>	CHAR	<u> </u>	BYIE	l		Record Type	3. or 4.
				+	<u> </u>	 		1		3=Normal_Observed_Record
	·			<u></u>	1	1 .	<u> </u>			<u>4=literature_Record</u>
					1	<u> </u>	 	·		
	<u>!</u>			+		+		t	<u></u>	
	}			+	1	+	<u> </u>		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
	-		┼───		<u> </u>	+	<u> </u>		· · · · · · · · · · · · · · · · · · ·	
	<u>.</u>		+		<u></u>	- <u></u>	1	1		
			<u> </u>		<u></u>	<u>.</u>	<u></u>	<u> </u>		
	<u>-</u>			<u> </u>	<u>+</u>	- <u></u>	<u> </u>	·		····
				1	<u> </u>	1	<u> </u>	<u>·</u>		· · · · · · · · · · · · · · · · · · ·
			┼╌┷	<u> </u>	.	1	<u>├</u>	1	·····	
				1	1		1	1	<u> </u>	
	<u></u>		┼───		<u>.</u>	÷	<u> </u>	<u> </u>		
		<u>.</u>	+	+	<u>i</u>	<u> </u>	<u>.'</u>		<u> </u>	······································
			+		<u>.</u>	<u>.</u>	<u></u>		<u> </u>	<u> </u>
			+	1	<u>†</u>	1	i	· · · ·		<u> </u>
			1	<u> </u>	<u>.</u> 1	<u>i</u>	<u></u>	<u> .</u> .		<u> </u>
	-		-f	 	1	<u>†</u>	i	<u>.</u>		

	Fage	10	01	<u> 10 </u>
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	•	RICK P	RINN	•
Coče:	D763	Cate	MARCH	1980
-			Revisi	on 3

RECORD DESCRIPTION

FILE NAME: STATION DATA I FILE

RECORD NAME: STANDARD RECORD (#6 or #7)

RELATION OF RECORD TO THE FILE:_

AND LEVEL	TEL TOCATION	Unites .	PEFIAT FACICR	ATTRIBUTE TYPE, BAS MODE, LANC PRECISION	S: E. FAC. , ETĆ.	USACE AND MEANING OF ELEMENT	CONDITICUS
· · · · · · · · · · · · · · · · · · ·	1-27 CHAR 27	BYTE		i CHAR_(27)	Duplicates first 27 characters (df Master Record
	28-30 3	i "	Į•	u (3)	BLANK	· · ·
	31-36 6	<u>i</u> "	i	· · · · · · · · · · · · · · · · · · ·	6)	Depth	meters-pos 31 + 36 blank
	<u>i 37 i " i 1</u>	; "	<u> </u>	" (1)	Temperature Sign	plus (+) or minus (-)
	38-41: " ! 4		· .	l(4)	Temperature	Celcius
	42-43 i 2	"	<u> </u>	· · · · · · · · · · · · · · · · · · ·	2)	I BLANK	· · · · · · · · · · · · · · · · · · ·
	44-4/1 4		<u>i</u>	<u> </u>	4)	Salinity	parts/thousand
	48-49 2	; " <u> </u>	<u> </u>	· · · · · · · · · · · · · · · · · · ·	2)	IBLANK	·
·			<u> </u>		1.)	ISigma-T Sign	plus (+) or minus (-)
• ••••••••••••••••••••••••••••••••••••	<u>51-54; " 4</u>		<u>į</u>	<u> </u>	4)	Sigma-T	\
1	<u> 55-58; " 4</u>			<u> . </u>	4)	Sound Velocity	meters/second
·	<u>59-62; " 4</u>	_ i "	<u> </u>	(4)	Oxygen	milliliters/liter
	<u>63 [" i 1</u>	<u> </u>	<u>] · </u>	<u>) </u>	1)	BLANK	
	<u>i64 i " i 1</u>			<u> </u>	1)	Dynamic Depth Sign	plus (+) or minus (-)
<u></u>	<u>65-68' i 4</u>	i "			<u>4)</u>	Dynamic Depth Anomaly	
	169 " : 1		1	<u> </u>	1)	Spec. Val. Sign	'plus (+) or minus (-)
· · · ·	70-75: " 6	n - n	1	<u> </u>	6)	Specific Volume Anomaly	
	<u>76-82; " ; 7</u>	1 1		<u> </u>	7)	BLANK	
L	<u>83-90; " 8</u>			<u>) " (</u>	8)	Duplicates positions 83-90 of M	aster Record
· · · ·	91-108 " 1	<u>8 i "</u>	·		18)	Unused Flags	All zero
· · · · · · · · · · · · · · · · · · ·	<u> 109 " 1</u>		1	<u> </u>	1)	Sigma T. Anomaly Flag	<u>''1'=Sigma-T decreases by</u>
!		1		1			i more than 0.02
I	<u>110-111 " i 2</u>	; II		<u> </u>	2)	BLANK	
<u>.</u>	112 1		1	<u> </u>	1)	Record Type	16' or 171
·	1i		1	1			1 6=Normal standard record
l 		<u>i</u>		<u> </u>			7=Originator interpolated
1	_ <u>i</u>	<u> </u>		1		<u> </u>	depths

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	1	2	3	4	5	6	,	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Ż6	27	28	29	30	31	32	33	34 3	15 3	ő [3	37	38	39	40	41	42	43	44	45	46	47
1	۲				W.						VEIN													·				1					1	1	1	1	1		-						1	1	1
2	1T.R	ы Ш	110	10	H &	Ŀ	ഗ		1-1	2	G I	NA VA	ĒG		NC:	T A			DC BC	28		2		0					<		ণ্	3		5	5									E	2	5	1
3	Ĵ	5	v	5	LAT	Ĵ	<u>.</u>		1		101	নি	F		거	42			. 6.	26		YE		Ē		7			0	-	Ê	U U	Ħ	3		ř†	┥							Ρ	+	4	-
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5					•												•											+				+		+	1	+									<u>+</u>	+ i	+ -
6			 									┢																-			1	1	-	L.	+	+	3				-		ŝ			2	-+
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TRANSMITTAL	AND RECEIPT RECORD	
(Please sign and return co	arbon copy acknowledging receipt)	
O: NOAA/NESDIS/NODC	REFER TO	
1825 Connecticut Ave NW		
Washington DC 20235	ATTENTION	
HE ITEN(S) I ISTED BELOW WERE FORWARDED TO YOU BY	E/OCI3, Dr. Anthony R. Pic	201010
MAIL MAIL MAIL MAIL		
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Enclosed, find documentation (includ and data formats) and one (1) magnet files of the Fletchers Ice Island T- productivity data as received from D Postel, UW, oceanography dept	ing 28 DDF's, printouts of the ic data tape containing a total 3 hydrographic, chlorophylls an rs. Rita Horner, Karl Banse and	digital data, of five (5) d primary Mr. Jim
Tape layout		
Files 1-3 contain the hydrographic (station, physical oceanographic) data.
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School of Oceanography, WB-10 University of Washington Seattle, Washington 98195 August 31, 1987

Mr. Sid Stillwaugh Northwest Liaison Office NOAA/NESDIS/NODC Bin C15700/Building 1 7600 Sand Point Way NE Seattle, Washington 98115

Dear Sid:

Enclosed are the file format descriptions to accompany the data tape I created on the University of Washington CYBER 180-855 computer with Tom English's hydrographic, chlorophyll, and productivity data from Ice Island T-3.

There are five separate files on the magnetic tape. The first three files contain hydrographic data in the "Station Data I File" format (Attachment A). (I have left the various 'flag' columns blank for NODC to fill in after they read and accept the data.). There are three files of hydrographic data just because that gave me convenient file sizes to use on the CYBER. The fourth file contains chlorophyll data in the format specified in Attachment B. The fifth file contains the productivity data in the format specified in Attachment C. If there are any questions about these formats I will be happy to clarify them for you.

For ease in writing this tape for you, I wrote all files as though the record length was 120 characters, resulting in a lot of blank columns in the chlorophyll and the productivity files. The first four files start right out with the data. The productivity file starts out with four comment lines that tells you that the station names cannot be matched directly with station names in the other two file types because Tom's group kept different station sequences for each data type.

The following information will aid in reading this tape. Attributes as expressed in FORTRAN. Responsible Computer Specialist: James R. Postel (206) 543-6141 or (206) 543-5093 School of Oceanography, WB-10 University of Washington Seattle, WA 98195 Recording Mode: EBCDIC Number of Tracks: Nine Parity: Odd Density: 1600 bpi Length of inter-record gap: 3/4 inch End of File Mark: Tape Mark Record Length: 120 characters Block Length: 3000 characters (25 records/block) Paper Label: VSN = NDCENG; T3 DATA TO NODC (5 files); Originator = T.S. English & K. Banse

James R. Postel

ATTACHMENT B

.

RECORD FORMAT DESCRIPTION								
RECORD NAME. Chiorophy	Co	lum	8	Card Type -				
Field Name	Start	End	Length	Attributes	Use and Meaning			
	1	1	1	1X	Blank			
Cruise	2	7	6	A6	P.I.'s Designation			
	8	9	2	2X	Blank			
Record Type	10	10	1	11	0 = Cruise Header			
Platform	11	21	11	A11	Always "T3 ICE ISLD"			
Cruise	22	27	6	A6	Repeat Col. 2-7			
Beginning Year	28	29	2	12	Last 2 digits of year			
Slash	30	30	1	A1	Always "/"			
Beginning Month	31	32	2	12	Local month(01-12)			
Slash	33	33	1	A1	Always "/"			
Beginning Day	34	35	2	12	Local day $(01-31)$			
Dash	36	36	1	A1	Always "_"			
Ending Year	37	38	2	I2	Last 2 digits of year			
Slash	39	39	1	A1	Always "/"			
Ending Month	40	41	2	12	Local month(01-12)			
Slash	42	42	1	A1	Always "/"			
Ending Day	43	44	2	12	Local day $(01-31)$			
Investigator	45	63	19	A19	Always"T.S. ENGLISH "			
Institution	64	75	12	A12	Always "UNIV OF WASH"			
	76	120	44	44X	Blank			
					• •			
RECORD NAME: Chlorophy	11 Stat	ion	Header	(Card Type =	= 1)			
	Co	lum	18		•• • • •			
Field Name	Start	End	Length	Attributes	Use and Meaning			
	1	1	1	1x	Blank			
Cruise	2	7	6	A6	P.I.'s Designation			
	8	9	2	2X	Blank			
Record Type	10	10	1	11	1 = Station Header Record			
	11	12	2	2X	Blank			
Station Name or Number	13	15	3	A3	P.I.'s Designation			
Latitude	16	21	6	12.F4.1	Latitude as DDMM.M			
Latitude Hemisphere	22	22	1	A1	Always "N"			
Longitude	23	29	- 7	13.F4.1	Longitude as DDDMM.M			
Longitude Hemisphere	30	30	1	A1				
Station Date	31	36	6	312	Local Date as YYMMDD			
Station Time	37	40	4	212	Local Time as HHMM			
	41	120	80	801	Blank			
		120	00	OUA	DIGUR			
RECORD NAME: Chlorophy	11 Stat	tion	Detail	(Card Type	= 3)			
Riald Name	Co	olum	18		No. and Manada			
	Start	End.	Length	Attributes	Use and meaning			
	1	1	1	1X	Blank			
Cruise	2	7	6	A6	P.I.'s Designation			
	8	9	2	2X	Blank			
Record Type	10	10	1	11	3 = Station Detail Record			
	11	12	2	2X	Blank			
Station Name or Number	13	15	3	A3	'P.I.'s Designation			
	16	16	1	1X	Blank			
Depth	17	20	4	F4.1	Meters to tenths (xxx.x)			
•	21	21	j	1X	Blank			
Chlorophyll a	22	24	3	F3.2	MG/M3 to hundreths (x.xx)			
	25	120	96	6X	Blank			

