

***** Record 11956 in INVENTORY *****

014223

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY)

8600164 FJM

DATE OF ENTRY: 11/10/86

REFERENCE NUMBER: 068646 ACCESSION NUMBER: 8600164
FORMER REFERENCE NUMBER: FORMER ACCESSION NUMBER: (RESUB ONLY)

INVENTORY

MEDIA-IN: 01 - Digital Magnetic Tape DINDB CODE 09
EXCHANGE (FORMAT): E005 - Universal Bathythermograph (Expendible)
PROCESSING (FORMAT): C116 - Universal Bathythermograph (UBT) for XBT

* NOTE * If data is F022, create an additional record for C022.

INSTITUTE (COUNTRY AND INSTITUTE CODES): 7603
PLATFORM (COUNTRY AND PLATFORM CODES): 76X9
PLATFORM TYPE: 9 - Ship DINDB CODE 09

ORIGINATORS FILE ID: ORIGINATORS CRUISE ID:
CRUISE START DATE: 12/12/85 CRUISE END DATE: 12/27/85 Press PgDn
PROJECT CODE: 0168 DATA USE CODE (DUC): 3 to continue

VOLUME - NUMBER OF STATIONS: 30 NUMBER OF RECORDS: 30

If STA/REC counts are not appropriate then enter -

NUMBER: UNITS:

AN AREA

CODE 1: 49	MEANING: South China Sea (Nan Hai)
CODE 2: 56	MEANING: Philippine Sea
CODE 3: 57	MEANING: North Pacific Ocean

DINDB TRACK TRANSACTION GENERATED: / /

XIANG YANG HONG #14

014224

DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY)

FJM

DATE OF ENTRY: 11/10/86REFERENCE NUMBER: 068647 ACCESSION NUMBER: 8600164
FORMER REFERENCE NUMBER: _____ FORMER ACCESSION NUMBER: _____ (RESUB ONLY)

INVENTORY

MEDIA-IN: 01 - Digital Magnetic Tape DINDB CODE 09
EXCHANGE (FORMAT): E005 - Universal Bathythermograph (Expendible)
PROCESSING (FORMAT): C116 - Universal Bathythermograph (UBT) for XBT

* NOTE * If data is F022, create an additional record for C022.

INSTITUTE (COUNTRY AND INSTITUTE CODES): 7603
PLATFORM (COUNTRY AND PLATFORM CODES): 76X9
PLATFORM TYPE: 9 - Ship DINDB CODE 09ORIGINATORS FILE ID: _____ ORIGINATORS CRUISE ID: _____
CRUISE START DATE: 01/07/86 CRUISE END DATE: 01/17/86 Press PgDn
PROJECT CODE: 0168 DATA USE CODE (DUC): 3 to continueVOLUME - NUMBER OF STATIONS: 45 NUMBER OF RECORDS: 45

If STA/REC counts are not appropriate then enter -

NUMBER: _____ UNITS: _____

AN AREA

CODE 1: 57A MEANING: NW Pacific (limit-180)
CODE 2: 57B MEANING: NE Pacific (limit-180)
CODE 3: _____ MEANING: _____DINDB TRACK TRANSACTION GENERATED: / /

XIANQ YANG HONG #14

014225DATA ENTRY INFORMATION SYSTEM
(DATASET INVENTORY)

FJM

DATE OF ENTRY: 11/10/86REFERENCE NUMBER: 068648ACCESSION NUMBER: 8600164

FORMER REFERENCE NUMBER: _____ FORMER ACCESSION NUMBER: _____ (RESUB ONLY)

INVENTORY

MEDIA-IN: 01 - Digital Magnetic Tape DINDB CODE 09EXCHANGE (FORMAT): E005 - Universal Bathythermograph (Expendible)PROCESSING (FORMAT): C116 - Universal Bathythermograph (UBT) for XBT

* NOTE * If data is F022, create an additional record for C022.

INSTITUTE (COUNTRY AND INSTITUTE CODES): 7603PLATFORM (COUNTRY AND PLATFORM CODES): 76X9PLATFORM TYPE: 9 - Ship DINDB CODE 09

ORIGINATORS FILE ID: _____ ORIGINATORS CRUISE ID: _____

CRUISE START DATE: 01/31/86 CRUISE END DATE: 02/19/86 Press PgDnPROJECT CODE: 0168 DATA USE CODE (DUC): 3 to continueVOLUME - NUMBER OF STATIONS: 91 NUMBER OF RECORDS: 91

If STA/REC counts are not appropriate then enter -

NUMBER: _____ UNITS: _____

AN AREA

CODE 1: <u>56</u>	MEANING: <u>Philippine Sea</u>
CODE 2: <u>57B</u>	MEANING: <u>NE Pacific (limit-180)</u>
CODE 3: _____	MEANING: _____

