

## **VOLNA SOFTWARE**

# USER'S MANUAL (PART I) BASIC MANUAL

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## PART I GENERAL PROVISIONS

## **1** General particulars



"VOLNA" software, is a software developed by the Russian Maritime Register of Shipping, for the collection, storage and assessment of defects parameters (wear, deformations, cracks etc.) of ship's hull structures, ship's arrangements and pipelines.

## 2 System requirements



#### Minimum system requirements:

- Windows 7 and further versions;
- Display dimension 1280 x 720 pixel (15');
- Processor (CPU) 1,0GHz or higher;
- RAM 1 Gb or higher.

#### **Recommended system requirements:**

- Windows 7 and above;
- Display dimension 1600 x 900 pixel (17');
- Processor (CPU) 2,0GHz or higher;
- RAM 4 Gb and above.

#### During installation of this software the following additional components will be installed to a computer:

- MS Framework 4.0

- SQL compact 4.0

## 3 Terms and abbreviations

"VOLNA" software, is a software developed by the Russian Maritime Register of Shipping, for the collection, storage and assessment of defects parameters (wear, deformations, cracks etc.) of ship's hull structures, ship's arrangements and pipelines.

RCSSS - Rules for classification surveys of ships in service

RS – Russian Maritime Register of Shipping

RS surveyor - member of Russian Maritime Register of Shipping

System Administrator - member of Russian Maritime Register of Shipping, responsible for setting up and maintenance of "VOLNA" software

TM – thickness measurements

TM operator – TM firm specialist

## 4 User's responsibilities

Software users' categories are distributed as follows:

TM Operator RS Surveyor System Administrator

#### **TM operator**

Free access

- Limited software interface

Tasks: Drawing up of table forms upon the results of defects parameters measurements Development of the Report on defects parameters

#### **RS Surveyor**

- Password-based access
- Extended software interface

Tasks:

Drawing up of permissible thickness diminution allowances;

Thickness measurement scope assignment for TM operator;

Verification of the Report prepared by TM operator

Information export/import to RS Head Office server;

Drawing up of table forms upon the results of defects parameters measurements and development of the Report on defects parameters if acting as a TM operator

Development of a technical condition assessment report (non-mandatory application).

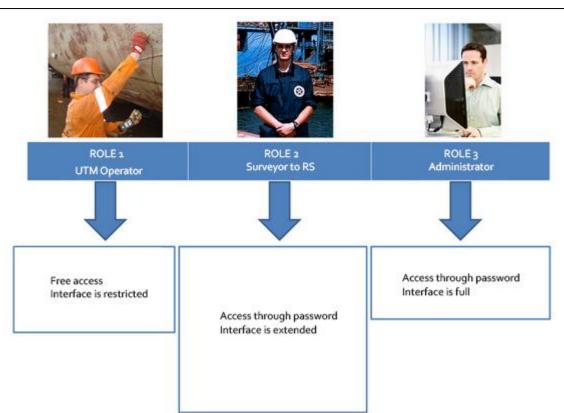
## System Administrator

- Password-based access

- Full software interface.
  - Tasks: Software setting up and maintenance Internal and outer software sites maintenance

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## 5. Operation principles

## 5.1 General principles

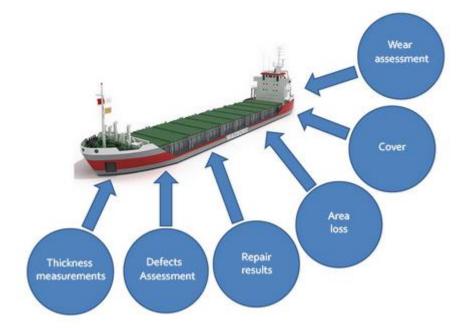
"VOLNA" software allows to perform and draw up all set of works regarding technical condition assessment.

Using «VOLNA» software it is possible to register the following information for technical condition assessment:

- 1.1 Residual thickness measurements;
- 1.2 Measurements of defects parameters (pitting, deformations, cracks etc.);
- 1.3 Description of repair performed;
- 1.4 Condition of hard protective coating in ship's spaces.

As a result of assessment of technical condition «VOLNA» software generates the following:

- Report on defects parameters together with the results of assessment of cross-sectional reduction area if applicable;
- Technical condition assessment report containing information on substantial corrosion zones, average wear of all items measured etc.)



#### 5.2. Collaboration of the software users.

5.2.1 By using software the collaboration of a TM operator and RS surveyor is performed as follows:

.1 Creation of a measurement/survey session. First steps are to be done by RS surveyor. RS Surveyor enters general particulars of current survey (imports ship's data, TM firm data, shipowner's data, permissible residual scantling information, if created earlier, from RS Head Office server and/or enters missing information in relevant sections/fields by himself/herself).

Than RS surveyor assigns the scope of thickness measurements. In case of creation of file containing permissible residual scantling information RS surveyor is to forward it to RS Head Office server (using function "Export" of VOLNA" software).

.2 If the vessel is not registered in RS database (in case of acceptance of a vessel to RS class). All necessary information for VOLNA software is filled in manually using available ship's documents.

.3 RS Surveyor forwards electronic file created by himself/herself to the TM operator. XML file has internal <u>encryption</u> and may be opened using VOLNA software only. File transmission is carried out in any way convenient for TM operator and RS surveyor (electronic mail, external storage medium, etc.)

.4 Upon receipt of a file from RS surveyor a TM operator downloads mentioned above electronic file using "VOLNA" software and draws up relevant tables on the basis of measurements done (refer to para 3.3 of this Manual).

.5 Upon completion of drawing up of report tabular forms, TM operator creates new electronic file and forwards it to RS surveyor. For these purposes it is necessary to choose relevant option in the second software window and click the button "Export" – "Encrypted report export to XML" (refer to figure below). Generated file is transmitted to RS surveyor in any way convenient and agreed by RS surveyor (e-mail, external storage medium, etc.).

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Normative export to server of F	RS Head Office	10318	17.30043.185UTM	254/2017		1702473
POMORYE	9428499	060393	17.00001.341UTM		Очередное	
VARIANT	9065247	912839	17.01451.150UTM		Очередное	1750584
SEISHYO MARU-38	8630423	836480	17.00006.341UTM		Очередное	
GRANITNYY	8858518	902240	17.00000.341UTM		Annual	
SOCAR-2	9232993	000246	17.00921.341UTM		Очередное	
ATLANTIC PROJECT II	9235983	010572	17.00922.341UTM		Очередное	
RIROIL 2	9175200	010159	17.00923.341UTM		Очередное	
KRILYON	8837813	900140	17.00924.341UTM			
	9286815	020038	17.00925.341UTM			
NIDRI STAR I	8651893	020536	17 00926 341UTM			

.6 Upon receipt of a file from TM operator, RS surveyor checks information in it and then completes the session by verification of deck and bottom with bilge cross-section area reduction (if applicable) and, in case of positive results of review, forwards the file to RS Head Office server.

RS surveyor enters the following additional information in this file before sending (on repairs carried out, hard protective coating condition etc.) and creates the ship's hull technical condition assessment report (as an additional information on survey).

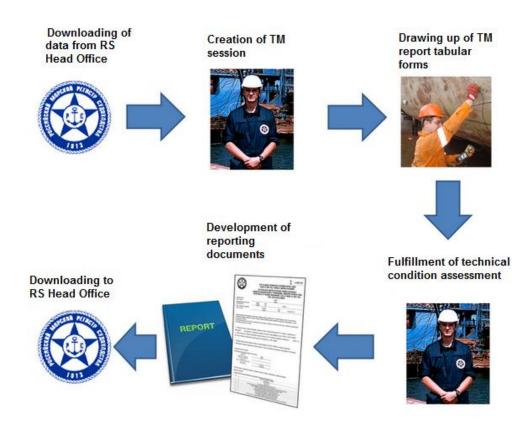


Figure 1 General scheme of development of TM report

## 6. Thickness measurement data input

## 6.1 To Input TM it is necessary to perform the following:

.1 to import general data on current survey from RS Head Office server (ship's data, TM firm data, shipowner's data, permissible residual scantling information, if created earlier, from RS Head Office server. Missing information is entered in relevant sections/fields manually).

#### Loading of current survey data from RS Head office server

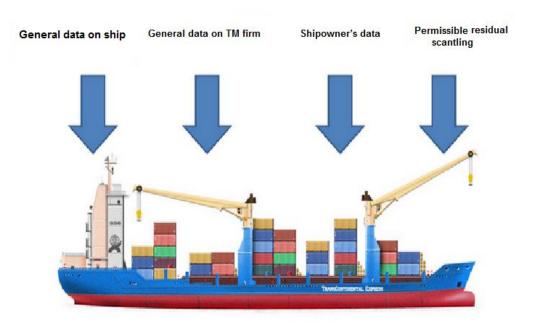


Figure 2 Information required for development of TM report by "VOLNA" software

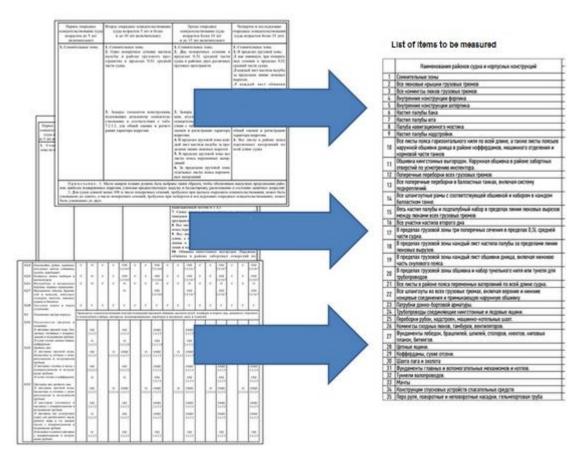
#### 6.2. Creation of the list of items to be gauged at current survey.

Creation is carried out on the basis of applicable requirements of the RS Rules for classification surveys of ships in service depending on the following criteria:

-ship's age;

ship's type;

- survey type.



# 7 Creation and using of database with as-built and permissible residual scantlings of ship's items required to be measured.

Software allows to create permissible residual scantling (further – norms, wear limits) regarding the following cases: .1 for ships which Register class has not been modified since their construction, as well as to ships built to the RS class and which have not undergone major repair or modification upon completion of construction (refer to 4.2.6 of Annex 2 to the RCSSS);

.2 for ships, having calculation of permissible thickness diminution elaborated in accordance with RS Rules and agreed by RS (refer to 4.2.1-4.2.5 of Annex 2 to the RCSSS);

.3 for ships, to which norms according to losing society -IACS member Rules applies (refer to 5.12.2 of part I "General provisions" RCSSS);

.4 for ships built under CSR;

.5 for ships for which IACS UR S19 applies;

.6 for ships for which UR S21/S21A applies;

.7 for ships for which IACS UR S31 applies.

Norms are created in one consolidated electronic file, stored on RS Head Office server for further using during development of relevant reports.

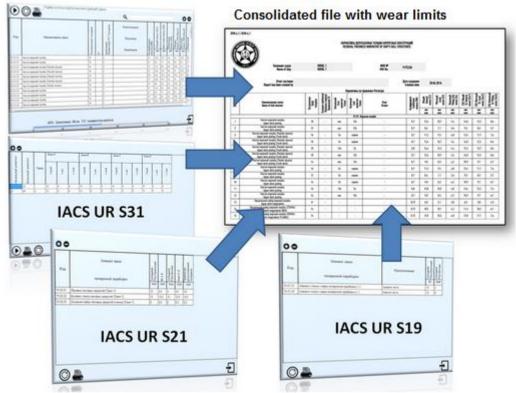


Figure 3 Content of file with wear limits

## 8 Tabular forms for reporting of the results of defects parameters

#### 8.1 Three groups of tabular forms are used in the software:

.1 forms RTM1.1 - RTM1.7 applies for drawing up of TM report for all ships, except those which are built under CSR Rules;

.2 forms, recommended by IACS (TM1 - TM7) are applied when RS rules allow to use recommended forms of IACS UR Z7, Z10.1, Z10.2, Z10.4, Z10.5.

.3 forms for ships, built under IACS Common Structural Rules.

For more information – refer to Instruction for drawing of TM tabular forms.

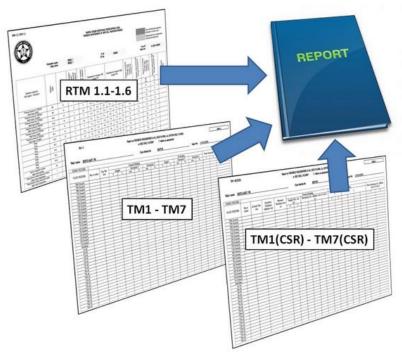


Figure 4. Three groups of TM report offered by the software "VOLNA" **8.2 Representation of defects parameters measurements on sketches.** The results of measurements put into tabular forms are to be shown additionally on sketches attached.

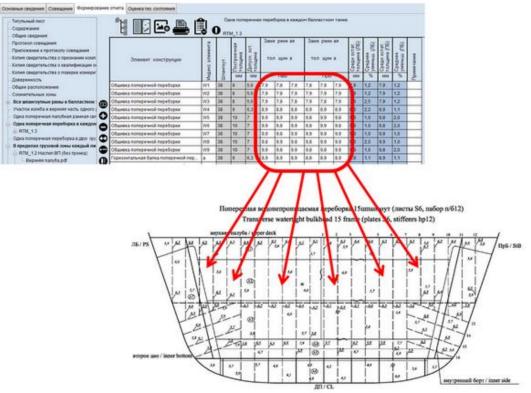


Figure 5. Representation of defect on sketches

## 9. Software help messages for users.

Text and graphic help messages are provided for the software users.

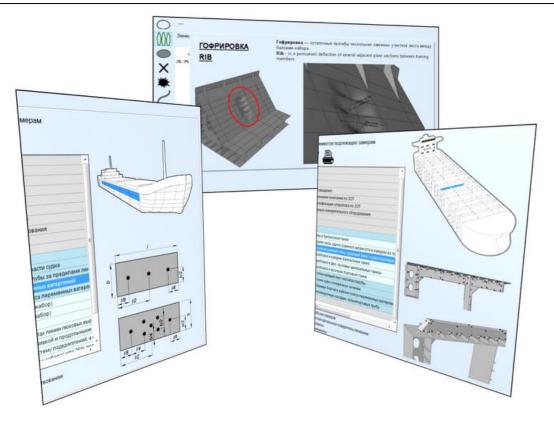


Figure 6. Example of help messages

## 10. Assessment of defects parameters (wastage, deformations, cracks etc.)

### **10.1 Assessment of defects**

Procedure for registration of defects parameters revealed during surveys on sketches, their assessment and creation of a report containing defects criteria (refer to fig. 7)

Software contains simple interface for registration of defects and their parameters. Permissible criteria of defects are calculated using software in accordance with the RS rules and the relevant report of assessment is created automatically (see forms RTM2.1 and RTM2.2).

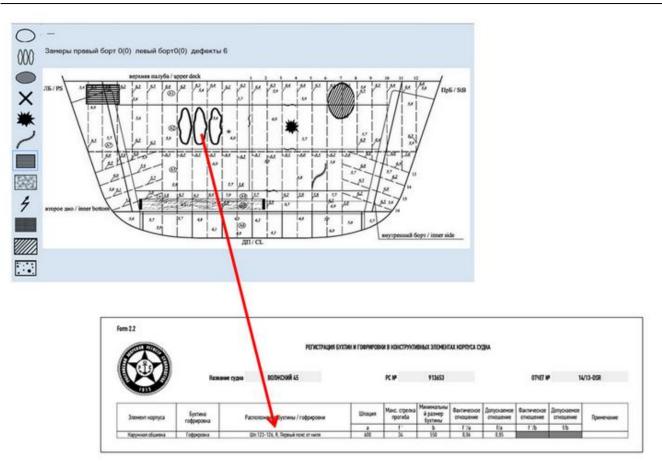


Figure 7. Example of sketch containing information of defects registered by "VOLNA"

#### 10.2 Assessment of the cross-section area reduction of deck and bottom with bilge

Assessment of cross-section area reduction of deck and bottom with bilge is to be carried out using the software according to the requirements of the RS Rules for classification surveys of ships in service (refer to Annex 2, para 2.2.1). The results of hull structures measurements within transverse sections are registered in form RTM1.1 and then the software determines and calculates the magnitude of reduction on the basis of data for the hull members relevant to appropriate groups of structures (i.e. deck and bottom groups of structures).

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			K5 100 080 7.0 9.8 A11 8.0 1160 6.4 7.0		20
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	🗄 All transverse bulkheads, in all cargo	D Bottom shell plating	C11 8.0 1930 6.4 7.8		25
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$\sim$	<ul> <li>Iniet and outlet pipes</li> </ul>	Double bollom plating	DB1 8.0 6.4 7.9	7.8 7.9 7.8 7.9 7.9 7.9 1.2 7.9	12
	Decks of superstructures, deckhouse	Double bottom plating	DD2 80 64 79	77 78 78 78 77 78 25 78 2	2.5
	n Companion hatch coamings and venti	Docore bolioni praning	DB3 8.0 6.4 7.8		2.5
	Chain lockers     Scofferdams, vold spaces [fr.204-210]	Double bollom plating	DB1 8.0 6.1 7.8		25
	Air and sounding pipes of ship's come	inner side plating (upper and lower strakes)			20
	🗄 Trunk for logs and depth sounders 🖕	Inner side plating (midle strakes)	132 8.0 5.5 7.9 183 8.0 6.4 7.7		2.5
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Figure 8 the results of assessment of cross-section area reduction

#### 10.3 Registration of the results of repair

Information on repair required on the basis of the results of assessment of technical condition may be registered using this software.

Upon completion of TM and countersigning of TM report by RS the software gives possibility to register the results of repair of ships items determined by the software as non-compliant to RS Rules (i.e. the defects parameters are beyond the allowable limits).

The results of repair carried out may be used by a shipowner for planning of further repairs/surveys and by RS for collection information of repair history.

The results of repair are represented in the special form created by the software and intended for RS surveyor. This information is included as a section of the Report of assessment of technical condition (form 6.1.06).

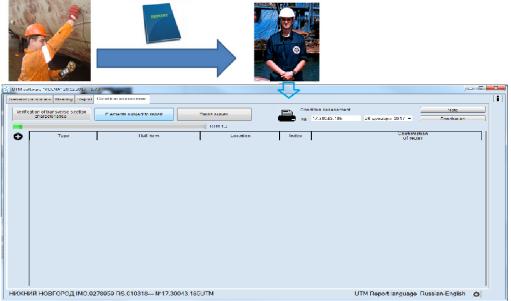


Figure 9 Entering of the results of repair

#### 10.4 Assessment of corrosion prevention system condition

The software gives possibility to register information on current condition of corrosion prevention system within ship's spaces.

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Figure 10 Entering of information on corrosion prevention system

## 11. Installation of the software

To install software "VOLNA" on a computer it is necessary:

- 1. to check minimum system requirements of a computer, on which the software is planned to be installed;
- 2. to go to web-site on the following address: https://volna-global.rs-class.org;
- 3. to download installation file from web-site;

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WOLNA Russian Maritime Register of Shipping	About "VOLNA" 👻	Installing the software 🔹	Technical support 👻	Edditional information 👻	
		🕫 Installation Guide			
		🖻 Download			

## **PROGRAM "VOLNA"**

Current program version - 0.8.27 dated 08.01.2019, base version - 0.90 dated 14.12.2018.



