National Climatic Data Center

DATA DOCUMENTATION

FOR

DATASET 1173 (DSI-1173)

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

October 23, 2014

National Climatic Data Center 151 Patton Ave. Asheville, NC 28801-5001 USA

Table of Contents

Top	pic	Page	Numbe	r
1.	Abstract			3
2.	Element Names and Definitions:			3
3.	Start Date			3
4.	Stop Date			3
5.	Coverage			3
6.	How to order data			4
7.	Archiving Data Center			4
8.	Technical Contact			4
9.	Known Uncorrected Problems			4
10.	Quality Statement			4
11.	Essential Companion Data Sets			4
12.	. References			4
13.	Appendix			4

:

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 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_mrdbuoy, 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 For Static collections no longer being updated, see appendix B for additional information.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

:

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).

:

4

Appendix A: Operational Data Sources in DSI-1173_01

Met Office Global Ship and Buoys with co-located model fields Met Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6127 NCDC reports collected from WMO Global Telecommunications System (GTS) NCDC reports collected from the larger collection in DSI-6121 NEAR-real-time reports transmitted over the GTS (BBXX Ships) Code; WMO FM-13 Ship Code; WMO FM-18 Buoy Code; WMO FM-18 Buoy Code; WMO FM-18 CMAN code			NICDC Davis	Original Fausset	Filonous a torr
UK Met Office Global Ship Reports from active ships and Buoy with co-located model fields VOSClim reports from UK Met Office Global Ship and Buoys with UK Met Office Rumerical Weather Prediction (NWP) feedback VOSClim reports from UK Met Office Global Ship and Buoys with co-located model fields Weather Prediction (NWP) feedback VOSClim ships with UK Met Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6127 NCDC reports collected from WMO Global Telecommunications System (GTS) System (GTS) Archive Location DSI-6127 BUFR VCVOS_mrdbuoy DSI-6127 Subset VCVOS_mrdbuoy DSI-6127 Subset VCVOS_mrdbuoy DSI-6127 Subset VCVOS_mrdbuoy DSI-6127 Subset VCVOS_mrdbuoy COCHAN Code	Бата туре	Description		Original Format	_
UK Met Office Global Ship and Buoy with co-located model fields VOSClim reports from UK Met Office Global Ship and Buoys with UK Met Office Global Ship and Buoys with UK Met Office Global Ship and Buoys with co-located model fields Weather Prediction (NWP) feedback VOSClim reports from UK Met Office Global Ship and Buoys with co-located model fields Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6127 NCDC reports collected from WMO Global Telecommunications System (GTS) System (GTS) Reports from active Met Met Office Numerical Weather Prediction (NWP) subset DSI-6127 BUFR vcvos_mrdbuoy dftbuoy DSI-6127 BUFR vcvos_mrdbuoy NoSI-6127 BUFR VOSCIm Figure 1					iaentijier
UK Met Office Global Ship and Buoy with co-located model fields VOSClim reports from UK Met Office Global Ship and Buoys with UK Met Office Rumerical Weather Prediction (NWP) feedback VOSClim reports from UK Met Office Global Ship and Buoys with co-located model fields Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6127 NCDC reports collected from WMO Global Telecommunications System (GTS) System (GTS) Reports from active DSI-6127 subset Weather Prediction (NWP) feedback. These are parsed from the GTS from ships, buoys, coastal/tide gauge stations, and platforms DSI-6111 (BBXX Ships) Code; WMO FM-18 Buoy Code; WMO CMAN code					