DINDB TRACK TRANSACTION GENERATED: / /

XIANQ YANG HONG #14

ACCESSION NO. 8600164FILETYPE C116TRACK NO. 68646-8PROJECT
IDENTIFICATION TOGA

STEP	DATE	INIT.	TAPE OR DISK DSN	NO. FILES	NO. RECL	BLK SIZE	NO. RECORDS
ORIG. TAPE	JULY 86	FJM	A00333 NL	166	32	3200	148/83
DUPLICATE TAPE W07054	10/17/86	FJM	DNODC*8600164-01.	↓	↓	↓	↓
REFORMATTED TAPE *	11/6/86	RPS	*	1	VB	VB	
REFORMATTED DISK							
FIRST MULCHEK							
FINAL MULCHEK							
MPD75 OR F022							
DATA SET FINALIZED							

~~ERRORS REPORTED TO PRINCIPAL INVESTIGATOR:~~

REF. 68646 →

68647 →

68648 →

* W02546 DNODC*CHINA2OUT.

* ~~W03265~~ W03265 DNODC*CHINA3OUTA.

* W14476 DNODC*CHINA4OUTA.

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

COMMENTS (TRACKS DELETED, FIELDS DELETED, ETC.)

 REF. 68646 = 30 obs.
 68647 = 45 obs.
 68648 = 91 obs.

October 22, 1986

Gregory W. Withee
Director, National Oceanographic
Data Center
Room 406
Universal Building
Washington, D.C. 20235

Dear Dr. Withee:

I would like to provide the U.S. NODC with the following tapes of historical oceanographic data and the data obtained from the first PRC/US TOGA cruise in machine-readable form.

Inventory of PRC Data for Exchange

1. PRC historical data and documentation.
 - A. Coastal Station Wave Data (10 stations, from about 1960 through 1976).
 - B. Coastal Station Temperature and Salinity Data (14 stations, from about 1959 through 1976).
2. PRC/US first cruise data and documentation.
 - A. Marine Meteorology Report Data (474 records).
 - B. Dissolved Oxygen and PH Value Data (225 records).
 - C. Nutrient, Chlorophyll and Productivity (the introduction is recorded on tape, 69 stations).
 - D. XBT Data (167 stations, but the 87th station data were missing).
 - E. Airsonde Data (53 stations).
 - F. STD Data (28 stations).
 - G. CTD Data (56 stations).

Yours sincerely,

Hou Wenfeng
Director, Institute of Marine
Scientific and Technological
Information, and
PRC NODC, SOA

Attachment:

An Introduction to read out data from the tapes

cc: Joe Huang
Executive Secretary for US/PRC Air Sea Interaction Studies in
the Western Tropical Pacific Ocean

DATE SUBMITTED 10-10-86	DATE MADE 10-10-86	BIN 33
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CONTINUED TO BE USED AND FUNCTION TO BE PERFORMED

MAX SL COPY, CLEAN PLUS NO LABEL COPY & SCAN

INPUT MEDIUM PAPER CARD DISK <u>TAPE</u> DISKETTE OTHER(SPECIFY)	OUTPUT MEDIUM CARD DISK <u>PRINT</u> <u>TAPE</u> PLOT DISKETTE OTHER(SPECIFY)
--	---

TAPE/DISKETTE INFORMATION

	TAPE #/ DISKETTE	SLOT #	TRK	DENSITY	PARITY	LABEL TYPE	RECORD TYPE	RECORD LENGTH	MAX. BLOCK SIZE	# OF FIL
INPUT	A00333		9	1600	0	NL	FB	32	3200	16
	SECTOR SIZE	EXCHANGE TYPE	CODE: ASCII EBCDIC BCD SDF. OTHER(SPECIFY)				DATA SET NAME			PUR DAT
	TAPE #/ DISKETTE	SLOT #	TRK	DENSITY	PARITY	LABEL TYPE	RECORD TYPE	RECORD LENGTH	MAX. BLOCK SIZE	# OF FIL
	SECTOR SIZE	EXCHANGE TYPE	CODE: ASCII EBCDIC BCD SDF OTHER(SPECIFY)				DATA SET NAME			PUR DAT
OUTPUT	W07054		9	1600	0	SL	FB	32	3200	16
	SECTOR SIZE	EXCHANGE TYPE	CODE: ASCII EBCDIC BCD SDF OTHER(SPECIFY)				DATA SET NAME DNDG-8000164-01			PUR DAT
	TAPE #/ DISKETTE	SLOT #	TRK	DENSITY	PARITY	LABEL TYPE	RECORD TYPE	RECORD LENGTH	MAX. BLOCK SIZE	# OF FIL
	SECTOR SIZE	EXCHANGE TYPE	CODE: ASCII EBCDIC BCD SDF OTHER(SPECIFY)				DATA SET NAME			PUR DAT