"VOLNA" is the software elaborated by the Russian Maritime Register of Shipping for collection, storage and assessment of the results of measurements of thickness and other parameters of defects of ship's hull structures, ship's arrangement and system pipelines.

😃 DOWNDLOAD

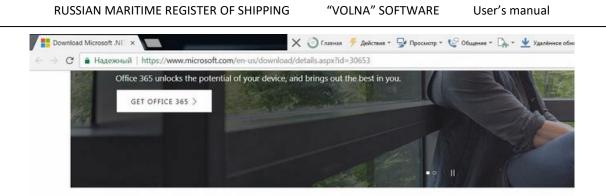


4. to install the software on a computer.

At the first step installation program checks presence of program Microsoft Windows .Net Framework of relevant version on a computer and offers to install it if not available (to install .Net Framework refer to paragraph 4.1). If available – go to item 6 and subsequent.

<sup>1</sup> Volna	
ля установки требуется .NET Framework	версии v4.5.2. Установите .NET
ramework и перезапустите программу ус	тановки. Пакет для установки .NET
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Framework можно получить по Интернету.	Сделать это сейчас?

4.1 Click "Yes", when tooltip offered to install Microsoft Windows.Net Framework.

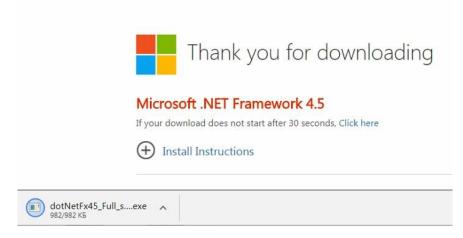


Microsoft .NET Framework 4.5

Select Language:	English	· •	Download
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.NET Framework 4.5 is a highly compatible, in-place update to .NET Framework 4.

4.2 Upon selection of language and pushing the button "Download" to install file uploaded.



4.3 To install program .Net Framework.

Для продолжения установки необ» соглашения.	vork 4.5 юдимо принять условия лицензионного
ДОПОЛНИТЕЛЬНЫЕ УС ИСПОЛЬЗОВАНИЕ ПРО MICROSOFT	ЛОВИЯ ЛИЦЕНЗИИ НА ГРАММНОГО ОБЕСПЕЧЕНИЯ
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5. Upon installation of program .NET FRAMEWORK, to start installation of the software "VOLNA" and follow to the instructions offered by the installation wizard .

5.1. To select the installation folder for the software VOLNA – which is the default folder on the desktop. It is possible to place the program in the "My Documents" folder or on drive D and than click Next.

륏 Volna	
Выбор папки для установки	
Установщик установит "Volna" в следующую папку.	
Чтобы воспользоваться данной папкой, нажмите кнопку "Д. введите нужный путь или выберите ее, нажав кнопку "Обзо Папка:	
C:\Users\user\Desktop\Volna\Launcher\	О <u>б</u> зор
	Место на дисках
Установить "Volna" только для меня или для всех, кто исп	ользует этот компьютер:



	C
тверждение установки	
ювщик готов к установке "Volna" на ваш компьютер.	
ачала установки нажмите кнопку "Далее".	
Отмена Кназад	Далее >



- 5.2. As a results the software VOLNA will be installed and relevant desktop shortcut will be created -
- 5.3. To double-click the shortcut to start the software.



5.4. Then the verification of a computer system will be carried out to check the presence of Microsoft SQL CE0 and, if it not available, the installation of it will start.

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5.5. If the installation process determines that a newer version of Microsoft SQL Ce0 is installed, the software "Volna" will close and it will need to be restarted.

6. After running the "Volna" will attempt to obtain updates from the RS Head Office server.

🛃 Обновление/Upda	ating VOLNA	
-		

7. After the successful upgrade the software will run.



8. If the update site is not available for some reason, the following message will appear:

D6новление/Updating VOLNA	_ 🗆 X
Connection with server is absent.	
Обновляется папка VOLNA/Template/	

9. In this case, to close and restart VOLNA software again or to continue working with the non-updated version. However, it is strongly recommended to upgrade software to the latest version, or download a latest version of installation from the server or to run from the desktop.

## PART II STEP-BY-STEP INSTRUCTION

## 1 First software popup window

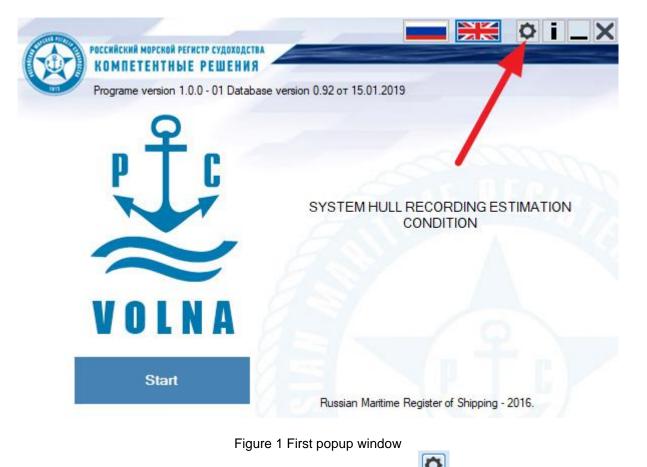
After installation of the software VOLNA according to the instruction (para 11 of part I) "the Software Installation", by



......, the first popup window appears (fig.1).

Note that before appearance of the first popup window, the software will automatically contact the RS Head Office server to check the availability of updates.

In the first popup window, software settings are carried out for each user (the interface language, the printout language(s) of the reporting documents, backup, and so on, program relevance (update) information is provided).



The first time of start the software, it is necessary to click the Settings button [19] (to personalize the user's settings).

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lacтройки/Settings Pese	рвное копирование/Backup		
Пользователь/User Инспектор PC/	Surveyor RS (gur\)	Язык/Language Русский/Russian	
Имя/Name Пароль/Password	gur\2227		
	ентации/Report language		
Русский/Russian Английский/Eng Русско-английский/Eng			
Сохранить настройки	-		

Figure 2 Setting tab

In the tab "Settings" there are following three options:

1) Option "User"

In this option it is necessary to enter name and password to access the software (required for RS surveyors only). For TM operators these fields are to be kept empty.

2) Option "Language"

In this option it is necessary to select the interface language.

3) Option "Report language".

In this option it is necessary to choose the language for drawing up of reports.

The software gives a possibility to draw up reports in Russian, English and Russian-English languages.

One advantage is that you can use only English as an example, and print the report documents in Russian (and vice versa). This advantage is relevant for foreign firms performing thickness measurements on vessels under the Russian flag for which it is required the processing of bilingual documentation.

The program's settings are sufficient to run once and the settings will remain saved.

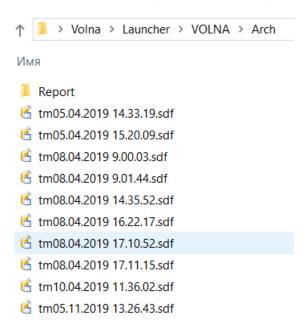
For the events of an inadvertent failure of the software the popup "Settings" contains a backup tab that allows to restore information entered earlier.

Сервис и настройки,		
Настройки/Settinga tm26.07.2016 1 tm26.07.2016 1 tm26.07.2016 1 tm26.07.2016 1 tm26.07.2016 1 tm26.07.2016 1 tm26.07.2016 1 tm27.07.2016 1 tm27.07.2016 1	11.20.33.sdf 13.30.48.sdf 14.08.56.sdf 14.20.16.sdf 14.22.14.sdf 15.50.34.sdf 11.30.06.sdf 7.57.27.sdf	Загрузить/Load Сохранить жущую/Save current base Загрузить базу из айла/Load base from file Выход/Exit

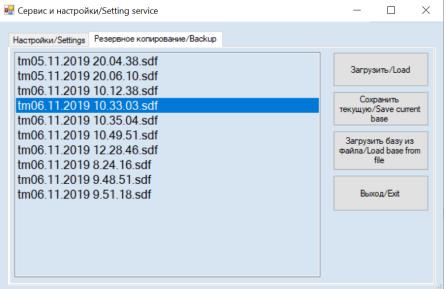
Figure 3 tab "Backup"

The mechanism of back-up is divided into saving of a local database and reports separately.

- 1.1 Full back-up of a local database.
- 1.1.1 At each start-up a full local database back-up is created. This database contains all created or down-loaded survey sessions which exist at the moment of start-up.
- 1.1.2 Created back-up is saved in the folder «Arch» of the folder where software VOLNA is located (by default in C:\Users\User\Desktop\Volna\Launcher\VOLNA\Arch).
- 1.1.3 The back-up file has a name «tm08.04.2019 9.00.03.sdf», where 08.04.2019 and 9.00.03 are the date and time of creation of each particular back-up.



- 1.1.4 The "VOLNA" software keeps the last 10 back-ups of local database by rewriting the latest one at each startup.
- 1.1.5 The access to the earliest saved back-up is provided using button "Settings" of the VOLNA software entering window.



By using buttons of this window it is possible to:

Down-load a database back-up created earlier automatically by completely replacing the current database;

Save current working database (not from the list provided) into the separate file at a way offered during saving;

Down-load database from separate file, saved earlier using button "Save current base".

Down-loading of local database is to be done carefully and only in case when the current working database is damaged.

1.2 Back-up of each report.

During working with certain report back-up is created automatically in XML file.

New back-up of a current report is created during the process of data entering in the tables every ten (10) minutes or during data entering for every one hundred (100) measurements.

It is possible to down-load certain report using button "Import" from the list form of all local database reports ("to import report from autosaving").



Upon fulfillment of settings actions, it necessary to save settings and to click button "Start" upon opening of the first

software window

Start	

## 2 Second popup window

The list of ships for which the TM session is created is located in the second software popup window.

Ships name	IMO number	RS No	Report number	No rep. company	Type of survey	Tesis No
POMORYE	9428499	060393	17.00001.341UTM		Очередное	
SOCAR-2	9232993	000246	17.00002.340UTM		Очередное	
SEISHYO MARU-38	8630423	836480	17.00006.341UTM			
GRANITNYY	8858518	902240	17.00000.341UTM			
			17.01010.100UTM			

Figure 4 Second popup window

In this popup window it is possible to:



- export or import electronic file to or from RS Head Office server or hard or portable disc.



The results of each session may be exported or imported (**Export Import**) in an electronic file and on RS HO server. Importing and exporting to RSHO server is available to RS surveyor only.

In the lower part of the screen the information for RS surveyor working with program is available.

## To create new TM session it is necessary:

1) to click button

2) Then popup window "Add new report" will appear.

3) In the field **"Ship's hull condition report No."** to enter identification number according to the RS Normative Document (for RS surveyor according to ND 2-060202-009).

4) In the field **"IMO number**" or **"RS number**" IMO number or RS number to be enter (it is allowed to draw up of one of the fields);

5) In the field **"Report language"** to choose the language of reporting documents generation for the relevant ship/survey.

6) Then to click on one of the options "**UTM is carried out by UTM company**" or "**UTM is carried out by RS**" whatever is applicable:

"UTM is carried out by UTM company» - TM are carried out by the recognized by RS organization. In this case to enter the number of the Recognition certificate of the firm in the field "RC No." or "UTM is carried out by RS " – in this case the field "RS No." will be unavailable.

Add new report
Ship's hull condition report No.
IMO No. 📃 No IMO No
Report language
🔘 Russian
english
Russian-English
OTM is carried out by UTM company O UTM is carried out by RS
RC No
✓ ?

#### Figure 5 Creation of a new TM session

7) Then to confirm completion of filling in of the fields by clicking on button and transfer to the third popup window of the software.

During transferring the software applies to RSHO server and loads the following:

- information on ship;
- information on UTM firm;
- information on shipowner;
- information on norms (as-built and permissible scantlings, is created earlier using software VOLNA);

**"VOLNA" SOFTWARE** 

User's manual

neral particulars Meeting Report Condition assessment		
Ship's data ?	RS division details	
No IND No RS Ship's name (eng)	Name RS division (eng) RS division address (eng) UTM operators qualification UTM operators qualification Details of measurement equipment Details of measurement equipment	
Current survey data     ?       Vype of current survey     RS report No     Comp. report No     First date of measur       17.0101.00UT     22.12.2017       Name RS Surveyor(eng)     No TESIS request       Port (eng)     Country (eng)	Location of the selected transverse sections	
Company (eng)	[S'] Normatives	

#### Figure 6 Third software popup window

If any data is not available it means that it is not available on RSHO server and it is necessary to input missing data manually in the appeared window. It is necessary to take into account that information on permissible scantlings may not be sufficient (i.e. were created partly) or it is necessary to correct it, then it is necessary to enter insufficient/actual information using relevant window (ribbon).

Permissible scantling (norms) are filled-in at the first survey (first case of TM). During down-loading of the report on RSHO server, norms are down-loaded into the relevant section of server and further kept there during all time when the vessel is under RS class. At the subsequent surveys, norms are down-loaded to the report automatically during creation of XML file. In case if as a result of subsequent surveys norms were changed (changes of norms type, additional or not counted earlier structures were added, etc.), then during sending of the report to RSHO server these norms will be updated.

If some data are absent (about shipowner, vessel etc.) it is necessary to enter missing data manually.

## 3 Third popup window

There are four tabs in the third popup window:

- General particulars;

- Planning of meeting;
- Report creation;

- Technical condition assessment

## 3.1 Tab "General particulars»

There are five tabs in this popup window:

-General particulars on ship and shipowner;

- Survey particulars;
- UTM firm data;
- Permissible scantlings (norms) data;

- Ship's spaces data.

Before transferring to the next popup window "Meeting" all sections of the window "Genera; particulars" shall be filledin properly.

In the previous popup window new TM session was created for a particular ship (refer to fig.4).

In the tab "General particulars" (fig.6) it is necessary to draw up empty fields.

CIL:		
- <u>Sn</u>	p's ty	me
	P 3 L)	100

Comb.

Ship' type: to choose ship's type from the list. Ship's type is determined by the application of the appropriate IACS UR (Z7-all ship's types; Z7.1- dry cargo ships (there is a area of exemption), Z7.2- gas carriers, etc.). If no one type is applicable to the ship, it is necessary to choose option "Others".

違 UTM software "VOLNA" 1.0.0 - 01					- 🗆 X
General particulars Meeting ORP Repo	ort Condition assessmen	ıt			i
Ship and shipowner data		Ship's data			?
	No IMO 8	871508 Ship's name	ВОЛГО-ДОН 5038		
Survey parameters	No RS 7	13878 Ship's name (eng)	VOLGO-DON 5038		
UTM company data	Build date 30	0.01.1975 Ship's length (m) 135	Ship's breadth (m) 16,75	Gross tonnage	4991 Deadweight (t) 490
	Flag	Россия	Port	Таганрог	
Normative data	Flag (eng)	Russia	Port (eng)	Taganrog	
	Ship's type		Comb.		
Space data	Class notation	z7-other z7.1-General Dry Cargo Ship			Frame 0.3L 0.4L 0.3L
		127.2-Gas Carrier 210.1-Oil Tanker 210.2-Bulk Carrier 210.3-Chemical Tanker (single hull) 210.3-Chemical Tanker(double hull) 210.4-Oil Tanker (double hull) 210.5-Bulk Carrier (double hull) 210.5-Bulk Carrier (ore carrier) 27.1 - RSN (river-sea navigation type)	*		Aft Bow
	Ship	powner details			
	Company name	Открытое акционерное общество ДОН	РЕЧФЛОТ		
	Company (eng)	"DONRECHFLOT", JOINT-STOCK COMP	ANY		
	Company address	Россия, 344019 Ростов-на-Дону, улица	Советская, 63		
	Address (eng)	Russia, 344019 Rostov-na-Donu, ul. Sov	vetskaya, d. 63		
ВОЛГО-ДОН 5038 ІМО:8871508	RS:713878 №			UTM	I Report language Russian-English 🚺
		0,3L	0,4L 0,3	L ►	
				-3	
· · · · · · · · · · · · · · · · · · ·	Frame	Aft		Bow	
In the fiels "Frame num	ber"				<ul> <li>to enter beyonds of</li> </ul>
mid part of the ship.					

In the popup window "Survey Parameters" the following shall be filled in:

1. Type of survey - to enter type of current survey.

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😟 UTM software "VOLNA" 1.0.0 - 01				– 🗆 X
General particulars Meeting ORP	Repor	t Condition assessment		i
Ship and shipowner data	?	Current survey data ?	UTM Minutes ( Meeting date	of meeting 18.11.2019
Survey parameters	?	Iype of current survey RS report No First date of measurement 19.00000.180UTI Special Intermediate No TESIS request	Place of meeting Place of measurement	Port (eng)
UTM company data	<b>~</b>	Occasional Annual Dock dock intermediate	Country	Country (eng)
Normative data	<b>~</b>	Country (eng) Port (eng)	Meeting participants Attending RS Surveyor	RS Surveyor (eng)
Space data		?	Shipowner representative	Shipsowner representative (eng)
	_		Master of the ship	Master (eng)
			UTM operator	UTM operator (eng)
		<u>TM reporting forms</u> O RS Table, Forms RTM 1.1 - 1.6 (mandatory) O IACS Table TM1-TM7 (in special case)	Previous Thickness Measure The IACS UR S19 Assessment	Programme (ESP) ses plans on of the corrosion prevention system ment Report nt of the transverse corrugated bulkhead
			ACS UR S31	e shell frames in accordance with the
			LITM Por	ort language Russian-English

ВОЛГО-ДОН 5038 IMO:8871508 RS:713878--- №

Name RS Surveyor(eng)

2. RS surveyor's name:

- to enter RS surveyor name, who is carrying out survey of the ship. To enter in the fields in Russian and English languages for correct creation of the report.

3. The request number registered in the TESIS system:



4. To indicate the place of current survey by clicking on the button In the first field of the popup window appeared to select country and in the second - port.

🔡 Select Co	ountry Port		_	
	Russia	Port	Murm	
NAVY of Rus Russia	ssian Federation			
Murmansk				
OK				Отмена



#### User's manual

## 5. Location of transverse sections which will be measured

Location of the selected transverse sections	$\zeta^{\Box}$	7
$\mathbf{O} \mathbf{O}$		]

In these fields RS surveyor shall identify location of transverse sections to be measured. The number of sections is identified automatically depending on ship's age, type and type of survey. These sections are preliminary. If upon the results of TM of an upper deck/bottom plating a more deteriorated structures will be found on the other locations (sections), relevant amendments may be introduced further.

In the left side of the window for entering sections locations there are buttons for adding/cancellation of additional sections, if will be necessary upon the results of survey. When entering new sections it is necessary to identify their positions along ship's length in frames numbers.

6. Three groups of tables are used in software VOLNA.

RS tables group – basic RS tables for drawing up of the reporting documents upon the results of thickness measurements. It is necessary to use these tables in all cases except conditions specified below.