and Buoy with co-located model fields Office Numerical Weather Prediction (NWP) feedback VOSClim reports from UK Met Office Global Ship and Buoys with co-located model fields Met Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6127 NCDC reports collected from WMO Global Telecommunications System (GTS) NCDC reports collected from ships, buoys, coastal/tide gauge stations, and platforms Addition Met Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6127 NCDC reports collected from WMO Global Telecommunications System (GTS) ASCII: WMO FM-13 Ship (BBXX Ships) Code; WMO FM-18 Buoy Code; WMO FM-18 Buoy Code; WMO CMAN code					
model fields Office Numerical Weather Prediction (NWP) feedback VOSClim reports from UK Met Office Global Ship and Buoys with co-located model fields Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI- 6127 NCDC reports collected from WMO Global Telecommunications System (GTS) Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI- (BBXX) Ships) Code; WMO FM-18 Buoy Code; WMO CMAN code		·	DSI-6127	BUFR	
Weather Prediction (NWP) feedback VOSClim reports from UK Met Office Global Ship and Buoys with co-located model fields Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI- 6127 NCDC reports collected from WMO Global Telecommunications System (GTS) Weather Prediction (NWP) feedback. These are parsed from the larger transmitted over the GTS (BBXX) Ships) Code; WMO FM-18 Buoy Code; WMO CMAN code	1	•			dftbuoy
VOSClim reports from UK Met Office Global Ship and Buoys with co-located model fields NCDC reports collected from WMO Global Telecommunications System (GTS) NCDC lim ships with UK Met Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6127 NCDC reports collected from WMO Global Telecommunications System (GTS) NCDC reports collected from ships, buoys, coastal/tide gauge stations, and platforms NCDC reports collected from ships, buoys, coastal/tide gauge stations, and platforms NCDC reports collected from SI-6111 (BBXX) Ships) SI-6112 Buoy Code; WMO FM-18 Subset NCDC reports collected from the larger collection in DSI-6120 SI-6112 Buoy Code; WMO CMAN code					
VOSClim reports from UK Met Office Global Ship and Buoys with co-located model fields NCDC reports collected from WMO Global Telecommunications System (GTS) Reports from active VOSClim ships with UK Met Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI- 6127 NSI-6111 Subset BUFR VCVOS_mrdbuck Near-rediction (NWP) feedback. These are parsed from the larger collection in DSI- 6127 NSI-6111 SSI-6111 SSI-6111 SSI-6112 SSI-612					
Met Office Global Ship and Buoys with co-located model fields Met Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6127 NCDC reports collected from WMO Global Telecommunications System (GTS) System (GTS) VOSClim ships with UK Met Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6127 DSI-6111 (BBXX WMO FM-13 Ship Code; WMO FM-18 System (GTS) Code; WMO FM-18 Buoy Code; WMO FM-18 Buoy Code; WMO FM-18 COMAN code	(,			
Buoys with co-located model fields Met Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6127 NCDC reports collected from WMO Global Telecommunications System (GTS) System (GTS) Met Office Numerical Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI-6121 ASCII: gts WMO FM-13 Ship Code; WMO FM-18 Buoy Code; WMO FM-18 Buoy Code; WMO Stations, and platforms	VOSClim reports from UK	Reports from active	DSI-6127	BUFR	vcvos_mrdbuoy
model fields Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI- 6127 NCDC reports collected from WMO Global Telecommunications System (GTS) Telecommunications System (GTS) Weather Prediction (NWP) feedback. These are parsed from the larger collection in DSI- 6127 DSI-6111 ASCII: (BBXX WMO FM-13 Ship Code; WMO FM-18 Buoy Code; WMO FM-18 Buoy Code; WMO CMAN code	Met Office Global Ship and	VOSClim ships with UK	subset		
