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# TASK ORDER #46

## Climate Database Modernization Program

## March 1, 2002

## DATA CONVERSION TASK 1.D
## Completion of Other Climate Databases Including Oceanic, Solar, Geophysical, and Hydrological

## TASK ORDER TITLE:
## Digitization of Marine Data from Japanese Whaling Ships (1946-84)

**Task objectives:** To digitize dates, positions, and meteorological data elements observed (once daily at local noon) from Japanese whaling ships (JWS) traveling to the Southern Ocean region during 1946-84 (up to four ships would leave Japan in October-November at the start of the whaling season, and return in March-April). Due to the shipping routes, these data are critical for Climate and Global Change research. The data are available on photocopies of original logsheets.

**Task details:**

*1. Description and organization of logsheets*

The (single-sided; 8.5 × 11 in.) photocopies have not been counted, but the sheets form a stack about 12 cm high. Each sheet contains space for up to 20 daily ship "reports" (i.e., the data reported daily from a ship recorded on one line of the form). Estimating (very roughly) 100 sheets per cm, this totals 1200 sheets. 20 reports per sheet × 1200 sheets = maximum 24,000 reports. The logsheet forms appear to be subject to only minor variations through the period-of-record in the location and meteorological elements.

The sheets were received stapled together into "sets." Each set comprises the data for a single ship and whaling season. Each page of the set is marked on the upper-left with the whaling season years (e.g., 1982/83) and the ship name in Japanese, and on the upper-right with a sheet number within the set (occasionally the sheet numbers were left missing). All the sets for a given ship were received bundled (clipped) together. To facilitate later identification of the ship and link the data for each voyage together, the whaling season years and sheet numbers should be digitized from each page, plus a ship number from the first sheet in each bundle (added by the task leader before shipping).

Dates, positions, and meteorological elements were generally written on the logsheets in Arabic numerals or English. However, the column headings, ship names, and other information appear in Japanese. No translation or documentation for the logsheets was provided when the data were supplied to the task leader. However, an approximate translation of the relevant headings has since been obtained (Appendix 3).

*2. Preparation and shipping of the logsheets to the contractor*

The task leader will mark the first page of each bundle with a ship number (lower left corner) prior to shipping. The bundles have been examined in some detail, and compared with records received from M.I.T. (Appendix 1). Since the ship name (in Japanese) will not be keyed, the ship number needs to be keyed and associated with each

output report (together with the whaling season years, and the sheet number within the set). This will facilitate later identification of the ship name, via translation of the Japanese or matching with independent data in which the ship name is already known.

The task leader is retaining duplicate photocopies of the entire collection, to facilitate resolutions of questions as they arise with the contractor.

*3. Digitization and preliminary quality assurance*

Appendix 2 outlines the proposed output format, which closely follows the column structure of the original forms. A fixed-field format with comma delimiters is used, with justification of the data within fields described in the output keying format (decimal points are also to be included in the output data as described in the keying format). Since the units of the data may vary and are not explicitly documented, several data elements should be keyed in literal form as noted. Data appearing in Japanese cannot be keyed, but the specified symbol (*) should be inserted to indicate this situation or other data that appeared on the forms but would not fit into the format or could not be deciphered. The asterisk (*) will indicate that information was entered on the form in this field but it was not possible to key for one of the various reasons described above.

A small amount of sample data should be keyed and returned to the task leader for review before production keying can begin. The task leader will then provide notice when production can begin once the sample test is approved.

*4. Data delivery*

The relatively small amount of data can be delivered to the task leader on a CD-ROM or via ftp, or other media convenient to the contractor after discussion with the task leader.

After completion of the project, the photocopies should be returned to the task leader since they contain proprietary whaling catch information. Thus the whaling information should not be digitized, and the forms not be imaged for permanent archival.