ATTACHMENT C

RECORD FORMAT DESCRIPTION

RECORD NAME: Productivi	ty Stat	tion olum	Header	(Card Type =	1)
Field Name	Start	End	Length	Attributes	Use and Meaning
	1	6	6	6X	Blank
Cruise	7	12	6	A6	P.I.'s Designation
	13	13	1	1X	Blank
Station Name or Number	14	16	3	A3	P.I.'s Designation
	17	17	1	1X	Blank
Station Date	18	23	6	312	Local Date as YYMMDD
	24	25	2	2X	Blank
Latitude	26	29	4	212	Latitude as DDMM
Latitude Remisphere	30	30	1	· A1	Always "N"
-	31	31	1	1X	Blank
Longitude	32	36	5	13,12	Longitude as DDDMM
Longitude Hemisphere	37	37	1	A 1	Always "W"
	38	38	1	1X	Blank
Millicuries C-14 Added	39	42	4	F4.2	Amount to hundreths(xx.xx)
	43	46	4	4X ⁻	Blank
Total Incubation Length	47	49	3	F3.1	Hours to hundreths(x.xx)
_	50	54	5	5 X	Blank
Station Time	55	58	4	212	Local Time as HHMM
	59	59	1	18	Blank
Record Type	60	60	1	11	1 = Station Header Record
	61	120	60	60X	Blank

RECORD NAME: Productivity Station Detail (Card Type = 3)

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•	Columns						
Field Name	Start	End	Length	Attributes	Use and Meaning		
	1	6	6	6X	Blank		
Cruise	7	12	6	A 6	P.I.'s Designation		
	13	13	1	1X	Blank		
Station Name or Number	14	16	3	A 3	P.I.'s Designation		
	17	17	1	1X	Blank		
Depth	18	21	4	F4.1	Meters to tenths (xxx.x)		
	22	22	1	1X	Blank		
Chlorophyll a	23	26	4	F4.2	MG/M3 to hundreths(xx.xx)		
	27	27	1	1X	Blank		
Light Source Intensity	28	31	4	14	Foot-candles (xxxx)		
-	32	32	1	1X	Blank		
Sample Light Level	33	35	3	13	Percent (xxx%)		
	36	38	3	3X	Blank		
Light Bottle C-14 Uptake	39	43	5	F5.3	MG/M3/HR to thousandths		
	44	45	2	2X	Blank		
Dark Bottle C-14 Uptake	46	50	5	F5.3	MG/M3/HR to thousandths		
•	51	53	3	3X	Blank		
Net C-14 Uptake(light-dar)	k) 54	58	5	F5.3	MG/M3/HR to thousandths		
	59	59	1	1X	Blank		
Record Type	60	60	1	11	3 = Station Detail Record		
	61	120	60	60X	Blank		

NOAA FORM 24-5 (8-73)	U.S. DI NATIONAL OCEANIC AND ATM	EPARTMENT OF COMMERCE DEPHERIC ADMINISTRATION							
TPANSMITT									
(Please sign and return carbon copy acknowledging receipt)									
TO: NOAA/NESDIS/NODC	REFER TO								
1825 Connecticut Ave NW	ATTENTION								
Washington DC 20235	E/OC13. Dr. Anthony R.	Piccipio							
THE ITEM(S) LISTED BELOW WERE FORWARDED TO YOU B	Y								
ORDINARY 🔲 RÉGISTERED 🗖 AIR	CERTIFIED GOVERNMENT BY	HAND OTHER							
	Cert. no.	523153							
Enclosed, find documentation (inc. and data formats) and one (1) mag files of the Fletchers Ice Island productivity data as received from Postel, UW, oceanography dept	luding 28 DDF's, printouts of t netic data tape containing a to T-3 hydrographic, chlorophylls m Drs. Rita Hornér, Karl Banse	the digital data, stal of five (5) and primary and Mr. Jim							
Tape layout									
Files 1-3 contain the hydrographic File 4 is the chlorophyll data. File 5 is the primary productivity	c (station, physical oceanograp y data.	hic) data.							
**Please refer to the enclosed cover regarding both the tape layout an	er letter, it contains complete nd tape specifications.	information							
CC. DI. KILA Horner, Uw, Oceanogra	apny								
FORWARDED BY (Sidentine)									
Sid Stillwaugh	NODC Listen Officer Seattle	IN AF OT							
RECEIVED BY (Signature)	TITLE	DATE PECEIVED							

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References ->0 2 Goldman, C. R. 1963. The measurement of primary productivity and limiting factors in freshwater with carbon-14, pp. 103-113. In M. S. Doty, ed., Proceedings of the Conference on Primary Productivity Measurement, Marine and Freshwater, University of Hawaii, 1961. U.S. Atomic Energy Commission TID-7633. Holm-Hansen, O., C. J. Lorenzen, R. W. Holmes, and J. D. H. Strickland. 1965. Fluorometric determination of chlorophyll. J. Cons. perm. int. Explor. Mer 30:3-15. Hunkins, K., and W. Tiemann. 1977. Geophysical Bata Summary for Fletcher's Ice Island (T-3) May 1962-October 1974. Part A: Geophysical Data Listings, Part B: Bathymetric, Geomagnetic, and Gravity Profiles, Part C: Seismic Reflection Profiles. Tech. Rep. No. CU-1-77. Lamont-Doherty Geological Observatory, Palisades, NY. 219 pp. Larrance, J. D. 1964. A method for determining volume of phytoplankton in a study of detrital chlorophyll a. M.S. Thesis, University of Washington, Seattle. 107 pp. Macanen, me - A. Daly 1804. Mullin, M. M., P. R. Sloan, and R. W. Eppley. 1966. Relationship between carbon content, cell volume and area in phytoplankton. Limnol. Oceanogr. 11:307-311. D-Scott, D. A. 1969. Seasonal and vertical distributions of zooplankton in the Canadian Basin of the Arctic Ocean. M. S. Thesis, University of Washington, Seattle. 156 pp. Steemann-Nielsen, E. 1952. The use of radio-active carbon for measuring organic production in the sea. J. Cons. perm. int. Explor. Mer 18:117-140. Strickland, J. D. H. 1960. Measuring the production of marine phytoplankton. Bull, Fish. Res. Board Canada 122:1-172. Strickland, J. D. H., and T. R. Parsons. 1965. A Manual of Sea Water Analysis. Bull, Fish. Res. Board Canada 125:1-Strickland, J. D. H., and T. R. Parsons. 1968. A Parctical Handbook of Seawater Analysis. Bull. Fish. Res. Board Canada 167:1-311. **B** Vindustrial Instruments, Inc. 1964. Instruction Manual for Model RS-7A Portable Induction Salinometer. Industrial Instruments, Inc., Cedar Grove, NJ. Unesco. 1966. Determination of photosynthetic pigments in sea-water. Monographs on Oceanographic Methodology 1. Unesco, Paris. 69 pp.

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Wist, G. 1933. Thermometric measurement of death. Hydrog. Rev. 10: 28-49.

(Hughes, K. H. 1903. Seasonal vertical Distributions of copyrin - the Ardiwater in the Condian Grin of the North Pola. Son 13. 5 item, Un work., Scattle, 84 pp. with pumping stations to assure comparability.

Sampling with a 2 m² closing umbrella net began in September 1967 (Scott , with a kilkatim ruhing 1.25:1, Maran > And 1987 1969). Mesh size was 215 and 569 µm. This net was the principal sampling device throughout the remaining field program though the netting itself was replaced with (4:1 Rithohim satis) and subsequent sample were collected with a high filtration type mesh in March 1972. Samples were collected from as deep in his put as 2500 m. untrela Two other kinds of nets were sometimes employei: a 3 m² closing net with 300 µm mesh in summer 1968 and a 1 m plummet/net with 571 µm mesh initially in May 1971 and periodically thereafter. (rach 3) Sorting, identifying, and counting of samples were done in Seattle. Echo-sounding was conducted from April 1970 to April 1974. A modified Ross 200A (100 kHz) echo-sounder and a 10° transducer with an impedance matching box scanned depth ranges of 0-50, 50-100, 100-150, and 150-200 fm. The 0-50 fm depth range was emphasized because of interest in the scattering layer often found at 25 fm. The system included the standard Ross 200A transceiver unit, recorder unit, and a Sony TC-5600 stereo tape recorder. During regular operation, echosounding was conducted continuously, normally on the 0-50 fm scale. Daily recordings of 15-45 min were made using all depth ranges. Modifications of this general sampling and analysis scheme, if any, are given with the individual cruise data documentation forms. An overlapping sampling scheme was word stocking in clatse -1969. Sampling Leptie were at 10 m intervalos from 300 + 10 m, 100 mi intersales from 1000 to 10 m and 500 mintersales from the bottom to 10 m. the 10 m appr limit was chosen to gist ant the set dering retrieved thought the higher hale.

La forting

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AIDJEX data RU 359 - Any FF 029 Dr. T.S. English T-3 data + 0 _____ E cho sounder data and 1/4" topen location, date, machine type and depth ranges and frequencies are known and available. (april 1970-1974) modified Ross 200A eduorounder * 21 rells of tope (Don Scott, 7/HI-Bill Friett- Nosc Coccon Sciences 805-965-6575) 808-254 (000-2000-1000-2000 lab sheets - date Time, by implications- pointion depth of haul, gear type - come even have haul log sheets (2 - 5 ft long shelves of lab books) need a copy of the Lamont - Doherty Report (see separate sheet) - for station locations come buch there - bring ATDJEX files and OCSEAP date.

DATA DOCUMENTATION FORM

HOA .: ORM 24-13 (4-77) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEANOGRAPHIC DATA CENTER RECORDS SECTION WASHINGTON, DC 20235 FORM APPROVED O.M.B. No. 41-R2651 EXPIRES 1-81

(While you are not required to use this form, it is the most desirable mechanism for providing the required ancillary information enabling the NODC and users to obtain the greatest benefit from your data.)

This form should accompany all data submissions to NODC. Section A, Originator Identification, must be completed when the data are submitted. It is highly desirable for NODC to also receive the remaining pertinent information at that time. This may be most easily accomplished by attaching reports, publications, or manuscripts which are readily available describing data collection, analysis, and format specifics. Readable, handwritten submissions are acceptable in all cases. All data shipments should be sent to the above address.

A. ORIGINATOR IDENTIFICATION

THIS SECTION MUST BE COMPLETED BY DONOR FOR ALL DATA TRANSMITTALS

1. NAME AND ADDRESS OF IN	STITUTION, LABOR	ATORY, OF	R ACTIVITY WIT	H WHICH SUBM	ITTED DATA AP	REASSOCIATED			
T. Saunders English	1								
School of Oceanogra	School of Oceanography WB-10								
University of Washi	University of Washington								
Seattle, WA 98195									
2. EXPEDITION, PROJECT. OF	2. EXPEDITION, PROJECT, OR PROGRAM DURING WHICH 3. CRUISE NUMBER(S) USED BY ORIGINATOR TO IDENTIFY								
DATA WERE COLLECTED			DATA IN TH	IS SHIPMENT					
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TSE-(T-3)-01 16 Mar - 09 Apr 1966

Modifications to basic Program Methods

Thirty-eight (38) zooplankton samples were collected with an open 0.5 m ring net having a mesh size of 215 μ m. Vertical hauls were taken at intervals between the surface and 3800 m.

