# English East India Company Logbook Digitization Keying Format Climate Database Modernization Program (NOAA/NCDC/CDMP) 

Images to key include images with 1 or 2 days data, in tabular form, including hand-drawn forms. See Example 3. If an image has 3 days of tabular data, which has not yet been seen, please contact NCDC to determine if image should be keyed.

Images with 3 days or more of observations should be marked, but not keyed, and will be reviewed by NCDC for a possible Phase 3 keying. A new set of instructions will be created for the Phase 3 keying if data is determined significant or if budget allows for more keying. See example 4 for sample images that will not be keyed in Phase 2.

Do not key data that has been marked through. See example 5. If an hourly ob has been marked through do not key that hour. If a whole day has been marked through, as with example 5, do not key any data from that day.

A tilde ( $\sim$ ) is to be inserted by the keyers whenever an entry cannot be determined due to poor legibility. This will indicate that there was an entry on the form but that the keyer could not determine the value. Every effort should be made to enter the value and to only enter a tilde as a last resort. If original data are entirely missing for any field, the field should be left blank. In the keying format, blank universally indicates missing data.

A pound (\#) is to be inserted by the keyers whenever an entry does not fit the requirements of the keying format; i.e., when the keyers encounter an alpha character, on an observation form, where the keying format provides for only numeric values a "\#" sign will be entered, left justified and blank-filled. These entries will be reviewed once keying is complete, and a determination of the proper entry will be made.

## Attachment A - English East India Company (EIC) Logbooks (data records)

## Data Record - one per day

| COLUMNS | \#CHARACTERS | DESCRIPTION | KEYING INSTRUCTIONS |
| :---: | :---: | :---: | :---: |
| 1-24 | 24 | Ship Name 1 | Key the index value of the Ship Name. This is also commonly located at the top of the pages with observations of weather, and may not be recorded on the cover. Left justify, blank fill. An adjunct Excel spreadsheet (from Clive's EIC Ships Working Document) is provided that contains an easy-to-read list of ship names for correct spelling. |
| 25-31 | 7 | Logbook ID 2 | Key the index value of the Logbook ID. This is the Batch ID in WSSRD. |
| 32-35 | 4 | Image Sequence Number | Key the image sequence number found in the "Sequence Number" column in WSSRD (or last 4 numbers in file name just before ". pdf", if keyed from disk). |
| 36-39 | 4 | Year 4\| | yyyy -- Key the year of the observational record. |
| 40-41 | 2 | Month 5 | mm - Key 1-12 as recorded in the date boxes right side of the form, top or center. You may have to interpret the date from the Remarks or elsewhere on the form, so look at the entire form - you may have to look at the previous or next form to help you determine the date. Right justify, zero fill. |
| 42-43 | 2 | Day 6 | dd - Key 1, 2, 3, etc., from the value in the date boxes, right side of form, top or center. Right justify, zero fill. |
| 44-51 | 8 | Latitude 7 | DD or DD.MM. or DD.MM.SS -- where DD means Degrees, MM means Minutes, and SS means Seconds. These values are given in the boxes containing noon obs, at the foot of each day's hourly obs, and |