The IACS UR tables group – tables, which forms are in compliance with forms recommended by IACS Unified Requirements. These forms may be applied in duly justified cases according to the provisions of the Rules for the classification survey of ships in service.

CSR table group – is applied to ships, built in accordance with the Common Structural Rules, only.

VOLNA software gives possibility to register thickness measurements in accordance with IACS UR S19, S21, S21A. The forms of tables are available in all groups in the appropriate branches of the report "tree".

TM reporting forms

- RS Table, Forms RTM 1.1 1.6 (mandatory)
- IACS Table TM1-TM7 (in special case)

7. In the right part of the window it is necessary to enter date and place of the meeting before TM, minutes of meeting number, as well as persons participated at this meeting.

8. To fill-in check boxes, applicable to the current survey.

Submitted and considered documentation:	
ESP Ship's file	
Approved Enhanced Survey Programme (ESP)	
Cargo, ballast and other spaces plans	
Information regarding condition of the corrosion prevention system	
Previous Thickness Measurement Report	
The IACS UR S19 Assessment of the transverse corrugated bulkhead	
Report on assessment of side shell frames in accordance with the IACS UR S31	

In the field "UTM company data" the following is to be filled in:

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違 UTM software "VOLNA" 1.0.0 - 01				- 🗆 X
General particulars Meeting ORP Report	t Condition assessment			i
Ship and shipowner data	UTM firm data			~
	UTM firm name ЧП "СИГО-	ІАРИН"		
Survey parameters ?	UTM firm name (eng) SIGO-MARI	IE		
	№ RC 18.80009.1	80 Issued 11.04.2018 Valid	11.04.2021 Firm report No	MBR 13-2019
UTM company data 🗸 🗸	UTM firm address	Украина, 65023 Одесса, ул. Коблевская, д.	44, кв. 10	
	UTM firm address (eng)	Ukraine, 65023 Odessa, ul.Koblevskaya 44,	ov.10	
Normative data 🗸				
Space data	Details of mea	surement equipment		
	Ф Иванов И.И.	vanov I.I. 123 01.10.201	a) 2 level	
		ators qualification		РŤс
	Image: Arrow of the second sec	123 18.11.2019		
ВОЛГО-ДОН 5038 ІМО:8871508	RS:713878 №		UT	M Report language Russian-English 🚺

Information on the firm, carrying out thickness measurements, i.e.:

- Firm's name;
- Firm's address;
- Recognition certificate number;
- Date of issuance of the recognition certificate;
- The term of validity of the recognition certificate;
- TM firm report Number (if the firm has its own report numeration system).

In the module regarding "Operator" it is necessary to fill in TM operator's name in two languages, number of qualification certificate, issued by national body, certificate term of validity and qualification level in accordance with the certificate.

🔛 UTM Operators		×
Name of UTM operator (ru	s)	Certificate No.
Иванов И.И.		123
Name of UTM operator (er	ng)	
Ivanov I.I.		
Validity date	Level	
01.10.2019 🔲 🔻	2 level	~
OK		E.a.
UK		Exit

And click "ok".

To describe other TM operators it is necessary to repeat mentioned above steps.

In the popup window "Details of measurement equipment" it is necessary to draw up information with regard to ultrasonic devices used for measurements – manufacturer's name, calibration certificate number, calibration certificate term of validity and serial number of device.

🖳 UTM Equipment			$\times$
Equipment name and ma Krautkramer	nufacturer	Number of callibration certificate	]
Validity date 18.11.2019	Serial number 123		
ОК		Exit	

In the popup window "Normative data" the information on ship's items permissible scantlings (norms, normatives) is filled-in.

2 UTM software "VOLNA" 1.0.0 - 01	-		×
General particulars Meeting ORP Report Condition assessment	i		
Ship and shipowner data ? [S'] Normatives			
Survey parameters ? Permissible thickness normatives No. 19.0000.180,Creation date 24.07.2019 9:44:46 RS Rules normatives Filed 5 from 241			
UTM company data			
Normative data No.			
Space data         19,00000,180           IMO No.         RS No.         Ship's age:           8871508         713878         30.01.1975			
Date of normative:         Type of ship:           24.07.2019 9:44:46			
<ul> <li>Normative m0</li> <li>Ship with restricted navigation area R2-RSN, R2-RSN(4.5), R3-RSN, R3</li> <li>Normative m1,m2</li> <li>Norms of ACS - IACS member</li> </ul>			
O Norms for CSR (Common structural Rules) ships and other ships designed in accordance with net scantling approach         Normatives [S]       S19       S21/S21A       S31			
ВОЛГО-ДОН 5038 IMO:8871508 RS:713878 № UTM Report language R	ussian-E	nglish	¢

For each ship a file with norms is to be created. It will be placed on RSHO server and downloaded into the software at each survey.

In the window it is necessary to choose option of norms applicable to each particular ship:

1.Norms m0 – permissible residual scantling identified in accordance with para 4.2.6 of Annex 2 to the Rules for classification surveys of ships in service;

If the ship if of restricted area of navigation (R2-RSN, R2-RSN(4.5), R3-RSN, R3) – it is necessary to click on the relevant check-box "Ship with restricted navigation area R2-RSN, R2-RSN(4.5), R3-RSN, R3.

2. Norms m1, m2 – permissible residual scantling identified in the approved by the Register calculation of permissible scantling according to the RS Rules. The number of the calculation and date of its agreement/endorsement by RS is to be entered in the appropriate check-box.

3. Norms of ACS-IACS member – permissible scantling identified according to the rules of another classification society- IACS member (for ships accepted to RS class from ACS-IACS member);

4. Norms for CSR – permissible scantling for ships built according to IACS Common Structural Rules (CSR).

A user with the rights of a TM operator cannot change option of norms selected by the surveyor.

For particular types of ships it is possible to enter special norms identified according to the applicable IACS unified requirements:

5. S19 – permissible scantling for transverse bulkhead of a bulk carrier between cargo holds Nos.1 and 2 (refer to URS19);

6. S21/S21A - permissible scantling for cargo hold hatch covers and coaming;

7. S31 - permissible scantling for side frames of single hull bulk carriers (refer to UR S31).

#### Creation of Norms (m1, m2).

! Condition for creation – availability of the calculation of permissible residual scantling approved or endorsed by the Register.

😟 UTM software "VOLNA" 1.0.0	- 01			_		$\times$
General particulars Meeting	ORP F	Report C	Condition assessment			
Ship and shipowner data Survey parameters	3	? ?	[S']         Normatives           Permissible thickness normatives No.19.00000.180,Creation date 24.07.2019 9:44:46           RS Rules normatives Filled Strom 241			
UTM company data		~	Permissible residual scantlings for hull elements			
Normative data		~	No.			
Space data			19,0000,180       IMO No.     RS No.     Ship's age:       18871508     713878     30.01.1975       Date of normative:     Type of ship:       24.07.2019 9:44:46			
			<ul> <li>Normative m0 Ship with restricted navigation area R2-RSN, R2-RSN(4.5), R3-RSN, R3</li> <li>Normative m1,m2</li> <li>Norms of ACS - IACS member</li> <li>Norms for CSR (Common structural Rules) ships and other ships designed in accordance with net scantling approach</li> </ul>			
			Normatives [S]         S19         S21/S21A         S31			
ВОЛГО-ДОН 5038 ІМО	:88715	508 RS	C713878 № UTM Report language	Russian-	English	¢

Figure 11. Creation of Norms (m1, m2)

To create "Norms m1, m2" it is necessary:

1) To choose option "Norms m1, m2".

2) In the field "**Appr. calc. report No.**" to enter an identification number of a calculation and date of its approval by the Register.

3) Upon clicking on the button "Normatives [S]" the following tab appears (fig.12):

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I Дайл	ġ		UTM soft	ware	'VOLNA"	20.12.201	17 - 0.7.7					- 0	×	P ×
	General particu			Ship	s hull norr	matives					- 🗆 🗙		i	
- - - -	No IMO 9404015	$\odot$	Ships hull normatives				۹							
- · 8 ·   · 6 ·   · 01 ·   · 11 ·   · 71	Flag (eng) Russia Ship's length 157,74 Ship's type Class notation KM(*) Ar	Code	Hul structure	Build thickness So	Thickness Required RS_Rules S	thickness Smin required RS_Rules Minimal	Location Clarification Note	Wear coefficient	B General wear [S1]	Local wear [S3]	Pitting [S4]           Bubstantial corrosion           Bobstantial corrosion           Ceneral wear [Ssc1]           Substantial corrosion			
- 18 - 1 - 17 - 1 - 16 - 1 - 15 - 1 - 14 - 1 - 13 - 1 -	Frame Type of currer Name RS Sur Port (eng)													
- 22 - 1 - 21 - 1 - 20 - 1 - 19 - 1	Company (en Murmansk t	< 0 10:9404015 آ	0% Filled 0 from 152 hull elements 20 40 RS:080039 №17.00000.000UTM	;		60	80		10		> Report languag	e Englist		
СТРАН	📋 🎋 📔	🔊 🤕	🖏 😋 🔥 🔳 💼	6			à 🛷 🛯 👱			EN	- 🖪 🛯 🔘 😋	• 10 -	18: 11 23.12	
			Figure 12. Ta	ab '	Ships								23.12.	2017

In the center of the tab ""Ships hull normatives" the table for entering norms is created. In the table each particular item has:

- code;
- name;
- as-built thickness S0;
- thickness required by RS rules S;
- minimum thickness Smin;
- location of an item;
- wastage factor;
- overall, local wear and pitting;
- upper limit of the substantial corrosion zone at overall, local wear and pitting.

In the left corner of the window there are the following buttons:



- drawing up of norms in automatic mode;



- data cleaning in the table content;



- print out of norms;



- copying of norms from the identical ship on a computer;



- search of a necessary hull item in the table;

creation/adding of norms from the software tree-list of items;

I - delete item from the table of norms.



- copying of an item with already created norm.

Software gives possibility to choose two options of creation of norms (automatic and manual).

#### Automatic mode:

By using of automatic mode norms are created in turns until all possible structures from the tree list will be described.

#### Manual mode:

By using of manual mode of creation of norms user selects necessary item from the tree list of all items.

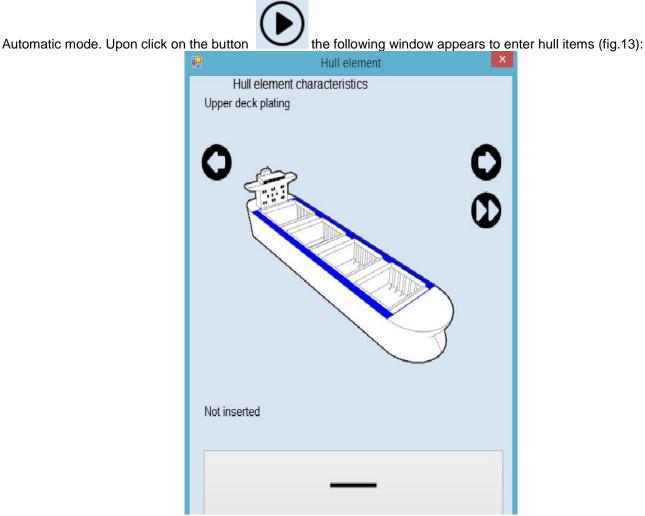


Figure 13. tab for selection of an appropriate hull item

In this window (fig.13) typical ship's hull items are offered to be filled in by turns from the VOLNA database. User shall choose applicable items from offered typical ones and put them into the norms table. In the upper part of the window the hull item name is given (the first item is an upper deck), in the central part a scheme of item is provided. Please pay attention that sketches provided in the software are for the information purpose only and are not related to the particular item of the particular ship (i.e., for upper deck the sketch of dry cargo ship upper deck is provided).

Icons



allow to transfer to the hull item offered to be described.





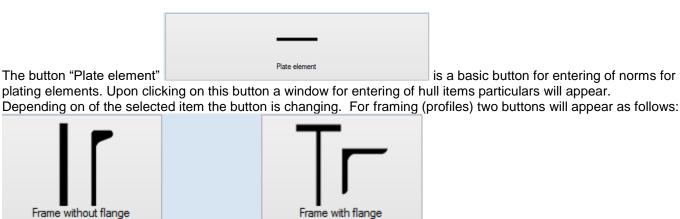


moves an user to the last hull item which is not described yet.

The button "NOT APPLICABLE" is used when a particular item is absent on a ship.

NOT APPLICABLE

#### Attention: after clicking on the button "NOT APPLICABLE" relevant item will be deleted from the list of automatic drawing up, but in manual mode this item may be selected mode.



For the plating to click "Plate element".

In the appeared window (fig.14) it is necessary to fill in all white (empty) fields.

Filling normative master
Upper deck plating  Clarification
So Build thickness (mm) S Thickness, required by RS Rules (mm) Minimum thichness to the RS Rules (mm)
material steel
Permissible thickness     Upper level of SC       General wear (mm
Genaral wear standard 0.7So - only for structures, for which permissible scantlings are absent in the calculation
Add Skip

Figure 14 Window "Filling normative master"

By clicking on button "Clarification" in the window (fig.14) it is possible to give extensive or precise description of a structure for ease of reference (for instance, if there are more than one superstructure decks on a ship). When



choosing the structures "superstructure/deckhouse deck" then it is necessary to name the deck in accordance with drawings (deck A, deck B etc.).

Upon clicking on button "Clarification" two fields will appear – for Russian and English languages (it is recommended to fill in both).

Further, in the window there are fields for entering information on as-built thickness, thickness required by RS rules, RS rules minimum thickness which are taken from the calculation (information on as-built thickness is determined by using drawings).

Build thickness Определение допускаемых тол Determination of allowing thick			олщин п	о усло		щего	и местно	wit го изн	th RS	kness in Rules.		nce блица 4	4.1
Ν			S <sub>o</sub>		[5	S₁]'		[S <sub>1</sub> ]"			0.7S <sub>0</sub>	[S <sub>1</sub> ]	[S <sub>3</sub> ]
л/п	Наименование связи	Structural members	O <sub>o</sub>	m <sub>1</sub>	\$	ΔS	m₁(S-∆S)	m <sub>2</sub>	S <sub>mi</sub>	$m_2 S_{min}$	0.700	[01]	[03]
			mm		mm	mm	mm		mn	mm	mm	mm	mm
1	Настил главной палубы (средняя часть)	Upper deck plating (middle part)	15.0	0.85	15.00	1.20	11.73	0.75	8.72	6.54	10.50	11.73	9.97
2	Настил главной палубы (оконечность)	Upper deck plating (extremity)	8.0	0.75	8.00	1.20	5.10	0.65	7.78	5.05	5.60	5.60	4.76
3	Настил главной палубы (оконечность)	Upper deck plating (extremity)	20.0	0.75	20.00	1.20	14.10	0.65	7.78	5.05	14.00	14.10	11.99
4	Настил главной палубы (оконечность)	Upper deck plating (extremity, between hatches)	12.0	0.75	12.00	1.20	8.10	0.65	7.78	5.05	8.40	8.40	7.14
5	Настил палубы твиндека	Tween deck plating	8.0	0.75	8.00	1.00	5.25	0.65	7.78	5.05	5.60	5.60	4.76
6	Настил палубы бака	Forecastle deck plating	8.0	0.80	8.00	1.20	5.44	0.60	7.78	4.67	5.60	5.60	4.76
7	Настил палубы бака	Forecastle deck plating	10.0	0.80	10.00	1.20	7.04	0.60	7.78	4.67	7.00	7.04	5.98
	Настил шлюпочной палубы	Poop deck plating	7.0	0.80				0.60	5.94	3.57	4.90	4.90	4.17
0		Longitudinal cooming (wall)	500	0 05	50 00	1 20	11 10			•	25 00	11 10	25 36

So Build thickness (mm)

S Thickness, required by RS Rules (mm)

Minimum thichness to the RS Rules (mm)

In the middle part of the window (fig.14) there is the section "Location/Note"

n of hull element tion/Note	

In this section it is recommended to enter information on location of an item on a ship for ease of reference. It is

possible also to enter any other information describing relevant item (for the sake of user's convenience).

#### In the lower part of the window

Permissible thickness	Upper level of SC
General wear (mm	
Local wear (mm)	
Pitting (mm)	

there are fields for entering of permissible thicknesses. In white fields information on permissible scantlings is entered.

For hull items for which there is no information on permissible wear in the agreed calculation it is allowed (upon agreement with the Register) to click button

Genaral wear standard 0.750 - only for structures, for which permissible scantlings are absent in the calculation

In this case permissible scantling is calculated according to the formula moSo (refer to para 4.2.6 of Annex 2 to the RS Rules for classification surveys of ships in service).

In general the form drawn up completely is shown on figure 15:

	Filling normative master
iŗ	Upper deck plating
	i
-	Clarification
	So Build thickness (mm)
:t	S Thickness, required by RS Rules (mm) 8 Minimum thichness to the RS Rules (mm) 7
	· · · · · · · · · · · · · · · · · · ·
-	material steel Y
	Location of hull element
	45-55
	Permissible thickness
	Upper level of SC General wear (mm7 7,8
	Local wear (mm) 6 7
	Pitting (mm) 3 4,8
-	
	Genaral wear standard 0.7So - only for structures, for which permissible scantlings are absent in the calculation
r	
1	Add Skip

Figure 15 Example of drawing up norm for upper deck plating item

Upon entering of all data to click button "Add".

Button "Skip" is used in cases when it is not necessary to add particular items in the table with norms (when particular item is absent on a ship).

Upon adding of deck item the main window of the table with norms will appear showing item with relevant information entered. The software calculates automatically permissible values for local wear and pitting as well as upper limit for substantial corrosion zone on the basis of three values (So, S and Smin).

Simultaneously prompt box is appeared with question with regard to repeat entering of data for hull structure with different thickness.

User's manual

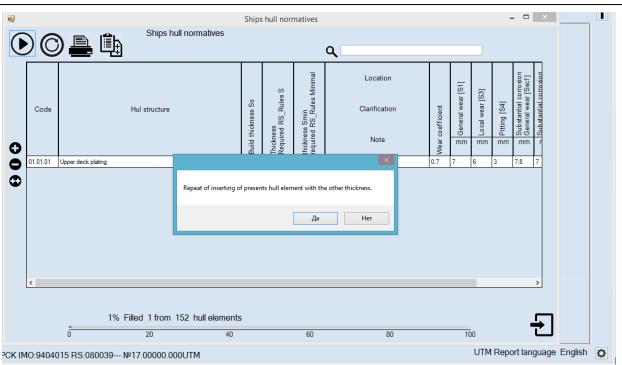
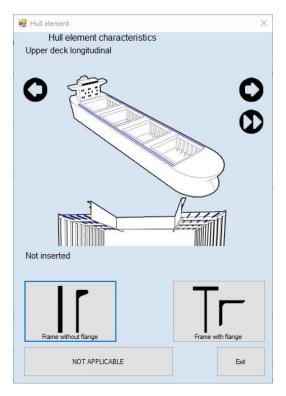


Figure 16. Example of table with norms for one drawn up record in it

Hull items within a group of items may have different original thicknesses (for instance, upper deck plating). To enter the next thickness for upper deck plating it is necessary to choose "Yes" and repeat mentioned above steps.