Two hydrographic station were taken and samples (48 each) were collected for temperature, salinity, and dissolved oxygen. For hydrographic data see: Tripp, R. B. 1967. Physical and chemical data from Fletcher's Ice Island

(T-3): Beaufort Sea area, January-May 1966. University of Washington, Department of Oceanography Technical Report No. 187. 62 pp.

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NAME OF DATA FIELD	REPORTING UNITS OR CODE	METHODS OF OBSERVATION AND INSTRUMENTS USED (SPECIFY TYPE AND MODEL)	ANALYTICAL METHODS (INCLUDING MODIFICATIONS) AND LABORATORY PROCEDURES	DATA PROCESSING TECHNIQUES WITH FILTERING AND AVERAGING	
Water transparen	cy meters	Secchi Disk	N/A	N/A	
Depth of Sample	meters	Wire out	N/A	N/A	
Temperature	°C	Reversing thermometers	N/A	n/a	
Salin ity	•/	Nansen bottles, modified Van Dorn bottles	Salinometer, University of Washington	N/A	
Sigma-t	-		_	N/A	İ.
Dissolved oxygen	m1/1	11	Winkler	N/A	ľ
Р0 ₄	μg-atom/1	œ	See Strickland and Parsons (1968)	N/A	.
NO ₃	18	**	11	N/A	
S104		н	· · · ·	N/A	
Chlorophyll <u>a</u>	mg m ^{−3}	Van Dorn bottles	Spectrophotometer, fluoro- meter (Strickland and Parsons 1963)	N/A	
Primary productivity (¹⁴ C uptake)	mg C m ⁻³ h ⁻¹	89	Strickland and Parsons (1968)	N/A	

B. SCIENTIFIC CONTENT

C. DATA FORMAT

COMPLETE THIS SECTION FOR PUNCHED CARDS OR TAPE, MAGNETIC TAPE, OR DISC SUBMISSIONS.

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1. LIST RECORD TYPES CONTAINED IN THE TRANSMITTAL OF YOUR FILE GIVE METHOD OF IDENTIFYING EACH RECORD TYPE

2. GIVE BRIEF DESCRIPTION OF FILE ORGANIZATION

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6. NUMBER OF TRACKS	SEVEN	X Tape Mark
		11. PASTE-ON-PAPER LABEL DESCRIPTION (INCLUDE
	ANINE	ORIGINATOR NAME AND SOME LAY SPECIFICATIONS OF DATA TYPE. VOLUME NUMBER)
	<u> </u>	Ice Island T-3 hydro, chlorophyll. &
7. PARITY		Productivity data sets.
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NT 44 FORM 14- 1

D. INSTRUMENT CALIBRATION

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This calibration information will be utilized by NOAA's National Oceanographic Instrumentation Center in their efforts to develop calibration standards for voluntary acceptance by the oceanographic community. Identify the instruments used by your organization to obtain the scientific content of the DDF (i.e., STD, temperature and pressure sensors, salinometers, oxygen meters, velocimeters, etc.) and furnish the calibration data requested by completing and/or checking (" $\sqrt{}$ ") the appropriate spaces. Add the interval time (i.e., 3 months, 6 months, 9 months, etc.) if the fixed interval calibration cycle is checked.

	DATE OF LAST CALIBRATION	INSTRUMENT WAS	CHECK ONE: INSTRUMENT IS CALIBRATED					INSTRU- MENT IS	
(MFR., MODEL NO.)		YOUR ORGANIZATION	ÓTHER ORGANIZATION (GIVE NAME)	AT FIXED	BEFORE OR After Use	BEFORE AND AFTER USE	ONLY AFTER REPAIR	ONLY WHEN NEW	NOT CALI- BRATED
Fluoro meter Turner Model 111		x			x				
Reversing thermometers		x	manufacturer		X				
Salinometer Univ. Washington		x			x				
Naval Arctic Research Lab.		x			x	•			

NOAA FORM 24-13

I.
Primary Production and Energy Flow

The program was directed by the late Dr. T. Saunders English and funded by the Office of Naval Research Contract Nonr-477 (37) Project NR 083 12 and Contract N00014-67-0103-0005. Users of the data are requested to acknowledge the agency support.

The methods used by biological oceanographers of the Department of Oceanography, University of Washington, Seattle, from 1966 to 1974 on Fletcher's Ice Island (T-3) drifting in the Arctic Ocean (Fig. 1) are given below. These methods are to compliment the entries in the individual cruise Data Documentation Forms where modifications, if any, are given.

Geueral

The field program was maintained at various intensities for eight years (March 1966 to June 1974), with personnel on T-3 continuously from April 1968 until the island was evacuated in June 1974. During this period, divided into 28 cruises (Table 1), biological and environmental parameters were measured (Table 2). The sampling program was structured to monitor periods of active change in the various parameters. Thus, hydrography and zooplankton sampling was a year round pursuit, field and logistic conditions permitting, whereas chlorophyll <u>a</u> concentrations and primary productivity (14 C uptake) were usually measured only during the summer (June to September). Various gear types, methodologies, and sampling strategies were tried and tested throughout the field program.

The oceanographic working area was located on 3-4 m thick sea ice in Colby Bay adjacent to the ice island. All sampling was done from inside a heated building positioned over a hole, ca. 1.5 m on a side, cut in the ice. The hut contained a space heater, oceanographic sampling equipment, and a Rankin winch powered by a 5 hp Wisconsin gasoline engine. The drum on the winch held about 4000 m of 5/32 inch hydrographic wire. The wire ran through a meter wheel attached to a tripod erected over the hole.

Geographic positions were provided by the Lamont-Doherty Geological Observatory, Palisades, NY (Hunkins and Tiemann 1977). Hydrography and biology (chlorophyll <u>a</u> and primary productivity) samples were not always taken from the same bottle cast or on the same day. Each kind of data has a separate sample numbering scheme. As a result, station positions may not always agree between the hydrographic and biological data. See individual cruise Data Documentation



Fig. 1. Drift track of T-J from June 1966 to April 1974. The months of June, July, August, and September are indicated in small letters for each year.

N

	Crui	se –						·	Cruis	зе					
Number		1	Dura	at:	ion			Number			Dui	cat	101	n	
01	16	Mar	66	-	9	Apr	66	15	5	Oct	70	_	30	Dec	70
02	2	Jun	6 6	-	18	0ct	66	16	1	Jan	71	-	30	Mar	71
03	1	Feb	67	-	15	Feb	67	17	30	Mar	71	-	30	May	71
04	4	Jun	67	-	11	Sep	67	18	30	May	71	-	1	0ct	71
05	12	Sep	67	-	24	Sep	67	19	1	0ct	71	-	20	Dec	71
06	27	Apr	68	-	9	Jun	68	20	20	Dec	71	-	20	Mar	72
07	10	Jun	68	-	20	Sep	68	21	20	Mar	72	-	31	May	72
08	21	Sep	68	-	31	Jan	69	22	31	May	72	-	29	Sep	72
09	31	Jan	69	-	13	Jun	69	23	29	Sep	72	-	13	Dec	72
10	13	Jun	69	-	3	0ct	69	24	13	Dec	72	-	7	Apr	73
11	4	Oct	69	-	5	Jan	70	25	7	Apr	73	-	28	May	73
12	5	Jan	70	-	23	Mar	70	26	28	May	73	-	19	0ct	73
13	23	Mar	70	-	7	Jun	70	27	31	0ct	73	-	8	Mar	74
14	7	Jun	70	-	5	0ct	70	28	8	Mar	74	-	1	Jun	74

Table 1. Cruise numbers and dates of T-3 field program

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	Total Number	1966	1967	1968
Parameter	of Samples	JFMAMJJASON	IDJFMAMJJASOND.	JFMAMJJASOND
Hydrography				
Salinity	5354	X		ХХ
Temperature	5354	X		ХХ
Dissolved oxygen	5198	X		ХХ
Nutrients				
Nitrate	3611			
Silicate	3440			
Phosphate	3440			
Phytoplankton				
Chlorophyll <u>a</u>	8022	ХX	X X X X	XXXX
Productivity	4978		x x x	XXX
Cell Counts	5838			XXXX
Zooplankton				·
Acoustic traces	40 mo			
Plankton pump	427	XXXXX	X XXXX	
Nets (mesh size µm))		•	
0.5 m ring (215)	38	XX		
1 m closing ring	(110) 355			XXXXX
1 m closing ring	(215) 318		x x x	
1 m ² plummet (571))* 56			
2 m ² umbrella (22)	3) [†] 9112		X	x
2 m ² umbrella (56	9) 95			X X
3 m ² umbrella (30	0) 104			XXX

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Table 2. Field data collected at T-3, March 1966 to June 1974

* A net that catches while descending [†] A collapsible net that can be lowered and retrieved through a hole in the ice

Table 2. (cont.)

	Total Number			19	59									1	970)									1	197	11					
Parameter	of Samples	JFM	<u>A 1</u>	<u>I</u> J	J	A	<u>s</u> c) N	D	J	F	M	A]	<u>M</u> .	<u>J</u> .	J A	S	0	N	D	J	F	M	A	M	J	J	<u>A</u>	S	0	N	D
Hydrography																																
Salinity	5354		XJ	C			X	2	X	X	X	X	X	X	K 3	c x	X	X	X	X			X	X		x	X	X	X	X	X	x
Temperature	5354		XJ	C			X	2	X	X	X	X	x x	x	K J	C X	X	X	X	X			X	X		X	X	X	X	X	X	x :
Dissolved oxygen	5354		XX	C			X	2	X	X	X	x :	X X	x	K 3	x	X	X	X	X			x	X		X	X	X	X	X	X	X
Nutrients																																
Nitrate	3611													3	K X	x	X	X	X					X		X	X	X	Х	X	X	X
Silicate	3440													2	χΣ	x	X	X	X					X		X	X	X	X	X	X	X
Phosphate	3440													2	K X	x	X	X	X					X		X	X	X	x	X	X	X
Phytoplankton																																
Chlorophyll <u>a</u>	8022			x	х	x X	K							Z	K X	C X	X							X		X	X	X	X			
Productivity	4978			x	x	XX	K							2	Z 2	x	X									X	X	x	X			
Cell Counts	5838		XX	x x	X	x	K X		x	X	X	X Z	x	x z	ζX	x	X	X	X	X			X	X		x	X	X	x			
Zooplankton																																
Acoustic traces	40 mo											2	x	x 3	K X	x	X	X	X	X				X	X	x	X	X	X	X	X	X
Plankton pump	427																•															
Nets (mesh size µm))																															
0.5 m ring (215)	38																															
1 m closing ring ((110) 355	x																														
1 m closing ring ((215) 318		X	x																												
1 m ² plummet (571)	* 56																									X	X	X	x	X	X	X
2 m ² umbrella (223	3) [†] 9112	хх	XX	x x	x	x	K X	x	х	x	x	x 2	x	X J	C X	x	X	X	X	X	x	x	x	X	x	x	X	x	х	X	X	X
2 m ² umbrella (569	9) 95																															
3 m ² umbrella (300)) 104																															

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* A net that catches while descending † A collapsible net that can be lowered and retrieved through a hole in the ice

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Table 2 (cont.)