|  |  |  | occasionally in the bottom of the remarks section, i. Key only one Latitude, "Lat. obs". If "Lat. obs" is not available, key "Lat. act.". Key the value as it is recorded, right justify. <br> Hour is assumed to be Noon (24). If value is not recorded in boxes at the foot of the hourly obs, also look in Remarks section, in case it is recorded there. |
| :---: | :---: | :---: | :---: |
| 52 | 1 | Latitude Hemisphere 8 | Key 'N' for North and 'S' for South. Leave blank if not recorded. |
| 53 | 1 | Latitude Source Indicator | Key: <br> 1 if keyed latitude is from "Lat. obs" (Observation) <br> 2 if keyed from "Lat. act." (Dead Reckoning) <br> 3 if keyed from "Lat P" <br> Blank if no latitude recorded. |
| 54-62 | 9 | Longitude 10 | (D)DD or (D)DD.MM. or (D)DD.MM.SS -- where (D)DD means Degrees, MM means Minutes, and SS means Seconds. These values are given in the boxes containing noon obs, at the foot of each day's hourly obs. Key only one longitude, "Lon. Chr.". If "Lon. Chr." is not available, key "Lon. in.". Key the value as it is recorded, right justify. Hour is assumed to be Noon (24). If value is not recorded in boxes at the foot of the hourly obs, also look in Remarks section, in case it is recorded there. |
| 63 | 1 | Longitude Hemisphere | Key 'W' for west and 'E' for East. Leave blank if not recorded. |
| 64 | 1 | Longitude Source Indicator | Key: <br> 1 if keyed longitude is from "Lon. Chr."(Chronometer); make not known <br> 2 if keyed from "Lon. in." (Greenwich Meridian) <br> 3 if keyed from "Lon. acct" (Dead Reckoning) <br> 4 if keyed from the 'mean' value of "Lon. Chr." <br> 5 if keyed from the 'Margett' chronometer <br> 6 if keyed from the 'Earnshaw' chronometer <br> 7 if keyed from the 'Barraud' chronometer <br> Blank if no longitude recorded. |
| 65-69 | 5 | Meridian Distance 12.1 | Look for value in noon box labeled "MD" at the foot of each day's hourly obs. If available, key this value as it is recorded, right justify, blank fill. If a colon is recorded within the numerical values, key a decimal in place of the colon. |
| 70-79 | 10 | Ship's Course 13 | Key the "Course" located in the boxes at the foot of each day's hourly obs. Hour is assumed to be Noon(24). <br> Key as follows: <br> Left justify, blank fill. If the direction is given as a standard 16-point direction code, e.g.: N, NNE, NE, etc., key it as is. If the direction is given as a text entry, convert the text into a standard direction code, e.g.: N, NNE, etc. If given as one direction "by" another, e.g.: WNW by N, key as WNWXN. If given as a combination of alphanumerics, e.g.: N45E, S67E, key as given. If given as one direction "to" or "through" another, e.g. NNW to/through $N$, key as NNWTN. If given using a combination of directions and fractions, e.g.: "SW $3 / 4 \mathrm{~W}$ ", convert the fraction to a three-digit decimal value, using the table below, and key as "SW750W". $\begin{aligned} & 1 / 16=063 \\ & 1 / 8=125 \\ & 1 / 4=250 \\ & 1 / 3=333 \\ & 3 / 8=375 \\ & 1 / 2=500 \\ & 5 / 8=625 \end{aligned}$ |