Upon completion of entering of all thicknesses of deck plating for a particular ship, it is necessary to click "No" in the query window and follow to the next structural member.

Entering of norms for hull items is repeated according to the steps described above.



K) D

#### Creation of NORMATIVE m0.

单 UTM software "VOLNA" 1.0.0 - 01	_		$\times$					
General particulars Meeting ORP Report Condition assessment								
Ship and shipowner data ? [S'] Normatives								
Survey parameters ? Permissible thickness normatives No.19.00000.180,Creation date 24.07.2019 9:44:46 RS Rules normatives Filled 5 from 241								
UTM company data Permissible residual scantlings for hull elements								
Normative data No.								
Space data         19,0000,180           IMO No.         RS No.         Ship's age:								
8871508         713878         30.01.1975           Date of normative:         Type of ship:								
24.07.2019 9:44:46								
Normative m0     Ship with restricted navigation area R2-RSN, R2-RSN(4.5), R3-RSN, R3     Normative m1,m2								
Norms of ACS - IACS member     O Norms for CSR (Common structural Rules) ships and other ships designed in accordance with net scantling approach								
Normatives [S] S19 S21/S21A S31								
ВОЛГО-ДОН 5038 IMO:8871508 RS:713878 № UTM Report language Russian-English								

Figure 17. Selection of option "NORMATIVE m0".

To create norms according mo (refer also to para 4.2.6 of Annex 2 to the RS Rules for classification surveys of ships in service it is necessary to:

1) Choose option "Normative m0". If the ship if of restricted area of navigation – it is necessary to choose this option by clicking on the relevant check-box.

The process of drawing up of these norms is similar to the process described above with regard to norms m1, m2, except the mechanism of entering of data to the tab "Entry of data".

	Entry of dat	a
Upper deck platin	g	V Midship region Sh. No0 - 0
Clarification  Main stiffeners  Ice		
material steel		▼
Builde thickness (		
General wear (mm) Local wear (mm) Pitting (mm)	3 3 3	Upper level of SC 2,3 2,3 2,3 2,3
Add		Cancel

Figure 18. Tab for entering of norms to hull items according to option "NORMATIVE m0"..

- 2) To enter norms in the tab "Entry of date" (refer to figure below) it is necessary to:
- 1. choose the area of location of a structure (mid part or stern, stem);
- 2. to identify the norm type. If structures are located within the ice strengthening area it is necessary to indicate it.
- 3. to choose material of structure (steel, aluminum alloy, copper);
- 4. to enter as-built thickness.

Permissible thicknesses on general, local wear and pitting, as well as upper limit of a substantial corrosion zone are calculated automatically in accordance with the RS Rules requirements.

🔹 UTM software	VOLN	A" 1.0.0 - 01										_	×
General particula	🖬 🖳 SI	hips hull nor	matives		_					-		×	
Ship and s	$\mathbf{\bullet}$	$\bigcirc \mathbb{C}$	) 🚊	Ê.	Ships hu	Upper deck plating							
Survey UTM cc Norm Spi	0	Code			Hul structure	Midship region Sh. No0-0 Midship region Sh. No0-0 Midship region Sh. No0-0 In Carification Midship region Sh. No0-0 In Midship region Sh. No0-0 In Midship region Sh. No0-0 In In In In In In In In In In	Wear	General wear [S1]	O B Local wear [S3]	Bitting [S4]	mm	- Substantial corrosion	
		٢	0	0% F	illed 0 from 2	As-built thickness (mm) Permissible thickness Upper level of SC General wear (mm) 3 2.3 Pitting (mm) 3 2.3 Add Cancel 40 60 80	pe o	of n	orm	nativ	/e	, ,	

ВОЛГО-ДОН 5038 IMO:8871508 RS:713878--- №

#### 3.2 tab "Meeting"

Tab "Meeting" is intended for the purpose to identify information required to be discussed during the meeting before thickness measurements.

To identify the scope of survey and thickness measurements for a particular ship to click the button



🖞 UTM software "VOLNA" 1.0.0 - 01 - 🗆 X								
General particulars Meeting ORP Report Condition assessment	i							
Scope of thickness measurement             Image: Scope of thickness measurement								
Scope of close up survey and thickness measurement Added elements								
ВОЛГО-ДОН 5038 IMO:8871508 RS:713878 №	UTM Report language Russian-English 🔯							

Figure 19 Tab "Meeting"

The scope of survey and TM is generated depending on age of a ship, type of survey and ship in accordance with the Rules foe classification surveys of ships in service.

Before forming of the items list the window will appear containing all of the parameters on the basis of which the list is generated. The period of survey may be changed, because the ship may be submitted not in the prescribed terms.

🔹 Scope of survey			$\times$
Age of ship 45 Years			
Type of survey Special			
Type of ship z7.1-General Dry Cargo Ship			
Period of survey should be changed if the ship is not presented on	time		
Order of survey 4 Special and higher  V			
Form		Cancel	

Upon clicking the button "Form" the minimum scope of survey and thickness measurements will appear.

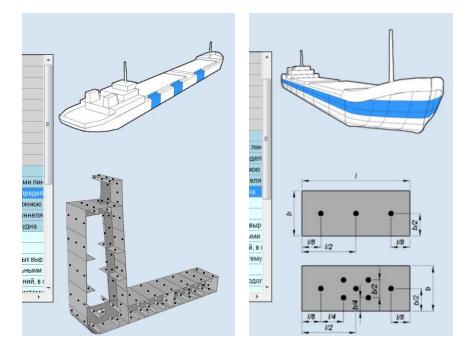
뵟 UTM so	ftware "VOLNA" 1.0.0 - 01	- 🗆 X
General pa	articulars Meeting ORP Report Condition assessment	i
	Scope of thickness measurement	
<b>±</b>	Title page	^
	Content	
<b>9</b>	General Particulars	
Q	Minutes of Meeting before TM	
_	Attachment to Minutes of meeting before TM	титульный лист
I	Copy of RS recognition Certificate	TITLE PAGE
الكار	UTM Operator Qalification Certificate	
-	UTM Equipment Callibration Certificate	
面	Power of attorney	
	General arrangement	
	SuspectAreas	
	Z7 All cargo hold hatch covers (plating and stiffeners)	
	Z7 All cargo hold hatch coamings (plating and stiffeners)	
	Z7 Internals in forepeak tank	
	Z7 Internals in afterpeak tank	
	Z7 Forecastle deck plating	
	Z7 Poop deck plating	
	Z7 Navigation bridge deck plating	
	Z7 Superstructure deck plating (is not poop, bridge and forecastle deck)	
	Z7 Lowest strakes and strakes in way of tweendecks of all transverse buikheads in cargo spaces together with internals in way Z7 All keel plates full length. Also, additional bottom plates in way of cofferdams, machinery space and aft end of tanks	
	Z7 Plating of sea chests/ice boxes. Shell plating in way of overboard discharges, as considered necessary by the attending surveyor	
	Z7.1 All cargo hold transverse bulkheads	
	Z7.1 All transverse bulkheads in ballast tanks, including stiffening system	
	Z7.1 All transverse webs with associated plating and framing in each ballast tank	
	Z7.1 All deck plating and underdeck structure inside line of hatch openings between cargo hold hatches	
	Z7.1 All areas of inner bottom plating	V
	Minimum UTM volume Deleted elements	
	Scope of close up survey and thickness measurement Added elements	
волго	)-ДОН 5038 IMO:8871508 RS:713878 №	UTM Report language Russian-English 👩

In this list first paras describe main documents, which shall be attached to the report (first page, content general particulars etc.). Then there are listed structures which shall be measured at the current survey. These paras are highlighted with color:

- minimum scope of TM

- scope of close-up survey

When transferring from para to para in the right part of the screen pictorial clues will appear subject to this particular structure and targeting positions – places where measurements to be done. By double clicking on pictorial clues – the text window will appear with descriptions of the item.





The software allows to add items to the list by clicking the button

In the window "Add new item" it is possible to enter additional hull items in the left part of the window, in the right part – typical items of ta particular ship.

	Add new item	×
Select of additional items	Select of standard items	
Gargo handling gear Cargo holds bilge wells Side longtudinal bukhead Fire line pipe Ballast pipe Cargo pipeline Vertilation pipes, ventilation casing Double bottom plating Platforms at ER and pump compartment Trawl arch Shell plating framings Halon storage tarik Thruster Sip of fishing vessel Other deck or platform	<ul> <li>Z7 All cargo hold hatch covers (plating and stiffeners)</li> <li>Z7 All cargo hold hatch covers (plating and stiffeners)</li> <li>Z7 All cargo hold hatch covers (plating and stiffeners)</li> <li>Z7 Internals in forepeak tank</li> <li>Z7 Internals in afterpeak tank</li> <li>Z7 Internals in afterpeak tank</li> <li>Z7 Poop deck plating</li> <li>Z7 Novgation bridge deck plating</li> <li>Z7 Superstructure deck plating (§ not poop, bridge and forecastle deck)</li> <li>Z7 Superstructure deck plating (§ not poop, bridge and forecastle deck)</li> <li>Z7 Superstructure deck plating is not poop, bridge and forecastle deck)</li> <li>Z7 Lovest strakes and strakes in way of tweendecks of all transverse bulkheads in cargo spaces together with internals in way</li> <li>Z7 All keel plates full length. Also, additional bottom plates in way of colferdams, machinery space and aft end of tanks</li> <li>Z7 Plating of sea chests/ce boxes. Shell plating in way of overboard discharges, as considered necessary by the attending surveyor</li> <li>Z7.1 Within the cargo length area, each deck plate outside line of cargo hatch openings</li> <li>Z7.1 Selected wind and water strakes within the cargo length area</li> </ul>	~
Add		Cancel
HC3 UK 331	Par and sounding pipes or omportantient	

Figure 22 How to add new item

Upon choosing of item and clicking of button "Add" new item appears in the general list of items for TM (fig.23).

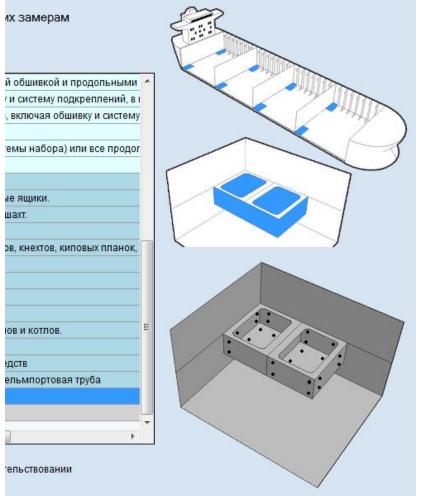


Figure 23 How to add new item



To delete item which is not applicable to a particular ship – to click on button **A user with the rights of a TM operator cannot delete items in the "Meeting" tab.** 

#### "Meeting"

In this case before deletion the query box will appear when it is necessary to explain action for deletion of item from the list.

When drawing up the tab "Meeting" it is possible to form and print out the Minutes of Meeting and relevant attachment. Also there is a possibility to print out the Cover page, General particulars and other pages which have to be originally signed and stamped and than scanned and added to the TM report (see further).



To print out of above mentioned document to click icon

In the appeared list to choose relevant document to be printed.

🔹 UTM software "VOLNA" 1.0.0 - 01	×
General particulars Meeting ORP Report Condition assessment	i
Scope of thickness measurement         Title page         Content         General Particulars         Minutes of Meeting before TM         Attachment to Minutes of meeting before TM         Copy of RS recognition Certificate         UTM Operator Qalification Certificate	ТИТУЛЬНЫЙ ЛИСТ ТІТLЕ РАДЕ
UTM Equipment Callibration Certificate Power of attorney General arrangement Suspect Areas Z7 All cargo hold hatch covers (plating and stiffeners) T7 All cargo hold hatch covers (plating and stiffeners)	
Title page         General data         Minutes of meeting before TM         Attachment to minutes of meeting before TM         Authorization         Z7 Superstructure deck plating (is not poop, bridge and forecastle deck)         Z7 Lowest strakes and strakes in way of tweendecks of all transverse bulkheads in cargo spaces together with internals in way         Z7 All keel plates full length. Also, additional bottom plates in way of cofferdams, machinery space and aft end of tanks         Z7 Plating of sea chests/ice boxes. Shell plating in way of overboard discharges, as considered necessary by the attending surveyor         Z7.1 All cargo hold transverse bulkheads         Z7.1 All transverse bulkheads in ballast tanks, including stiffening system         Z7.1 All transverse webs with associated plating and framing in each ballast tank         Z7.1 All areas of inner bottom plating         Minimum UTM volume       Deleted elements         Scope of close up survey and thickness measurement       Added elements	v
ВОЛГО-ДОН 5038 IMO:8871508 RS:713878 №	UTM Report language Russian-English 🛛 🔯

At this stage actions of RS surveyor are completed.

RS surveyor closes the window by clicking the button (and the second popup window will appear again –

refer to fig.24). In the following window (fig.24) it is necessary to export file developed by RS surveyor or TM operator under supervision of RS surveyor to XML file and shift it to TM operator by any available means for further development of TM report.

2			UTM	software "VOLNA" 20.12.	2017 - 0.7.7		- 🗆	×
			_			Очистк а базы		i
	Report export to XML Report export to server of RS Head		RS No	Report number	No rep. company	Type of survey	Tesis No	
C	Normative export to server of RS H	lead Office	62427	17.00001.340UTM		Очередное		
	MONCHEGORSK	9404015	080039	17.00004.341UTM		Очередное		
S	TAYMEN	7640885	762427	17.00000.000UTM				
Ø	MONCHEGORSK	9404015	080039	17.00000.000UTM		Special		

Figure 24. Second popup window

#### 3.3 Tab "Report"

This tab is intended to draw up information upon the results of thickness measurements and entering of defects parameters.

The window is divided into two parts.

In the left part of the screen there is a tree list of hull item required to be measured. On the right part of the screen there are tables and other information required for drawing up of tables.

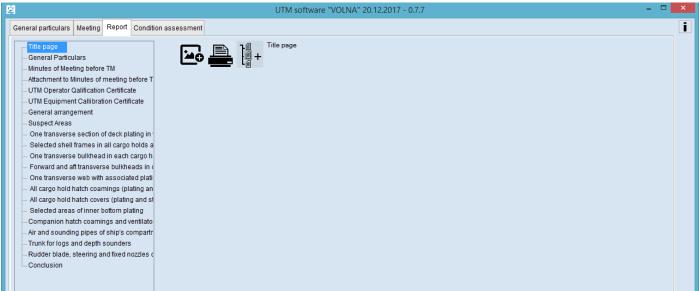


Figure 25. Tab "Report"

The tree is provided for quick and comfort navigation in the report. In each branch of the tree it is possible to attach one or more tables as well as sketches, drawings and other documents.

First ten items of the tree have housekeeping issue meaning. It is necessary to attach relevant scanned copies in these items. These attached documents will be introduced in TM report.

To attach document to the branch of the tree it is necessary to choose exact branch (by clicking on the mouse left

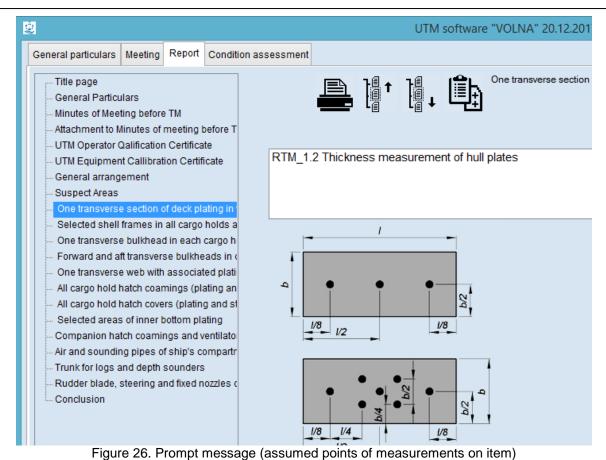


button), in the right part the following icon will appear -

By clicking of this icon it is possible to attach electronic document in jpg, bmp or pdf format.

The next items in the tree – required scope of thickness measurements. By clicking on a branch in the right part the field will appear where it is necessary to choose one or more applicable tables (some of items, for instance upper deck between cargo hold hatches, may be registered in the form RTM1.2 or RTM1.4).

There is a prompt message below the window concerning selection of tables (assumed points of measurements on item) – refer to fig.26.



By clicking on the number of the TM form (highlighted in blue in the figure) new prompt message appears containing explanations to the table.

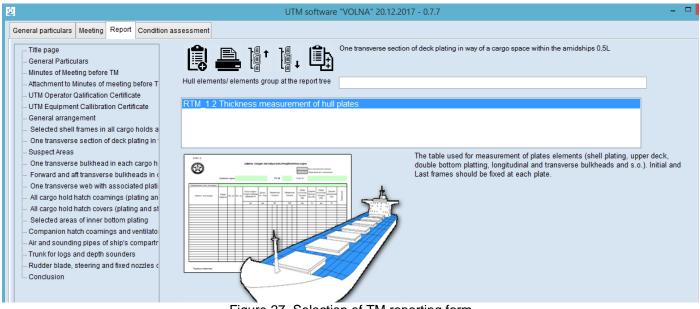


Figure 27. Selection of TM reporting form



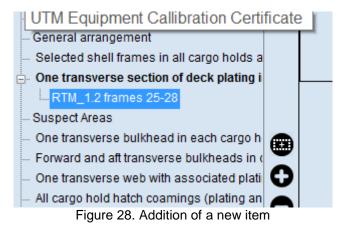
The following icon for drawing up of the tabular form appears

#### The following field is appeared

Hull elements/ elements group at the report tree

Due to possibility of attachment of several identical tables to the tree branch this field may be used for entering explanations to each table. It means that upon completion of creation of the table new branch (item) will be added to

the tree with a name of the table. Comment added in this field will be shown in the name of the created item (refer to fig.28).



Upon generation of the table the screen will be as follows (refer to fig.29):

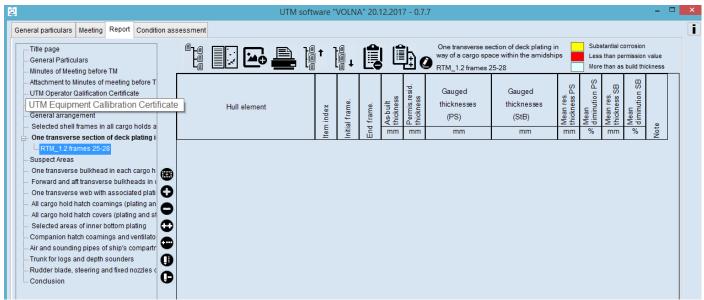


Figure 29. Example of working field (table area)

The table area is located in the right part of the screen (right from the tree).

In the upper part (above the table) there is a navigation menu for TM report and table view managing. In the left part of the table there is a navigation menu for the table lines managing. Upper menu icons designation:



- to hide the tree, i.e. to fit the table full screen (for the suitability at working with one table).



- to post table and sketch next to the screen (for the suitability of transferring of point to sketches).



- to attach one or more figures to the table.



- icon "Print out" with the list of possible options of printing out.



- to delete the table from the tree.



copying of the table in the tree branch.



to enter note to the tree branch (refer to para 3 above).

