

National Climatic Data Center

DATA DOCUMENTATION

FOR

DATASET 1173 (DSI-1173)

**NCDC Global Marine Data and the International Comprehensive
Ocean-Atmosphere Data Set (ICOADS)**

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1. Abstract: Multiple sources of NCDC's global marine observational data including global WMO Voluntary Observing Ships (VOS) Fleet), global buoys (moored and drifting), VOS Climate (VOSclim) Fleet, platforms, coastal/tide gauge stations, and the most current official release of the International Comprehensive Ocean-Atmosphere Data Set (ICOADS) with Enhanced Trimming (ET) in the International Maritime Meteorological Archive (IMMA) format are archived in DSI-1173. Various sources are translated from their original source formats to the IMMA format to create a more widely accessible and readable dataset in a common format. All filenames in this collection contain information regarding the original source of the data prior to conversion to IMMA (e.g. vos_mrd buoy, immt, etc). Each source is described below and in Appendices A & B with reference to the raw data archives at NCDC. The period of record is from 1662 to present. For Static collections no longer being updated, see appendix B for additional information.

Active Collections Highlights (See Appendix A for more information):

- UK Met Office BUFR and Voluntary Observing Ship Climate (VOSclim) Fleet
The VOS Climate (VOSclim) Fleet is a class of reporting ship within the VOS Scheme that aims to provide a high-quality subset of VOS data in real-time and also in delayed-mode, supplemented by an extensive array of metadata, to support global climate studies and research. The VOSclim observations are made available on the VOSclim website hosted at NCDC. As the Data Assembly Center (DAC) for the VOSclim fleet, NCDC is responsible for making all VOSclim observations available, including from the full BUFR sources outlined in this submission agreement, as well as other sources such as those from the WMO Global Telecommunications System (GTS). The data in particular will be used to: input directly into air-sea flux computations, as part of coupled atmosphere-ocean climate models; provide ground truth for calibrating satellite observations; and provide a high quality reference data set for possible re-calibration of observations from the entire VOS. The data is captured by the UK Met Office from the GTS, global Numerical Weather Prediction (NWP) output from UK Models is added, encoded into bufr, and then placed back onto the GTS and transmitted to Washington where it is located and ingested by NCDC for processing and archiving.
- Ship, Buoy and Coastal reports from the WMO Global Telecommunications System (GTS): NCDC's near-real-time collection of ship, buoy and coastal marine reports from the WMO Global Telecommunications System (GTS).
- International Comprehensive Ocean-Atmosphere Data Set (ICOADS) with Enhanced Trimming: The most current release of the International Comprehensive Ocean-Atmosphere Data Set (ICOADS) with Enhanced Trimming. The data consists of the most current official ICOADS release processed through additional quality control to remove reports failing climatological quality control checks outside of 4.5 standard deviations.
- WMO Global Collecting Center (GCC) delayed mode data: Quarterly global delayed-mode VOS reports from the Global Collecting Centers in the UK and Germany.

2. Element Names and Definitions:

The format used for the ICOADS data set is the IMMA (International Maritime Meteorological Archive). All input data formats are converted to IMMA for

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common format access.

IMMA format documentation can be found at
<http://www.ncdc.noaa.gov/oa/documentlibrary/vosclim/imma.pdf>

3. **Start Date:** 16621001

4. **Stop Date:** Present

5. **Coverage:**

- a. Southernmost Latitude: -90.0S
- b. Northernmost Latitude: 90.0N
- c. Westernmost Longitude: -180.0W
- d. Easternmost Longitude: 180.0E

6. **How to Order Data:**

Ask NCDC's Climate Services about the cost of obtaining this data set.
Phone: 828-271-4800
FAX: 828-271-4876
E-mail: NCDC.Orders@noaa.gov

7. **Archiving Data Center:**

Archive Branch
National Climatic Data Center
151 Patton Avenue
Asheville, NC 28801

8. **Technical Contact:**

National Climatic Data Center
151 Patton Avenue
Asheville, NC 28801

9. **Known Uncorrected Problems:** None.

