

# Guidelines on **Remote Surveys**

## **Revision 2**

## **December 2022**



**IRCLASS**  
Indian Register of Shipping

**Guidelines  
on  
Remote Surveys**

**Revision 2, December 2022**

**TABLE 1 – AMENDMENTS INCORPORATED IN THIS VERSION**  
*These amendments will come into force on 1 January 2023*

Clause	Subject/ Amendments
	The Guidelines have been completely revised in accordance with the amendments to Part 1, Chapter 2 of the Rules and Regulations for the Construction and Classification of Steel Ships. New Section added giving details for specific surveys.

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### References

## Section 1

### Background

- 1.1 Safety of life at sea, safety of assets and prevention of pollution are key factors for the shipping industry and their exposure to risk is an aspect which is duly considered during ship surveys.
- 1.2 Recent developments in the methods for remote inspections coupled with the advances in the area of information and communications technology and the difficulties faced for attendance on board due to any force majeure situation (Refer Part 1, Chapter 2, Section 1.11.3 of the *Rules and Regulations for the Construction and Classification of Steel Ships*) have led to the increased application of remote surveys by Classification Societies.
- 1.3 The purpose of this document is to provide guidelines to Owners/ Ship Operators and Surveyors for planning and undertaking remote surveys in an efficient and secure manner, as an alternative to surveys with physical attendance on-board the ship.
- 1.4 Remote survey is a process of verifying that a ship and its equipment are in compliance with the rule requirements, where the verification is partially or fully undertaken by applying digital or technological means, in an efficient and secure manner, without physical attendance of the surveyor on-board the ship. Requirements for remote surveys are specified in Part 1, Chapter 2, Section 24 of the *Rules and Regulations for the Construction and Classification of Steel Ships* (hereinafter referred to as the Main Rules).
- 1.5 Information and Communication Technology (ICT) are the technologies used in the scope of remote surveys for gathering, storing, retrieving, processing, analysing, and transmitting information which includes both software and hardware. For remote surveys using ICT, IRS has investigated and examined the types of survey to which it can be applied, determined the type and amount of information required for the remote survey and the requirements for ICT to be used, thereby ensuring reliability equivalent to conventional physical surveys being achieved with transparency in the application of remote survey. It is recognized that remote survey may be appropriate in some, but not all, circumstances and there are challenges and benefits involved. Presently remote surveys are envisaged to be used for, as listed in Section 3.1 of these Guidelines. When it is related to statutory matters, remote surveys will be subject to approval by the relevant Flag Administration.
- 1.6 Ships considered capable by IRS, to have classification surveys carried out remotely, will be assigned additional class notation **REMOTE SURVEY**, as indicated in Part 1, Chapter 2, Section 24 of the Rules. The additional class notation REMOTE SURVEY will be assigned to ships considered capable by IRS, for carrying out classification surveys remotely, subject to the following:
  - a) provided with suitable equipment/ hardware/ software that are acceptable to IRS
  - b) vessel not under condition improvement/ condition monitoring program of IRS
  - c) procedures available for training and familiarity of on-board personnel/ crew in use of equipment/ hardware/ software
  - d) satisfactory completion of sample remote survey(s).

Unmanned non-self-propelled barges/ pontoons are not eligible to be assigned REMOTE SURVEY notation. Conduct of remote surveys on ships not assigned REMOTE SURVEY notation will be considered on case-to-case basis, based on specific request from the Owners (Also see 4.2). While guidelines for remote surveys are provided in this document, specific instructions from Flag for conduct of such surveys will be complied with..

- 1.7 These Guidelines will be reviewed as necessary based on advances in technology being used, experience gained during such surveys and inputs/ feedback from stake holders.