	Total Number				1	972	2				-	-				1	97:	3			_			-				19	9 74	 }				
Parameter	of Samples	J	FM	A	M	<u>J .</u>	J A	S	0	N	D	J	F	M	<u>A 1</u>	<u>M</u> .	<u>J</u> .	J_/	<u>A 8</u>	<u>0</u>	N	D	J	F	M	<u> </u>	M	<u> </u>	<u>1</u>]		1 5	<u> </u>) <u>N</u>	<u>D</u>
Hydrography																																		
Salinity	5354	X	XX	X	X	XX	K X	X	X	X	X	X	X	X	X	K X	K J	K J	XX	C	X	X	X	X	X	X								
Temperature	5354	X	XX	X	X	XX	K X	X	X	X	X	X	X	X	X	K 3	K J	K I	C X	C	X	X	X	X	X	X	:							
Dissolved oxygen	5198	X	ХX	X	X	XX	K X	X	x	x	X	X	X	x	XX	K X	K J	K X	C X	C	X	X	X	X	X	X	•							
Nutrients																																		
Nitrate	3611	• x :	XX	X		XX	K X	X	X	X	X	X	X	X	x	K I	x 3	K X	κ 3	C	X	X	X	X	X	X								
Silicate	3440	X	XX	X		XX	K X	X	X	x	X	X	X	X	x	K I	K J	K X	K X	ζ	X	X	X	X	X	X								
Phosphate	3440	x :	XX	X		хX	K X	X	X	X	X	X	X	x	x	K J	K J	K J	XX	C	X	X	X	X	X	X								
Phytoplankton																																		
Chlorophyll <u>a</u>	8022					хУ	x x	X								2	K 3	K J	ζ 3	C														
Productivity	4978					X X	K X	X	X							2	K 3	K J	K X	C														
Cell Counts	5838					XX	x x	X	x			X	X	X	x	K J	K J	K 3	K X	ζ	X	X	X	X	X	X								
Zooplankton																																		
Acoustic traces	40 mo	X	хх	x	X	XX	K X	X	x	x	X	X	X	X	X	K X	K J	K X	ζ Σ	C	X	X	X	X										
Plankton pump	427																																	
Nets (mesh size µm))																																	
0. 5 m ring (215)	38																																	
1 m closing ring ((110) 355																																	
1 m closing ring ((215) 318																																	
1 m ² plummet (571)	* 56		X	x																														
2 m ² umbrella (223)† 9112	X	хх	X	X	XX	x x	X	x	х	x	X	X	x	x	XX	K J	K 3	K 3	C	X	X	X	X	X	X								
2 m ² umbrella (569) 95																																	
3 m ² umbrella (300)) 104																																	

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* A net that catches while descending
 * A collapsible net that can be lowered and retrieved through a hole in the ice

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Forms for kind of sampling bottle used.

Hydrography and Nutrients

Temperature, salinity, oxygen, and nutrient determinations were made on water collected with Van Dorn polyvinylchloride or uncoated Nansen water sampling bottles. The Van Dorn bottles contained surgical tubing which may or may not be toxic to organisms (see Price et al. 1986). In general, the upper 100 m was sampled at 5 m intervals, 125-375 m at 25 m intervals, 400-500 m at 50 m intervals, 600-1000 m at 100 m intervals, and 1000 m to the bottom at 250 m intervals with a 30 m interval between the last bottle and the bottom. Periodically, additional samples were taken at 2 m intervals around the pycnocline (usually 40-60 m). In periods when weekly casts were taken, an alternating pattern of sampling, 0-100 m, 0-500 m, 0-100 m, 0-deep, allowed a more frequent survey of short-term variation in the near-surface stratum without the additional burden of time-consuming deep casts. Because of heat lamps and cables and the accumulation of freshwater in the hydrohole, surface readings would not have been representative, therefore the top bottle of a hydrocast was usually placed 5 m below the water surface.

The highest observed wire angles during these cruises were about 4°. For a 1000 m cast, this would yield a true depth of 998 m at the bottom. Computations of thermometric depths (Wüst 1933) were performed for those observations deeper than 250 m where unprotected thermometers were used for which calibrations were still available (262 depths at 45 stations). With the exception of two casts (Cruise 11, station 1, cast 5, 1400-2000 m and Cruise 13, station 12, cast 5, 500-1300 m), all calculated values were generally within 2-3% of the nominal depths sampled. These two casts were corrected. All other depths reported here are uncorrected, but should be within 2-5% of the true value.

Temperatures were determined from reversing thermometers on each water bottle; protected thermometers were usually deployed in pairs. Bottles were tripped about 5 min after the top bottle reached its intended depth. Thermometers were read using a lighted magnifying glass about 15 min after retrieval. Readings were corrected from the auxiliary thermometers and the thermometer constants by an IBM 1130 program at the Department of Oceanography, University of Washington.

Over 100 reversing thermometers were used during the course of these observations. They were calibrated either by the manufacturers or at various times at the University of Washington. Calibration data available from the

latest date preceding the use of each thermometer on T-3 were used to correct the thermometer readings. The calibrations were usually 0.5-3 yr old when they were applied to these data.

Salinity samples were drawn into 250 ml clear polyethylene bottles, tightly sealed, and allowed to come to room temperature. Determinations were made on T-3 using an Industrial Instruments Model RS-7A (Industrial Instruments Co., Cedar Grove, NJ) or a Beckman Model RS-7B (Beckman Instruments, Inc., Fullerton, CA) portable induction salinometer calibrated against a standard seawater sample obtained from the Laboratoire Hydrographique (Copenhagen, Denmark). Substandards of seawater (ca. $34.9^{\circ}/_{\circ}$ collected from ca. 500 m) were used after each 10 samples and at the end of a run. Salinity was calculated using the tables in the salinometer manual (Industrial Instruments 1964). These values are considered to have an accuracy of ± 0.003 ppt.

Dissolved oxygen was analyzed by a modified Winkler method (Strickland and Parsons 1965). Brown BOD bottles of 250 ml capacity, an automatic 100 ml pipet, an automatic 25 ml burette readable to 0.01 ml, and an electric stirrer were used.

Nutrients were determined by the methods in Strickland and Parsons (1968). The samples were either analyzed immediately after collection or frozen for later analysis either on the ice, or during April and May 1971, at the University of Washington using a Beckman DU spectrophotometer (Beckman Instruments, Inc., Fullerton, CA) with 1 cm cells. After December 1972, nitrate determinations were run on a Brinkman PC/1000 colorimater (Brinkman Instruments, Westbury, NY) with a fiber optics probe and calibrated against the spectrophotometer. Reagents and standards were prepared from water filtered through an Ion-X-Change column, Grade 1, consisting of a mixed bed non-regenerable resin (Illinois Water Treatment Co.) that produces triple distilled water. Comparisons between reagents and standards made up with this water and with distilled water sent from the Naval Arctic Research Laboratory at Barrow showed these proceures to be adequate. Standards were run with each set of samples and for each nitrate column.

Chlorophyll a

Chlorophyll <u>a</u> was determined according to Strickland and Parsons (1968). In 1968 through 1970, water was filtered through 47 mm 0.45 µm Millipore filters (Millipore Corporation, Bedford, MA). Suction pressure was less than 250 mm Hg. In 1971 through 1973, Gelman A/E glass fiber filters (approximate

pore size = 1.0 μ m) (Gelman Instrument Co., Ann Arbor, MI) were used. MgCO₃ was added to all filters near the end of the filtration. In 1968, samples of about 4 liters of water were analyzed using a Beckman DK spectrophotometer in Seattle and chlorophyll <u>a</u> was calculated using the SCOR-UNESCO equations (Unesco 1966). For 1968 through 1973, samples of about 2 liters of water were filtered and a Turner Model 111 fluorometer (G. K. Turner Associates, Palo Alto, CA) was used for analysis. Fluorometer filters were 5-60 and 2-64. The fluorometer was calibrated using either a Beckman DU spectrophotometer on T-3 or a Beckman DK scanning spectrophotometer in Seattle. For samples analyzed with the fluorometer, chlorophyll <u>a</u> was calculated using equations in Holm-Hansen et al. (1967). Phaeopigments were not determined.

Primary Productivity

Primary productivity was measured during the summers by the radiocarbon technique of Steemann-Nielsen (1952) as detailed by Strickland and Parsons (1968). Two experimental schemes were used:

1. Depth series - paired 130 ml light and dark bottles were filled with water collected from a number of depths and incubated under constant high illumination (for the level of irradiance, see below).

2. Graduated light series - five light and one dark bottle containing water from one depth were incubated under 0, 10, 25, 50, 75, and 100% irradiance provided by glass neutral density filters over the incubation bottles.

For both series, dark bottles were pre-wrapped with black tape and then covered with aluminum foil to insure complete darkness. Depths and frequencies of sampling varied from year to year.

The plastic incubator box was fronted with clear plexiglass and had a wheel that rotated in the vertical plane. The wheel accomodated 12 groundglass stoppered 130 ml bottles. At various times, because of stripped gears, the wheel did not rotate or was manually turned periodically during incubation. Light, provided by a bank of 12 GE Cool-White fluorescent lamps (General Electric Corporation, Stamford, CT), and amount of radioactivity added varied from year to year. Highest irradiance (= 100%) in the incubator was between 1100 and 1400 ft-c measured with a GE Model No. 214 photometer (General Electric Corporation, Stamford, CT). A pumped water flow-through system maintained ambient incubator temperature near 0°C. Samples were incubated for 6 or 12 hr.

At the end of the incubation, the samples were filtered (suction pressure

less than 250 mm Hg) onto 25 mm, 0.45 µm Millipore filters, washed with filtered seawater, air-dried, and stored over desiccant until analyzed. Filters were fumed over concentrated HCl and counted three times for 1000 counts, using a gas flow proportional counter (Nuclear Chicago Corporation, Des Plaines, IL). Counting was done either in Seattle using a Nuclear Chicago Model D-47 counter with micromil window, C-110 automatic sample changer, 161-A scaler, and ClllB printing timer, or on T-3 using a Nuclear Chicago manual, end-window Model 8770 scaler, Model 3053 sample changer, Model 108 G-M detector, and Model 8420 dual timer.

Carbon uptake was calculated from

P = (L-D)(W)(1.05)/(Z)(T)

where P is in mg C m⁻³ h⁻¹; L-D is the difference between the light and dark bottle in counts per minute corrected for machine background and coincidence; W is the total carbonate in mg C m⁻³ calculated from W = $(810)(S^{\circ}/_{\circ \circ})$ as suggested by Dr. G. C. Anderson, Department of Oceanography, University of Washington; 1.05 is the isotope discrimination factor (Strickland 1960); Z is the total activity in counts per minute added to the sample and corrected for the counter efficiency of about 22.8%; T is the incubation time (6 or 12 hr).

All ¹⁴C ampoules used on T-3 were prepared in the Department of Oceanography, University of Washington, from aqueous sodium carbonate obtained from Nuclear Chicago Corporation. All glassware was rinsed with distilled water and autoclaved. The amount of solution to be made was determined by dividing the activity of the stock aqueous sodium carbonate by the desired activity per ml of final solution. Glass distilled water was filtered through 47 mm, 0.45 µm Millipore filters. The pH was adjusted to 9.5-9.7 with NaOH. The solution was well mixed, and after adding the commercial sodium carbonate, mixed again. Glass ampoules holding 2 or 5 ml of solution were filled by an automatic volume dispenser. The ampoules were sealed using propane torches. The sealed ampoules were placed in large beakers, covered with water to which methylene blue dye was added, and autoclaved for ca. 1 hr at 120°C. After washing away the dye, the ampoules were inspected for any sign of color inside them. Ampoules that were even slightly discolored were discarded. The filled ampoules were colorcoded with spray paint and stored.

