Climate Database Modernization Program - Enhancing the Marine Environment

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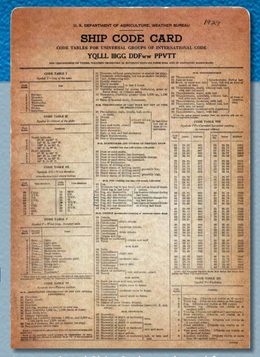
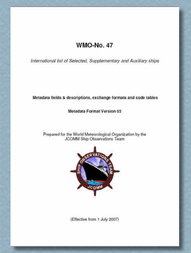
For over ten years, the Climate Database Modernization Program (CDMP) has been involved in many aspects of environmental data and metadata rescue. One of the various concentrations of rescue activities within the program is marine data preservation. Involved with many groups, nationally and internationally, CDMP is a key figure in rescuing historic logbooks and observer instructional materials. By recovering data from the past and preserving historical metadata, CDMP is enhancing global marine datasets as well as promoting a more comprehensive understanding of the earth's physical environment, past and present. The marine work of CDMP is not limited to rescuing ship logbooks and includes multiple projects related to marine ecosystems, sub-surface ocean environments, and shoreline changes over time. Although the marine rescue activities are broad, this presentation focuses on current and future ship logbook rescue activities: from lightships to research vessels, sailing ships to tankers. True to the program's mission, CDMP is digitizing and processing historical and near real-time marine observations and making them available to scientists around the globe.

Metadata Imaging

CDMP images and preserves invaluable national and international information regarding historical observing practices including instructional materials for observers, international code cards, and rare publications enhancing our understanding of how observations were taken in the past so that they can be accurately translated to the standards of today.



International Ship Code card used for coding and transmitting weather observations, 1929 edition.



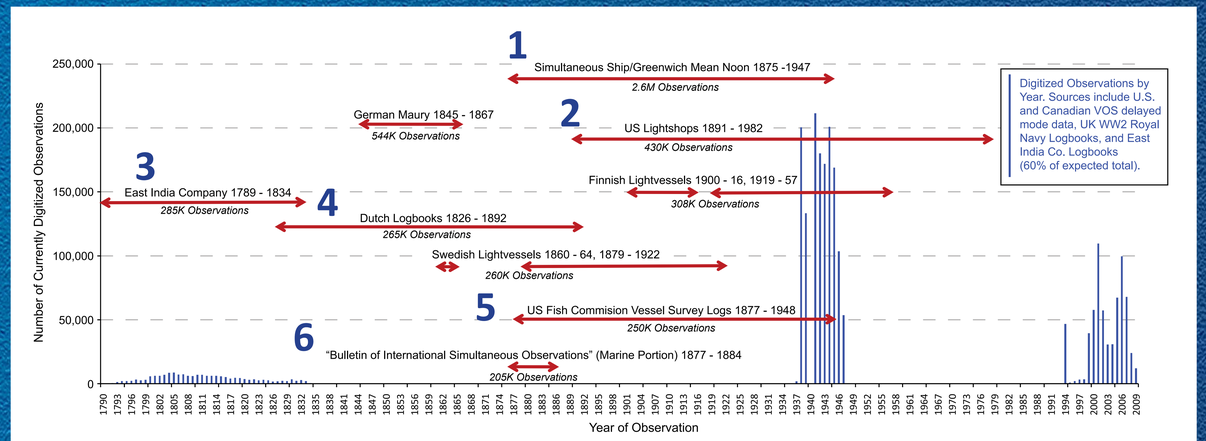
WMO Publication No. 47 contains vital metadata on globally registered Voluntary Observing Ships (VOS). This document is important in providing instrumentation metadata used on board Selected, Supplementary, VOSClim and Auxiliary VOS ships.

Sample form showing the use of two different temperature scales, Celsius and Reaumur.

1 Simultaneous Ship Greenwich Mean Noon Observations:

Period of Record: 1874-1947
2.6M Observations

Global observations taken by multiple countries simultaneously at Greenwich Mean Noon (GMN). With 2.6 million expected observations, this set is sure to add an abundance of much needed data to the global climate record.



2 US Lightship Observations

Period of Record: 1891-1982
430K Observations

Cooperative project with Woods Hole Oceanographic Institution capturing U.S. East Coast Lightship data from forms archived at the National Archives and Records Administration (NARA).

Lightships were often very large so that they could be seen from far distances. This image shows the size of the Handkerchief Lightship LV-96 as compared to a lighthouse that has been superimposed on top of the ship.

3 English East India Company Logbooks

Period of Record: 1789-1834
285K Observations

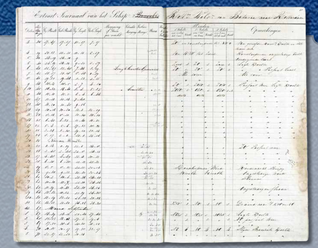
Early instrumental data with great spatial and temporal coverage in the southern Atlantic and Indian Oceans. Approximately 17K observations identified so far below 34°S.

Official flag of the English East India Company, circa 1801.

4 Dutch Logbooks

Period of Record:
1826-1892
265K Observations

Great source of early instrumental observations, similar to the English East India Company, covering the Atlantic and Indian Oceans.



Logbook image from the Dutch vessel *Rotterdams Welvaren*, 1826

Bulletin of International Simultaneous Observations (Marine Portion)

Period of Record: 1877-1884
205K Observations

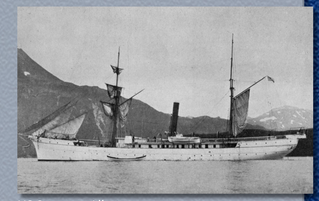
Surface map with isobars and isotherms produced from simultaneous observations. Date of map is 25 January 1882.

The *Bulletin of International Simultaneous Observations* created a true synopsis, a photograph taken by up to 30 different countries at the same time, beginning in 1875 on land and sea. Once collated under the direction of General Myer (U.S. Weather Bureau) they were able to produce a 'snapshot' of the atmospheric conditions over the Northern Hemisphere.

5 US Fish Commission Survey Logs

Period of Record: 1877-1948

Approximately 360 scientific survey logs of the first U.S. Fisheries Research Vessels: *Fish Hawk*, *Albatross*, *Gr'ampus*, *Halcyon*, *Danglade* and *Yvonne*. The logs contain a wealth of biological, meteorological and sub-surface oceanographic observations as well as abundant metadata on the instruments used to take the observations.



US Steamer *Albatross*