|  |  |  | $\begin{aligned} & 2 / 3=667 \\ & 3 / 4=750 \\ & 7 / 8=875 \end{aligned}$ <br> Note - For values that contain a whole value AND a fraction between directions, e.g. "SW241⁄2W", the fractions have been converted to tenths of a degree as often done by observers. In these cases $1 / 4=$ ' .15 ', $1 / 2=' .30^{\prime}$ and $3 / 4=$ ' $.45^{\prime}$. For example "SW24 $1 / 2 W$ " will be keyed as "SW24.30W". Observers commonly recorded values in fractional and decimal format. |
| :---: | :---: | :---: | :---: |
| 80-82 | 3 | Ship's Distance Traveled In Previous 24 hours | If 'Ship's Course' is keyed, also key numeric value in "Course and Distance" field located in the boxes at the foot of the day. This value should not be enclosed within 2 directions; it sometimes precedes "miles"; and is typically recorded after the direction. Right justify, blank fill. |
| 83 | 1 | Pressure Units 1 | Key: <br> 1 if English Inches (1 observation; default, unless specified otherwise on the form or through special instructions) <br> 2 if Millimeters <br> Z if English inches (am and pm available; pm keyed) <br> Leave blank if pressure is not recorded. |
| 84-88 | 5 | Barometric Pressure | Key digits from the "Barom." field located in the boxes at the foot of the day in the form of Ttht: Tens, tenths, hundredths, thousandths(e.g. 29.000). Ignore decimal points. Left justify, zero fill. If in millimeters, value will be in HTt: Hundreds, Tens, tenths (~760.0). Hour is assumed to be Noon (24). <br> Example: '30' recorded would be keyed as '30000'; or 29.6 recorded would be keyed as ' 29600 ', or ' $291 / 4$ ' recorded would be keyed as '29250 or '29.81/4' recorded would be keyed as '29825'. <br> Note: Pressure recorded in inches should be somewhere in the ranges of $25.50-32.00$ " and only major extremes would fall outside this range. |
| 89 | 1 | Air Temperature Units | Key: <br> 1 for Fahrenheit (1 value recorded at noon; default, unless specified otherwise on the form or through special instructions) <br> 2 for Celsius <br> 3 for Réamur <br> 4 for Fahrenheit: Range recorded, max value keyed; range 0 degree <br> 5 for Fahrenheit: Range recorded, max value keyed; range $1 / 2$ degrees <br> 6 for Fahrenheit: Range recorded, max value keyed; range 1 degrees <br> 7 for Fahrenheit: Range recorded, max value keyed; range $11 / 2$ degrees <br> 8 for Fahrenheit: Range recorded, max value keyed; range 2 degrees <br> 9 for Fahrenheit: Range recorded, max value keyed; range $21 / 2$ degrees <br> 0 for Fahrenheit: Range recorded, max value keyed; range 3 degrees <br> A for Fahrenheit: Range recorded, max value keyed; range $31 / 2$ degrees <br> B for Fahrenheit: Range recorded, max value keyed; range 4 degrees <br> Y for Fahrenheit: AM value only option available; AM keyed. <br> Z for Fahrenheit: AM and PM available, no ranges; PM keyed. <br> C for Fahrenheit: AM/PM available, but in ranges; max PM value keyed; range of PM obs 0 degree <br> D for Fahrenheit: AM/PM available, but in ranges; max PM value keyed; range of PM obs $1 / 2$ degrees |


|  |  |  | E for Fahrenheit: AM/PM available, but in ranges; max PM value keyed; range of PM obs 1 degrees <br> F for Fahrenheit: AM/PM available, but in ranges; max PM value keyed; range of PM obs $11 / 2$ degrees <br> G for Fahrenheit: AM/PM available, but in ranges; max PM value keyed; range of PM obs 2 degrees <br> H for Fahrenheit: AM/PM available, but in ranges; max PM value keyed; range of PM obs $21 / 2$ degrees <br> I for Fahrenheit: AM/PM available, but in ranges; max PM value keyed; range of PM obs 3 degrees <br> J for Fahrenheit: AM/PM available, but in ranges; max PM value keyed; range of PM obs $31 / 2$ degrees <br> K for Fahrenheit: AM/PM available, but in ranges; max PM value keyed; range of PM obs 4 degrees <br> Leave blank if temperature is not recorded. |
| :---: | :---: | :---: | :---: |
| 90 | 1 | Minus Sign for Air Temp | If air temperature is negative, minus sign will be keyed here. |
| 91-94 | 4 | Air Temperature 1 | Key given value in "Ther." field located in the boxes at the foot of the day. Positions $93 \& 94$ are reserved for tenths and hundredths, respectively. Decimal is implied and hour is assumed to be Noon (24), unless otherwise indicated by the indicator in position 89.. <br> Left justify and zero fill(e.g. 69 will be keyed as 6900 , 69.2 will be keyed as 6920 , and 69.25 will be keyed as 6925). For observations recorded with fractions, e.g. 69¼, convert the fraction to decimal value and key in positions 93 \& 94 . For example $691 / 4$ would be keyed as 6925. <br> Note - Observers sometimes recorded temperatures in dd.mm (degrees.minutes) format. Those in dd.mm format are keyed as recorded (i.e. 6215, 6230, 6245, 6259)) |
| 95-104 | 10 | Wind direction 20 | Key the Noon wind direction located in the "12" (24) hourly observation of the "Wind \&c." column immediately preceding the boxes at the foot of each day, and usually recorded on the left side of this column(and should not be followed by a numerical value - see Notes, Example 2a. The direction should also not be preceded by 'Com' or Com ${ }^{\text {d' }}$ as in Example 2b). <br> If wind direction is not available in hour "12" (24), key the next available up the list, e.g. "11" (23), or "10" (22), etc. but do not key any before "4" (16). <br> If "ditto" or "do" is recorded, key the next available wind direction recorded above the "ditto" or "do". <br> If none is available in said hourly observations (16-24), look in the remarks section for wind direction recorded in description of "Latter" or "Latterly" (recorded with wind force). If none is recorded in hourly obs or In description of "Latter(ly)" part of day, then look in the remarks for 'Throughout', in that sequence. If none are available in hourly obs, Latter(ly) or Throughout, then leave this field blank. <br> Note - Occasionally observers recorded the wind direction in the remarks labeled 'Noon'. These are keyed with hour '24' in positions 105-106. <br> Key as follows: <br> Left justify, blank fill. If the direction is given as a standard 16-point |