## Section 2

### Information and Communication Technology

- 2.1 A ship is required to have the capability to connect to the surveyor by the use of information and communication technology (ICT) that can capture the images, record video and/or live stream video or other data and transmitting information for a remote survey.
- 2.2 ICT are the technologies used in the scope of remote surveys for gathering, storing, retrieving, processing, analyzing, and transmitting information.
- 2.3 The communication equipment used for live streaming is to have following minimum functionality:
- both ends are to simultaneously see the same image/videos in near real-time (i.e., live streaming)
  - two-way direct voice communication
  - possibility to take screenshots
- 2.4 Computer devices compatible with the software application used for remote survey can be used for receiving the streaming of images/data/video. This may include standalone devices e.g. digital cameras and other smart devices such as smart phone, tablet, wearable device, smart glass, communication accessories like headphones and microphones and any other devices which can be connected to the network and capable of transmitting the necessary data/images over a Cellular, Wi-Fi or Satellite Connection to the remote surveyor.
- 2.5 All hardware installations on board used for the remote survey are to comply with the applicable requirements relevant for use and location on board, including hazardous areas. The computer screen is to be able to present an image quality that is sufficient to enable a survey decision to be made. Portable equipment are to have a power capacity suitable for the intended scope and time of survey. Provision of suitable anti-shake device is to be ensured for proper stability when a portable device on board for live streaming is being used.
- 2.6 IRS software application is used by IRS for remote survey. The system has secure login, so that only authorized personnel can login into the system. The application can be downloaded by the on-board personnel through a link which will be provided by IRS. The surveyor controls the live streaming by providing instructions to the onboard personnel/crew towards capturing relevant information applicable for the survey activity.
- 2.7 When any other software is proposed for use for the live streaming; the use of such software or application may be considered on case-to-case basis. In such cases the proposal will be evaluated by IRS to ensure that the software/ application used to perform the remote survey is compatible with the technical requirements and comply with the cyber security, data protection and confidentiality requirements of IRS for the transmitted data and Surveyors are familiarized in the use of the software.
- 2.8 When live streaming communication is applied, the internet connection is to have sufficient and stable bandwidth capacity to ensure quality (such as resolution and frame rate) of the direct color image/video and voice communication to the remote survey location to the satisfaction of the Surveyor.

2.9 In compliance with cyber security, data protection and confidentiality policies and procedures, it is to be ensured that data collected during the survey are captured, transmitted and stored in a secure way that has minimum vulnerability to unauthorized manipulation and distribution. Integrity of raw data is to be maintained during the data storage process and it is to be ensured that data is made available as and when required via secure sharing mechanism to authorized personnel and systems.

The Owner is responsible to ensure that their data security policies are implemented as per the Company's Safety Management System taking into account IMO resolution MSC.428(98), MSC-FAL.1/Circ.3. IRS *Guidelines on Maritime Cyber Safety* may also be referred.

## Section 3

### Application and Methodology

3.1 The following surveys can be considered for being undertaken remotely (also refer Part 1, Chapter 2, Section 24 of the Main Rules):

3.1.1 Examinations for Postponement of various surveys, as listed below:

- (i) Postponement, issuance, deletion of Condition of Class
- (ii) Postponement of following Class Surveys:
  - a. Boiler surveys
  - b. Docking Surveys
  - c. Tail shaft surveys (for maximum period of one year)

3.1.2 Other surveys as listed in the following

- (i) In-water bottom Survey
- (ii) Occasional survey for change of ship's name
- (iii) Occasional survey for loss of anchor
- (iv) Occasional survey for minor machinery or equipment damage
- (v) Items of Continuous Surveys of Machinery (CSM) or Planned Maintenance Scheme (PMS)
- (vi) Occasional survey for minor hull damage
- (vii) Occasional surveys for minor deficiencies/ defects not subject to a Condition of Class
- (viii) Specified items of a class survey (excluding additional specific items of initial or renewal surveys), including completion of remaining items of a part held class survey
- (ix) Non-propelled/ un-manned barges/pontoon – annual surveys when no survey of hull compartments is due
- (x) Minor retrofit / installation/upgrade of equipment
- (xi) Documentary or data based initial / periodical / renewal / occasional verifications and surveys



### 3.2 Methodology for remote surveys:

- 3.2.1 The request for remote survey is to be in accordance with IRS requirements and subject to acceptance on review of request. The Surveyor is to be provided with all necessary facilities for safe execution of the survey and access to vessel's plans and documents to carry out remote survey effectively..
- 3.2.2 Applicable method for remote surveys will depend on the type and scope of survey being undertaken. While information required such as videography/photographs and supporting documents would be exchanged through email, arrangement for two-way communication is to be confirmed for all cases.
- 3.2.3 In general, most of the surveys listed in sub-section 3.1 will be undertaken using remote software application in real time. However extension of CSM items, minor repairs may be accepted based on review of videos/ photos and supporting documents on a case by case basis where it is possible to confirm required information without real time communication.