SPECIAL INSTRUCTIONS ✓ PLEASE ASSIGN "W" TAPE PLEASE MAKE ALL COPY & LABEL SCAN "CHINA" XBL	ESTIMATED EXECUTION TIME
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731 USE ONLY					DEVICES USED, NUMBER OF TAPE MOUNTS, LINES PRINTED, DISKETTES USED, CARDS PUNCHED, CARDS KEYVERIFIED
DATE JOB COMPLETED	START TIME	END TIME	PRIORITY		
10/17/86	10:50	12:00	C		Completed by Andy

00391

DATA ENTRY INFORMATION SYSTEM
(SUBMISSIONS)

DATE OF ENTRY: 05/22/86 ACCESSION NUMBER: 8600164
DATE OF RECEIPT: 05/22/86 FORMER ACCESSION NUMBER: _____ (RESUBS ONLY)

SUBMITTER'S NAME: MR. CHEN ZE SE (FIRST M.I. LAST)
SUBMITTER'S ADDRESS: DIRECTOR
ADDRESS: FIRST INSTITUTE OF OCEANOGRAPHY
CITY: QINGDOA STATE: _____ ZIP: _____
COUNTRY: PEOPLES REPUBLIC OF CHINA Q

NODC SUBMITTER CODE: NWLO SUBMISSION PRIORITY: HIGH
L.O. AREA: _____ S.A. CODE: _____ SPONSORING AGENCY: _____

CONTENTS OF SUBMISSION

DOCUMENTATION? none MAGNETIC TAPE(S)? no DISKETTE(S)? no
STRIP CHART(S)? no LOG SHEET(S)? no MAP(S)/CHART(S)? no
PUBLICATION(S)? no MICROFORM(S)? no CASSETTE(S) yes Press
PgDn to
continue

DESCRIPTION: TWO XBT CASSETTES (XIANGYANGHONG 14; 49 OBS.; 1/6-21/1986)
(to be entered on Submitter acknowledgement letter)

SUBMISSION MANAGER (3 INITIALS): FJM GRANT/CONTRACT NO.: _____

DATE TRANSFERRED TO SUBMISSION MANAGER : 05/22/86

SUBMITTER ACKNOWLEDGEMENT DATE: 05/24/86

ENTIRE SUBMISSION ON "HOLD" STATUS

WHEN: / / WHY: _____ WHO'S RESPONSIBLE: _____ RESTART DATE: / /
REASON: _____
WHEN: / / WHY: _____ WHO'S RESPONSIBLE: _____ RESTART DATE: / /
REASON: _____
SUBMITTER CONTACTED ON: / /

ENTIRE SUBMISSION CANCELLED

WHEN: / / DISPOSITION: _____

REASON: _____

XBT Data File Introduction

1. Outline

Geographic Coverage-

Tropical Western Pacific.

Time Period-

from Dec.12,1985 through Feb.19,1986.

Investigation Institution-

the First Institute of Oceanography, the State Oceanic Administration, PRC.

Investigation Instrument-

XBT SA-810 Serial #51.

Investigation Vessel-

R/V Xiangyanghong No.14.

Cruise-

The first cruise of the US-PRC Cooperative investigation of the Tropical Western Pacific (TOGA Project).

Description-

The original voltage data file contains voltage data recorded at discrete time.

The temperature-depth data file contains temperature-depth pair data. these files are in cruise file version.

2. Original Voltage Data File

Structure-

The original voltage data files were already transformed from the special cassette tape(98200A) of HP-85 microcomputer into the 1/2 inch wide, 9-track magnetic tape in EBCDIC character format.

Each file which corresponds to a station number is recorded on several physical records. These physical records are fixed block length record. The block length is 800 Bytes, the logical records length is 80 Bytes and the records density is 1600 BPI.

Each file comprises 720 characters of header information plus 8 character of voltage data for each time.

File format-

XBT Original Voltage Data File

PARAMETER	SC	EXPLANATION
XBT probe type	1	
XBT launch number	9	
day number	17	for example, 346 represents Dec.12,1985, 7 represents Jan.7,1986. (for GMT)

hour of launch	25	for GMT
minute of launch	33	for GMT
(latitude degree)*100	41	+ if north
+(latitude minute)		- if south
		(symbol "+" can be omitted)
latitude second	49	
(longitude degree)*100	57	+ if east
+(longitude minute)		- if west
		(symbol "+" can be omitted)
longitude second	65	
length of XBT data	73-80	
cycle in seconds		
blank and zero	81	zero is nonsignificant
XBT SA-80 SERIAL number	713-720	SERIAL number for this cruise is 51
XBT voltage	721	voltage data (8 characters) repeated many times.
		data unit is volt, the number of digits right of decimal point is 4.

Print Sample- See Figure 1

File number-

All the original voltage data consist of 167 stations among which the missing 86th station is missing.