|  |  |  | direction code, e.g.: $N$, NNE, NE, etc., key it as is. If the direction is given as a text entry, convert the text into a standard direction code, e.g.: N, NNE, etc. If given as one direction "by" another, e.g.: WNW by N, key as WNWXN. If given as Variable, Var, Vrb, or Baffling, key <br> Variable types $=\mathrm{V}$, and Baffling $=\mathrm{B}$. If given as one direction <br> "through" another, e.g.: "Variable E through W", key as VETW. If given as combination of alphanumerics, e.g.: N45E, S67E, key as given. If given as one direction "to" or "through" another, e.g. NNW to/through N, key as NNWTN. If given using a combination of directions and fractions, e.g.: "SW $3 / 4 \mathrm{~W}$ ", convert the fraction to a three-digit decimal value, using the table below, and key as "SW750W". $\begin{aligned} & 1 / 16=063 \\ & 1 / 8=125 \\ & 1 / 4=250 \\ & 1 / 3=333 \\ & 3 / 8=375 \\ & 1 / 2=500 \\ & 5 / 8=625 \\ & 2 / 3=667 \\ & 3 / 4=750 \\ & 7 / 8=875 \end{aligned}$ <br> If you encounter any other fractional value, convert it to a 3-digit decimal value, rounding the third digit as necessary, enter it into the table, and inform CDMP of the new fractional (decimal) value encountered. |
| :---: | :---: | :---: | :---: |
| 105-106 | 2 | Hour of Keyed Wind Direction | Key the hour, 16-24, of the keyed wind direction above. If keyed from the remarks under "Latter" key 'L' (left justify, blank fill). If keyed from the remarks under "Throughout" key 'T'. If keyed from the remarks under 'Noon' key '24'. Leave blank if no wind direction is keyed. For cases where recorded from 'ditto' or 'do', key the hour where the 'ditto' or 'do' is recorded (see wind direction above). |
| 107-112 | 6 | Wind Force 22 | Key the Noon wind force located in the "12" (24) hourly observation of the 'Wind \&c." column immediately preceding the boxes at the foot of each day. If wind direction is not available in hour "12" (24), key the next available up the list, e.g. "11" (23), or "10" (22), etc. but do not key any before "4" (16). <br> If "ditto" or "do" is recorded, key the next available wind force recorded above the "ditto" or "do". Be careful to differentiate "ditto"(s) and "do"(s) recorded for Wind Direction (above) and Wind Force. <br> If none is available in said hourly observations (16-24), look in the remarks section for wind force recorded in description of "Latter" or "Latterly". If none is recorded in hourly obs or In description of "Latter(ly)" part of day, then look in the remarks for 'Throughout', in that sequence. If none are available in hourly obs, Latter(ly) or Throughout, then leave this field blank. <br> Note - Occasionally observers recorded the wind force in the remarks Labeled 'Noon'. These are keyed with hour '24' in positions 113-114. <br> This section will be finalized upon completion of the project as more terms are being added as they are encountered. Please use the following 3 digit codes for values keyed in positions 107-109 and 110-112. |







|  |  |  | decimal value and key in positions 323 \& 324. For example $691 / 4$ would be <br> keyed as 6925. |
| :--- | :--- | :--- | :--- |
| 325 | 1 | Civil Time Indicator <br> 29 | This indicator is filled with a '1' to indicate that the observation is recorded <br> in civil time(1am-12am) rather than on the mariners' day(1pm-12pm). <br> Blank fill if on the mariner's day. |