## Section 4

### Review of request and planning remote surveys

- 4.1 In all cases of request for surveys to be undertaken remotely, Survey request form - SRF (Remote Survey), is to be filled up by the ship or the Company. ICT means to be used during planning and for remote survey along with identity and ranking of personnel/crew to be involved in the remote survey are to be confirmed. The request would be reviewed at Head Office, while ensuring there is no breach of International Conventions or legal, regulatory and statutory requirements of the relevant flag Administrations. When the classification survey is also related to a statutory item and the statutory survey is carried out by IRS, Flag Administration will be contacted for acceptance and specific instruction if any.

It is to be ensured by the Surveyor that specific instructions from IRS Head Office including Flag Administration, if any, are taken into account for the conduct of the remote survey.

- 4.2 Conduct of remote surveys on ships not assigned "**REMOTE SURVEY**" notation will be considered on case-to-case basis subject to verification of compliance with relevant requirements as per the Rules. In such cases, conduct of remote survey will be subject to satisfactory verification of the shipboard arrangements by the Surveyor prior the undertaking the survey.
- 4.3 Proper planning, preparation and close co-operation between the attending Surveyor and other parties such as owner/manager/ ship personnel/crew is an essential part of the remote survey process. Planning of the remote survey is undertaken by exchange of data/electronic documents and/or by live streaming video and audio connection

- 4.4 Before initiating the survey, the following are to be confirmed by the surveyor undertaking the survey:
- i. scope of survey requested.
  - ii. schedule for the planned survey.
  - iii. time frame for conducting the survey.
  - iv. activities, areas, information and personnel to be involved.
  - v. provisions of ICT to be used.
  - vi. software application for live streaming video and audio has been installed onboard and trial has been conducted to ensure that planned survey will be performed effectively.
  - vii. internet connectivity tests (audio and video) are done to ensure proper connectivity during the survey, when live streaming is used for remote survey.
  - viii. real time communication channels other than software application platform between the ship and the surveyor are available.
  - ix. personnel/crew involved in remote survey are identified and confirmed that they are suitably skilled/ familiarized to use the electronic devices and/or software used for the remote survey
  - x. items to be examined, operational tests/ checks to be carried out and sharing of such information and the relevant survey checklists with the ship in advance.
  - xi. records and documentation required by the surveyor in advance, as well as during the survey.
- 4.5 Surveyor will review the supporting documents and videos/photos provided by the Master / Chief Engineer prior to undertaking the remote survey, to arrive at specific areas requiring focus during the survey.
- 4.6 As the purpose of the survey is to verify that the ship is in compliance with IRS Rules and statutory Conventions, it is essential that Master, Chief Engineer and other personnel involved in remote survey cooperate and provide information in a transparent manner so that deficiencies/ non-compliances are brought out, in the interest of the safety of the vessel, crew and protection of the environment.

## Section 5

### Conduct of Remote Surveys

- 5.1 A planning meeting is to be scheduled to brief the Master, Chief Engineer, responsible persons on ship including service suppliers, (if required) during remote survey, in respect of the scope of survey, how the activities will be progressed, items and tests which will be witnessed and to confirm the arrangements.
- 5.2 Date / time shown on the device having the application software installed is to be verified for correctness, as this would be reflected in the remote survey records.
- 5.3 Where simple/ limited verifications are required (e.g. documentary or data base information) and evidence can be received using ICT platform such as emails, clouds etc. based on which surveyor can assess and get the level of assurance as in a physical survey, such method may be used without using live streaming. Remote survey method to be utilized will be specifically mentioned in the survey authorization.