Several ampoules from the beginning, middle, and end of the filling process were kept separate to be used for standardization. Standardization was done using methods then employed by the Department of Oceanography, University of Washington, where ampoules were either sent to Dr. C. R. Goldman, University of California, Davis, and analyzed using gas phase (Goldman 1963; Steemann-Nielsen 1974) or, in the Department of Oceanography, University of Washington, were compared to samples obtained from the National Bureau of Standards. From 1970-1973, ampoules were standardized by liquid scintillation techniques and external standards at the Department of Oceanography.

Phytoplankton Cell Counts

Samples for phytoplankton identification and cell counts were usually taken from Nansen bottles during hydrocasts and stored in 250 ml glass jars. They were preserved with 4% formalin, buffered (sodium borate) or unbuffered, for a final strength of approximately 1%. Samples were shipped to Seattle for later analysis. Some samples were collected from a water pumping system during summer 1970 (see below).

Phytoplankton species were enumerated for some of the samples collected in the summers of 1968, 1969, and 1971 with the inverted microscope method (Hasle 1978a, b). Samples were individually counted or samples from two, three, or four days were combined for each depth. The samples combined to make a composite were separated in time by one week or less. After thorough mixing, the samples were poured into 5 and 50 ml Zeiss counting chambers (Carl Zeiss, Oberkochen Würt, FRG) and allowed to settle at least 20 hr before counting. A Zeiss inverted microscope was used for all enumerations. The 5 ml chamber was counted at 390 X using a 25 X objective, 12.5 X oculars, and a magnification factor of the optics carrier of 1.25. The 50 ml chamber was counted at 156 X with a 10 X objective, 12.5 X oculars, and the 1.25 X magnification factor. Cell counts were converted to cells per liter, cell volumes (Larrance 1964), and cell carbon (Mullin et al. 1966). These data are contained in an unpublished manuscript (Walline 1973) available from the School of Oceanography, University of Washington.

Zooplankton

Zooplankton sampling was maintained from March 1966 through April 1974. Gear types, sampling periods, and depth intervals sampled varied between and within years. Regardless of the gear used, all samples were concentrated and preserved in 4% V/V formalin (final concentration) buffered with either sodium acetate or sodium borate.

Initially, samples were taken with an open 0.5 m diameter ring net with 215 µm mesh gauze. From June 1966 through July 1967, a 7.6 cm centrifugal

pump system with a 10 cm diameter hose intake was lowered. A 25 kg weight at the end of the wire held down the hose intake. Since wire angles were low, the depth of sampling was estimated from the length of the wire. Maximum depth of sampling was about 185 m. Samples of 5 to 18 m³ of water were filtered at a rate of 0.2 to 0.6 m³ per min through a net of 215 μ m mesh size. Beginning in early July 1967, a closing 1 m diameter ring net of either 110 or 215 μ m mesh was used to sample to 1000 m. This sampling overlapped with pumping stations to assure comparability.

Sampling with a 2 m² closing umbrella net began in September 1967 (Scott 1969; Macaulay and Daly 1987). Mesh size was 223 and 569 μ m. This net, with a filtration ratio of 1.25:1, was the principal sampling device throughout the remaining field program though the netting itself was replaced with a high filtration type mesh (4:1 filtration ratio) in March 1972. All subsequent samples were collected with the 4:1 filtration ratio net.

An overlapping sampling scheme was used starting in October 1969. Sampling depths were at 10 m intervals from 300 to 10 m, 100 m intervals from 1000 to 10 m, and 500 m intervals from the bottom to 10 m. The 10 m upper limit was chosen to protect the net during retrieval through the hydrohole. Samples were collected from as deep as 2500 m.

Two other kinds of nets were sometimes employed: a 3 m^2 closing umbrella net with 300 µm mesh in summer 1968 and a 1 m^2 plummet net with 571 µm mesh initially in May 1971 and periodically thereafter. The plummet net is a downward fishing net with an opening-closing mechanism activated with a messenger (Macaulay 1978; Macaulay and Daly in prep.).

Sorting, identifying, and counting of some samples were done in Seattle (Table 3). Other samples have been analyzed for some groups of organisms, primarily copepods. These data are available in the School of Oceanography, but obtaining them will require an investigator to visit the University of Washington.

Echo-sounder

Echo-sounding was conducted from April 1970 to April 1974. A modified Ross 200A (100 kHz) echo-sounder and 10° transducer with an impedance matching box scanned depth ranges of 0-50, 50-100, 100-150, and 150-200 fm. The 0-50 fm depth range was emphasized because of interest in the scattering layer often found about 25 fm. The system included the standard Ross 200A transceiver unit, recorder unit, and a Sony TC-5600 stereo tape recorder. During regular Hughes (1968) 399 samples collected with a plankton pump Cruises: 02 22 Jun - 15 Jul 1966 27 Jul - 25 Aug 30 Aug - 17 Oct 5 Feb - 14 Feb 1967 03 523 samples collected with a pump, 1 m closing ring net and Scott (1969) 2 m² umbrella net 22 Jun - 15 Jul 1966 Cruises: 02 27 Jul - 25 Aug 30 Aug - 17 Oct 5 Feb - 14 Feb 1967 03 04 10 Jul - 6 Sep 1967 05 13 Sep - 23 Sep 1967 Damkaer (1976) 52 samples collected with a 1 m closing ring net Cruises: 04 12 Jul - 8 Sep 1967 06 5 May 1968 07 10 Jun - 18 Aug 1968 Heron and Damkaer (1976) 2 samples collected with a 1 m closing ring net 10 Jun Cruises: 07 1968 12 Jun 1968 Pautzke (1979) 16 samples collected with a 2 m² umbrella net 7 Jun - 5 Oct 1970 Cruises: 14 30 May - 1 Oct 1971 18 31 May - 29 Sep 1972 22 26 28 May - 19 Oct 1973 Heron, English, and Damkaer (1984) 54 samples collected with a 1 m closing ring net and 3 m² umbrella net Cruises: 06 5 May 1968 07 10 Jun - 20 Sep 1968 08 21 Sep 1968

Table 3. List of T-3 zooplankton samples analyzed and used in theses, reports, and publications operation, echo-sounding was conducted continuously, normally on the 0-50 fm scale. Daily recordings of 15-45 min were made using all depth ranges. Some of these data are available on 1/4 inch magnetic tape, but retrieval will be difficult.

Data Management

The data were available from computer printouts or raw data sheets. The original punched data cards could not be located so the data were re-entered directly to disk files on the University of Washington Cyber 180-855 computer using a Tandy Model DT-1 data terminal. After editing the files to correct data entry errors or to fill in gaps in the data, the files were transferred to a 9-track, EBCDIC-coded magnetic tape for NODC. The resulting tape contains three files of hydrographic data, one file of chlorophyll data, and one file of primary productivity data.

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A. ORIGINATOR IDENTIFICATION

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1. NAME AND ADDRESS OF IN	STITUTION, LABOR	ATORY, OF	R ACTIVITY WIT	H WHICH SUBM	ITTED DATA AP	REASSOCIATED
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lemperature	°С	Reversing thermometers	N/A	N/A
Salinity	۳/۰۰	Nansen bottles, modified Van Dorn bottles	Salinometer, University of Washington	N/A
Sigma-t	-	11	-	N/A
Dissolved oxygen	ml/1	17	Winkler	N/A
Р0 ₄	µg-atom/1	2	See Strickland and Parsons (1968)	N/A
NO3	11	11	11	N/A
S104	,	99	39	N/A
Chlorophyll <u>a</u>	mg m ⁻³	Van Dorn bottles	Spectrophotometer, fluoro- meter (Strickland and Parsons 1968)	N/A
Primary productivity (¹⁴ C uptake)	mg C m ⁻³ h ⁻¹	11	Strickland and Parsons (1968)	N/A
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B. SCIENTIFIC CONTENT

TSE-(T-3)-02 Q2 Jun 1966 - 18 Oct 1966

Modifications to the basic Program Methods

Zooplankton samples were collected with a 7.6 cm centrifugal pump with water pumped through 10 cm diameter underwater hose clamped to the hydrographic wire. Rate of discharge varied from ca. 0.2 to 0.6 m³ per min. The water was filtered through a conical net having a base of 0.5 m and a height of 0.6 m suspended in a 0.1 m³ container. Net mesh size was 215 μ m.

Samples were collected at 5 m intervals over a depth range of 5 to 180 m for periods of 20 and 30 min. Volumes ranged from 5 to 18 m^3 .

20% methanol (final concentration unspecified) was added to the samples for antifreeze.

225 samples were collected (120 day, 105 night).

For sample analysis, see Hughes 1968; Scott 1969.

Data from 4C chlorophyll <u>a</u> samples collected with Van Dorn bottles during this cruise were lost.

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1. NAME AND ADDRESS OF IN	ISTITUTION, LABOR	ATORY, OF	R ACTIVITY WIT	H WHICH SUBM	ITTED DATA AP	REASSOCIATED
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School of Oceanogra	phy WB-10					
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TSE-(T-3)-03 01 Feb 1967 - 15 Feb 1967

Modifications to the basic program methods

Zooplankton samples were collected with a 7.6 cm centrifugal pump with water pumped through 10 cm diameter underwater hose clamped to the hydrographic wire. Rate of discharge varied from ca. 0.2 to 0.6 m³ per min. The water was filtered through a conical net having a base of 0.5 m and height of 0.6 m suspended in a 0.1 m³ container. Net mesh size was 215 μ m.

Samples were collected at 5 m intervals over a depth range of 10 to 185 m for periods of 20 and 30 min. Volumes ranged from 5 to 18 m³.

174 samples were collected (87 day, 87 night).

For sample analysis, see Hughes 1968; Scott 1969.

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NOAA FORM 24-13



TSE-(T-3)-04 04 Jun 1967 - 11 Sep 1967

Modifications to the basic program methods

Zooplankton samples were collected at 25 and 45 m with a 7.6 cm centrifugal pump with water pumped through 10 cm diameter underwater hose clamped to the hydrographic wire. Approximately 10 m³ of water were filtered through a 215 μ m mesh net. Fourteen day and fourteen night samples were collected.

Zooplankton samples were also collected with a 1 m closing ring net, mesh size 215 μ m, over 10 m depth intervals from 10 - 100 m, 20 m intervals from 100 - 200 m, 50 m intervals from 200 - 400 m, and 100 m intervals from 400 - 1000 m. Two hundred forty-three samples were collected.

Chlorophyll <u>a</u> and primary productivity data collected during this cruise were lost.

For zooplankton sample analysis see Hughes 1968; Scott 1969; Damkaer 1976.

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A. ORIGINATOR IDENTIFICATION

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1. NAME AND ADDRESS OF IN Dr. T. Saunders Engl School of Oceanogram University of Washin Seattle, WA 98195	ISTITUTION, LABORA	ATORY, OF		H WHICH SUBM	ITTED DATA AF	
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4. PLATFORM NAME(S)	5. PLATFORM TYPE (E.G., SHIP, BUO	E(S) Y, ETC.)	6. PLATFORM A NATIONALIT	ND OPERATOR	7. DA	TES
Island (T-3)	Ice island		PLATFORM	OPERATOR	FROM: MODAY Y	TO: MO DAY YR
			USA	USA	09/12/67	09/24/67
8. ARE DATA PROPRIETARY NO YES IF YES, WHEN CAN TH FOR GENERAL USET	? EY BE RELEASED YEARMON TH	11. PLEAS	SE DARKEN ALL AINED IN YOUR	MARSDEN SQ SUBMISSION W GENERAL AF	UARES IN WHIC ERE COLLECT	H ANY DATA ED.
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NCAA FORM 24-13



TSE-(T-3)-05 12 Sep 1967 - 24 Sep 1967

Modifications to the basic program methods

Zooplankton samples were collected using a 1 m diameter closing ring net and a 2 m² closing umbrella net, both with 223 μ m mesh. Sampling was done over 20 m depth intervals between 0 and 200 m, 50 m intervals between 200 and 300 m, 100 m intervals between 300 and 1000 m, and 500 m intervals between 1000 and 2000 m. Ninety-three (93) samples were collected: 44 with the 1 m net and 59 with the 2 m² net.