*5. Task leader contact information*

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# CDMP Task Order # 46
# Appendix 1: SHIP NUMBER INFORMATION
# Digitization of Marine Data from Japanese Whaling Ships (1946-84)

Japanese Whaling Ship Observations:

| | Ship | Year (starting) | obs | bytes | <-routes typically start late Oct/early Nov, and end in late Mar or Apr. |
|---|---|---|---|---|---|
| 1 | Hashidate | 1946-1950 | 750 | 45000 | |
| 2 | Nissin | 1946-67,69 | 3500 | 230000 | |
| 3 | Tonan | 1951-1965 | 2250 | 157500 | |
| 4 | Baikaru | 1951 | 170 | 11250 | |
| 5 | Kinjo | 1954-1960 | 1050 | 70000 | |
| 6 | Matshima | 1956 | 150 | 10000 | |
| 7 | Kyokuyo2 | 1956-65,68 | 1800 | 121000 | |
| 8 | Tonan2 | 1957-73,76 | 2700 | 198000 | |
| 9 | Kyokulo3 | 1960-75(ext68,74) | 2250 | 155000 | |
| 10 | Nissin2 | 1957-1964 | 1250 | 88000 | |
| 11 | Chiyo | 1971-83(ext75) | 1900 | 130000 | <-actually 1971-74 (below)? |
| 12 | Kyokusei | 1973 | 50 | 3625 | |
| 13 | Nissin3 | 1961-1973 | 1950 | 130000 | <-actually 1961-83 (below)? |

| Hashidate | Nissin | Tonan | Baikaru | Kinjo | Matshima | Kyokuyo2 | Tonan2 |
|---|---|---|---|---|---|---|---|
| ha | ni | to | ba | ki | ma | ky2 | to2 |
| 46a | 46b | 51a | 51c | 54c | 56b | 56e | 57e |
| 47a | 47b | 52a | | 55c | | 57f | 58b |
| 48a | 48b | 53a | | 56d | | 58f | 59b |
| 49a | 49b | 54a | | 57c | | 59f | 60b |
| 50a | 50b | 55a | | 58e | | 60f | 61b |
| | 51b | 56a | | 59e | | 61f | 62b |
| | 52b | 57d | | 60e | | 62f | 63b |
| | 53b | 58a | | | | 63f | 64b |
| | 54b | 59a | | | | 64f | 65b |
| | 55b | 60a | | | | 65e* | 66b |
| | 56c | 61a | | | | 68 | 67b |
| | 57b | 62a | | | | | 68c |
| | 58c | 63a | | | | | 69c |
| | 59c | 64a | | | | | 70b |
| | 60c | 65a | | | | | 71b |
| | 61c | | | | | | 72a |
| | 62c | | | | | | 73a |
| | 63c | | | | | | 76a |
| | 64c | | | | | | |
| | 65d | | | | | | |
| | 66c | | | | | | |
| | 67c | | | | | | |
| | 69b | | | | | | |

| Kyokuyo3 | Nissin2 | Chiyo | Kyokusei | Nissin3 |
|---|---|---|---|---|
| ky3 | ni2 | ch | ky | ni3 |
| 60g | 57a | 71d | 73e | 61 |
| 61g | 58d | 72b | | 62 |
| 62g | 59d | 73b | | 63 |
| 63g | 60d | 74a | | 64 |
| 64g | 61d | 76b** | | 65 |
| 65c | 62d | 77a** | | 66 |
| 66a | 63d | 78a** | | 67 |
| 67a | 64d | 79a** | | 68 |
| 69a | | 80a** | | 70 |
| 70a | | 81a** | | 71 |
| 71a | | 82a** | | 72 |
| 72d | | 83a** | | 73 |
| 73d | | | | 76*** |
| 75a | | | | 77*** |
| | | | | 78*** |
| | | | | 79*** |
| | | | | 80*** |
| | | | | 81*** |
| | | | | 82*** |
| | | | | 83*** |

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# Information from M.I.T. files JWSlist2/JWSnames; annotated through examination of the logsheet photocopies:

* 65/66 papers photocopies appear to be missing. These might turn up mis-stapled to another bundle in the course of keying.

** These years were not present in the bundle as received. It appears that the years may actually belong to (and are bundled with) Nissin3 (see ***).

*** The original JWSnames only went through 73; 76-83 were added. However, the bundle as received contained 61-83, and the ship names appear to be identical Japanese characters throughout.

