

SUB-COMMITTEE ON SHIP DESIGN AND
CONSTRUCTION
10th session
Agenda item 6

SDC 10/6
2 November 2023
Original: ENGLISH
Pre-session public release:

AMENDMENTS TO THE 2011 ESP CODE

Allowing the use of remote inspection techniques (RIT)

Submitted by IACS

SUMMARY

Executive summary: This document proposes draft amendments to the 2011 ESP Code, as amended, with a view to allowing the use of remote inspection techniques (RIT) for close-up surveys of existing ships.

*Strategic direction,
if applicable:* 7

Output: 7.21

Action to be taken: Paragraph 9

Related document: SDC 7/10

Introduction

1 At its seventh session, the Sub-Committee considered document SDC 7/10 (IACS), which proposed draft amendments to the 2011 ESP Code on the use of remote inspection techniques (RIT) for close-up surveys of existing ships. Noting the differing views expressed at SDC 7, the Sub-Committee did not endorse the proposed amendment and invited IACS and interested delegations to note the comments made and take action, as appropriate (SDC 7/16, paragraph 10.4).

Background

2 The maritime industry is increasingly applying remote inspection techniques (RIT), such as remotely operated vehicles (ROVs) and real-time sensing devices that are carried by drones. IACS considers that these new techniques offer greater efficiency, higher flexibility, and increased reliability in the day-to-day activities of survey and inspection without impairing the result of those surveys.

3 In order to permit the use of such techniques and to realize the benefits that they can potentially offer (safer surveys, decreased fault rate and reduction of cost of maintenance), IACS has updated its relevant unified requirements accordingly, i.e. IACS Unified Requirements (URs) Z3 (Rev.7), Z7 (Rev.26), Z7.1 (Rev.14), Z7.2 (Rev.7), Z10.3 (Rev.18) and Z15 (Rev.2).

4 Having permitted the use of RIT in its URs (including unmanned robot arms, ROVs, and unmanned aerial vehicles or drones) for close-up surveys of existing ships, IACS has developed the technical requirements for the approval of firms engaged in undertaking surveys using RIT for a close-up survey of the structure of ships and mobile offshore units, i.e. section 16 of IACS UR Z17 (Rev.13).

Discussion

5 According to IACS Recommendation 42 "*Guidelines for the use of remote inspection techniques for surveys*", RIT are to be used under the physical attendance of a surveyor and, therefore, it should be understood that the use of RIT is different from the concept of "remote surveys" where the physical attendance of a surveyor may not be expected. The use of RIT is to be limited/restricted in cases where conditions of class for repairs are imposed and where there is a record or indication of abnormal deterioration or damage. When a suspected area is found during inspections, the survey will be carried out without the use of RIT by the attended surveyor.

6 By introducing RIT into the 2011 ESP Code IACS does not intend it as an alternative to close-up surveys, but rather to support surveyors in their survey activities without impairing the result of the surveys.

Proposal

7 To permit the use of RIT in conducting surveys of existing bulk carriers and oil tankers, it is proposed that the 2011 ESP Code, as amended by resolution MSC.483(103), is updated:

- .1 to include a definition of RIT in each part of the annexes of the Code, supplementing it with the reference to IACS Recommendation 42 on "*Guidelines for the use of remote inspection techniques for surveys*";
- .2 to allow the use of RIT for close-up surveys; and
- .3 to include specific requirements for RIT.

8 The proposed draft amendments to the 2011 ESP Code, as amended by resolution MSC.483(103), are set out in the annex to this document for consideration of the Sub-Committee.

Action requested of the Sub-Committee

9 The Sub-Committee is invited to consider the above, the proposal in paragraph 7 and the annex to this document and take action, as appropriate.

ANNEX

DRAFT AMENDMENTS TO THE 2011 ESP CODE AMENDED BY RESOLUTION MSC.461(101)*

1 Insert new definition:

- .1 1.2.22 after existing definition 1.2.21 in part A of annex A;
- .2 1.2.22 after existing definition 1.2.21 in part B of annex A;
- .3 1.2.21 after existing definition 1.2.20 in part A of annex B; and
- .4 1.2.18 after existing definition 1.2.17 in part B of annex B to read:

"1.2.xx Remote inspection techniques (RIT)

Remote inspection technique is a means of examination of parts of the structure without direct physical access.*

* Refer to IACS recommendation 42 "Guidelines for use of remote inspection techniques for surveys".

2 The existing paragraphs 1.5 of part A of annex A, part B of annex A, part A of annex B and part B of annex B are replaced by the following:

"1.5 Thickness measurements and close-up surveys

1.5.1 In any kind of survey, i.e. renewal, intermediate, annual or other surveys having the scope of the foregoing ones, for structures in areas where close-up surveys are required, thickness measurements, when required by annex 2, shall be carried out simultaneously with close-up surveys.

1.5.2 Consideration may be given by the attending surveyor to allow the use of remote inspection techniques (RIT) in achieving the objectives of a close-up survey. Surveys conducted using RIT shall be completed to the satisfaction of the attending surveyor. When RIT is used for a close-up survey, temporary means of access for the corresponding thickness measurements as specified in this part shall be provided unless such RIT is also able to carry out the required thickness measurements."

3 Insert new paragraphs 1.6 in part A of annex A, part B of annex A, part A of annex B and part B of annex B as follows:

"1.6 Remote inspection techniques (RIT)**

1.6.1 The RIT shall provide the extent and quality of information normally obtained from a close-up survey. RIT surveys shall be carried out in accordance with the

* Tracked changes are indicated using "strikeout" for deleted text and "grey shading" to highlight all modifications and new insertions, including deleted text.

requirements given herein.* These considerations shall be included in the proposals for use of a RIT which shall be submitted in advance of the survey and as part of the survey programme in 5.1 so that satisfactory arrangements can be agreed.

1.6.2 The equipment and procedure for observing and reporting the survey using a RIT shall be discussed and agreed with the parties involved prior to the RIT survey, and suitable time shall be allowed to set up, calibrate and test all equipment beforehand.

1.6.3 When using an RIT for close-up survey, if not carried out by the Administration itself, it shall be conducted by a firm approved as a service supplier and shall be witnessed by an attending surveyor of the Administration.

1.6.4 The structure to be examined using an RIT shall be sufficiently clean to permit meaningful examination. Visibility shall be sufficient to allow for a meaningful examination. The Administration shall be satisfied with the methods of orientation on the structure.

1.6.5 The surveyor shall be satisfied with the method of data presentation including pictorial representation, and a good two-way communication between the surveyor and RIT operator shall be provided.

1.6.6 If the RIT reveals damage or deterioration that requires attention, the surveyor may require traditional survey to be undertaken without the use of an RIT."

1.6.7 Confirmatory surveys/close-up surveys may be carried out by the Surveyor at selected locations to verify the results of the remote inspection technique.

** Refer to IACS Unified Requirement Z17, annex 1 section 16 "Firms engaged in survey using remote inspection techniques (RIT) as an alternative means for close-up survey of the structure of ships and mobile offshore units".