3. Temperature-Depth Data File

Structure-

These files are recorded in the 1/2-inch wide, 9-track magnetic tape in EBCDIC character format. Each file which corresponds to a station number is recorded as several physical records. The physical records are fixed block length records. The block length is 3200 Bytes, the logical record length is 32 Bytes and the record density is 1600 BPI. The first physical record of each file comprises 480 character of header information plus 32 character of temperature-depth pair repeated many times. The following physical records only comprises temperature-depth pair data.

File format-

XBT Temperature-Depth Data File

PARAMETER	SC	EXPLANATION
"*"	1-32	
blank	33-64	
"XBT # "	65	

XBT launch number	71	XBT launch number is known as
		XBT station number
blank	74	
"T-"	83	
XBT probe type	85	
blank	87	
"PROBE"	88	
blank	93-96	
blank	97-128	
"TIME"	129	
blank	133	
hour of launch	135	for GMT
":"	137	
minute of launch	138	for GMT
blank	140	
"GMT"	141	
blank	144	
"DAY"	149	
blank	152	
day number	153	for example, 346 represents Dec. 12, 1985. 7 represents Jan. 7, 1986, (for GMT).
blank	156-160	
blank	161-192	
"LAT: "	193	
latitude degree	198	
" DEG "	201	
latitude minute	207	
" MIN "	209	
latitude second	215	
" SEC (N)" or " SEC L(S)"	217	
blank	225-256	
"LON: "	257	
longitude degree	262	
" DEG "	265	
longitude minute	271	
" MIN "	273	
longitude second	279	
" SEC (E)" or " SEC (W)"	281-288	
blank	289-320	
"SA-810 SERIAL # 51"	321	

blank	340-352	
blank	353-359	
"TAPE FILE NAME"	360	
tape file name	378	the first character represents the XBT probe type, the following characters represent the XBT station number.
blank	381-384	
blank	385-416	
"*"	417-448	
blank	449-480	
blank	481	
depth	488	meter to tenths
blank	491	
temperature	499	degree C to hundredths.
blank	504-512	
blank	513	temperature-depth pair repeated many times by 481-512 character format.

Printed Sample-See Figure 2

File index

All XBT temperature-depth data files consist of 167 stations, but the 86th station in them is missing.

The XBT temperature-depth data index file is provided in Figure 4.

4. XBT Temperature-Depth Computation

a Temperature computation

$$R = 18094 - 1490.1 * V$$

$$T = -273.15 + 1 / (A + B * \ln R + C * (\ln R)^3)$$

Where V is original voltage data (volt)

R is resistance (ohm).

T is temperature (degree C)

$$A = 1.29502 * 10^{(-3)}$$

$$B = 2.34546 * 10^{(-4)}$$

$$C = 9.9434 * 10^{(-8)}$$

b Depth computation

Depths are determined by XBT probe type and the time elapsed since the probe entered the water.

$$M = M8 * S + M9 * S^2$$

$$S = I - 10 + 0.1 * J$$

Where M is depth (meter)

I is integer from 10 to Z

J is integer from 1 to 10

Z is parameter about observation number

$Z=9+(\text{length of XBT data cycle in seconds})$

M8 and M9 are determined by XBT probe type:

probe type/ M	M8	M9
T-5	6.828	-0.00182
T-10	6.301	-0.00216
T-11	1.7779	-0.0002557
T-4,6,7	6.472	-0.00216

The above computation is finished in IBM-4341 computer.

The above computation formulars are extracted from Operations Manhal

- Model SA-810-XBT Data Acquisition System (by Bathy Systems, Inc., Garder Road
W. Kingston, RI 02892, TEL (401) 3294-2190).

5. Note

We are sorry not to have provided the standard XBT data, because we don't master the technique of obtaining "inflection point" and we don't have XBT data quality control program.

Because of precision defference between HP-85 and IBM-4341, an error occurs when we compute the depth value, i.e.

10.3 m by IBM-4341

10.4 m by HP-85

Others are correct.