Designation of icons on the left menu:



• to add new line in the table;



- to delete table line/lines selected;



to copy selected table line (with as-built and permissible thicknesses);

- to add line to the item of measured structure (is used in case when it is necessary to increase the number of measurements, for instance for substantial corrosion zones).



- to enter measurements on sketches;

to delete connection between table line and sketch. (For more information - refer to Measurements on sketches).

So the table is created. To add the line to the table it is necessary to click the button

The following window (refer to figure 30) appears in which the information on hull items will be presented together with as-built and permissible thicknesses applicable to this branch.

So the software offers to add a hull item from the hull items database for a current ship to the table line.



User's manual

ot lookes casu Upper deck plating				UTM software "VOLNA		- • ×	×
Upper deck plagngs-6; [s]-42 Ends Upper deck plagngs-7; [s]-43 Midship region Upper deck plagngs [s]-5 Midship region Upper deck plagngs S, [s]-42 Midship region	Sort ювные связи			۹	New item		i
	Upper deck platin Upper deck platin Upper deck platin Upper deck platin	g s=5, [s <sup>*</sup> ]=3,5 Ends 1g s=6, [s <sup>*</sup> ]=4,2 Ends 1g s=7, [s <sup>*</sup> ]=4,9 Midship regio 1g s=5, [s <sup>*</sup> ]=3,5 Midship regio	n				,

By double clicking on the relevant item is selected from the list. For huge number of items in the branch (transverse sections etc.) the searching mechanism is provided.

New line will appear in the table with preliminary entered data such as:

- hull element:
- as-built thickness;

- permissible thickness.

Hull element	Item index	Initial frame.	End frame.	<ul> <li>As-built</li> <li>thickness</li> </ul>	Bermis.resid. Thickness	th	auged ickness (PS) mm		th	auged ickness (StB) mm		<ul> <li>Mean res.</li> <li>thickness PS</li> </ul>	% Mean diminution PS	<ul> <li>Mean res.</li> <li>thickness SB</li> </ul>	% Mean diminution SB	Note
Upper deck plating				7,0	4,9											
Upper deck plating	<b>ф1</b>			7,0	4,9	5,0	5,0	5,0	5,0	5,0	5,0	5,5	21,4	5,5	21,4	
						5,0	6,0	7,0	5,0	6,0	7,0					
Upper deck plating				7,0	4,9	4,0	5,0	6,0	7,0	8,0	9,0	5,0	28,6	8,0	0,0	

Figure 31. Table area for entering measurements data

In this table shown on fig.31 it is necessary to identify item index, initial and end frames and gauged thicknesses Mean residual thickness (mm) and mean diminution (%) are calculated automatically. The software gives possibility to enter data into the table without mouse, i.e. moving from cell to cell by clicking on the button "Enter" on a computer keyboard.

To copy the record of the line – move to the record to be copied and click to the record and then to the icon 🐨 in the vertical menu (refer to fig.32). Then draw up empty fields.



RUSSIAN MARITIME REGISTER OF SHIPPING

"VOLNA" SOFTWARE

User's manual

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eneral particulars	Meeting	Report	Conditi	ion as	sessment																					
■ Title page General Particu Minutes of Meet		тм	^				<del>ن</del> ه		<u>}</u> ∎↑	]	↓		ļ	b	len	open p igth M_1.2	oarts of u	upper d	leck pla	ting full		Les	s than pe	orrosion rmission build thi	value	
Attachment to M UTM Operator G UTM Equipmen General arrang Suspect Areas	linutes of r alification t Callibrati	neeting b Certificat	e			Hull	element		tem indev		Initial frame.	End frame.	As-built thickness	Bermis.resid.	th	Gauged iicknes (PS) mm			Gaugeo nicknes (StB) mm	ses	Mean res. thickness PS	Mean diminution PS	Mean res.	Mean diminution SB	Note	
— All cargo hold h					Upper de	-la -latin -			ž	1	5	ш		4,9					1					.~	z	
— All cargo hold h			ting																							
<ul> <li>Internals in fore</li> </ul>	1 - C				Upper de	ck plating			ф1	_	_		7,0	4,9	5,0	5,0	5,0	5,0	5,0	5,0	5,5	21,4	5,5	21,4		
<ul> <li>Internals in after</li> </ul>															5,0	6,0	7,0	5,0	6,0	7,0						
All open parts		leck platir	ng fi	-	Upper de	ck plating							7,0	4,9	4,0	5,0	6,0	7,0	8,0	9,0	5,0	28,6	8,0	0,0		
				θ																						
- Three transvers				0																						
- All wind and wa		s, port and	d sti	-																						
- Forecastle dec				Ð																						
- Poop deck plat	-																									
- Navigation brid				ŏ																						
<ul> <li>Superstructure</li> <li>Lowest strakes</li> </ul>				0																						
				œ																						
<ul> <li>Plating of sea of lolet and outlet.</li> </ul>		boxes. Sn	en (	-																						



If the value of measurement is below the permissible limit the cell is highlighted in red color.

If the value of measurement is within the substantial corrosion zone limits than the prompt message will appear with attention to enter additional measurements. The cell will be highlighted in yellow color (refer to fig.33).

8		UTM soft	ware "	VOLNA	4" 20.1	12.201	7 - 0.7	.7										- 1
General particulars Meeting Report C	Condition as	sessment																
Title page     General Particulars     Minutes of Meeting before TM	^		<b>↑</b> -				Ŀ.	a len	open p gth M_1.2 r		ıpper d	eck plat	ing full		Les	s than pe	corrosion ermission s build thi	value
Attachment to Minutes of meeting be     UTM Operator Qalification Certificate     UTM Equipment Callibration Certifica     General arrangement     Suspect Areas	•	Amount of points should be increased ! Point at the area of substantial corrosion	index	Initial frame.	End frame.	As-built thickness	Permis.resid. thickness	th	auged ickness (PS)			Gauged lickness (StB)		Mean res. thickness PS	Mean diminution PS	Mean res. thickness SB	Mean diminution SB	e
All cargo hold hatch covers (plating a	anı		tem	Initi	Enc	mm	mm		mm			mm		mm	%	mm	%	Note
All cargo hold hatch coamings (plati		Upper deck plating				7,0	4,9											
Internals in forepeak tank		Upper deck plating	ф1			7,0	4,9	5,0	5,0	5,0	5,0	5,0	5,0	5,5	21,4	5,5	21,4	
Internals in afterpeak tank								5,0	6,0	7,0	5,0	6,0	7,0					
All open parts of upper deck plating		Upper deck plating				7,0	4,9	4,0	5,0	6,0	7,0	8,0	9,0	5,0	28,6	8,0	0,0	
	0	Upper deck plating				7,0	4,9	5,0						5,0	28,6			
- Three transverse sections in way of	ca	Upper deck plating				7,0	4,9											
<ul> <li>All wind and water strakes, port and</li> </ul>		Upper deck plating				7,0	4,9											
- Forecastle deck plating	Œ										1	1						
Poop deck plating																		

Figure 33. Indication of substantial corrosion zones (yellow color)

To increase the number of measurements it is necessary:

- to move to the line (record) needs to be extended, click on it and click the icon in the vertical menu



Under the line new cells will appear which are to be drawn up.

#### 3.4 Plotting of measurements on a sketch

Measurements registered in the table are to be transferred to the sketch. To transfer measurements to the sketch it is necessary:



1. To attach the figure by clicking on the icon

In the horizontal menu.



In the appeared window it is possible to attach the figure. Thera three option to attach the figure:

- to create empty figure (the software contains image editor for creation of simple figures and schemes);

- to attach figure from clipboard;
- to attach figure created in JPG, BMP or PDF format.

In the items tree the sketch branch appears under the table (refer to fig. 34).

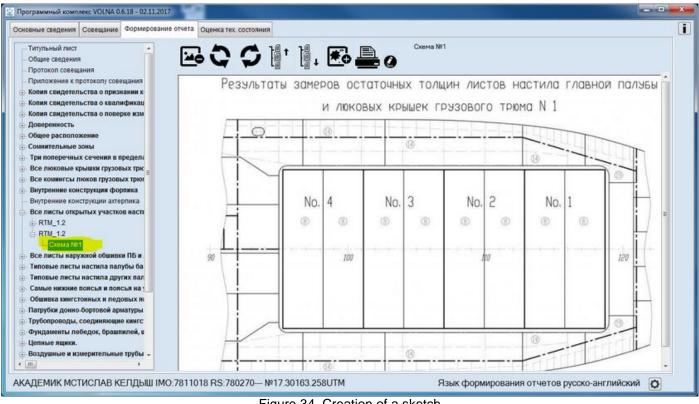


Figure 34. Creation of a sketch

Then to move to the record of form with measurements to be shown on the sketch, click on it and then the icon

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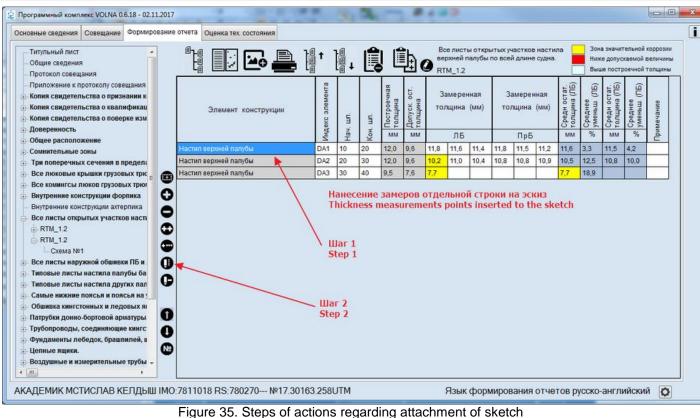




Figure 36. Indication of measurements on a sketch

Then to indicate measurements on the sketch according to the instruction of the popup window near the mouse indicator.



To exit the window to click the icon

To move to the next record and click the icon

#### To indicate the next group of measurements.

Thus it is necessary to indicate measurements on the sketches from the tables.

Upon completion of registration of all of required measurements in the tables and sketches, TM operator shall create file containing TM report and submit it to RS surveyor using applicable means.

To do it it is necessary to close the window with table. Then in the second popup window to click the button "Export" (export to XML format). To save the file and submit it to RS surveyor using applicable means.

# 3.5 Assessment of technical condition

Upon receipt of electronic file from TM operator RS surveyor carrying out survey and supervising TM, RS surveyor is to carry out verification of the submitted TM report and assessment of technical condition of ship's items.

To perform it an electronic file is to be downloaded in to the software – refer to section for import of a report to XML format in the second popup window.

Then RS surveyor is to verify TM report. Further It is recommended to move to the tab "Condition assessment" (fig.37).

For more information it is necessary to follow the instructions in part II of the User's Manual "Ship's hull technical condition assessment".

# PART III Instructions for drawing up of reporting forms

# 1 Instruction for drawing of TM tabular forms

# 1.1 Thickness measurement forms according to RS Rules (mandatory)

## RTM-1.1

The form RTM-1.1 is intended for the drawing up of measurements of items in ship's hull transverse section

In the tab "Report" section with items tree it is necessary to find and click on item containing words "Transverse sections", then in the following window to clarify the location of sections on the basis of the results of upper deck and bottom plating measurements and click on "OK".

When filling in this table it is necessary to take into account the description of the transverse section provided in the Rules for the classification surveys of ships in service:

A Transverse Section includes all longitudinal members such as plating, longitudinals and girders at the deck, sides, bottom, inner bottom, and longitudinal bulkhead. For transversely framed vessels, a transverse section includes adjacent frames and their end connections in way of transverse sections.

The location of the section is to be chosen in accordance with the provisions of Annex 2 of the Rules for classification surveys of ships in service (for instance, 3.2.2.1, 3.3.2.1 etc. of the Annex 2 to the RCSSS).

In the popup window "Report" in list of items it is necessary to find and click on the item containing words "Transverse sections" and then in the nest window to clarify the location of the transverse sections on the basis of the results of measurements of the upper deck plating and bottom plating and click "Ok".

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<b>9</b>	UTM software "VOLNA" 20.12.2017 - 0.7.7	- 🗆 🗙
General particulars Meeting Report Condition	assessment	i
<ul> <li>Title page</li> <li>General Particulars</li> <li>Minutes of Meeting before TM</li> <li>Attachment to Minutes of meeting befor</li> <li>UTM Operator Calification Certificate</li> <li>UTM Equipment Calibration Certificate</li> <li>General arrangement</li> <li>Suspect Areas</li> <li>All cargo hold hatch covers (plating ani- All open parts of upper deck plating from ani- All wind and water strakes, port and star- Forecastle deck plating</li> <li>Poop deck plating</li> <li>Navigation bridge deck plating (is not poc Lowest strakes and strakes in way of tailing of sea chests/ice boxes. Shell</li> </ul>	Image:	
Inlet and outlet pipes		

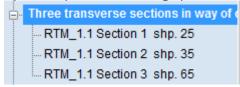
∎ª⁺∥₊ ≞

Three transverse sections in way of cargo spaces within the amidships 0,5L

ATTENTION, in accordance with RS Rules, selected section for thickness measurement should be determined as worst subject to thickness measurement of upper deck and shell plating.

# te Section, proposed by RS surveyor (fr) 20 30 50 Worst section, subject to thickness measurement of upper deck and shell plating. 25 35 65 (Should be corrected if worst section is different to section proposed by RS Surveyor) 25 35 65

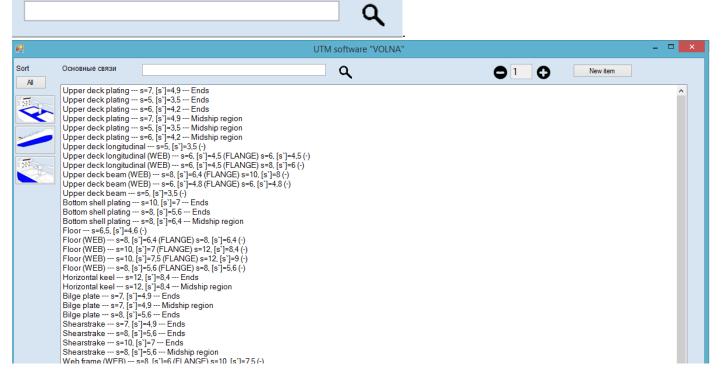
Upon completion of drawing up of this subtab new branches will be added to the tree:



Then when clicking on one of the subsection, window with the following table appears:

	UTM soft	ware "VOLNA	\" 20.12.201	17 - 0.7.7							
eneral particulars Meeting Report Condition ass	essment										
Title page     General Particulars     Minutes of Meeting before TM		↑ <u>]</u>			e sections in way of ca le amidships 0,5L on 1 shp. 25	irgo		Less	stantial co s than per e than as	rmission	
Minutes of Meeting before TM Attachment to Minutes of meeting befor UTM Operator Qalification Certificate UTM Equipment Callibration Certificate UTM Equipment Callibration Certificate General arrangement All cargo hold hatch covers (plating an Internals in afterpeak tank Internals	Hull element	Item index ∃ As⊳built [ ☐	a Plate width Permis resid. at thickness	Gauged thicknesses (PS)	Gauged thicknesses (SB) mm	B Mean res. B thickness PS	% Mean	B Mean res. B thickness SB	Mean diminution SB	Note	
Navigation bridge deck plating     Superstructure deck plating (is not poc     lowest strakes and strakes is way of											

By clicking on icons in the vertical menu it is necessary to choose appropriate item from the appeared window. Items related to a transverse section are listed in the table. To find necessary item it is possible to search it using



To describe items it is necessary to enter the following information:

- 1. item index;
- 2. plate breadth;
- 3. measurements on port side and starboard side.

Longitudinal and transverse members are to be entered into the table (refer to the definition of the transverse section). For items, accounting in calculation of the area reduction of deck and bottom with bilge transverse section, it is necessary to indicate plate breadth/frame. Upon completion of filling of this form the software will form separate table (to identify the form No.) with the results of the assessment of area reduction. If the result is necessary to perform verification of hull girder transverse section (additional notification about necessity of performing such verification is generated by the software).

The software does not allow to indicate this information for items which are not the part of calculation of area reduction.

#### RTM-1.2

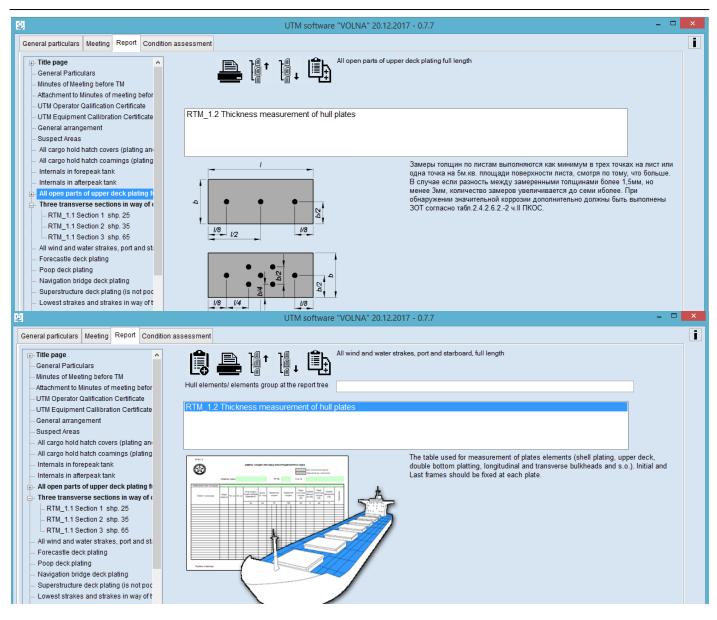
Tabular form RTM-1.2 is intended to draw up measurements of plate items (decks, shell plating, inner bottom plating, longitudinal bulkheads plating and etc.).

In the item tree it is necessary to find and click appropriate item and:

1. to choose appropriate form.

2. to acknowledge explanations for number and points of measurements (refer to Annex 4 of the RS Rules for classification surveys of ships in service).

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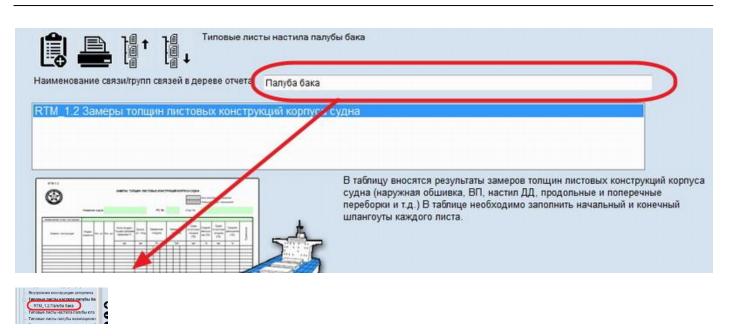


By clicking on the number of form in the right part of the screen, the prompt message with description of the table appears.