(NWP) feedback. These are parsed from the larger collection in DSI-6127 NCDC reports collected from WMO Global Telecommunications System (GTS) NCDC reports collected from WMO Global transmitted over the GTS (BBXX WMO FM-13 Ship Code; WMO FM-18 Buoy Code; WMO Stations, and platforms (ZZYY CMAN code)	Buoys with co-located	Met Office Numerical			
are parsed from the larger collection in DSI- 6127 NCDC reports collected from WMO Global Telecommunications System (GTS) System (GTS) Telecommunications and platforms Telecommunications Coastal/tide gauge stations, and platforms ASCII: gts WMO FM-13 Ship Code; WMO FM-18 Buoy Code; WMO SM-18 CMAN code	model fields	Weather Prediction			
larger collection in DSI-6127		(NWP) feedback. These			
NCDC reports collected from WMO Global Telecommunications System (GTS) NCDC reports collected from WMO Global transmitted over the GTS (BBXX WMO FM-13 Ship Code; WMO FM-18 Buoy Code; WMO Stations, and platforms (ZZYY CMAN code)		are parsed from the			
NCDC reports collected from WMO Global transmitted over the GTS (BBXX WMO FM-13 Ship Form ships, buoys, System (GTS) transmitted over the GTS (BBXX WMO FM-13 Ship Code; WMO FM-18 Buoy Code; WMO Stations, and platforms (ZZYY CMAN code)		larger collection in DSI-			
from WMO Global Telecommunications System (GTS) transmitted over the GTS from ships, buoys, coastal/tide gauge stations, and platforms (BBXX WMO FM-13 Ship Code; WMO FM-18 Buoy Code; WMO STATIONAL CODE (ZZYY CMAN code		6127			
Telecommunications System (GTS) from ships, buoys, coastal/tide gauge stations, and platforms Ships) Code; WMO FM-18 Buoy Code; WMO CMAN code	NCDC reports collected	Near-real-time reports	DSI-6111	ASCII:	gts
System (GTS) coastal/tide gauge DSI-6112 Buoy Code; WMO stations, and platforms (ZZYY CMAN code	from WMO Global	transmitted over the GTS	(BBXX	WMO FM-13 Ship	_
System (GTS) coastal/tide gauge DSI-6112 Buoy Code; WMO stations, and platforms (ZZYY CMAN code	Telecommunications	from ships, buoys,	Ships)	Code; WMO FM-18	
stations, and platforms (ZZYY CMAN code	System (GTS)	coastal/tide gauge		Buoy Code; WMO	
	, , , , , , , , , , , , , , , , , , , ,	stations, and platforms	(ZZYY	CMAN code	
DUUYS)			Buoys)		
DSI-6113			DSI-6113		
(CMAN			(CMAN		
Coastal			Coastal		
Stations)			Stations)		
VOSClim reports parsed VOSClim subset from GTS DSI-6111 ASCII: vcgts	VOSClim reports parsed	VOSClim subset from GTS	DSI-6111	ASCII:	vcgts
from NCDC-collected GTS collections (BBXX WMO FM-13 Ship	from NCDC-collected GTS	collections	(BBXX	WMO FM-13 Ship	
reports Ships) Code	reports		Ships)	Code	
International Most current official DSI- International icoads2.5	·	Most current official	DSI-	International	icoads2.5
Comprehensive Ocean- release of the ICOADS 1173_02 Maritime	Comprehensive Ocean-	release of the ICOADS	1173_02	Maritime	
Atmosphere Data Set data set processed to Meteorological		data set processed to	_	Meteorological	
(ICOADS) only include all reports Archive (IMMA)	(ICOADS)	only include all reports		Archive (IMMA)	
meeting climatological format		meeting climatological		format	
standards of < 4.5		standards of < 4.5			
standard deviations from					
climatology					
Delayed-mode reports Delayed-mode DSI- International immt	Delayed-mode reports	<u> </u>	DSI-	International	immt
from the Global Collecting observations from e- 9970_01 Maritime	1	-			_
Centers in Germany and logbooks and other and DSI- Meteorological	_		_		

:

5

UK	various sources	9970_03	Tape (IMMT)	
	submitted to the GCCs on		format	
	a quarterly basis.			

Appendix B: Static data sources in DSI-1173_01:

Data Type	Description	NCDC Raw Data Set	Original Format	Filename tag
		Archive Location		identifier
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

:

6