6	10	347	18	36	2000	20	12201	45	91
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	51
9.1577	9.1016	9.1382	9.1577	9.1602	9.1626	9.1626	9.1602	9.1577	9.1553
9.1553	9.1528	9.1528	9.1553	9.1553	9.1553	9.1577	9.1626	9.1626	9.1626
9.1675	9.1650	9.1650	9.1675	9.1724	9.1675	9.1650	9.1675	9.1675	9.1675
9.1650	9.1675	9.1675	9.1650	9.1650	9.1699	9.1675	9.1675	9.1699	9.1724
9.1724	9.1724	9.1748	9.1724	9.1724	9.1748	9.1699	9.1724	9.1724	9.1724
9.1699	9.1724	9.1724	9.1699	9.1724	9.1724	9.1724	9.1724	9.1748	9.1748
9.1748	9.1748	9.1772	9.1748	9.1797	9.1748	9.1724	9.1724	9.1699	9.1724
9.1748	9.1748	9.1748	9.1748	9.1748	9.1748	9.1724	9.1724	9.1724	9.1724
9.1772	9.1748	9.1748	9.1772	9.1772	9.1748	9.1748	9.1748	9.1748	9.1748
9.1724	9.1772	9.1748	9.1724	9.1724	9.1748	9.1724	9.1724	9.1724	9.1772
.0415	.0098	.0098	.0415	2.0190	0.0000	.0171	0.0000	9.9976	9.9976
9.9976	1.7993	9.9976	9.9976	9.9976	9.9976	9.9976	9.9976	9.9976	9.9976
.0977	1.1841	.1318	.0977	0.0000	8.9038	.0317	.0073	.0098	.0098
9.9976	9.9976	9.9976	9.9976	9.9976	9.9976	9.9976	9.9976	9.9976	9.9976

Figure 1 : XBT Original Voltage Data File

XBT # 20 T- 6 PROF

TIME 19:46 GMT DAY 357

LAT: 21 DEG 0 MIN 0 SEC (N)

LON: 180 DEG 0 MIN 0 SEC (E)

SA-810 SERIAL # 01

TAPE FILE NAME 025

0.0	25.28
1.3	24.95
1.9	25.17
2.6	25.22
3.2	25.22
3.9	25.25
4.5	25.23
5.2	25.23
5.8	25.23
6.5	25.22
7.1	25.19
7.5	25.15
8.4	25.13
9.1	25.19
9.7	25.16
10.5	25.17
11.0	25.18
11.6	25.20

Figure 2

FILE: 112

AL

VHF/50 CONVERSATIONAL MONITOR

***** XBT INDEX *****

SHIP : 770-14 CRUISE : 1 SA-111 SERIAL : 51

PR	XBT#	NAME	DAY	TIME	LATITUDE			LONGITUDE			DEPTH	TEMP		
6	1	61	345	22:34	21	45	17	(N)	117	24	0	(E)	820	497.8
6	2	62	345	22:36	21	35	3	(N)	117	0	0	(E)	820	460.9
6	3	63	347	00:38	21	15	0	(N)	117	32	0	(E)	840	473.2
6	4	64	347	02:42	21	0	0	(N)	118	0	0	(E)	810	454.3
6	5	65	347	04:42	20	44	34	(N)	118	30	0	(E)	810	454.2
6	6	66	347	06:54	20	21	12	(N)	118	0	0	(E)	910	516.2
6	7	67	347	09:06	20	14	4	(N)	117	30	0	(E)	860	473.2
6	8	68	347	11:16	20	0	2	(N)	117	0	28	(E)	910	516.2
6	9	69	347	14:37	20	0	0	(N)	117	0	18	(E)	840	473.2