For sample analysis see Scott 1969.

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Dr. T. Saunders English School of Oceanography WB-10 University of Washington Seattle, WA 98195 2. EXPEDITION, PROJECT, OR PROGRAM DURING WHICH DATA WERE COLLECTED Primary production and energy flow 4. PLATFORM NAME(S) Fletcher's Ice Island (T-3) Ice island 4. PLATFORM NAME(S) Fletcher's Ice Island (T-3) Ice island 1. PLATFORM AND OPERATOR 7. DATES NATIONALITY((ES) PLATFORM AND OPERATOR 7. DATES NATIONALITY((ES) PLATFORM AND OPERATOR 7. DATES NATIONALITY((ES) PLATFORM AND OPERATOR 7. DATES NATIONALITY((ES) PLATFORM OPERATOR 7. DATES NATIONALITY((ES) PLATFORM OPERATOR 7. DATES NATIONALITY((ES) PLATFORM OPERATOR 7. DATES NATIONALITY((ES) PLATFORM OPERATOR 7. DATES (E.G., SHIP, BUOY, ETC.) Ice island I. PLEASE DARKEW ALL MARSDEN SQUARES IN WHICH ANY DATA CONTAINED IN YOUR SUBMISSION WERE COLLECTED. FY VES IF VES IF VES IF VES IN ON DUES IN CAN THEY BE RELEASED OR GENERAL USEY VEAN TIONAL EXCHANGE? X NO DUES IN CLUDED IN WORLD DATA SCUARES IN CLUDED IN WORLD DATA SCUARES IN CLUDED IN WORLD DATA SCUARES (DATIONAL PROGRAM (DAP)? X NO DUES (PART (SPECIFY SELOW) DATA SCUARES (DATES CONCERNING TOPAL EXCHANGE?) X NO DUES (PART (SPECIFY SELOW) DATA SCUARES (DATA CECLARED TOPALE SCUARES?) DATE SCUARES (PART (SPECIFY SELOW) DATA S	1. NAME AND ADDRESS OF IN	STITUTION, LABOR	ATORY, OI	RACTIVITY		ITTED DATA AP	RE ASSOCIATED
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NOAA FORM 24-13



TSE-(T-3)-06 27 Apr 1968 - 09 Jun 1968

Modifications to the basic program methods

Fifty-nine (59) zooplankton samples were collected with a 1 m closing ring net having a mesh size of 100 μ m. Samples were collected over 10 m depth intervals from 0-100 m, 20 m intervals from 100-200 m, 50 m intervals from 200-300 m, 100 m intervals from 300-500 m, and 500 m intervals from 500-1000 m.

For sample analysis see Damkaer 1976; Heron, English, and Damkaer 1984 One hundred twelve samples each were collected with Van Dorn bottles for chlorophyll <u>a</u> determinations and phytoplankton cell counts. Primary productivity was measured at 2 stations, 6 depths each.

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Primary production a	and energy flow	,	TSE-(T-3)-07		
4. PLATFORM NAME(S)	5. PLATFORM TYPE		6. PLATFORM	ND OPERATOR	7. DA	TES
Fletcher's Ice	Toe teland	, EIC.)	PLATFORM	OPERATOR	FROM: MODAY YR	TO: MO DAY YR
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8. ARE DATA PROPRIETARY	EY BE RELEASED	11. PLEAS	SE DARKEN ALI AINED IN YOUR	L MARSDEN SQ SUBMISSION W GENERAL AR	UARES IN WHIC ERE COLLECTI	H ANY DATA ED.
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FIG. I

TSE-(T-3)-07 10 Jun 1968 - 20 Sep 1968

Modifications to the basic program methods

Zooplankton samples were collected with three closing nets:

Dates		Net (1	Mesh a) Aperture	# (µm) Sample	Dept es Min	th (m) Max
10 Jun-19	Sep	1	110	272	0	3000
21 Jun-10	Sep	2 ²	223	285	5	2500
12 Aug-03	Sep	22	569	95	, 5	2500
28 Jun-22	Aug	32	300	104	5	2500

Sampling was done over 10 m depth intervals from 10 to 100 m, over 20 m intervals from 100 to 200 m, over 50 m intervals from 200 to 400 m, over 100 m intervals from 400 to 1000 m, and over 500 m intervals from 1000 to 2500 m

For some sample analysis, see Damkaer 1976; Heron and Damkaer 1976; Heron, English and Damkaer 1984.

Chlorophyll <u>a</u> (565) and phytoplankton cell count (529) samples were collected with Van Dorn bottles from 5, 7.5, 10, 12.5, 15, 17.5, 20, 25, 30, 40, 50, 60, 70, 80, 100, and 200 m at 35 stations between 11 June and 4 September. Primary productivity experiments were run at 8 stations between 5 Jul and 4 Sep at depths of 5, 10, 15, 20, 40, and 60 m. Incubations were all done at one light intensity.

NOAA FORM 24-13

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEANOGRAPHIC DATA CENTER RECORDS SECTION WASHINGTON, DC 20225

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 NAME AND ADDRESS OF INSTITUTION, LABORATORY, OR ACTIVITY WITH WHICH SUBMITTED DATA ARE ASSOCIATED Dr. T. Saunders English School of Oceanography WB-10 University of Washington Seattle, WA 98195 EXPEDITION, PROJECT, OR PROGRAM DURING WHICH DATA WERE COLLECTED CRUISE NUMBER(S) USED BY ORIGINATOR TO IDENTIFY DATA IN THIS SHIPMENT 						
Primary production	a	TSE-(T-3)-08				
4. PLATFORM NAME(S)	E(S) Y, ETC.)	(S) 6. PLATFORM AND OPERATOR 7. DATES , ETC.) NATIONALITY(IES)				
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			USA	USA	09/21/68	01/31/69
8. ARE DATA PROPRIETARY X NO YES IF YES, WHEN CAN TH FOR GENERAL USE!	11. PLEASE DARKEN ALL MARSDEN SQUARES IN WHICH ANY DATA CONTAINED IN YOUR SUBMISSION WERE COLLECTED. GENERAL AREA					
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(206) 543-5079	100' 120'	148° 158° 188 188° 144	r 129* 108* 58* 98*	48* 28* 8* 28*	48 62 54 100	


TSE-(T-3)-08

Modifications to the basic program methods

Zooplankton samples (71) were collected with a 2 m^2 closing net with a mesh size of 223 μ m. Sampling was done over 10 m depth intervals from 0-100 m, over 20 m intervals from 100-200 m, over 100 m intervals from 200-500 m, and over 500 m intervals from 500-2000 m. •• .. •

Two hydrographic casts were done and 46 samples each were collected for temperature, salinity, and dissolved oxygen measurements, however oxygen values are missing from the data.

1044 FORM 24-13

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FORM APPROVED O.M.B. No. 41-R2651 EXPIRES 1-81 ۰.

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Dr. 1. Saunders Eng.	1130					
School of Jeanogra						
University of Washing	ugron					
Seattle, WA 90195						
2. EXPEDITION, PROJECT, O	R PROGRAM DURING	WHICH	3. CRUISE NUM	BER(S) USED	BY ORIGINATOR	TO IDENTIFY
DATA WERE COLLECTED		_	DATA IN TH	IS SHIPMENT		
Primary production	and energy flow	7	TSE-(T-3)-09		
4. PLATFORM NAME(S)	E.G., SHIP, BUO	E(S) Y, ETC.)	6. PLATFORM	Y(IES)	7. DA	TES
Fletcher's Ice			PLATFORM	OPERATOR	FROM: MODAY Y	TO: MO, DAY / YR
Island (T-3)	Ice island	1			ľ	
			USA	USA	01/31/69	06/13/69
8. ARE DATA PROPRIETARY	?	11. PLEA	SE DARKEN AL	MARSDEN SQ	UARES IN WHIC	H ANY DATA
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IF YES, WHEN CAN TH FOR GENERAL USET	EY BE RELEASED	ļ		GENERAL AR	REA	
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<u>[(200) 343-3079</u>		}				1



TSE-(T-3)-09 31 Jan 1969 - 13 Jun 1969

Modifications to the basic program methods

Zooplankton samples were collected with three closing nets:

Dates	Net (m)	Mesh Aperture (µm)	# Samples	Depth Min	(m) Max
18 Mar-28 Mar	l (diam)	110	24	10	2000
10 Apr-28 May	2 (sq)	223	39	10	2000
31 May-09 Jun	l (diam)	215	31	10	2000
			94		

Depth intervals were 10 m between 10 and 300 m, 20, m between 10 and 200 m, 50 m between 200 and 400 m, 100 m between 10 and 1000 m, and 500 m between 10 and 2000 m.

Phytoplankton cell count samples were collected with Van Dorn bottles at 5, 10, 15, 30, 60, 100, and 200 m on 8 dates between 22 April and 9 June. Three sets of hydrographic observations were obtained with 51 samples each collected for temperature, salinity and dissolved oxygen.

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Dr. T. Saunders Engl School of Oceanograp University of Washin Seattle, WA 98195	ish hy WB-10 gton					
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Primary production a	and energy flow	,	TSE-(T-3))-10		
4. PLATFORM NAME(S)	5. PLATFORM TYPE (E.G., SHIP, BUO	E(S) Y, ETC.)	6. PLATFORM A NATIONALIT	ND OPERATOR	7. DA	TES
Fistener's ice	Tee feland		PLATFORM	OPERATOR	FROM: MODAY,Y	TO: MO, DAY, YR
			USA	USA	06/13/69	10/03/69
8. ARE DATA PROPRIETARY		11. PLEAS	SE DARKEN ALI AINED IN YOUR	L MARSDEN SQ SUBMISSION W	L UARES IN WHIC ERE COLLECT	H ANY DATA ED.
IF YES, WHEN CAN TH FOR GENERAL USE?	EY BE RELEASED			GENERAL AR	REA	
9. ARE DATA DECLARED NA PROGRAM (DNP)?	TIONAL	-	HAR" 186" 188" 186" 148	· 127 107 107 107 107	4° 1° 1° 1°	er 11' 11' 11'
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NOAA FORM 24-17	_					



TSE-(T-3)-10 13 Jun 1969 - 03 Oct 1969

Modifications to the basic program methods

Zooplankton samples (37) were collected with a 2 m² closing umbrella net having a mesh size of 223 μ m over depth intervals of 10 m between 10 and 60 m, 20 m intervals between 60 and 100 m, and 100 m intervals between 200 and 1000 m.

Chlorophyll <u>a</u> samples were taken at 2 m intervals from 2 to 50 m and at 10 m intervals from 50 to 80 m; samples were also taken at 100 and 200 m. 1684 samples were collected at 56 stations. Phytoplankton cell count samples were taken over the same depth intervals at 52 stations for a total of 1612 samples. Primary productivity experiments were run at 27 stations (459 samples). Incubations were done at constant or graded light levels. All phytoplankton samples were collected with Van Dorn bottles.