**CDMP Task Order # 46**
**Appendix 2: OUTPUT KEYING FORMAT:**
**Digitization of Marine Data from Japanese Whaling Ships (1946-84)**

See Table 1 (below). Notes for Table 1:

a) The form column indicates the expected form of the data:

i = integer
a = alphabetic
f = floating point

b) The output format is fixed-width, but also with comma delimiters (in the positions indicated in the right-hand column). Within-field justification is specified below (for numeric data, decimal points are to be included in the digital output). In some cases the numeric data for meteorological elements were recorded at different precisions by different ships (e.g., temperatures to whole degrees or pressures to hundredths). The data should be keyed as recorded (e.g., in whole degrees, with a blank tenths position, or to hundredths).

c) Missing data should be indicated by all blanks in a field. If, for example, only the month and day are available (meteorological fields are missing), the month and day should be entered followed by all blanks in the trailing fields.

d) Data elements or locations appearing in Japanese or that could not be interpreted should be indicated by entering "*" in the field (left justified blank filled), or at the end of the digital information string if part of the field was recognizable. For example, locations in Japanese may indicate port names.

e) Blanks are preferred to leading zeros, as specified below.

f) Examples of data to be entered are shown in "quotes" below (however the quotes are not to be entered as part of the field).

g) All alphabetic information should be entered in UPPER-CASE only.

h) Sometimes ditto mark(s) appear in a field (''). The corresponding field from the previous day's report should be entered.

Table 1.

| Cols. | Description | Justification | Form | Col.=, |
|---|---|---|---|---|
| 01-02 | ship number (appearing only on the 1st page of each bundle) | Right Justify Blank Fill | i | 03 = , |
| 04-07 | whaling season years, e.g., enter 1960/61 as: 6061 | | i | 08 = , |
| 09-10 | sheet number (within set), e.g., enter No. 1 as “ 1” | Right Justify Blank Fill | i | 11 = , |
| 12-13 | month (“ 1” = Jan, “ 2” = Feb, …, “12” = Dec) | Right Justify Blank Fill | i | 14 = , |
| 15-16 | day of month (“ 1”, “ 2”, …, “31”) | Right Justify Blank Fill | i | 17 = , |
| 18-19 | latitude degrees | Right Justify Blank Fill | i | 20 = , |
| 21-22 | latitude minutes | Right Justify Blank Fill | i | 23 = , |
| 24 | hemisphere (“N” or “S”) | | a | 25 = , |
| 26-28 | longitude degrees | Right Justify Blank Fill | i | 29 = , |
| 30-31 | longitude minutes | Right Justify Blank Fill | i | 32 = , |
| 33 | hemisphere (“E” or “W”) | | a | 34 = , |
| 35-40 | wind direction: enter literally as compass points (e.g., “NNE” or “NE/E”), degree values (e.g., “295”), or “CALM”. The cardinal directions were frequently written out and can be shortened to “N”, “S”, “E” or “W”. | Left Justify Blank Fill | a/i | 41 = , |
| 42-43 | wind force (“ 0”, “ 1”, … “12”) | Right Justify Blank Fill | i | 44 = , |
| 45-50 | weather: enter literally. These were recorded in the logsheets as either lower- or upper-case letters. All should be entered as upper-case, e.g., bc should be entered as “BC”. | Left Justify Blank Fill | a | 51 = , |
| 52-59 | barometric pressure: enter literally including decimal point, e.g., “1009.0”. | Left Justify Blank Fill | f | 60 = , |
| 61-65 | air temperature: enter literally including decimal point, e.g., “28.0” or “−1.3”. | Left Justify Blank Fill | f | 66 = , |
| 67-71 | sea surface temperature: as for air temperature. | | f | 72 = , |
| 73-90 | sea state: enter literally (converted to upper-case). The form of these data can be numeric or a variety of English terms, e.g., “MODERATE”, “MOD”, “PHENOMENAL”. | Left Justify Blank Fill | a/i | 91 = , |
| 92-99 | ice state: enter literally, if available. The form of these data can vary widely, and be numeric or some English and possibly Japanese terms. Interpretation is uncertain. A small number of forms carry very detailed information. Where | Left Justify Blank Fill | a/i | 100 = , |