6	10	610	347	18:36	20	0	20	(N)	122	1	45	(E)	910	516.2
6	11	611	347	22:02	20	15	55	(N)	123	3	50	(E)	820	460.9
6	12	612	348	01:23	20	31	56	(N)	124	0	0	(E)	910	516.2
6	13	613	348	04:57	20	44	55	(N)	125	0	0	(E)	910	516.2
6	14	614	348	08:35	21	0	4	(N)	126	0	42	(E)	850	479.4
6	15	615	349	13:54	19	15	35	(N)	128	0	0	(E)	910	516.2
6	16	616	350	05:23	18	3	15	(N)	130	0	0	(E)	910	516.2
6	17	617	351	03:38	20	59	12	(N)	135	0	0	(E)	880	497.8
6	18	618	351	23:19	21	0	45	(N)	140	0	0	(E)	820	460.9
6	19	619	352	17:20	21	0	40	(N)	145	0	0	(E)	910	516.2
6	20	620	353	14:00	20	59	49	(N)	150	0	0	(E)	910	516.2
6	21	621	354	07:53	21	1	0	(N)	155	0	0	(E)	790	442.5
6	22	622	355	00:54	21	0	12	(N)	160	0	0	(E)	790	442.5
6	23	623	355	17:31	21	0	0	(N)	165	0	0	(E)	780	436.3
6	24	624	355	09:48	21	0	0	(N)	170	0	0	(E)	810	454.3
6	25	625	357	02:46	21	0	48	(N)	175	0	0	(E)	830	467.1
6	26	626	357	19:46	21	0	0	(N)	180	0	0	(E)	800	448.6
6	27	627	358	12:19	21	0	14	(N)	175	0	0	(E)	820	460.9
6	28	628	359	07:38	21	0	40	(N)	169	59	47	(E)	810	454.8
6	29	629	360	00:18	21	0	5	(N)	165	0	0	(E)	810	454.8
6	30	630	361	05:24	20	52	48	(N)	160	37	0	(E)	830	467.1
6	31	631	7	07:02	19	15	0	(N)	160	0	0	(E)	910	516.2
6	32	632	7	13:21	18	3	14	(N)	161	30	0	(E)	880	497.8
6	33	633	7	19:15	17	6	0	(N)	162	30	0	(E)	770	430.1
6	34	634	7	23:47	16	0	0	(N)	163	35	6	(E)	690	380.5
6	35	635	8	04:52	15	0	0	(N)	164	41	0	(E)	670	401.7
6	36	636	8	10:04	14	0	0	(N)	165	44	0	(E)	710	393.0
6	37	637	8	15:07	13	0	0	(N)	166	49	0	(E)	910	516.2
6	38	638	8	20:14	12	0	0	(N)	167	51	0	(E)	720	405.4
6	39	639	9	01:19	11	0	0	(N)	168	55	6	(E)	760	436.3
6	40	640	9	06:27	10	2	0	(N)	169	58	0	(E)	750	417.7
6	41	641	9	12:21	9	20	0	(N)	170	2	46	(E)	910	516.2
6	42	642	9	18:50	8	50	21	(N)	169	57	24	(E)	910	516.2
6	43	643	9	17:15	9	0	0	(N)	170	0	0	(E)	720	436.3
6	44	644	9	18:57	8	0	0	(N)	170	0	0	(E)	750	417.7
6	45	645	9	22:40	7	0	0	(N)	170	0	0	(E)	910	516.2
6	46	646	10	00:54	7	0	0	(N)	170	0	0	(E)	910	516.2
6	47	647	10	04:50	6	30	0	(N)	170	0	0	(E)	910	516.2
6	48	648	10	08:41	6	0	0	(N)	170	0	0	(E)	910	516.2
6	49	649	10	10:58	5	30	0	(N)	169	59	54	(E)	770	430.1