When live streaming is used for remote survey, the surveyor is to verify the identity of the ship at the commencement of the survey. Owner is to ensure that owner's representative is attending on board and has access to the areas intended to be surveyed, 2-ways visual and audible communication including ICT solutions meeting the requirements.

- 5.4 In case where a livestreaming is not possible or is not continuous at the place of the survey (e.g., Engine Room), partly online sequences (where the Owner is able to capture pictures and videos offline of those items not covered by live streaming) may be accepted by the Surveyor. Where live streaming is not required for the survey based on the scope and type of survey undertaken, a confirmation is received from Owner's representative regarding the identity of the ship at the commencement of the survey.
- 5.5 The digital information submitted by the Owner to the Surveyor is to reflect the real situation of the surveyed item. For recorded videos/ photos, the following information is to be available:
  - (a) date and time when they were taken
  - (b) identity of the personnel/ crew responsible for taking evidence
  - (c) confirmation that they were taken on-board the ship
- 5.6 It is essential that sufficient lighting is arranged by the ship to show the condition of the ship, its machinery and equipment clearly. Where the survey location does not have sufficient /no natural lighting, temporary lighting is required to be provided, keeping safety issues on priority at all times.
- 5.7 Remote survey is to be undertaken by checking items to get information as normally obtained from a physical survey/audit/inspection based on IRS survey procedures/work instructions.
- 5.8 If the Surveyor is not satisfied with the arrangements or if the remote session cannot be properly maintained, he/ she may call off the survey. For example in case of a live video, the image quality is to be at least such that the person or the thing can be clearly seen.
- 5.9 Remote Survey may be carried out in parts or as a combination of part remote survey and physical survey depending on the circumstances.

- 5.10 All findings are to be recorded and proposal for repairs, corrective actions are to be reviewed along with provisions for alternate arrangements. For deferment of repairs to statutory items, Flag advice would be required.
- 5.11 The evidence available are subject to the technical evaluation and final acceptance by the Surveyor based on his professional judgement with respect to the completeness and accuracy, necessary to perform the requested survey according to the applicable requirements.
- 5.12 In case the Surveyor, according to his professional judgment, deems that the remote survey does not provide the same level of assurance as a survey with attendance on board, the surveyor may decide not to credit the relevant survey item/s.
- 5.13 The Surveyor may require to confirm the result of the remote survey, by a survey attended on board to credit the relevant survey item/s at his discretion or in case the remote survey is not carried out to his satisfaction. A Surveyor attendance on-board may also be required to complete a survey upon the Surveyor's request and at his discretion. This is to be recorded in the survey status as an additional information or as a condition of class as the case may be.
- 5.14 The Surveyor is to collect the evidence as required based on the type and scope of the survey. The necessary evidence that was examined by the Surveyor in order to satisfactorily complete the survey are to be collected and archived, as required.
- 5.15 On successful completion of remote survey, electronic survey report/ certificate will be issued, or certificate endorsement done electronically, as appropriate.

## **Section 6**

### **Familiarization of assisting crew**

- 6.1 The persons on board assisting in the remote survey, including service suppliers, are to be familiarized in carrying out those activities. Identity of the personnel and their familiarity would be verified by the Surveyor prior commencement of the survey. The ship's flag Administration may require that the Safety Management System of the ship is updated by the Company to include provisions for specific training of the crew engaged in remote surveys.

## Section 7

### Guidance pertaining to specific surveys

#### A. Postponement, Issuance, Deletion of Condition of Class

- (i) Depending upon the nature of deficiency, surveyor is to decide the type of evidence which will be required from the ship so that relevant item can be verified.
- (ii) Above evidence including Master/ Chief Engineer's Statement, log entries, photos/ recorded video/ audio and other supporting documents as required are to be received and verified. Surveyor is to examine and assess the relevant item/s, verify, and assesses the applicable tests using live streaming unless survey authorization specifically mentions other remote survey methods. Based on final evaluation surveyor may recommend issuance/postponement/deletion of the Condition of Class as the case may be.
- (iii) Surveyor may require at his discretion to confirm the result of the remote survey, by a survey attended on board.