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A. ORIGINATOR IDENTIFICATION

THIS SECTION MUST BE COMPLETED BY DONOR FOR ALL DATA TRANSMITTALS

Dr. T. Saunders English School of Oceanography WB-10	
School of Oceanography WB-10	
University of Washington	
Seattle, WA 09195	
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Seattle, WA 98195	İ



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TSE-(T-3)-11 04 Oct 1969 - 05 Jan 1970

Modifications to the basic program methods

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Zooplankton samples were collected using a 2 m² umbrella net, mesh size 223 μ m. Fifty-four (54) samples were collected.

Two hydrographic series were done using Nansen bottles. Samples were collected for temperature, salinity, dissolved oxygen, and phytoplankton cell counts. 108 samples each were collected.

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 NAME AND ADDRESS OF INSTITUTION, LABORATORY, OR ACTIVITY WITH WHICH SUBMITTED DATA ARE ASSOCIATED Dr. T. Saunders English School of Oceanography WB-10 University of Washington Seattle, WA 98195 EXPEDITION, PROJECT, OR PROGRAM DURING WHICH DATA WERE COLLECTED Primary production and energy flow SEAT (T-3)-12 						
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NOAA FORM 24-13



TSE-(T-3)-12 05 Jan 1970 - 23 Mar 1970

Modifications to the basic program methods

 $628\ zooplankton samples were collected with a 2 m^2 umbrella net with a mesh size of 223 <math display="inline">\mu m$.

Hydrographic stations were taken with Nansen bottles approximately weekly (9 stations, 291 bottles). Salinity, temperature, and dissolved oxygen samples were taken at all stations and phytoplankton cell count samples were taken at 7 stations (242 samples).

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TSE-(T-3)-13 23 Mar 1970 - 07 Jun 1970

Modifications to the basic program methods

541 zooplankton samples were collected with a 2 m² umbrella net, mesh size 223 μ m.

Hydrographic stations (7) were taken with Nansen bottles approximately weekly with samples (205 each) collected for temperature, salinity, dissolved oxygen, and phytoplankton cell counts. Additional hydrographic stations over the range of 40 to 60 m with bottles spaced at 2 m intervals were taken for Lamont-Doherty Geological Observatory. Only temperature and salinity values were measured.

Echo-sounder observations were started during this cruise and were done on an intermittent basis.

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Dr. T. Saunders Eng	lish					
School of Oceanogra	phy WB-10					
University of Washi	Ington					
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Modifications to the basic program methods

1149 zooplankton samples were collected with a 2 m² umbrella net, mesh size 223 μ m. The sampling frequency was 10 m, 100 m, and 500 m hauls made in the ratio of 4:2:1.

Sixteen (16) regular hydrographic stations were taken with Nansen bottles (513 bottles) at approximately weekly intervals. Temperature, salinity, dissolved oxygen, and phytoplankton cell count samples were taken at all stations; nutrient samples (437) were taken at 14 stations. Eleven (11) special hydrographic stations were taken for Lamont-Doherty Geological Observatory. These consisted of 11 bottles spaced at 2 m intervals over the depth range of 40 to 60 m. Only temperature and salinity samples were taken.

Chlorophyll <u>a</u> samples were collected from 0-100 m using either Van Dorn bottles or a 1/2 hp Webtrol submersible pump. Pumped samples were analyzed using the flow-through door of the fluorometer. Chlorophyll samples were collected at 79 stations, usually at 30 depths per station. Some duplicate stations were also sampled. Fluorometric chlorophyll analyses totaled 3004; 277 additional samples collected either from the fluorometer discharge or with Van Dorn bottles were filtered and used as calibration filters.

Primary production was measured at 83 stations (439) samples with graduate light series being done at 59 stations (295 samples) and constant light series being done at 24 stations (144 samples). Samples were collected with Van Dorn bottles.

For chlorophyll and productivity sample analyis see Pautzke 1979. Echo-sounder traces were obtained continuously.

NOAA FORM 24-13 (4-77)

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A. ORIGINATOR IDENTIFICATION

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1. NAME AND ADDRESS OF IN Dr. T. Saunders Eng School of Oceanogra University of Washi Seattle, WA 98195	STITUTION, LABOR 11sh 1phy WB-10 2ngton	ATORY, O	R ACTIVITY'WIT	H WHICH SUBM	ITTED DATA AF	RE ASSOCIATED
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Modifications to the basic program methods

182 zooplankton samples were collected with a 2 m² umbrella net, mesh size 223 μ m.

Hydrographic stations were taken approximately weekly in October and once per month in November and December (7 stations, 245 samples). Temperature, salinity, dissolved oxygen, and phytoplankton cell count samples were collected on all casts; nutrients were collected on 3 casts (123 samples). Oxygen samples (68) were lost for 2 casts when the hydrohut froze and the sample bottles broke.

Eight (8) special hydrocasts were done for Lamont-Doherty Geological Observatory over the depth range 40 to 60 m with bottles spaced at 2 m intervals. Only temperature and salinity (88 samples each) were collected.

Echo-sounding was limited to periods when the hydrohole was not in use and was therefore done on an irregular basis.

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Dr. T. Saunders Eng	zlish					
School of Oceanogra	aphy WB-10					
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TSE-(T-3)-16 01 Jan 1970 - 30 Mar 1970

Modifications to the basic program methods

71 zooplankton samples were collected with a 2 m² umbrella net, mesh size 223 $\mu m.$

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One hydrographic station was taken with 48 bottles. Samples were collected for temperature, salinity, dissolved oxygen, and phytoplankton cell counts.

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 NAME AND ADDRESS OF IN Dr. T. Saunders En School of Oceanogra University of Wash: Seattle, WA 98195 EXPEDITION, PROJECT, O DATA WERE COLLECTED Primary production 	ISTITUTION, LABORA glish aphy WB-10 ington R PROGRAM DURING and energy flo	ATORY, OI	3. CRUISE NUM DATA IN TH TSE- (T-	H WHICH SUBM IBER(S) USED E IS SHIPMENT 3)-17	ITTED DATA AF	RE ASSOCIATED
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Seattle, WA 98195 (206) 543-5079	j j	577 160° 128'	578 (195) 577 (196) 1487 (196) 1487 (196)	1206 65 562 65 17 1201 1307 80 80	1 510541	353 377 44 10 10 100



TSE-(T-3)-17 30 Mar 1971 - 30 May 1971

Modifications to the basic program methods

175 zooplankton samples were collected with the 2 m² umbrella net, mesh size 223 μ m. Three high speed zooplankton hauls were made through the scattering layer with the 2 m² umbrella net, mesh size 223 μ m: Depth range for the high speed samples was from 170 to 51 m.

A 1 m^2 plummet net consisting of two nets, one that fishes downward and one that fishes upward, was tested during this cruise.

Eight calibration hauls were taken with the 2 m² umbrella net, mesh size 223 μ m. A TSK flowmeter was attached to the net frame. Depth range for these hauls was from 200 to 10 m.

One hydrographic station was taken with 36 bottles. Samples were collected for temperature, salinity, dissolved oxygen, nutrients and phytoplankton cell counts. An additional station was taken over the depth range of 40 to 62 m (12 bottles) for temperature and salinity.

The echo-sounder was operated on a continuous basis.

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A. ORIGINATOR IDENTIFICATION

THIS SECTION MUST BE COMPLETED BY DONOR FOR ALL DATA TRANSMITTALS

1. NAME AND ADDRESS OF IN Dr. T. Saunders Eng School of Oceanogra University of Washi Seattle, WA 98195	STITUTION, LABOR glish uphy WB-10 ington	ATORY, OI	RACTIVITY WIT	H WHICH SUBM	ITTED DATA AI	RE ASSOCIATED
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TSE-(T-3)-18 30 May 1971 - 01 Oct 1971

Modifications to the basic program methods

1217 zooplankton samples were collected with the 2 m² umbrella net, mesh size 223 μ m. 29 samples were collected with the 1 m² plummet net, mesh size 571 μ m, fishing in the downward direction only.

Hydrographic observations were made using Van Dorn bottles. Samples were collected approximately weekly with 541 samples being collected for temperature, salinity, dissolved oxygen, and phytoplankton cell counts and 515 samples for nutrients. Twice per month the 40 to 60 m depth range was sampled with the bottles spaced at 2 m intervals for Lamont-Doherty Geological Observatory.

1792 chlorophyll determinations were made during the summer using the fluorometer. Calibrations were done with a spectrophotometer.

946 primary productivity filters were collected with experiments being done either with constant or graduated light livels.

Chlorophyll and productivity samples were collected with Van Dorn · bottles.

For analysis of the chlorophyll and productivity data, see Pautzke 1979.

NOAA FORM 24-13 (4-77) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEANOGRAPHIC DATA CENTER RECORDS SECTION WASHINGTON, DC 20235 FORM APPROVED O.M.B. No. 41-R2651 EXPIRES 1-81

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1. NAME AND ADDRESS OF IN	STITUTION, LABOR	ATORY, OI	R ACTIVITY WIT	H WHICH SUBM	ITTED DATA A	REASSOCIATED
Dr. T. Saunders Eng	jlish					
School of Oceanogra	iphy WB-10					
University of Washi	lngton					
Seattle, WA 98195						
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TSE-(T-3)-19 01 Oct 1971 - 20 Dec 1971

Modifications to the basic program methods

292 zooplankton samples were collected with a 2 m² umbrella net, mesh size 223 µm. Five (5) zooplankton samples were collected with the 1 m² plummet net, mesh size 571 µm.

Hydrographic stations (8) were taken approximately weekly. Temperature, salinity, and dissolved oxygen determinations were made at all stations (264 each) and nutrient determinations were made at 4 stations (148).

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The echo-sounder was run on a continuous basis.

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1. NAME AND ADDRESS OF INSTITUTION, LABORATORY, OR ACTIVITY WITH WHICH SUBMITTED DATA ARE ASSOCIATED Dr. T. Saunders English School of Oceanography WB-10 University of Washington Seattle, WA 98195						
2. EXPEDITION, PROJECT, OR PROGRAM DURING WHICH DATA WERE COLLECTED			3. CRUISE NUMBER(S) USED BY ORIGINATOR TO IDENTIFY DATA IN THIS SHIPMENT			
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TSE-(T-3)-20 20 Dec 1971 - 20 Mar 1972

Modifications to the basic program methods

Zooplankton samples were collected with a 2 m² umbrella net, mesh size 223 μ m. At the beginning of the cruise, 100 samples were collected with the standard 1.25:1 net, but in March, a new 4:1 high filtration net was obtained and 29 samples were collected with it.

Thirteen hydrographic stations were taken. Samples were collected for salinity, temperature, dissolved oxygen (421 each) and nutrients (131).

The echo-sounder was run continuously on the 0-50 fm scale with 15-45 min recordings daily using the other depth ranges.

NOAA FORM 24-13 (4-77)

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U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEANOGRAPHIC DATA CENTER RECORDS SECTION WASHINGTON, DC 20235

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Dr. T. Saunders En	glish					
School of Oceanogr	aphy WB-10					
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Seattle, WA 98195						
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NOAA FORM 24-13



TSE-(T-3)-21 20 Mar 1972 - 31 May 1972

Modifications to the basic program methods

Zooplankton were collected with the high filtration (4:1) 2 m² umbrella net, mesh size 223 μ m. 671 samples were collected.

14 samples were collected with the 2 m^2 umbrella net to be used for biomass determinations. The samples were dried in an oven, weighed on a Kahn electro-balance, ashed in a muffle furnace, and weighed again to obtain the ash-free dry weight.