10. **Quality Statement:**

11. **Essential Companion Datasets:**

12. **References:**

Woodruff, S., 2010: Archival of data other than in IMMT format: The International Maritime Meteorological Archive (IMMA) format
[<http://icoads.noaa.gov/e-doc/imma/R2.5-imma.pdf>].

Woodruff, S.D., S.J. Worley, S.J. Lubker, Z. Ji, J.E. Freeman, D.I. Berry, P. Brohan, E.C. Kent, R.W. Reynolds, S.R. Smith, and C. Wilkinson, 2010: ICOADS Release 2.5: Extensions and enhancements to the surface marine meteorological archive. *Int. J. Climatol.* (in press) ([doi:10.1002/joc.2103](https://doi.org/10.1002/joc.2103)).

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Appendix A: Operational Data Sources in DSI-1173_01

<i>Data Type</i>	<i>Description</i>	<i>NCDC Raw Data Set Archive Location</i>	<i>Original Format</i>	<i>Filename tag identifier</i>
UK Met Office Global Ship and Buoy with co-located model fields	Reports from active ships and buoys with UK Met Office Numerical Weather Prediction (NWP) feedback	DSI-6127	BUFR	vos_mrdbuoy dftbuoy
VOSclim reports from UK Met Office Global Ship and Buoys with co-located model fields	Reports from active VOSclim ships with UK Met Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6127	DSI-6127 subset	BUFR	vcvos_mrdbuoy
NCDC reports collected from WMO Global Telecommunications System (GTS)	Near-real-time reports transmitted over the GTS from ships, buoys, coastal/tide gauge stations, and platforms	DSI-6111 (BBXX Ships) DSI-6112 (ZZYY Buoys) DSI-6113 (CMAN Coastal Stations)	ASCII: WMO FM-13 Ship Code; WMO FM-18 Buoy Code; WMO CMAN code	gts
VOSclim reports parsed from NCDC-collected GTS reports	VOSclim subset from GTS collections	DSI-6111 (BBXX Ships)	ASCII: WMO FM-13 Ship Code	vcgts
International Comprehensive Ocean-Atmosphere Data Set (ICOADS)	Most current official release of the ICOADS data set processed to only include all reports meeting climatological standards of < 4.5 standard deviations from climatology	DSI-1173_02	International Maritime Meteorological Archive (IMMA) format	icoads2.5
Delayed-mode reports from the Global Collecting Centers in Germany and	Delayed-mode observations from e-logbooks and other	DSI-9970_01 and DSI-	International Maritime Meteorological	immt

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UK	various sources submitted to the GCCs on a quarterly basis.	9970_03	Tape (IMMT) format	
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Appendix B: Static data sources in DSI-1173_01:

<i>Data Type</i>	<i>Description</i>	<i>NCDC Raw Data Set Archive Location</i>	<i>Original Format</i>	<i>Filename tag identifier</i>
UK Met Office Global VOSclim Ships with co-located model fields	Reports from active VOSclim ships with UK Met Office Numerical Weather Prediction (NWP) feedback	DSI-6124	BUFR	bufr
US VOS ship paper logbooks digitized by NOAA's CDMP	Digitized ('keyed') reports from US VOS ships recorded on paper logbooks	DSI-9972	ASCII: CDMP 'keyed' format	keyed
VOSclim subset from US VOS ship paper logbooks digitized by NOAA's CDMP	VOSclim reports parsed from larger digitized ('keyed') reports collection from US VOS ships recorded on paper logbooks	DSI-9972	ASCII: CDMP 'keyed' format	vckeyed
Shipboard Environmental Acquisition System Version 2000 (SEAS 2000)	Reports from NOAA's SEAS2000 e-logbook software.	DSI-1149	ASCII: SEAS format (similar to WMO FM-13 ship code)	seas
VOSclim subset from Shipboard Environmental Acquisition System Version 2000 (SEAS 2000)	VOSclim subset from NOAA's SEAS2000 e-logbook software.	DSI-1149	ASCII: SEAS format (similar to WMO FM-13 ship code)	vcseas

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