#### B. Postponement of Class Surveys

- (i) Postponement of following Class surveys may be undertaken remotely:
  - a. Boiler Survey
  - b. Tail shaft Survey (postponement not exceeding one year)
  - c. Docking Survey
  - d. Continuous Survey of Machinery items
- (ii) Underwater examination where required for postponement of docking survey is to be carried out using the services of an approved diving company which is witnessed remotely by the surveyor by live streaming. Arrangement in respect of the remote survey, the scope of survey and procedure is discussed by the surveyor with the diving company personnel involved in the survey. It is to be verified that diving company personnel are conversant with the use of ICT for the remote survey. A trial of the ICT arrangement will be done to ensure the survey can be undertaken efficiently.
- (iii) Flag instructions (if any) are to be complied with.
- (iv) Based on satisfactory survey, the survey is postponed for a particular time period and reported while reflecting such postponement in the survey status.

#### C. Items of Continuous Survey for Machinery (CSM) or Planned Maintenance Scheme (PMS)

- (i) Part 1 Ch.2 Section 1.4 of the Main Rules permit continuous survey of some machinery items to be carried out under the supervision of the Chief Engineer of the ship.
- (ii) Details of the machinery items which can be surveyed by Chief Engineer are provided in *IRS Guidelines on Continuous Surveys of Machinery*. Confirmatory survey for machinery items carried out under the supervision of the Chief Engineer, may be undertaken remotely and credited based on final evaluation of the evidence. In addition to Chief Engineer's report, log entries, photos/recorded video/audio and other supporting documents as required are to be received and verified. Surveyor is to

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examine and assess the relevant item/s, verify and assesses the applicable tests by live streaming unless based on survey scope, other survey method can be undertaken and included in the survey authorization. Relevant item is to be credited based on final evaluation of the evidence.

(iii) CSM items covered under PMS may also be credited based on evaluation of evidence remotely.

#### **D. Occasional survey for change of ship's name**

(i) Towards occasional survey for change of ship's name, evidence related to change of ship's name are to be received from the ship and it is to be confirmed that new name is marked on the hull.

(ii) When authorization from flag is received for remote verification of carving and marking and issuance of statutory certificates in the new name, specific instruction from flag in this respect will be followed.

(iii) Along with marking on hull, it is to be confirmed remotely that ship's new name is reflected in relevant documents carried on board, marked on lifesaving appliances, altered in navigation equipment e.g. AIS/ LRIT and service/ shore based maintenance contracts with service providers.

(iv) Surveyor is to verify and assess the relevant items by using live streaming unless survey authorization specifically mentions other remote survey method considering equivalent provision e.g. confirmation of carving and marking based on physical verification by other Class Society/RO or confirmation by Master as is agreed with the Flag Administration.

(v) On satisfactory verification, class certificate along with statutory certificates as may be authorized by the flag Administration in the new name are issued to the ship electronically.

#### **E. Occasional survey for loss of anchor, minor machinery or equipment damage, for minor hull damage, minor deficiencies/ defects not subject to a Condition of Class**

(i) Depending upon the nature of deficiency, Surveyor is to request the ship for evidence which will be required so that relevant item can be verified.

(ii) In addition to Master/ Chief Engineer's Statement, log entries, photos, recorded video/ audio and other supporting documents as required are to be received and verified. Relevant items are to be examined and tests witnessed by live streaming unless based on survey type and scope, other survey method can be undertaken and specifically included in the survey authorization.

(iii) Based on final evaluation, surveyor is to recommend minor deficiency/defect to be reflected as memoranda entry or condition of class permitting to deal with the deficiency within a definite time period, as the case may be.

(iv) Surveyor at his discretion may also recommend for a confirmatory survey to be undertaken within a definite time period.

## **F. In-water bottom survey**

(i) Other than as provided in sub-section B above, In-water bottom survey may be carried out remotely for the purpose of

- a. crediting of docking survey
- b. towards examination of damage to underwater portion of hull/appendages/ shafting system

(ii) Underwater examination will be carried out using the services of an approved diving company which is witnessed remotely by the surveyor by live streaming. Arrangement in respect of the remote survey, the scope of survey and procedure is discussed by the surveyor with the diving company personnel involved in the survey. It is verified that diving company personnel are conversant with the use of ICT for the remote survey. A trial of the ICT arrangement is done to ensure the survey can be undertaken efficiently.