22 samples were collected with the 1 m² plummet net, mesh size 571 μ m.

Hydrographic stations were taken approximately every two weeks. Samples were collected for temperature and salinity (135 each), dissolved oxygen and nutrients (87 each). 24 samples (every 5 m to 100 m plus 125, 150, 175, and 200 m) were collected with Nansen bottles for phytoplankton cell counts. They were preserved in 1% formalin buffered with sodium acetate.

Echo-sounding was done on a continuous basis, usually on the 0-50 fm range.

NOAA FORM 24-13

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T. Saunders English							
School of Oceanogra	phy WB-10						
University of Washington							
Seattle, WA 98195							
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Seattle, WA 98195		B 77	P72 - 1 - 1			<u> </u>	
(206) 5/3-5079		100 120-	148' 168' 108 168' 148	128- 198' 88' 98-	46 28 8' 28	48 60 60 100	
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TSE-(T-3)-22 31 May 1972 - 29 Sep 1972

Modifications to the basic program methods

970 zooplankton samples were collected with the 2 m^2 umbrella net, mesh size 223 μ m.

Hydrographic stations were occupied approximately weekly (16 stations taken) using Nansen bottles. Samples were collected for temperature, salinity, dissolved oxygen (524 each), nutrients (488), and phytoplankton cell counts (476).

Chlorophyll <u>a</u> samples were collected with Van Dorn bottles from 7.5, 10, 12.5, 15, 17.5, 20, 22.5, 25, 30, 35, 40, 45, 50, 60, 70, 80, 100, 150, and 200 m. 1274 samples were collected.

Primary productivity experiments were run on samples collected with Van Dorn bottles using both graded light and constant light. 1216 samples were collected for primary productivity and an additional 406 samples were collected for chlorophyll <u>a</u> determinations.

A Coulter counter was used for 5 experiments to try to differentiate between groups of phytoplankton on the basis of size. Duplicate samples were collected for counting with the inverted microscope. 10 samples were settled for 72 h, partially decanted, and settled for an additional 72 h before counting and identifying the cells using the inverted microscope.

The echo-sounder was run on a continuous basis.

For analysis of the chlorophyll and productivity data, see Pautzke 1979.

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Dr. T. Saunders Eng School of Oceanogra	glish aphy WB-10					
University of Wash:	Ington					
Seattle, WA 98195						
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Dr. Karl Banse		╎╠┽┼				10 ¹ - 47
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Modifications to the basic program methods

Zooplankton samples were collected using a 2 m² umbrella net, mesh size 223 μ m and a 4:1 filtration ratio.

Seven hydrographic stations were taken. At one station, samples were collected every 5 m from 5 to 500 m. Samples were collected for temperature, salinity (255 each), dissolved oxygen (244), nutrients (220), and phyto-plankton cell counts (60).

One primary productivity station was taken with samples collected at 5, 7.5, 10, 15, 20, 30, 40, 50, 80, 100, 150, and 200 m. The kind of sampling bottle used was not specified, but presumably Van Dorn bottles were used.

The echc-sounder was run on a continuous basis except between 28 Nov and 13 Dec when a damaged transducer had to be replaced.

NOAA FORM 24-13 (4-77)

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2. EXPEDITION, PROJECT, OR PROGRAM DURING WHICH DATA WERE COLLECTED Primary Productivity and energy flow			DATA IN THIS SHIPMENT TSE-(T-3)-24			
4. PLATFORM NAME(S)	5. PLATFORM TYPE (E.G., SHIP, BUO	E(S) Y, ETC.)	6. PLATFORM A NATIONALIT	ND OPERATOR	7. DA	TES
Fletcher's Ice			PLATFORM	OPERATOR	FROM: MODAY,YF	TO: MO DAY /YR
Island (T-3)	Ice island		USA	USA	12/13/72	04/07/73
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TSE-(T-3)-24 13 Dec 1972 - 07 Apr 1973

Modifications to the basic program methods

Zooplankton samples were collected with a 2 m² umbrella net, mesh size 223 μ m and 4:1 filtration ratio. 168 samples were collected.

Hydrographic stations (12) were taken approximately weekly. Samples were collected for temperature, salinity, dissolved oxygen (336 each), nutrients (168), and phytoplankton cell counts (312).

The damaged transducer was replaced at the béginning of this cruise. The echo-sounder was monitored continuously until early January (no date specified) when the chart recorder failed.

NOAA FORM 24-13 (4-77) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEANOGRAPHIC DATA CENTER RECORDS SECTION WASHINGTON, DC 20235 FORM APPROVED O.M.B. No. 41-R2651 EXPIRES 1-81

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A. ORIGINATOR IDENTIFICATION

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Dr T Saunders Eng	olish							
School of Oceanogra	aphy WB-10							
University of Wash	University of Washington							
Seattle, VA 98195								
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TSE-(T-3)-25 07 Apr 1973 - 28 May 1973

Modifications to the basic program methods

595 zooplankton samples were collected with the 2 m² umbrella net, mesh size 223 μ m and a 4:1 filtration ratio.

Hydrographic stations (7) were taken weekly. Samples were collected for temperature, salinity, dissolved oxygen (192 each), nutrients (168), and phytoplankton cell counts (192).

The echo-sounder was not used until the end of the cruise because of problems repairing the chart recorder.

NOAA FORM 24-13 (4-77)

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U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEANOGRAPHIC DATA CENTER RECORDS SECTION WASHINGTON, DC 20235

FORM APPROVED O.M.B. No. 41-R2651 EXPIRES 1-81

(While you are not required to use this form, it is the most desirable mechanism for providing the required ancillary information enabling the NODC and users to obtain the greatest benefit from your data.)

This form should accompany all data submissions to NODC. Section A, Originator Identification, must be completed when the data are submitted. It is highly desirable for NODC to also receive the remaining pertinent information at that time. This may be most easily accomplished by attaching reports, publications, or manuscripts which are readily available describing data collection, analysis, and format specifics. Readable, handwritten submissions are acceptable in all cases. All data shipments should be sent to the above address.

A. ORIGINATOR IDENTIFICATION

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THIS SECTION MUST BE COMPLETED BY DONOR FOR ALL DATA TRANSMITTALS

1. NAME AND ADDRESS OF IN	STITUTION, LABOR	ATORY, O	RACTIVITY	H WHICH SUBM	ITTED DATA A	RE ASSOCIATED
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NOAA FORM 24-13



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Modifications to the basic program methods

Zooplankton samples (1007) were collected with a 2 m² umbrella net, mesh size 223 μ m.

Hydrographic stations whre taken periodically with 516 samples each collected for temperature, salinity, dissolved oxygen, and nutrients. In addition, 189 samples were collected at 8 depths for nitrate and ammonia analysis. Phytoplankton cell county samples (505) were collected during the hydrocasts.

Chlorophyll <u>a</u> (1768) and primary productivity (1828) samples were collected with Van Dorn bottles. Productivity experiments were run with either graded or constant light conditions.

The echo-sounder was run continuously at the 0-50 fm range with daily runs at other ranges.

Zooplankton samples (343) were collected at 10 m intervals from the upper 150 m to be used for biomass estimates.

For analysis of chlorophyll and productivity data, see Pautzke, 1979.

NOAA FORM 24-13

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEANOGRAPHIC DATA CENTER RECORDS SECTION WASHINGTON, DC 20235 FORM APPROVED O.M.B. No. 41-R2651 EXPIRES 1-61

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Seattle, WA 98195		577	572 567 148 168 188 168 168		1 1957758 40 20 8' 20	40 60 10 100
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TSE-(T-3)-27 31 Oct 1973 - 08 Mar 1974

Modifications to the basic program methods

Zooplankton samples (202) were collected with the 2 m² umbrella net, mesh size 223 μ m. 174 samples were collected at 10 m intervals from 300 to 10 m; one extra sample was collected at 100 to 90 m. 24 samples were collected at 100 m intervals from 800 to 10 m; one sample each was collected at 1000 to 900 m and 900 to 800 m. One sample was collected from 500 to 10 m.

Hydrographic stations were taken periodically with 271 samples each collected for temperature, salinity, and dissolved oxygen, 177 samples for nutrient analyses, and 114 samples for phytoplankton cell counts.

The colorimeter was used to analyze all nutrient samples. The echo-sounder was run until late February, date not specified.

NOAA FORM 24-13

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEANOGRAPHIC DATA CENTER RECORDS SECTION WASHINGTON, DC 20235 FORM APPROVED O.M.B. No. 41-R2651 EXPIRES 1-81

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Dr. T. Saunders English School of Oceanography WB-10 University of Washington Seattle, WA 98195							
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TSE-(T-3)-28 08 Mar 1974 - 01 Jun 1974

Modifications to the basic program methods

Zooplankton samples (141) were collected with the 2 m² umbrella net, mesh size 223 μ m.

Four hydrocasts were done during March and April 1974, with 111 samples each collected for temperature, salinity and phytoplankton cell counts; 77 samples for dissolved oxygen, and 58 samples for nutrients. Nutrient samples were analyzed with the colorimeter.

The echo-sounder was run for only 4 days during this cruise with continuous readings on the 0-50 fm range and 15 min daily recordings at each of the other depth ranges.

An underwater camera equipped with a sonically triggered strobe flash and shutter was used in conjunction with the echo-wounder in an attempt to photograph fish, zooplankton and the 50 m scattering layer. The camera was initially lowered to 30 m where the echo-sounder indicated that fish were present. After 2 days, a scattering layer occurred at 50 m and the camera was lowered to just above the layer. The camera and related gear were retrieved when the frame counter indicated that film was all exposed. No time period indicated. Location - Arctic Ocean data, approx, 75°N (most data are N of 80°), long. approx. 80° W to 180°W.

Total observations are approx. 6 yrs., from 1966 to 1974

<u>Data types</u> - of greatest importance is the hydrographic data that exists on punch cards in an NODC format (most likely the station data format). These data include:

> 5500 recs. temperature data 5500 recs. salinity data 5100 recs. 02 data 3300 recs. phosphate data 3000 recs. silicate data

- <u>Media</u> these data exist on punch cards in an NODC format and are currently being digitized onto a magnetic data tape in our Station Data format, by the UW/APL - Polar Science Center.
- <u>Avialability</u> these data should be available to me for NODC in approx. 6 months.
- <u>Other data</u> include 6200 chlorophyll records, and 4000 C₁₎, production. There is also a listing of 11000 zooplankton hauls that include position, depth, and net type (mesh), as well as status (counted or not).

XXXXXX

Sid - info

UNIVERSITY OF WASHINGTON SEATTLE, WASHINGTON 98195

School of Oceanography, WB-10

18 December 1987

Mr. Kent Hughes National Oceanographic Data Center Washington, D. C. 20235

Dear Kent:

We have a couple of additions to the Data Documentation Form for the TSE T-3 data. We would like to substitute a new page 14 (copy enclosed) in the general methods.

I also enclose copies of the two Tech Reports. I think they came out rather well. Copies have been sent to oceanographic institutions, libraries, and interested polar zooplankton researchers around the world - about 45 in al. Additional copies are still available if you know anyone who wants them.

I, too, wish we could think of a memorial for Tom. There is a memorial fund at the UW for him and also for Dick Richards. I don't think it is specially earmarked for anything.

Sincerely,

: f.t. Rita Horner

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Status of Arctic Data Transferral to NODC Year <u>Cruise</u> Tape Sent Cards Sent 1971 C2 (W12) CIAN T3 W13 T3 018 TT 062 AX (Wi4) 2/73 19:12 TT 71 2/73