## NOTES:

The mariners' day is divided into 3 parts: first, middle and latter. The 'first' part is typically from Noon-8PM, the 'middle' from 8PM-4AM, and the 'latter' from 4AM-Noon.

A mariner's day begins at 1PM (01) and continues through Noon (24). The hourly observation for Noon (24) is always the last observation of the Day marked ' 12 '. It is located immediately above the boxes with the Course and Distance, Latitudes/Longitudes, pressure and temperature, which are also Noon observations. Below (Example 1) are the times as they are recorded on the forms and their corresponding keyed times (with "Latter" part of day in bold):

## EXAMPLE 1:

| H. | COU1 | On Form | Keyed As |
| :---: | :---: | :---: | :---: |
| 1 | Alyy. | 1 | 01 |
| 2 | , | 2 | 02 |
| 3 |  | 3 | 03 |
| 4 |  | 4 | 04 |
| 5 | $\sim$ | 5 | 05 |
| 6 |  | 6 | 06 |
| 7 |  | 7 | 07 |
| 8 |  | 8 | 08 |
| 9 | - | 9 | 09 |
| 10 | - | 10 | 10 |
| 11 | - | 11 | 11 |
| 12 |  | 12 | 12 |
| 1 | - | ------------ | 13 |
| 2 | - | 2 | 14 |
| 3 |  | 3 | 15 |
| 4 | - | 4 | 16 |
| 5 |  | 5 | 17 |
| 6 | 6 | 6 | 18 |
| 7 |  | 7 | 19 |
| 8 | 0 | 8 | 20 |
| 9 | $\square$ |  | 21 |
| 10 | $\checkmark$ | 10 | 22 |
| 11 |  | $11$ |  |
| 12 | $2=$ | 12(Noon) | 24 |
| $\begin{aligned} & \text { Course and Di } \end{aligned}$ |  |  |  |
| Departure, - |  |  |  |

## EXAMPLE 2a:

Wind Directions recorded in "Wind \&c." column:
Many times when a ship was in company with another ship the observer would record the bearing to the other ship in the "Wind \&c." column. This looks very similar to the wind direction. Below is an example (Example 2).
Note that there are directions recorded: one set on the left side of this column(e.g. SSE, vble, S, vble, SEbS, etc) and another set on the right side of the column (e.g. SSW1/2, do, SSW1/2, do, ESE1, etc).
For this form and many others like it, the wind direction to be keyed will be located on the left side to middle of the column, while the ship's bearing to the other ship in company will be on the right.
A good way to differentiate the wind direction from the ship's bearing is from the numerical value recorded with the direction(e.g. ESE1). This numerical value is not a wind force but rather the bearing distance of the other ship. Wind forces are typically recorded in word format (e.g. fresh breeze, light airs, etc). Any wind direction followed by a numerical value is likely bearing rather than wind direction.
If directions are consistently recorded both on the left side of the column and on the right side of the column, as shown in the example below, please key the left as the wind direction and ignore the values on the right as the bearings will not be keyed.


Example 2b - Do not key directions preceded by "Com" or "Com"d and followed by a numerical value. See hour ' 8 ' below.


Example 3 - Images to key; 2 days of tabular data:


Example 4 - Images to not key, but mark for possible P3 review; no tabular data:



Example 5 - Data to not key due to marking through; erroneous data on bottom of image.


## Example 6: 'Symp’iesometric Pressure examples



In this example, 'Bar' is crossed through and 'Symp' is recorded in its place.


In this example the regular barometric pressure (keyed in F16) is in its normal location, and the 'Symp' pressure is on the right side of the ‘Ther' box.

