WORLD METEOROLOGICAL ORGANIZATION

JOINT WMO/IOC TECHNICAL COMMISSION FOR OCEANOGRAPHY AND MARINE METEOROLOGY (JCOMM)
EXPERT TEAM ON SEA ICE – FOURTH SESSION

STEERING GROUP FOR THE PROJECT GLOBAL DIGITAL SEA ICE DATA BANK (GDSIDB) – TWELTH SESSION

ST PETERSBURG, RUSSIAN FEDERATION
1 TO 5 MARCH 2010

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)

ETSI-IV GDSIDB-XI/Doc. 2.6.2(5)
(17.II.2010)

ITEM 2.6.2

Original: ENGLISH

UNDERSTANDING AND IDENTIFYING OLD ICE IN SUMMER

(Submitted by John Falkingham)

Summary and Purpose of Document

This document contains a proposal for WMO publication authorities to consider publishing and distributing the above-named document or, alternatively, to have it included, in whole or in part, with the WMO Sea Ice Illustrated Glossary.

ACTION PROPOSED

The Expert Team on Sea Ice (ETSI) is invited to:

(a) Consider this proposal and recommend further action.

Appendix: *Understanding and Identifying Old Ice in Summer*; M.E. Johnston and G.W. Timco; Canadian Hydraulics Centre, National Research Council of Canada; Ottawa, Canada; December 2008. (available in hard copy only)

DISCUSSION

1. Dramatic changes in the condition of Arctic sea ice have made the Arctic more accessible to shipping in recent years. The Arctic shipping season extends earlier in the summer and later in the fall. Tourism in the Arctic is rapidly increasing and the recovery of oil and gas deposits and developing the significant mineral wealth in the Arctic is becoming economically feasible. Increased shipping means an increase in the number of mariners with little or no Arctic experience. Tools are needed to help them gain this experience safely.
2. While the rise of remote sensing is important for ice charting at the macro scale, visual observation is still the best means of detecting hazardous ice at ship scales. Ships and structures operating in ice-covered waters require personnel to reliably

recognize and, when possible, avoid the most dangerous forms of sea ice. Old ice represents a significant hazard in the Arctic and sub-Arctic.

3. Experienced mariners and professional ice observers know that identifying the varied appearance and forms of old ice is not straightforward. With the Arctic warming in recent years, the appearance of old ice in summer is becoming even more varied and confusing.
4. During 2006-2008, Drs. Michelle Johnston and Garry Timco of the National Research Council (NRC) of Canada organized Ice Service Specialists and Captains on Canadian Coast Guard icebreakers to photograph and gather information about many different forms of Arctic sea ice in summer. Johnston and Timco used these photographs as the basis for a comprehensive publication entitled “Understanding and Identifying Old Ice in Summer”. It is designed to be a reference tool to help ship and off-shore structure operators distinguish first year ice from second- and multi-year ice.
5. NRC holds the copyright for the publication but does not have the intention to maintain a distribution of it. In an informal conversation, Dr. Johnston indicated that the NRC may be quite willing to give distribution rights for the publication to WMO so that it could receive a wider circulation and improve Arctic marine safety as a result. Alternatively, elements of the publication could be used to update and enhance the WMO Illustrated Glossary of Sea Ice.
6. Any future arrangement between WMO and NRC must be negotiated between responsible authorities in each organization. If the ETSI members agree that this would be a worthwhile objective, then it is proposed that ETSI ask WMO to enter into such negotiation.