Figure 3

6	50	650	10	15:37	4	59	4	(N)	170	2	0	(W)	740	423.9
4	51	451	10	17:12	4	20	0	(N)	169	59	12	(W)	910	516.2
6	52	652	10	18:20	4	1	0	(N)	169	54	36	(W)	910	516.2
4	53	453	10	20:30	3	30	0	(N)	170	0	0	(N)	910	516.2
4	54	454	11	01:25	3	0	0	(N)	170	0	0	(N)	910	516.2
4	55	455	11	03:25	2	0	0	(N)	170	0	0	(N)	910	516.2
4	56	456	11	11:15	2	0	0	(N)	170	0	0	(N)	910	516.2
6	57	657	11	14:00	1	32	0	(N)	170	0	0	(N)	780	436.3
6	58	658	11	20:30	1	0	0	(N)	170	0	0	(N)	370	491.7
6	59	659	12	04:15	0	30	0	(N)	170	0	0	(N)	820	460.9
6	60	660	12	05:54	0	0	0	(N)	170	0	0	(N)	320	460.9
6	61	661	12	11:32	0	30	0	(N)	170	0	0	(N)	300	448.6
6	62	662	12	13:53	1	0	0	(N)	170	0	0	(N)	830	467.1
6	63	663	12	21:10	1	30	0	(N)	170	0	0	(N)	350	479.4
6	64	664	13	01:10	0	0	0	(N)	170	0	12	(N)	840	473.2
6	65	665	13	05:15	0	30	0	(N)	170	0	0	(N)	910	516.2
6	66	666	13	11:37	0	0	0	(N)	169	59	0	(N)	910	516.2
6	67	667	14	11:41	0	0	0	(N)	170	0	0	(N)	910	516.2
6	68	668	14	22:12	0	0	0	(N)	172	20	0	(N)	840	473.2
6	69	669	15	06:29	0	0	22	(N)	180	0	0	(N)	910	516.2
6	70	670	15	10:41	0	0	18	(N)	177	30	0	(N)	820	469.9
6	71	671	16	05:09	0	0	26	(N)	175	0	0	(N)	700	442.5
6	72	672	16	15:23	0	0	17	(N)	172	30	0	(N)	300	448.6
6	73	673	16	23:22	0	0	0	(N)	170	0	0	(N)	780	436.3
6	74	674	17	11:46	0	0	0	(N)	167	30	0	(N)	700	436.3
6	75	675	17	20:45	0	0	0	(N)	165	0	0	(N)	810	454.8
6	76	676	31	07:14	10	0	0	(N)	165	0	0	(N)	910	516.2
6	77	677	31	15:31	6	50	40	(N)	165	0	36	(N)	910	516.2
6	78	678	32	01:29	6	0	0	(N)	165	0	0	(N)	910	516.2
6	79	679	32	05:25	7	30	0	(N)	165	0	0	(N)	910	454.8
4	80	480	32	07:54	7	0	0	(N)	165	0	0	(N)	910	516.2
4	81	481	32	11:39	6	30	0	(N)	165	0	0	(N)	910	516.2
4	82	482	32	13:43	6	0	0	(N)	165	0	0	(N)	910	516.2
4	83	483	32	17:58	5	30	0	(N)	165	0	0	(N)	910	516.2
4	84	484	32	19:29	5	0	0	(N)	165	0	0	(N)	910	516.2
4	85	485	32	23:55	4	30	0	(N)	165	0	0	(N)	910	516.2
4	87	487	33	07:12	3	0	0	(N)	165	0	0	(N)	910	516.2
4	88	488	33	14:03	2	30	0	(N)	165	0	0	(N)	910	516.2
4	89	489	33	18:05	2	0	0	(N)	165	0	0	(N)	910	516.2
4	90	490	33	22:34	1	30	0	(N)	165	0	0	(N)	910	516.2
4	91	491	34	02:17	1	0	0	(N)	165	0	0	(N)	910	516.2
4	92	492	34	07:51	0	30	0	(N)	165	0	0	(N)	910	516.2
4	93	493	34	11:44	0	0	0	(N)	164	50	12	(N)	910	516.2
4	94	494	34	15:49	0	30	0	(N)	165	0	12	(N)	910	516.2
4	95	495	34	22:40	1	0	0	(N)	165	0	0	(N)	910	516.2
4	96	496	35	03:22	1	30	0	(N)	165	0	0	(N)	910	516.2
4	97	497	35	07:33	0	0	0	(N)	165	0	0	(N)	910	516.2
4	98	498	35	11:29	2	30	0	(N)	165	0	0	(N)	910	516.2
4	99	499	35	15:10	3	0	0	(N)	165	0	24	(N)	910	516.2
4	100	4100	35	22:05	4	0	0	(N)	165	0	12	(N)	910	516.2
4	101	4101	35	03:01	4	0	0	(N)	165	0	0	(N)	700	442.5
6	102	6102	35	03:37	0	0	0	(N)	165	0	0	(N)	780	436.3
6	103	6103	37	10:52	0	0	1	(N)	160	0	0	(N)	910	516.2
6	104	6104	38	01:52	0	0	45	(N)	157	30	0	(N)	430	467.1
6	105	6105	38	11:23	0	0	0	(N)	155	0	0	(N)	910	516.2