8	UTM software "VOLNA" 20.12.2017 - 0.7.7	- 🗆 🗙
General particulars Meeting Report Condition :		i
Title page     General Particulars     Minutes of Meeting before TM     Attachment to Minutes of meeting befor     UTM Operator Calification Certificate	Hull elements/ elements group at the report tree	
UTM Equipment Callibration Certificate     General arrangement     Suspect Areas     All cargo hold hatch covers (plating an-	RTM_1.2 Thickness measurement of hull plates	
<ul> <li>All cargo hold hatch coamings (plating</li> <li>Internals in forepeak tank</li> <li>Internals in afterpeak tank</li> <li>All open parts of upper deck plating fr</li> </ul>	The table used for measurement of plates elements (shell plating, upper d double bottom platting, longitudinal and transverse bulkheads and s.o.). In Last frames should be fixed at each plate.	
Three transverse sections in way of c RTM_1.1 Section 1 shp. 25 RTM_1.1 Section 2 shp. 35 RTM_1.1 Section 3 shp. 65 All wind and water strakes, port and st		
Forecastle deck plating     Poop deck plating     Navigation bridge deck plating     Superstructure deck plating (is not poc		
Lowest strakes and strakes in way of t		

Fields "Hull elements group at the report tree" is not mandatory for drawing up. It is intended for the improvement of navigation in the tree. For one item it is possible to create many tables and to improve navigation on items, tables it is recommended to enter additional information in this field.

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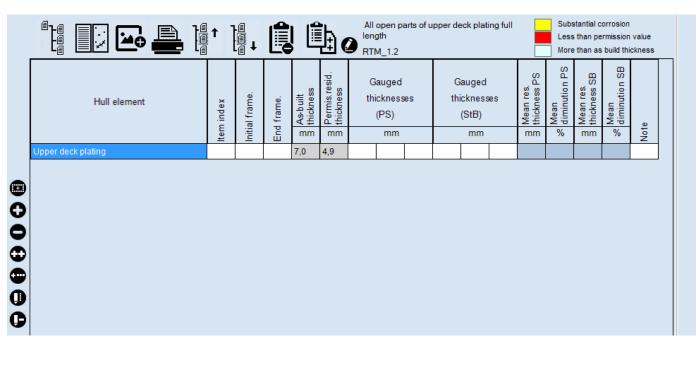


To create new record for item it is necessary to click the icon •, then window will appear offering list of appropriate items to be selected (information from the file containing norms). If item or item with different scantling is absent, it is necessary to add item to the file with norms. To add item to the file with norms it is necessary to click button "New item".

99	UTM software "VC	LNA"	- • ×
Sort ювные связи	۹		New item
Upper deck plating s=7. [s']=4.9 Ends Upper deck plating s=5. [s']=3.5 Ends Upper deck plating s=6. [s']=4.2 Ends Upper deck plating s=7. [s']=4.9 Midship region Upper deck plating s=5. [s']=3.5 Midship region Upper deck plating s=6. [s']=4.2 Midship region			

In the table it is necessary to enter the following information on each plate:

- 1. item index (according to ship's drawings or assigned by TM firm);
- 2. Initial frame;
- 3. End frame;
- 4. Measurements on PS and STBD side.



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When it is necessary to enter measurements on one side or for each side in turn, it is possible to choose table RTM-1.2a. This table gives possibility to register measurements on each side only and the number of measurements in one line is greater.

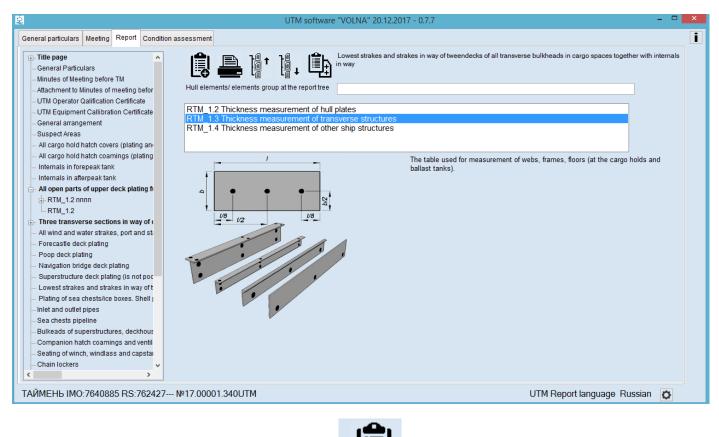
# RTM-1.3

Tabular form RTM-1.3 is intended for the purpose of entering information on transverses (web frames, floors, transverse bulkheads and etc.).

In the item tree it is necessary to find and click appropriate item and:

1. to choose appropriate form.

2. to acknowledge explanations for number and points of measurements (refer to Annex 4 of the RS Rules for classification surveys of ships in service).



By clicking on the appropriate number of form and icon

the relevant table will appear.

User's manual

UTM software "VOLNA" 20.12.2017 - 0.7.7 – 🗆 🗙											
General particulars Meeting Report Condition assessment											
General Particulars	Substantial corrosion Less than permission value More than as build thickness										
- Attachment to Minutes of meeting befor - UTM Operator Calification Certificate - UTM Equipment Califoration Certificate - General arrangement - Suspect Areas	Mean Mittickness SB Mean Mittickness SB diminution PS Note										
All cargo hold hatch covers (plating an All cargo hold hatch covers (plating an Internals in forepeak tank All open parts of upper deck plating f Three transverse sections in way of All wind and water strakes, port and st Forecastle deck plating Poop deck plating Superstructure deck plating (is not poc Lowest strakes and strakes in way of Internal outlet pipes Sea chests pipeline Bulkeads of superstructures, deckhous Companion hatch coamings and ventil Seating of winch, windlass and capsta Chain lockers Cofferdams, void spaces											
TAŬMEHE IMO:7640885 RS:762427 №17.00001.340UTM UTM Report lang	guage Russian 🔯										

The mechanism of filling in data on ship's hull transverses in the table 1.3 is provided by data blocks. For selected frame the structure's block is created. Further new structure's block is created or copied for the next frame. Thus data on all frames are filled in.

To start drawing up it is necessary to click the icon . Then in the window appeared to indicate "Frame" (first frame) and click "Make as current".

			1	.≘ .≘ ↓		0	all transverse bulkher	strakes in way of tweer ads in cargo spaces to		of _	Less	stantial c s than pe e than as	rmissior	value
	Hull elemen	t	ltem index	Frame	As-built thickness	Permis.resid. thickness	Gauged thicknesses (PS)	Gauged thicknesses (SB)	Mean res. thickness PS	Mean diminution PS	Mean res. thickness SB	Mean diminution PS	te	
			lter	Fra	mm	MM	mm	mm	mm	%	mm	%	Note	
0000000		Frame		Ма Сору	e frame ake as cu y of the e Delete fra	urrent	×							

Further the following window will appear where it is necessary to indicate first item located on a current frame.

<b>2</b>	UTM software "VOLNA" -	 x
Sort ювные связи Q	● 1 ● New item	
Transverse bulkhead plating s=6, [s']=4,2 (·) Transverse bulkhead plating s=6,5, [s']=5,2 (·) Transverse bulkhead plating s=7, [s']=4,9 (·) Transverse bulkhead plating s=8, [s']=5,6 (·) Transverse bulkhead plating s=8, [s']=6,4 (·) Transverse bulkhead plating s=8, [s']=4,6 (·) Transverse bulkhead plating s=6,5, [s']=4,6 (·) Transverse bulkhead plating s=6,5, [s']=4,6 (·) Transverse bulkhead plating s=6,5, [s']=4,9 (·)		

Further all items located on a current frame to be entered following principle described above. For the user's convenience reference it is possible to copy repeated items on the same frame.

To copy item it is necessary to click the icon . In the window appeared to enter new frame into field "Frame" and to choose frame number from the list under "Inserted frames" and click the button "Copy of the element".

	<b>□</b> -= -= -=		• 🖴	]ª↑ ]	.≘ 		0	Lowest strakes and strakes in way of tweendecks of all transverse bulkheads in cargo spaces together       Substantial corrosion         RTM_1.3       More than as build thickness										
		Hull elem	ent	ltern index	Frame	∃ As-built ∃ thickness	E Permis.resid. ≅ thickness	Gauged thicknesses (PS) mm	Gauged thicknesses (SB) mm	B Mean res. Ethickness PS	% Mean diminution PS	B Mean res. Ethickness SB	% Mean diminution PS	Note				
$\mathbf{\Theta} \mathbf{\Theta} \mathbf{\Theta} \mathbf{\Theta} \mathbf{\Theta} \mathbf{\Theta} \mathbf{\Theta} \mathbf{\Theta} $			Frame		Сор	e frame ake as cu y of the e Delete fra	urrent element											

It is possible to copy, move and change etc. frames blocks.

#### RTM-1.4

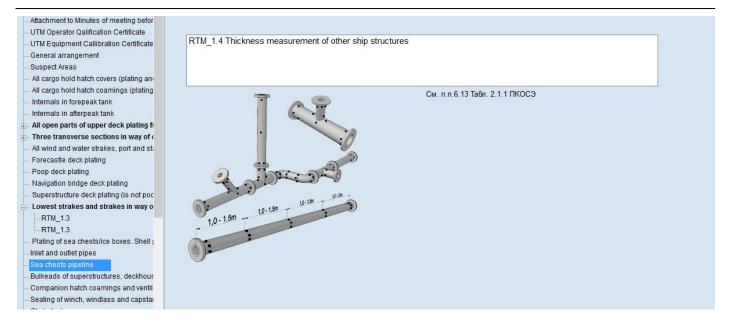
Tabular form RTM-1.4 is intended for the purpose of entering information on miscellaneous items, for which forms RTM1.1, RTM1.2, RTM1.3, RTM1.5, RTM1.6 are not used.

In the item tree it is necessary to find and click appropriate item and:

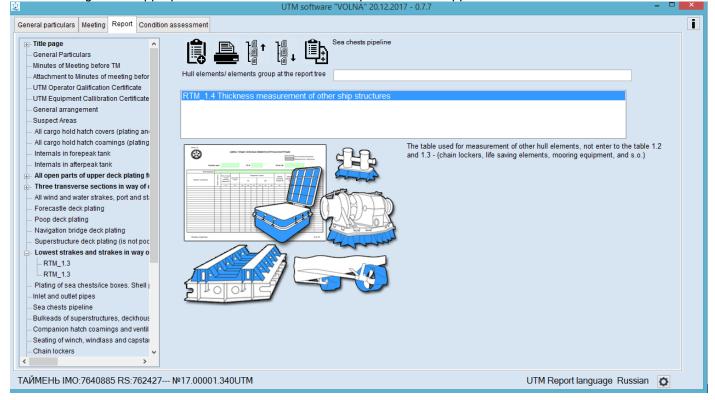
1. to choose appropriate form.

2. to acknowledge explanations for number and points of measurements (refer to Annex 4 of the RS Rules for classification surveys of ships in service).

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#### When clicking on the appropriate number of form the description form will appear.





and the appropriate table will appear. By clicking on icon 🕒 it is necessary to choose

Then click the button the appropriate item.

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•	UTM software "VOLNA"	- • ×
Sort ювные связи	۹.	New item
Transverse bulkhead plating s=6, [s`]=4,2 (·) Transverse bulkhead plating s=6,5, [s`]=5,2 (·) Transverse bulkhead plating s=7, [s]=4,9 (·) Transverse bulkhead plating s=8, [s`]=5,6 (·) Transverse bulkhead plating s=8, [s`]=6,4 (·) Transverse bulkhead plating s=8, [s`]=4,6 (·) Transverse bulkhead plating s=10, [s`]=4,6 (·) Transverse bulkhead plating s=6,5, [s`]=4,9 (·) Transverse bulkhead plating s=6,5, [s`]=4,9 (·)		
		Вьход

#### Then to enter all necessary data to the table.

Самые нижние поясья и поясья на ; « Все листы пояса горизонтального » Общивка кингстонных и ледовых ящи	1 🖸 🛥 🚇 (	<b>)</b> (		иные я И_1.4 (	цики. Цепної	й ящик, і	шп. 125	-131						Нено	а допуска	пьной коррозии вемой величины ечной толщины
Люковые закрытия всех грузовых з Комингсы люковых закрытий всех гру Дополнительные замеры топщин шг Эсе поперечные переборки грузовь	Элемент конструкции	элемента	строечная 1щина	пуск. . толщина		амерен лщина			амерен пцина		едн остат. тщина (ЛБ)	еднее еньш (ЛБ)	едн остат. зщина (ПБ)	еднее еньш. (ЛБ)	аннен	
Весь настип палубы и подпалубный		Индек		щŝ		11000000	_	1			55	55		55		
Дополнительные замеры толщин по	1	_	MM	MM		ЛБ			ПрБ		MM	%	MM	%	Upon	
Все поперечные рамные связи с с	Общивка целного ящика форлика	W1	10,0	7.0	8,9	8,6	8,8	8,7		8,1	8,8	12,0	8,4	16,0		1
Все поперечные переборки в балла	Общиека цепного ящика форпика	W2	10,0	7,0	9,2	9,4	8,8	8,9	8,0	9,2	9,1	-	8,7	13,0		
В пределах грузовой зоны три попе	Общивка цепного ящика форпика	W3	10,0	7,0	8,1	9,2	9,4	8,0	8,6	8,4	8,9		8,3	17,0		
Все шпангоуты во всех грузовых тр	Общивка целного ящика форпика	W4	10,0	7,0	8,8	8,9	8,9	8,4	8.8	8,1	8,9	11,0	8,4	16,0		
	Днищевой пист цепного ящика форпика	D1	12,0	8,4	11,2	11,6	11,8	11,4	11,8	11,2	11,5	4,2	11,5	4,2		
рубопроводы соединяющие кингсто Тереборки рубок, надстроек, машини	Днищевой лист цепного ящика форпика	D2	12,0	8,4	10,5	10,9	11,6	10,8	10,4	10,0	11,0	8,3	10,4	13,3		
ундаменты лебедок, брашпилей, шт целкые ящики. — RTM_1.4 Цепной ящих, шп. 125-13																

# RTM-1.5

Tabular form RTM-1.5 is intended for the purpose of entering information on side frames of bulk carriers for which UR S31 applies.

In the item tree it is necessary to find and click appropriate item and:

1. to choose appropriate form.

# 2. to acknowledge explanations for number and points of measurements (refer to Annex 4 of the RS Rules for classification surveys of ships in service).

	UTM software "VOLNA" 20.12.2017 - 0.7.7 – 🗖
eneral particulars Meeting Report Condition ass	sessment
Title page  General Particulars Minutes of Meeting before TM Attachment to Minutes of meeting befor	Additional thickness measurement guidelines applicable to the side shell frames and brackets on ships subject
UTM Operator Qalification Certificate     UTM Equipment Callibration Certificate     General arrangement     Suspect Areas     Internals in forepeak tank	RTM_1.5 Thickness measurement of cargo hold frames (S31)
Internals in afterpeak tank Forecastie deck plating Poop deck plating Navigation bridge deck plating Superstructure deck plating (is not poc Lowest strakes and strakes in way of t All keel plates full length. Also, additior Plating of sea cheets/ice boxes. Shell 1 All cargo hold hatch covers (plating an All cargo hold hatch coaming (plating a	<ol> <li>Замеры в зонах А, В и D следует проводить в 5 точках (см. рис.) равномерно по ширине и высоте стенки.</li> <li>Замеры в зоне С проводить в 3-х точках. Если стенки имеют общую коррозию, замеры проводить в 5 точках, как указано на рисунке стенки.</li> </ol>
	delines applicable to the side shell frames and brackets on ships subject
ОРГИЙ СЕДОВ IMO:8811950 RS:9068	876 №17.00001.340UTM UTM Report language English

#### Then in the appeared window it is necessary to enter information in the field "Cargo hold No.".

General particulars Meeting Report Condition assessment	
	I
<ul> <li>The page</li> <li>General Particulars</li> <li>Minutes of Meeting before TM</li> <li>Athchment to Minutes of meeting before</li> <li>UTM Equipment Calification Certificate</li> <li>Guneral arrangement</li> <li>Suspect Areas</li> <li>Internals in faferpeak tank</li> <li>Forecastle deck plating</li> <li>Novig both ridig deck plating</li> <li>Suspect Nuclue deck plating (is notificated)</li> <li>Atlationsent building is notificated building (is notificated)</li> <li>Atlaticates and stakes in subject to IACS S31</li> <li>Covest stakes and stakes in subject to IACS S31</li> <li>Atlaticates building find for deck plating</li> <li>Atlaticates building find for deck plating</li> <li>Atlaticates building find for deck structure</li> <li>Atlaticates and under deck structure</li> <li>Atlaticates measurement of data building in building and under deck structure</li> <li>Atlaticates and structure in building and under deck structure</li> <li>Atlaticates even building and under deck structure</li> <li>Atlaticates measurement of data building in building and under deck structure</li> <li>Atlaticates even building and under deck structure</li> <li>Atlaticates and structure in building and under deck structure</li> <li>Atlaticates and structure in building deck structure</li> <li>Atlaticates and building deck structure</li> <li>Atlaticates and struct</li></ul>	
Inlet and outlet pipes     Sea chests pipeline     v	
ГЕОРГИЙ СЕДОВ IMO:8811950 RS:906876 №17.00001.340UTM UTM Report language English	

Then it is necessary to indicate frames numbers PS and STBD.

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Side (Port/stb.):	PS	√?

Further the following table will appear with frames numbers related to the cargo hold chosen earlier. Permissible scantling will be displaced too (from the file of norms).

<u>ģ</u>	UTM	software "VOLNA" 20.12.2017 - 0.7.7		- 🗆 🗙
General particulars Meeting Report Condition as	assessment			i
Title page General Particulars Minutes of Meeting before TM		Additional thick applicable to th	he side shell frames and brackets on	stantial corrosion s than permission value e than as build thickness
Attachment to Minutes of meeting befor		ZONE A	ZONE B	ZO
	Frame	Build. tren tcoat tm Dimenution	Build. tren tcoat tm Dimenution	Build. tren tcoa
UTM Equipment Callibration Certificate	No.	thickn.	thickn.	thickn.
- General arrangement		mm mm mm mm %	6 mm mm mm mm %	mm mm mm
Internals in forepeak tank				
- Internals in afterpeak tank				
- Forecastle deck plating				
- Poop deck plating				
- Navigation bridge deck plating				
- Superstructure deck plating (is not poc				
- Lowest strakes and strakes in way of t				
- All keel plates full length. Also, addition	•			
<ul> <li>Plating of sea chests/ice boxes. Shell  </li> </ul>				
All cargo hold hatch covers (plating an				
<ul> <li>All cargo hold hatch coaming (plating a</li> </ul>				
😑 Additional thickness measurement g				
RTM_1.5 CARGO HOLD NO.:1     All cargo hold transverse bulkheads in				
	·			
<ul> <li>All deck plating and under deck structu</li> </ul>				
<ul> <li>Additional thickness measurement gui</li> </ul>				
<ul> <li>All transverse webs with associated pl</li> </ul>				
<ul> <li>All transverse bulkheads in ballast tan</li> </ul>				
- Three transverse sections beyond the				
- All shell frames in all cargo holds, inclu				
- Inlet and outlet pipes 🗸				
< >>	<			>
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To draw up information on measurements in row "tm" - in each frame zone according to the requirement of URS31.

