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Ref. T2-OSS/1.4

MSC.1/Circ.1293  
10 December 2008

## **PARTICIPATION IN THE WMO VOLUNTARY OBSERVING SHIPS' (VOS) SCHEME**

1 The Maritime Safety Committee (MSC), at its sixty-fourth session (5 to 9 December 1994), in response to a request for assistance from the World Meteorological Organization (WMO) on enhancing the recruitment of merchant ships into the Voluntary Observing Ships' (VOS) Scheme, approved and circulated MSC/Circ.674 regarding this matter. Since the merger in 1999 of the marine activities of the WMO and the Intergovernmental Oceanographic Commission (IOC) of UNESCO, the VOS Scheme has been a programme of the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM).

2 The Maritime Safety Committee, at its seventy-fourth session (30 May to 8 June 2001), in response to a further proposal from the WMO, subsequently updated and re-issued this circular as MSC/Circ.1017. It was noted at the time that the *Report of the Re-opened Formal Investigation into the Loss of the MV Derbyshire* had underlined the potential value of VOS observations to maritime safety, and recommended, *inter alia*, that consideration be given to reissuing this MSC circular.

3 Unfortunately, there has been further decline in the number of ships recruited into the VOS Scheme, regardless of the re-issuance of this circular. In December 2004, there were approximately 6,500 ships listed with the WMO as observing ships from 53 participating countries. By mid-2005, this figure had fallen to fewer than 6,000 ships; however, the analysis of ships' weather reports show that the number of VOS that are actively reporting is actually far less than indicated. Based on reports, during the first six months of 2005, there were approximately 3,025 ships worldwide reporting pressure, and only 2,652 reporting sea surface temperature.

4 The VOS meteorological reports provide vital real time feedback on ocean weather conditions to Weather Forecasters who use the data to improve the quality of the forecasts and warnings issued through the SafetyNET Maritime Safety Information (MSI) and the international NAVTEX services for mariners at sea. The VOS reports, therefore, form an important element in ensuring the safety of ships, their cargoes and crews. Furthermore, it should be noted that these reports also provide a valuable data source for studying the changes in climate which have become a matter of global concern in recent years.

5 IMO and, in particular, its Marine Environment Protection Committee are giving high priority to the work relating to the issue of climate change. Ships' meteorological observations are not only recognized as being essential for the provision of safety-related services for ships at sea, but also for climatological purposes, since the VOS reports' contribution to global climate studies is unique, when considering the role of the oceans in the global climate system.

6 Whilst the weather data collected under the VOS Scheme is provided for Forecasting, Climatology and Research applications, some VOS data have become available on public websites causing concern to ships' owners and masters because of the publication of ship identification and position data. WMO has therefore established a high-level dialogue, involving affected Members, IMO, ICS, shipping companies, relevant organizations and technical commissions, to propose a general and universally acceptable solution to the issue. This solution would address shipowners' and masters' concerns as well as those of the WMO community regarding data monitoring and quality information feedback requirements. This high-level dialogue resulted in the recommendation that ship's identification and location should not appear on public websites, including those of National Meteorological Services (NMS), in real time when this is not authorized by the shipowners and masters. As a temporary measure, WMO Executive Council therefore adopted Resolution 7 (EC-LVIII, 2006) and Resolution 7.7 (EC-LIX, 2007) authorizing its Members to implement open data distribution schemes where the ship's identification is masked. The continued participation of ships in the VOS Scheme remains critical.

7 It is essential that the volume of data provided by ships recruited to the VOS Scheme be maximized and, as such, the number of VOS participating in the Scheme increased wherever/whenever possible. It should be made clear that participation in the VOS Scheme is entirely voluntary and no charges are incurred by the ship, shipowner or ship operator, as the meteorological instruments and, in most cases, the cost of the observation transmission are borne by meteorological services.

8 In accordance with the provisions of SOLAS regulation V/5, Member Governments are invited to bring the relevant information in the attached brochure regarding the VOS Scheme to the attention of shipowners, ship operators, ship managers, masters and crews, and other parties concerned and to encourage them to support the JCOMM and their National Meteorological Service (NMS), by offering their ships to participate in the VOS Scheme. More information on this issue can be located at the following web address: <http://www.bom.gov.au/jcomm/vos/index.html>. Ships that pass through or operate in the data-sparse areas (shown by the lack of dots on the attached ship data coverage chart), are strongly encouraged to volunteer and join the VOS Scheme.

9 This circular revokes MSC/Circ.1017.

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## ANNEX

### THE VOLUNTARY OBSERVING SHIPS' (VOS) SCHEME

#### 1 Background

The international scheme by which ships plying the various oceans and seas of the world are recruited by National Meteorological Services (NMS) for taking and transmitting meteorological observations is called **the Voluntary Observing Ships' (VOS) Scheme**. (See the following web address for further information: <http://www.bom.gov.au/jcomm/vos/index.html>).

The VOS Scheme is operated under the auspices of the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM), which was formed in 1999 through a merger of the marine activities of the World Meteorological Organization (WMO) and the Intergovernmental Oceanographic Commission (IOC) of UNESCO.

The forerunner of the scheme dates back as far as 1853, the year in which delegates of ten maritime countries came together at a conference in Brussels, on the initiative of Matthew F. Maury, then Director of the United States Navy Hydrographic Office, to discuss his proposal to establish a uniformed system for collecting meteorological and oceanographic data from the oceans and the use of these data for the benefit of shipping in return.

The Conference accepted Maury's proposal and adopted a standard form of ships' logs and a set of standard instructions for the required observations.