Figure

6	106	6106	38	23:14	0	0	0	(N)	1-2	22	0	(E)	720	442.5
6	107	6107	40	03:57	0	0	0	(N)	1-2	0	0	(E)	840	473.2
6	108	6108	40	17:23	0	0	0	(N)	1-2	20	0	(E)	810	454.3
6	109	6109	41	02:23	0	0	1	(N)	1-2	0	0	(E)	840	473.2
6	110	6110	41	18:07	0	0	0	(N)	1-2	21	0	(E)	910	516.2
6	111	6111	41	23:20	0	20	0	(N)	1-2	20	0	(E)	910	516.2
6	112	6112	42	04:01	1	0	0	(N)	1-2	20	0	(E)	910	516.2
6	113	6113	42	03:09	1	20	0	(N)	1-2	20	0	(E)	910	516.2
6	114	6114	42	11:40	0	0	0	(N)	1-2	20	0	(E)	910	516.2
4	115	4115	42	11:39	2	20	0	(N)	1-2	20	0	(E)	910	516.2
6	116	6116	42	19:00	0	0	0	(N)	1-2	20	0	(E)	910	516.2
6	117	6117	42	23:06	2	20	0	(N)	1-2	20	0	(E)	870	491.7
6	118	6118	43	03:57	4	0	0	(N)	1-2	0	0	(E)	910	516.2
6	119	6119	43	03:45	4	20	0	(N)	1-2	20	0	(E)	910	516.2
6	120	6120	43	07:29	0	0	0	(N)	1-2	20	0	(E)	910	516.2
4	121	4121	43	21:12	5	0	0	(N)	1-2	20	0	(E)	910	516.2
4	122	4122	44	10:11	5	0	0	(N)	1-2	20	0	(E)	910	516.2
4	123	4123	45	05:36	5	0	0	(N)	1-2	20	0	(E)	910	516.2
4	124	4124	45	12:14	5	0	0	(N)	1-2	0	0	(E)	910	516.2
4	125	4125	45	15:41	5	30	0	(N)	1-2	0	0	(E)	910	516.2
4	126	4126	45	17:43	6	0	0	(N)	1-2	0	0	(E)	910	516.2
4	127	4127	45	21:18	0	0	0	(N)	1-2	0	0	(E)	910	516.2
4	128	4128	45	23:18	7	0	0	(N)	1-2	0	0	(E)	910	516.2
4	129	4129	45	03:07	7	20	0	(N)	1-2	0	0	(E)	910	516.2
4	130	4130	45	05:23	8	0	0	(N)	1-2	0	0	(E)	910	516.2
6	131	6131	45	09:39	8	20	0	(N)	1-2	0	0	(E)	860	485.5
6	132	6132	45	11:30	9	0	0	(N)	1-2	0	0	(E)	910	516.2
6	133	6133	46	15:34	0	30	0	(N)	1-2	0	0	(E)	870	491.7
6	134	6134	46	17:35	10	0	24	(N)	1-2	0	30	(E)	910	516.2
6	135	6135	46	21:00	10	30	0	(N)	1-2	59	36	(E)	970	491.7
6	136	6136	46	22:48	11	0	0	(N)	1-2	0	0	(E)	910	516.2
6	137	6137	47	02:19	11	30	0	(N)	1-2	0	0	(E)	850	479.4
6	138	6138	47	04:12	12	0	0	(N)	1-2	0	0	(E)	910	516.2
6	139	6139	47	07:53	12	20	0	(N)	1-2	0	0	(E)	860	485.5
6	140	6140	47	09:46	13	0	0	(N)	1-2	0	0	(E)	910	516.2
6	141	6141	47	13:48	13	40	0	(N)	1-2	0	0	(E)	860	485.5
6	142	6142	47	16:17	14	20	0	(N)	1-2	0	0	(E)	840	473.2
4	143	4143	47	18:55	15	0	0	(N)	1-2	0	0	(E)	910	516.2
4	144	4144	48	03:14	16	0	0	(N)	1-2	0	0	(E)	910	516.2
4	145	4145	48	05:57	17	0	0	(N)	1-2	0	0	(E)	910	516.2
4	146	4146	48	08:01	17	40	0	(N)	1-2	0	0	(E)	910	516.2
4	147	4147	48	10:44	18	20	0	(N)	1-2	0	0	(E)	910	516.2
4	148	4148	48	13:39	18	20	0	(N)	1-2	20	0	(E)	910	516.2
4	149	4149	48	15:27	18	20	0	(N)	1-2	0	0	(E)	910	516.2
4	150	4150	48	16:26	18	20	0	(N)	1-2	30	0	(E)	910	516.2
4	151	4151	48	20:27	18	20	0	(N)	1-2	0	0	(E)	910	516.2
4	152	4152	48	23:12	18	20	0	(N)	1-2	30	0	(E)	910	516.2
4	153	4153	49	00:56	18	20	0	(N)	1-2	0	0	(E)	910	516.2
4	154	4154	49	04:05	18	20	0	(N)	1-2	30	0	(E)	910	516.2
4	155	6155	49	05:55	18	20	0	(N)	1-2	0	0	(E)	910	516.2
6	156	6156	49	11:41	18	10	0	(N)	1-2	20	0	(E)	820	460.9
6	157	6157	49	13:35	18	10	0	(N)	1-2	0	0	(E)	800	448.6
6	158	6158	49	17:27	18	20	20	(N)	1-2	45	0	(E)	830	467.1
6	159	6159	49	18:35	18	30	30	(N)	1-2	30	0	(E)	820	460.9
6	160	6160	49	19:53	18	40	0	(N)	1-2	10	0	(E)	810	454.8

Figure 3

FILE: 112

R

AI

VM/SP CONVERSATIONAL MONITOR

6	161	6161	47	10:51	18	47	0	(8)	114	4	0	(8)	810	454.6
6	162	6162	48	11:00	18	56	0	(8)	114	4	0	(8)	810	454.6
6	163	6163	49	11:10	18	57	0	(8)	114	4	0	(8)	810	454.6
6	164	6164	50	11:31	19	00	0	(8)	117	17	0	(8)	840	473.2
6	165	6165	51	11:39	19	17	0	(8)	117	17	0	(8)	820	460.9
6	166	6166	52	11:45	19	24	10	(8)	120	24	0	(8)	830	467.1
6	167	6167	53	11:51	19	31	0	(8)	120	31	0	(8)	840	473.2

DATA DIVISION OF CONSOLE APRIL 23, 1966.

Password:

accNo	fleA	refNo	proj	inst	ship	startDate	cruise	catId
8600164	C116	068646	0168	7603	76X9	1985/12/12	NULL	163629
8600164	C116	068647	0168	7603	76X9	1986/01/07	NULL	163630
8600164	C116	068648	0168	7603	76X9	1986/01/31	NULL	163631

(3 rows affected)

Password:

accNo	fleA	refNo	ship	staCnt	recCnt	startDate	endDate
-----	-----	-----	-----	-----	-----	-----	-----
8600164	C116	068646	76X9	30	30	85/12/12	85/12/27
8600164	C116	068647	76X9	45	45	86/01/07	86/01/17
8600164	C116	068648	76X9	91	91	86/01/31	86/02/19

(3 rows affected)