# RTM-1.6

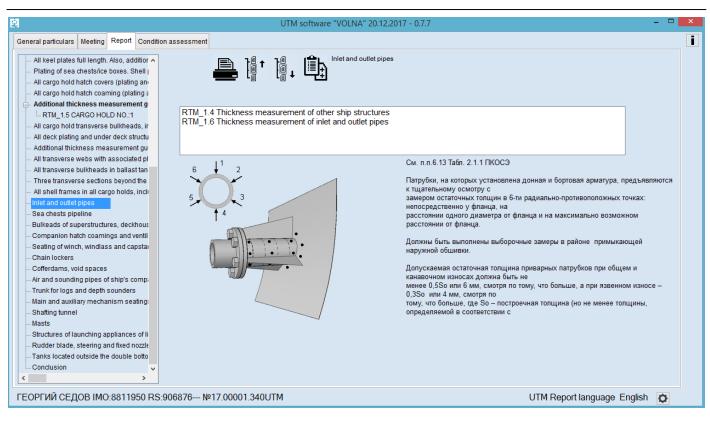
Tabular form RTM-1.6 is intended for the purpose of entering information on inlet and outlet pipes.

In the item tree it is necessary to find and click appropriate item (inlet and outlet pipes) and:

1. to choose appropriate form.

2. to acknowledge explanations for number and points of measurements (refer to Annex 26 to the Guidelines for the technical supervision of ships in service and relevant Annex to the RS Rules for classification surveys of ships in service).

User's manual



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General particulars       Meeting       Report       Condition assessment         All keel plates full length. Also, addition ~       Plating of sea chests/ice boxes. Shell 1       Inlet and outlet pipes         All cargo hold hatch covers (plating an -       All cargo hold hatch covers (plating a: -       Image: Cargo hold hatch covers (plating a: -         All cargo hold hatch covers (plating a: -       All cargo hold hatch covers (plating a: -       Image: Cargo hold hatch covers (plating a: -         All cargo hold hatch covers (plating a: -       All cargo hold hatch covers (plating a: -       Image: Cargo hold hatch covers (plating a: -         All cargo hold hatch covers (plating a: -       All cargo hold hatch covers (plating a: -       Image: Cargo hold hatch covers (plating a: -         All cargo hold hatch covers (plating a: -       All cargo hold hatch covers (plating a: -       Image: Cargo hold hatch covers (plating a: -         All cargo hold transverse bulkheads, ir       -       All deck plating and under deck structure       RTM_1.4 Thickness measurement of inlet and outlet pipes	
<ul> <li>Additional thickness measurement gu</li> <li>All transverse webs with associated pi</li> <li>All transverse buikheads in ballast tan</li> <li>Three transverse sections beyond the</li> <li>All shell frames in all cargo holds, incl</li> <li>Inlet and outlet pipes</li> <li>Sea chests pipeline</li> <li>Bulkeads of superstructures, deckhous</li> <li>Companion hatch coamings and ventil</li> <li>Seating of winch, windlass and capsta</li> <li>Chain lockers</li> <li>Cofferdams, void spaces</li> <li>Air and sounding pipes of ship's comp:</li> <li>Truck for logs and depth sounders</li> <li>Main and auxiliary mechanism seating:</li> <li>Shatting tunnel</li> </ul>	pes.
Masts Structures of launching appliances of li Rudder blade, steering and fixed nozzle Tanks located outside the double botto Conclusion Conclusion CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLUSION CONCLU	rt language English 🔯



the following table will appear

User's manual

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eneral particulars Meeting Report Condition :	assessment																i
Title page     General Particulars     Minutes of Meeting before TM	□  		] 🛥 c		<u>]</u> ∎↑			et and outle	et pipes				Less	s than permi	ssion val	lue	
Attachment to Minutes of meeting befor UTM Operator Qalification Certificate		Initial	End	Diam.	As-built thickn.	Perm. res.	thickness.	Gauging opposite		radial	res. ess	Mean diminution	num Lal	Max. dimenution			
UTM Equipment Callibration Certificate General arrangement	Side	frame	frame			0,5xSo	0,3xSo	I*	II*	III*	Mean res. thickness		Minimum residual thickness	Max. dimer	Note		
Suspect Areas Internals in forepeak tank				mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	ž		
<ul> <li>Internals in afterpeak tank</li> <li>Forecastle deck plating</li> <li>Poop deck plating</li> <li>Navigation bridge deck plating</li> <li>Superstructure deck plating (is not poot</li> <li>Lowest strakes and strakes in way of t</li> <li>All keel plates full length. Also, additior</li> <li>Plating of sea chests/ice boxes. Shell  </li> <li>All cargo hold hatch covers (plating an</li> <li>All cargo hold hatch coaming (plating a</li> <li>Ald cargo hold transverse bulkheads, ir</li> <li>All deck plating and under deck structu</li> <li>Additional thickness measurement gu</li> <li>All transverse webs with associated pl</li> <li>All transverse bulkheads in ballast tan</li> <li>Three transverse sections beyond the</li> <li>All shell frames in all cargo holds, incli</li> </ul>	D																
RTM_1.6																	
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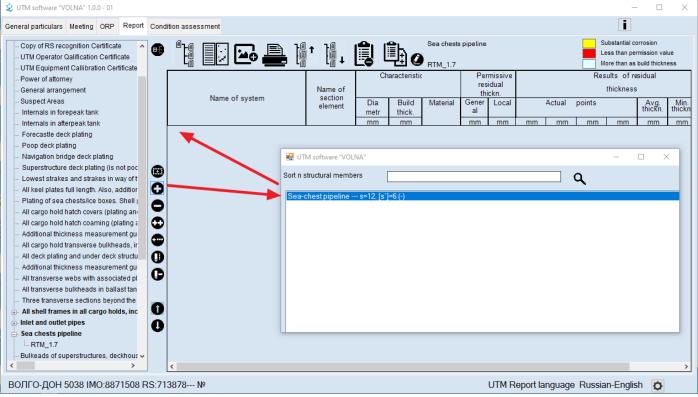
Then click the icon V and choose the appropriate pipe from the list (information from section with norms).

To draw up the table there are two groups of fields:

- 1. Particulars and location of the pipe (side, initial frame and end frame, diameter)
- 2. Measurements in six radial opposite points.

#### RTM-1.7

Table form RTM-1.7 is intended for filling in the results of thickness measurements of ship's pipelines. To fill in the table it is necessary to identify the places of measurements (sections) and pipeline diameter.



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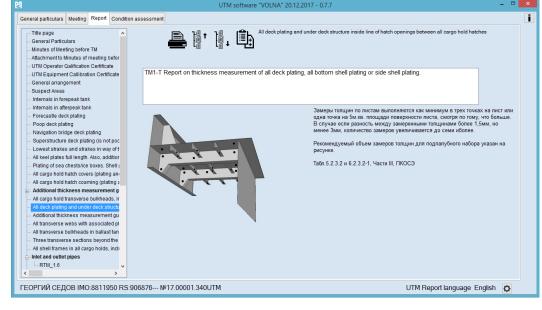
单 UTM software "VOLNA" 1.0.0 - 01											_		×
General particulars Meeting ORP Report Cor	ndition assessment												
Copy of RS recognition Certificate     UTM Operator Qalification Certificate     UTM Equipment Callibration Certificate			-								ubstantial c ess than pe lore than as	rmission va build thickr	
Power of attorney General arrangement		Name of	CI	aracteristi	c	res	missive idual ickn.			Res	sults of re thickness		
Suspect Areas Internals in forepeak tank	Name of system	section element	Dia metr	Build thick.	Material	Gener al	Local			points		Avg. thickn.	Min. thickr
Internals in afterpeak tank	Sea-chest pipeline	Section A-A	79	mm 12.0	steel	mm 6,0	mm 3,6	8.8	9.9	9,8	9,6	 9,5	8.8
- Forecastle deck plating	Sea-chest pipeline	Section A-A	79	12,0		6.0	3,6	10.0	9,9	9,4	9,3	9,5	9,2
···· Poop deck plating	Sea-chest pipeline	Section A-A	79	12,0		6,0	3,6	8,8	9,2	9,4	9,3	9,2	9,2 8,8
Navigation bridge deck plating     Superstructure deck plating (is not poc		Section A-A	79	12,0		6,0	3,6	9,0	9,2	9,2	9,1	9,1	9
Lowest strakes and strakes in way of t	Sea-chest pipeline	Section A-A	79	12,0		6,0	3.6	9,7	9,2	9,2	7,0	8,9	7
All keel plates full length. Also, addition	Sea-criest pipeline	SecionA-A	79	12,0	Steel	0,0	3,0	9,7	9,0	9,4	17,0	0,9	1
Plating of sea chests/ice hoves Shell .													
All cargo hold hatch covers (plating an													
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- All deck plating and under deck structu													
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All shell frames in all cargo holds, inc													
Bea chests pipeline													
- Bulkeads of superstructures, deckhous 🗸													
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# 1.2 Instruction for tabular forms recommended by IACS UR (these forms may be used only upon agreement with RS surveyor in exceptional cases described in RS Rules)

### *TM1*

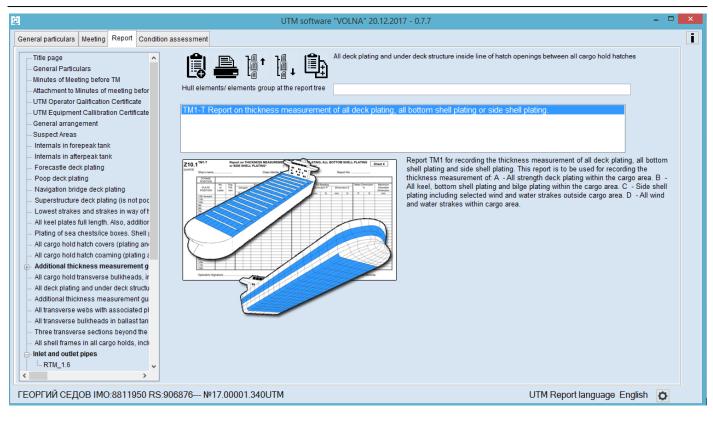
Tabular form TM1 is intended for drawing up of measurements of deck plating, bottom and side shell plating.

In the item tree it is necessary to find and click appropriate item (deck plating, bottom and side shell plating) and: 1. to choose appropriate form.

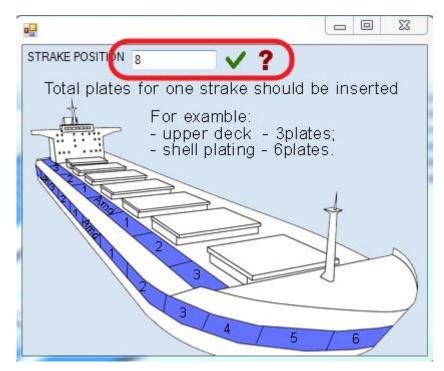


2. to acknowledge explanations for number and points of measurements (refer to the URZ7, Z10.s).

User's manual



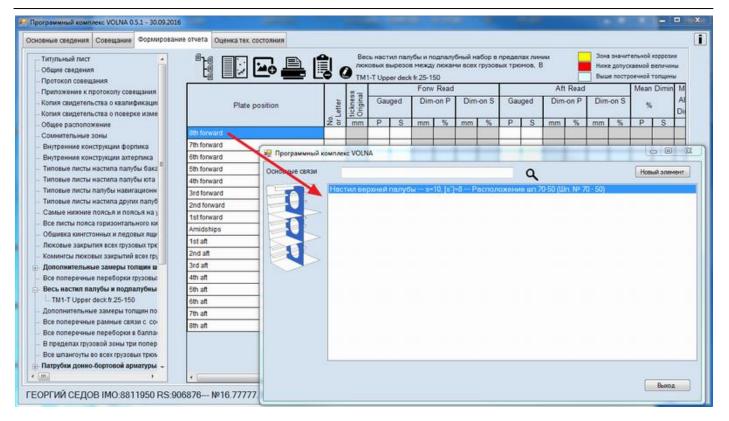
Upon double clicking on the form number, it is necessary to indicate necessary number of plate on a current strake.



Upon entering of a number of plates, the following table will appear for each strake.

To draw up the lines of the table, it is necessary to double click the item in row "Plate position" and choose appropriate item from the list (the values of permissible thickness and permissible diminution will be introduced in the table thereto).

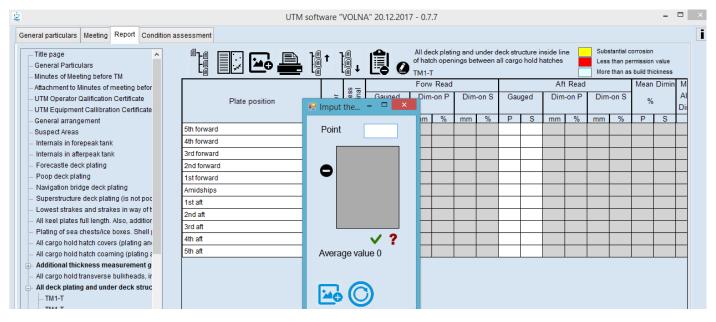
User's manual



The process of drawing up of measurements in IACS recommended forms differs from the process applied in RS forms (RTM).

IACS forms require to enter average thickness in the appropriate cells. In this software it is possible to enter all measurements taken and the average thicknesses will be introduced in the table further.

To draw up measurements it is necessary to click appropriate cells, at that the software offers to enter free number of measurements.



# TM2i

Tabular form TM2i is intended for drawing up of measurements of items of an upper deck plating.

- 1) In the item tree it is necessary to find and click appropriate item containing words "transverse sections" and
- 2) Clarify location of sections on the basis of actual thickness measurements of deck plating as follows (the location of fore and aft sections may be changed on the basis of the results of thickness measurements of deck and bottom (i.e. more deteriorated sections is to be chosen):

User's manual

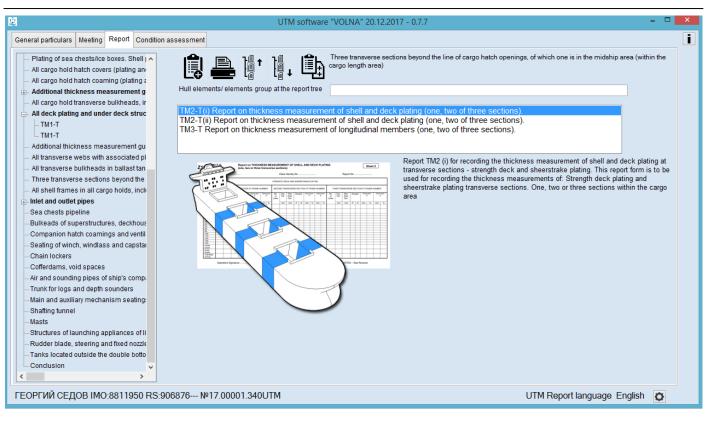
Ger	neral particulars Meeting Report Conditi	on assessment		1
	Plating of sea chests/ice boxes. Shell        A     All cargo hold hatch covers (plating an     All cargo hold hatch coaming (plating a	Register transverse sections beyond the line of cargo hatch openings, of which one is in the midship area (within the cargo length area)	:	
ŧ	<ul> <li>Additional thickness measurement g</li> <li>All cargo hold transverse bulkheads, ir</li> </ul>	ATTENTION, in accordance with RS Rules, selected section for thickness measurement should be determined as worst subject to thickness measurement of upper deck and shell plating.		
	<ul> <li>All deck plating and under deck struc</li> <li>TM1-T</li> <li>TM1-T</li> </ul>	Section, proposed by RS surveyor (fr) 45 80 120		
	<ul> <li>Additional thickness measurement gu</li> <li>All transverse webs with associated pl</li> </ul>	Worst section, subject to thickness 45 80 120		
	All transverse bulkheads in ballast tan     Three transverse sections beyond     All shell frames in all cargo holds, incli	measurement of uoper deck and shell blatino the line of cargo hatch openings, of which one is in the midship area (within the cargo length area) (Should be corrected if worst section is different to section		
ŧ	In Inlet and outlet pipes	proposed by RS Surveyor)		
	Bulkeads of superstructures, deckhous     Companion hatch coamings and ventil     Seating of winch, windlass and capstal			
	Chain lockers Cofferdams, void spaces			
	Mir and sounding pipes of ship's comp:     Trunk for logs and depth sounders     Main and auxiliary mechanism seating:	OK		
	Structures of launching appliances of li Rudder blade, steering and fixed nozzle Tanks located outside the double botto			
<	- Conclusion			
ΓF	ОРГИЙ СЕДОВ ІМО:8811950 RS	:906876 № 17.00001.340UTM UTM Report language English		

- 3) Then click "OK" and the following window will appear with the following options:
- Tabular forms for registration of data on main structures of the upper deck TM2-Ti;
- Tabular forms for registration of main structures of bottom and side plating TM2-Tii;
- Tabular forms for registration of other structures in transverse section TM3-T.

2	UTM software "VOLNA" 20	.12.2017 - 0.7.7	
General particulars Meeting Report Condition a	issessment		i
<ul> <li>Plating of sea chests/ice boxes. Shell            <ul> <li>All cargo hold hatch covers (plating ani- All cargo hold hatch coaming (plating a</li> <li>Additional thickness measurement g</li> <li>All cargo hold transverse bulkheads, ir</li> <li>All deck plating and under deck struc</li> <li>TM1-T</li> <li>TM1-T</li> </ul> </li> </ul>	TM2-T(i) Report on thickness measurement of shell an TM2-T(i) Report on thickness measurement of shell an TM2-T(ii) Report on thickness measurement of longitudin	id deck plating (one, two of three sections). nd deck plating (one, two of three sections).	
<ul> <li>Additional thickness measurement gu</li> <li>All transverse webs with associated pl</li> <li>All transverse bulkheads in ballast tan</li> <li>Three transverse sections beyond the</li> <li>All shell frames in all cargo holds, incli</li> <li>Inlet and outlet pipes</li> <li>Sea chests pipeline</li> <li>Bulkeads of superstructures, deckhous</li> <li>Companion hatch coamings and ventil</li> <li>Seating of winch, windlass and capstai</li> <li>Chain lockers</li> <li>Cofferdams, void spaces</li> <li>Air and sounding pipes of ship's comp:</li> <li>Trunk for logs and depth sounders</li> <li>Main and auxiliary mechanism seating:</li> <li>Shafting tunnel</li> <li>Masts</li> <li>Structures of launching appliances of li</li> <li>Rudder blade, steering and fixed nozzle</li> <li>Tanks located outside the double botto</li> <li>Conclusion</li> </ul>		В общем случае поперечное сечение - это сечение всех продольных конструктивных элементов, таких как общивки и настилы, а такие основные и рамные продольные связи палуб, бортов, днища, второго дна, продольных переборок и внутренних бортов (включая общивку и продольные связи наклонных и поризонтальных листов подпалубных, скуповых и бортовых танков), на протяжении длины одного листа вдоль судна. Для судов с поперечной системой набора, поперечное сечение включает примыкающий набор и его концевые соединения в районе поперечных сечений. (п.2.1, ч. 1, ПКОС). Замеры толщин по листам выполняются как минимум в трех точках на лист или одна точка на бм кв. площади поверхности листа, смотря по тому, что больше. В случае если разность между замеренными топщинами более 1,5мм, но менее Змм, количество замеров увеличивается до семи иболее. При обнаружении значительной коррозии дополнительно должны быть выполнены 30T согласно табл.2.4.2.6.2.2.4.11 ПКОС.	
ГЕОРГИЙ СЕЛОВ IMO:8811950 RS:90	)6876 №17 00001 340UTM	LITM Report Janquage English	

After selection of an appropriate form the software provides information with description of the table and name of structures/group of structures in the report tree.