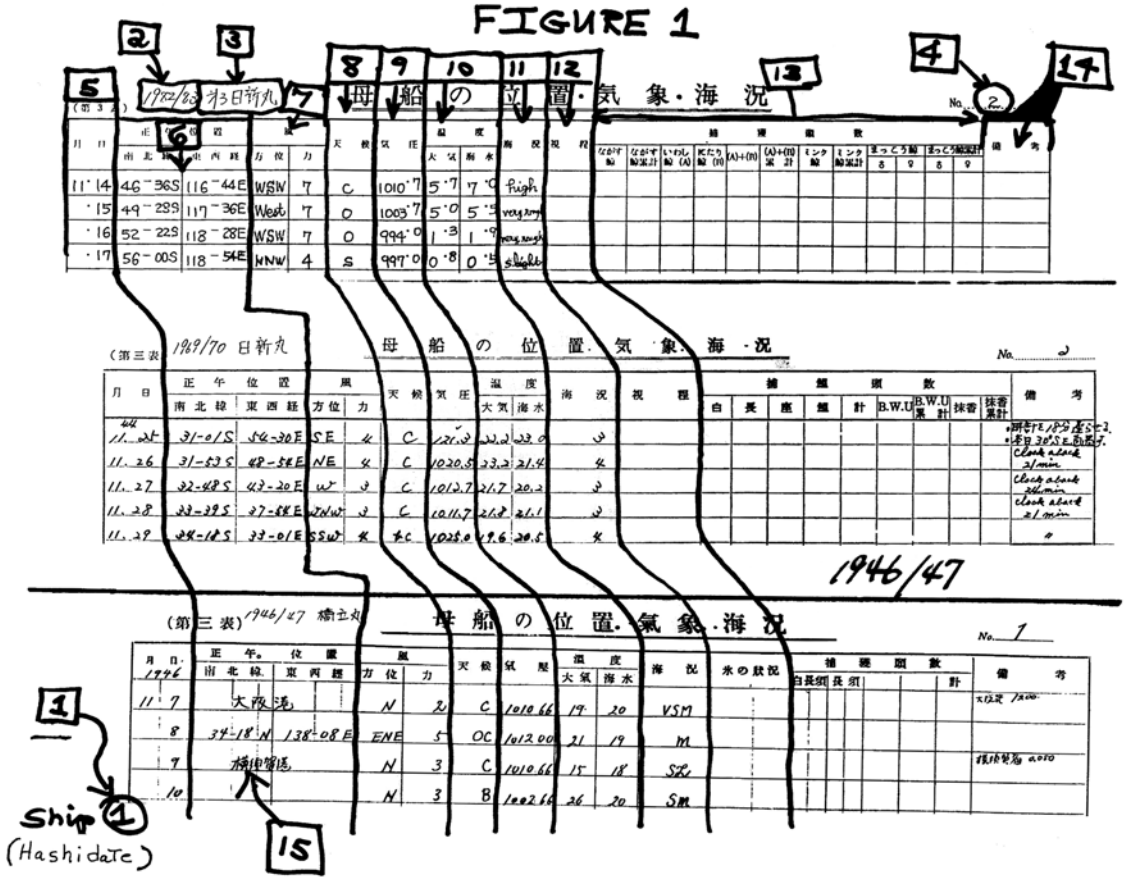
| | | | | |
|---|---|---|---|---|
| | information is available but cannot be entered, "*" should be used. | | | |

**CDMP Task Order # 46**
**Appendix 3: DISCUSSION OF JAPANESE FORM TYPES AND COLUMNS**
**Digitization of Marine Data from Japanese Whaling Ships (1946-84)**

Figure 1 provides three examples (1982/83, 1969/70, and 1946/47) of data and the logsheet headings. Lines were drawn vertically on Figure 1 to bracket the same columns on the forms for different years. The numbers in boxes (1-15) on Figure 1 point to elements that are described by the following corresponding notes:

1. Ship number: marked on the bottom-left corner (number in a circle) of the first page (only) of each bundle.
2. Whaling season years.
3. Ship name (not keyed). Within a set and bundle, these should all match up.
4. Sheet number (within set).
5. Columns for month and day.
6. Columns for latitude and longitude (degrees and minutes)
7. Columns for wind (direction and force).
8. Column for weather.
9. Column for barometric pressure.
10. Columns for air temperature (left) and sea surface temperature (right).
11. Column for sea state.
12. Column(s) for ice state. Note: some variations in column headings in Japanese.
13. Whaling fishing information (not to be keyed).
14. Remarks (not to be keyed).
15. Possible port names or geographic location s in lat/lon fields (to be keyed as "*").

FIGURE 1


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
1952/53 第3日新丸
母船の位置・気象・海況
(第三表) 1969/70 日新丸
母船の位置・気象・海況
1946/47
(第三表) 1946/47 續立丸
母船の位置・氣象・海況
Ship 1
(Hashidate)