From the very beginning, ships' meteorological observations were recognized as being essential for the provision of safety-related meteorological services for ships at sea, as well as for climatological purposes.

#### 2 The situation today

At present, the contribution that VOS meteorological reports make to operational meteorology, to marine meteorological services, weather routing services and to global climate studies is unique and irreplaceable. During the past few decades, the increasing recognition of the role of the oceans in the global climate system has placed an even greater emphasis on the importance of marine meteorological and oceanographical observing systems.

One of the continuing major problems facing meteorology is the scarcity of data from vast areas of the world's oceans (so-called data sparse areas) in support of basic weather forecasting, the provision of marine meteorological and oceanographic services and climate analysis and research.

While meteorological satellites help substantially to overcome these problems, data from more conventional platforms (in particular VOS data) will remain essential for the foreseeable future, to provide ground-truthing for the satellite observations, and to provide important information that satellites cannot easily observe (notably pressure measurements). In addition, the VOS provide an essential contribution to the data input for the numerical weather prediction (NWP) models, which are the basis of most present-day forecasts and warnings, and provide real-time reports which can be used immediately in services for the mariner. The reports from the ships at sea are also used

operationally in the preparation and promulgation of Maritime Safety Information (MSI) forecasts and warnings of gales, as well as storms required by the GMDSS (e.g., SafetyNET and NAVTEX), and issued to mariners in accordance with the SOLAS Convention requirements.

Thus, without VOS observations, reliable and timely weather forecasts for mariners could not be provided.

### **3 The VOS Fleet Size**

A peak in the total number of VOS was reached in 1984/85, when 7,700 ships worldwide were listed as participating in the VOS Scheme. Since then, there has been an irregular but noticeable decline. In December 2004, there were some 6,500 ships listed at WMO as observing ships from 53 countries and by mid-2005 there were fewer than 6,000 ships. However, analysis of ships' weather reports show that the number of VOS that are actively reporting is actually far less. Based on the first six months of 2005, there were approximately 3,025 ships worldwide reporting pressure, and only 2,652 reporting sea surface temperature. It is recognized that priority must often be given to other navigational duties, particularly in areas of dense shipping, and that there will be periods when a ship is in port or dry-dock and when it will not be possible to perform weather observations. However, the number of actively participating ships is clearly in a decline and needs to be reversed.

As might be expected, real-time reports from the VOS are heavily concentrated along the major shipping routes, primarily in the North Atlantic and North Pacific Oceans. The attached chart shows details of the geographical distribution of ships weather reports for December 2006, and the most striking feature is the large data-void areas in all southern hemisphere oceans. While this situation certainly reflects the relatively small numbers of ships sailing in these waters, it also makes it more essential that ships sailing in these areas actively participate in the VOS, thus contributing to the global observing programme and the consequent enhancement of the forecast and warning services to the mariner.

Of course, as the VOS reports are part of a global data capture programme, these reports are of value from all the oceans and seas of the world, and even the relatively well-frequented North Atlantic and North Pacific Oceans require more observational data.

### **4 What are the charges to be part of the VOS Scheme?**

#### **THERE ARE NO CHARGES TO THE SHIP OR TO THE SHIP OPERATOR**

In accordance with the provisions of SOLAS regulation V/5, "Contracting Governments undertake to encourage the collection of meteorological data by ships at sea and to arrange for a selection of ships to be equipped with tested marine meteorological instruments (such as a barometer, a barograph, a psychrometer, and suitable apparatus for measuring sea temperature)".

The calibrated marine meteorological instruments that are required to undertake weather observing at sea are supplied free of charge to the ship by the National Meteorological Services (NMS). The installation of the equipment is usually performed by a Port Meteorological Officer (PMO), appointed and trained by the NMS, who will provide advice on observing the various meteorological elements at sea. The appointed PMO will also explain the use of the WMO SHIP code for reporting the observation, and offer guidance on transmitting the observations from the ship to shore using the ships satellite or terrestrial communications equipment.

## **THERE ARE NO CHARGES TO THE SHIP FOR THE TRANSMISSION OF VOS WEATHER REPORTS**

Ships which send messages through Land Earth Stations (LESs) using special Access Code 41 will not incur any transmission charges.

After recruitment into a national VOS Fleet, the meteorological instruments will be regularly serviced, without charge to the ship or shipowner, generally by a PMO from the 'recruiting NMS' or by a PMO from the international PMO network.

### **5 How can you become involved?**

If an Administration:

- .1 Be aware that ships' meteorological reports can make a significant contribution to safety of life and navigation through higher quality forecasts and warnings.
- .2 Ensure that your ship operators are aware of the VOS Scheme and encourage their active participation.

If a Ship Operator:

- .1 Contact your National Meteorological Services (NMS), or a local Port Meteorological Officer (PMO), and nominate your ship(s) for recruitment into the VOS Scheme.

For further information contact:

Ocean Affairs Division  
World Meteorological Organization  
7 bis, avenue de la Paix  
Case Postale No. 2300  
CH-1211, GENEVA 2  
Switzerland  
**Telephone:** +41-22 730 82 37  
**Telefax:** +41-22 730 81 28  
**E-mail:** [mmo@wmo.int](mailto:mmo@wmo.int)

### **REMEMBER:**

**HELP IMPROVE THE QUALITY OF FORECASTS AND WARNINGS AND  
CONTRIBUTE TO THE ENHANCEMENT OF SAFETY AT SEA BY JOINING THE  
VOLUNTARY OBSERVING SHIPS' SCHEME**

### Mapping position plot chart of data received during August 2008

Messages : SHIP

Total : 386292