(iii) Flag specific instructions if any are to be complied with.

## **G. Specified items of a class periodical survey (excluding additional specific items of initial or renewal surveys), including completion of remaining items of a part held class periodical survey**

(i) Specific items of class periodical survey (excluding additional specific items of initial or renewal surveys) which are based on pure documentary verification may be undertaken remotely as a part held survey or completing an already part held survey. Example of such items include verification of documentation and records, log entries, ship certificates, document of approval of equipment, report of service by manufacturer/service supplier/service providers, test of machineries/equipment etc. Surveyor is to be guided by survey authorization for remote survey methods to be employed for survey and specific instruction from flag Administration, if any, are to be complied with.

(ii) Condition of class and/or repairs to minor deficiencies/ defects/ damages (refer sub-section A and E) and/or minor retrofit/installation/upgrade of equipment (refer sub-section I) can also be undertaken remotely as part of the class periodical survey.

## **H. Non-propelled/ un-manned barges/pontoon – annual surveys when no survey of hull compartments is due**

(i) Annual surveys of non-propelled and unmanned barges/ pontoons which do not require examination of hull compartment may be undertaken remotely. Annual surveys can be part held.

(ii) Live streaming will be required for the conduct of the survey. Owner will be required to make arrangement for ICT required for the survey including the onboard trial and provide details of personnel who will be engaged for the remote survey. Arrangement in respect of the remote survey, the scope of survey and procedure is to be discussed by the surveyor with the personnel involved in the survey. It is to be verified that personnel are conversant with the use of ICT for the remote survey. A trial of the ICT arrangement is to be done to ensure the survey can be undertaken efficiently



## **I. Minor retrofit/ installation/ upgrade of equipment**

(i) Minor retrofit/installation/upgrade of equipment onboard ship may be undertaken by live streaming and/or other survey methods at Surveyor's discretion. Additional supporting documents such as approved plan for modification, work done report of the OEM/ Service Supplier, approval document for the equipment, test report subsequent to installation/upgrading etc. as applicable will be required to be verified by the Surveyor.

(ii) Surveyor is to examine and assess the relevant item/s, verify and assesses the applicable tests as the case may be using live streaming unless survey authorization specifically mentions other remote survey methods which can be applied for the remote survey and flag specific instruction if any to be followed when it pertains to statutory item.

(iii) Surveyor may accept the retrofit/installation/upgrade of equipment based on final evaluation of the evidence and/or may recommend for a physical confirmatory survey to be undertaken within a definite time period.

## **J. Documentary or data based initial / periodical / renewal / occasional verifications and surveys**

(i) Specific items of class survey which are purely documentary or data-based verification can be undertaken remotely. Example of such items include verification of documentation and records, log entries, ship certificates, document of approval of equipment, report of service by manufacturer/service supplier/service providers, test of machineries/equipment etc.

(ii) As the remote survey involves simple/ limited verifications, evidence can be received using ICT platform such as emails, cloud etc. without the use of live streaming. Surveyor is to be guided by survey authorization and flag specific instruction, if any, is to be followed when it pertains to statutory item(s).

## **K. Ships assigned REMOTE SURVEY notation**

(i) For ships assigned **REMOTE SURVEY** notation, the satisfactory functioning of equipment/ hardware/ software and, procedures for training of on-board personnel/ crew in the use of equipment/ hardware/ software and procedural requirements will be verified by the Surveyor during Annual Surveys.

**References:**

- IRS Rules and Regulations for the Construction and Classification of Steel Ships
- IACS Recommendation 42 - Guidelines for Use of Remote Inspection Techniques for surveys
- IRS Guidelines on Maritime Cyber Safety
- IRS Guidelines on Continuous Surveys of Machinery
- ISO 9001:2015
- IMO Resolution MSC. 428(98)
- MSC-FAL.1/Circ. 3

**End of Guidelines**