User's manual

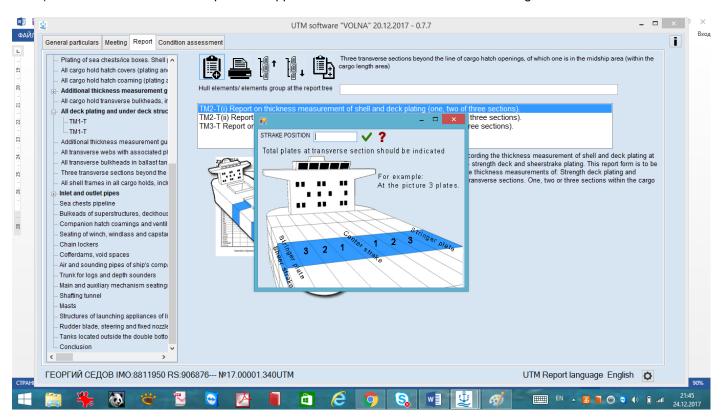


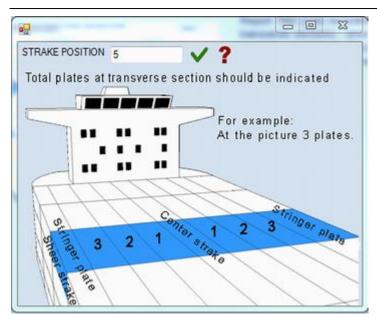


4)

Further click on

5) Then enter the number of plates of upper deck from central strake to deck stringer in the window as follows:





#### 6) Then the table with appropriate number of lines will be created:

- Титульный лист - Общие сведения - Протокоп совещания	1 🛛 🛥 💻 🕯	0		ковы				теречных се юторых в ср				Нисно	е допуся	ельной к каемой в оечной т	канинины
Приложение к протоколу совещания Копия свидетельства о признании ко Копия свидетельства о квалификации	Strake position	Strake breath	No. or		Max. Alw. Dim.	Gau		Section Diminution P	Dimi	nution	Strake breath	No. or		Cond Max. Alw. Dim.	Transver Gaugeo
Копия свидетельства о поверке изме		mm	Let	mm	mm	Р	S	mm %	mm	%	mm	Let	mm	mm	P
Доверенность	Stringer Plate														$\rightarrow$
Общее расположение	1st strake inboard														
Сомнительные зоны	2nd														
Внутренние конструкции форпика	3rd														
Внутренние конструкции ахтерпика	4th														
Типовые листы настила палубы бака	5th														
Типовые листы настила палубы юта	center strake														
<ul> <li>Типовые листы палубы навигационн</li> </ul>	sheer strake														-
<ul> <li>Типовые листы настила других палуб</li> </ul>									_						
<ul> <li>Самые нижние поясья и поясья на у</li> </ul>															
Все листы пояса горизонтального н															
Общивка кингстонных и ледовых ящи															
<ul> <li>Люковые закрытия всех грузовых т</li> </ul>															
<ul> <li>Комингсы люковых закрытий всех гру</li> </ul>															
Дополнительные замеры толщин ш															
Все поперечные переборки грузовь															
<ul> <li>Весь настил палубы и подпалубный</li> </ul>															
Дополнительные замеры толщин по															
Все поперечные рамные связи с с															
Все поперечные переборки в балла															
В пределах грузовой зоны три попе — TM2-T(i)															
- 1M2-1(I) +															

7) To enter measurements it is necessary to follow to the line and double click on the mouse, then to choose necessary item from the list of items. At that permissible thickness and permissible diminution will be entered into the table from the norms database created earlier.

User's manual

Титульный лист     Общие сведения     Протокоп совещания	"i II	E 🚑 🗯	10	3 предела инии люк M2-T(i)								Ниж	е допус	каемой в	коррозии зеличины голщины
<ul> <li>Приложение к протокопу совещания</li> <li>Приложение к протокопу совещания</li> <li>Копия свидетельства о признании ко</li> <li>Копия свидетельства о квалификации</li> <li>Копия свидетельства о поверке изме</li> </ul>		ike position	Strake breath mm	No. Or or Th Let m	ik C	Max. Alw. C Dim.	ansvers Bauged	1 Dim	tion inution P	5	Strake breath mm	No. or Let	Se Org Thk mm	Max. Ahv. Dim. mm	Transver Gauge
— Доверенность — Общее расположение — Сомнительные зоны — — — — — — — — — — — — — — — — — — —	Stringer Plate 1st strake in bo 2nd	Программный комплек	C VOLNA										Le	. 0	8
<ul> <li>Внутренние конструкции ахтерпика</li> <li>Типовые писты настипа палубы бака</li> <li>Типовые писты настипа палубы юта</li> <li>Типовые писты палубы навигационн</li> </ul>	Hach Npoz None	ил верхне ил верхне ольный н речный н	бор вер	кней і кней і	палубы	s=1( s=1(	0,1, [s`]= 0,1, [s`]=	ение с 7,5	oc-98						

The process of drawing up of measurements in IACS recommended forms differs from the process applied in RS forms (RTM).

IACS forms require to enter average thickness in the appropriate cells. In this software it is possible to enter all measurements taken and the average thicknesses will be introduced in the table further.

8) To draw up measurements it is necessary to click appropriate cell, the software offers to enter free number of measurements (enter appropriate value, click "Enter" and so on).

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Основные сведения Совещание Формирование	е отчета Оценка тех. состояния								i
Титульный лист     Общие сведения     Поотокоп совещания	14 🕕 🗠 🚔 🕯	0	В пред линии / TM2-T(i	елах гр ноковь i)				перечных сечения за пределами Зока значительной коррозии соторых в средней части длины Икке допускаемой величины Выше построечкой топщины	
<ul> <li>Приложение к протоколу совещания</li> <li>Копия свидетельства о признании ко</li> <li>Копия свидетельства о квалификации</li> </ul>	Strake position	Strake breath mm	No. or Let	F Org. Thk.	Max. Alw. Dim.	<u>Trans</u> Gau	ged S	Section Second Transve Dim Boog sawep. D B 23 Org. Max. Thk. Dim 3aMep mm P	1
<ul> <li>Копия свидетельства о поверке изме</li> <li>Доверенность</li> </ul>	Stringer Plate 1st strake inboard	1200	DA1	15,0		13,6	14	1,4	
Общее расположение     Сомнительные зоны     Внутренние конструкции форлика	2nd 3rd							4.9	1
<ul> <li>Внутренние конструкции фортика</li> <li>Внутренние конструкции ахтерпика</li> <li>Типовые листы настила палубы бака</li> </ul>	4th								
<ul> <li>Типовые листы настила палубы юта</li> <li>Типовые листы настила палубы юта</li> <li>Типовые листы палубы навигационн</li> </ul>	5th center strake					_			
<ul> <li>Типовые листы настила других палуб</li> <li>Самые нижние поясья и поясья на у</li> </ul>	sheer strake							✓ ?	
<ul> <li>Все листы пояса горизонтального »</li> <li>Общивка кингстонных и ледовых ящи</li> </ul>								среднее значение 14,1	
<ul> <li>Эноковые закрытия всех грузовых т</li> <li>Комингсы люковых закрытий всех гру</li> </ul>									
<ul> <li>⊕. Дополнительные замеры толщин ш</li> <li>⊕. Все поперечные переборки грузовь</li> </ul>									
<ul> <li>Весь настил палубы и подпалубный</li> <li>Дополнительные замеры толщин по</li> </ul>									
<ul> <li>Все поперечные рамные связи с си</li> <li>Все поперечные переборки в баллай</li> </ul>									
<ul> <li>В пределах грузовой зоны три попе</li> <li>TM2-T(i)</li> </ul>									
ВЛАДИМИР РУСАНОВ ІМО:9056868 R							Язь	ык формирования отчетов русско-английский 🔯	1

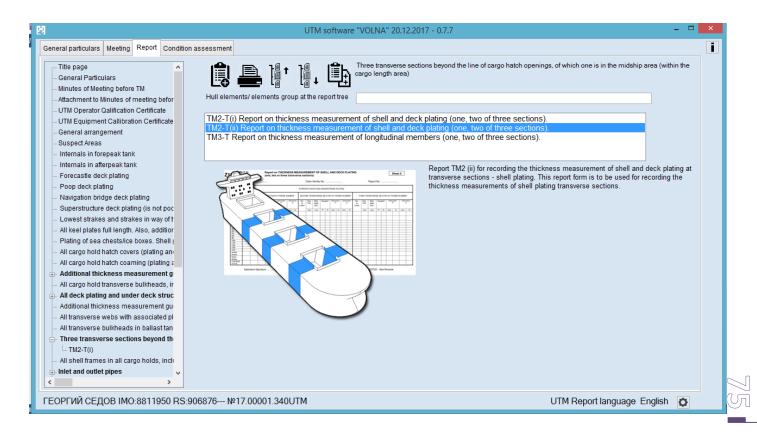
#### TM2ii

Tabular form TM2ii is intended for drawing up of measurements of shell plating items.

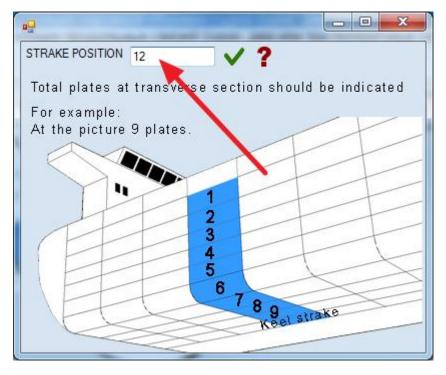
- 1) In the item tree it is necessary to find and click appropriate item containing words "transverse sections" and
- Clarify location of sections on the basis of actual thickness measurements of deck and bottom plating as follows:

	UTM software "VOLNA" 20.12.2017 - 0.7.7	
General particulars Meeting Report Conditi	on assessment	_ 1
Plating of sea chests/ice boxes. Shell	🛋 👌 🖓 🖌 📔 🔁 Three transverse sections beyond the line of cargo hatch openings, of which one is in the midship area (within the	
All cargo hold hatch covers (plating an	Three transverse sections beyond the line of cargo hatch openings, of which one is in the midship area (within the cargo length area)	
All cargo hold hatch coaming (plating a		
Additional thickness measurement g	ATTENTION, in accordance with RS Rules, selected section for thickness measurement should be determined as worst subject to	
- All cargo hold transverse bulkheads, ir	thickness measurement of upper deck and shell plating.	
All deck plating and under deck struc		
TM1-T		
TM1-T	Section, proposed by RS surveyor (fr) 45 80 120	
<ul> <li>Additional thickness measurement gu</li> </ul>		
All transverse webs with associated pl	Worst section, subject to thickness 45 80 120	
- All transverse bulkheads in ballast tan	Worst section, subject to thickness 45 80 120	
Three transverse sections beyond	the line of cargo hatch openings, of which one is in the midship area (within the cargo length area)	
All shell frames in all cargo holds, inclu	(Should be corrected if worst section is different to section	
Inlet and outlet pipes	proposed by RS Surveyor)	
Sea chests pipeline		
Bulkeads of superstructures, deckhous		
- Companion hatch coamings and ventil		
- Seating of winch, windlass and capsta		
Chain lockers		
- Cofferdams, void spaces		
- Air and sounding pipes of ship's comp	ОК	
- Trunk for logs and depth sounders		
Main and auxiliary mechanism seating:		
Shafting tunnel		
Masts		
- Structures of launching appliances of li		
Rudder blade, steering and fixed nozzle		
Tanks located outside the double botto		
Conclusion		
< >		
-ЕОРГИЙ СЕДОВ ІМО:8811950 RS	:906876 №17.00001.340UTM UTM Report language English	

3) choose TM-2ii from the appeared list (the prompt message gives description of the table)



3) Then to enter necessary number of strakes of shell plating from sheerstrake to horizontal keel, for instance:



4) The table with required number of lines will appear.

🥶 Программный комплекс VOLNA 0.5.1 - 30.09.2016	-												-			- 0	o x
Основные сведения Совещание Формирование	отчета Оценка тех. состояния																i
Общие сведения Протокоп совещания Припожение к протокопу совещания	12 🕰 🚔 🗐	0		пюковь іі)	к выре	зов, од	но из к	теречны юторых	в сред				Ниже	е допуси е постр	ельной і каемой в оечной т	зеличина голщины	ы
<ul> <li>Копия свидетельства о признании ко</li> <li>Копия свидетельства о квалификаци</li> <li>Копия свидетельства о поверке изме</li> </ul>	Strake position	Strake breath mm	No. or Let	Org. Thk.	Max. Alw. Dim.	Gau		Secti Dimin	ution	Dimin S		Strake breath mm	No. or Let	Org. Thk.	Cond Max. Alw. Dim.	<u>Trans</u> Gauş	
— Доверенность — Общее расположение	1st below sheer strake	mm	Let	mm	mm	Ρ	S	mm	%	mm	%	mm	Let	mm	mm	Р	_
Сощее расположение     Сомнительные зоны	2nd																
– Внутренние конструкции форпика	3rd																
<ul> <li>Внутренние конструкции ахтерпика</li> </ul>	4th																
<ul> <li>Типовые листы настипа палубы бака</li> <li>Типовые листы настипа палубы юта</li> </ul>	5th	-					<u> </u>									_	_
<ul> <li>Типовые листы палубы навигационн</li> </ul>	6th 7th	-	-				-									$\rightarrow$	
— Типовые листы настила других палуб	8th						-									-	-
<ul> <li>Самые нижние поясья и поясья на у</li> </ul>	9th									_				_			-
<ul> <li>Все листы пояса горизонтального и         <ul> <li>Общивка кингстонных и ледовых ящи</li> </ul> </li> </ul>	10th																
Люковые закрытия всех грузовых т	11th																
<ul> <li>Комингсы люковых закрытий всех гру</li> </ul>	12th																
<ul> <li>Дополнительные замеры толщин ш</li> </ul>	keel strake																
Все поперечные переборки грузовь     Весь настил палубы и подпалубный     Дополнительные замеры топщин по     Все поперечные переборки с сі     Все поперечные переборки с балла     В пределах грузовой зоны три попе     ТМ2-Т(0)     ТМ2-T(0)		-															
ВЛАДИМИР РУСАНОВ ІМО:9056868 R	S:932847 №16.00001.180UTM						Яза	ык фо	рмир	овани	ия отч	четов ру	сско-	англи	ийский	Ø	

5) To enter measurements it is necessary to follow to the line and double click on the mouse, then to choose necessary item from the list of items. At that permissible thickness and permissible diminution will be entered into the table from the norms database created earlier.

User's manual

Общие сведения Протокол совещания Припожение к протоколу совещания	1		В пределах г пинии люкови TM2-T(ii) —								Ниж	е допус	епьной ко каемой ве оечной то	личины
<ul> <li>Копия свидетельства о признании ко</li> <li>Копия свидетельства о квалификация</li> <li>Копия свидетельства о поверке изме</li> <li>Доверенность</li> </ul>	Strake position	Strake breath mm	No. Org. or Thk. Let mm	Max.	Gaugeo	se Sect d Dimir F S mm	nution	Diminut S mm	tion %	Strake breath mm	No. or Let	Org Thk mm	Cond Max. Alw. Dim. mm	Gauged
Общее расположение     Сомнительные зоны	2nd Property Contraction 2nd Property Contract	имный комплекс VC	INA .					-				-	6	8
Внутренние конструкции форпика     Внутренние конструкции актерпика     Типовые писты настипа палубы бака	4th OchoBHue 5th	связи						٩					Новый	элемент
<ul> <li>Типовые писты настипа палубы юта</li> <li>Типовые писты палубы навигационн</li> <li>Типовые писты настипа другкх палуб</li> </ul>	68h 7th	Продол	верхней пал ный набор ный набор	верхней	палубы	s=10,1			30,00					

The process of drawing up of measurements in IACS recommended forms differs from the process applied in RS forms (RTM).

IACS forms require to enter average thickness in the appropriate cells. In this software it is possible to enter all measurements taken and the average thicknesses will be introduced in the table further.

1) To draw up measurements it is necessary to click appropriate cell, the software offers to enter free number of measurements (enter appropriate value, click "Enter" and so on).

🛃 Программный комплекс VOLNA 0.5.1 - 30.09.2016	-	(								
Основные сведения Совещание Формирование	е отчета Оценка тех. состояния									i
Общие сведения Протокол совещания Приложение к протоколу совещания	14 💷 🛥 🚔 🕯	0	В пред линии л ТМ2-Т(	пюковь						ания за пределани Зона значительной коррозии дней части длины Ниже допускаемой величины Выше построечной толщины
<ul> <li>Копия свидетельства о признании ко</li> <li>Копия свидетельства о квалификация</li> <li>Копия свидетельства о поверке изме</li> </ul>	Strake position	Strake breath mm	No. or Let	Org. Thk.	mm	Gau	iged S	Secti Dimin P	ution	Beog sawep_□ □ 22 Alw. Gaugec
<ul> <li>Доверенность</li> <li>Общее расположение</li> <li>Сомнительные зоны</li> </ul>	1st below sheer strake 2nd	1200	S1	20,0			19,2		6,5	0.7
Внутренние конструкции форпика     Внутренние конструкции актерпика	3rd 4th		-							18.4
<ul> <li>Типовые листы настипа папубы бака</li> <li>Типовые листы настипа палубы юта</li> </ul>	5th 6th									
<ul> <li>Типовые листы палубы навигационн</li> <li>Типовые листы настила других палуб</li> </ul>	7th 8th					_				
Самые нижние поясья и поясья на )      Все листы пояса горизонтального и	9th 10th					_				среднее значение
<ul> <li>Общивка кингстонных и ледовых ящи</li> <li>Люковые закрытия всех грузовых т</li> <li>Комингсы люковых закрытий всех гру</li> </ul>	11th 12th									18,8
Оплински поковек закрении всехтру     Дополнительные замеры толщин ш     Все поперечные переборки грузовь	keel strake					_				
<ul> <li>Весь настил палубы и подлалубный</li> <li>Дополнительные замеры толщин по</li> <li>Все поперечные рамные связи с си</li> </ul>										
Все поперечные переборки в балла-     В пределах грузовой зоны три попе     ТМ2-Т(0)     ТМ2-Т(0)										
ВЛАДИМИР РУСАНОВ ІМО:9056868 R	S-932847 Nº16 00001 180UTM	_	_	_			(Day	ur da	DAMAD	рования отчетов русско-английский 🔯
5/1 44 Min 1 / Ora 100 Mino.3030000 M	0.00001/10/0001.1000101						7130	an qu	shumb	

#### ТМ3

Tabular form TM3 is intended for drawing up of miscellaneous items related to the transverse section and which are not mentioned in the tables TM2i and TM2ii.

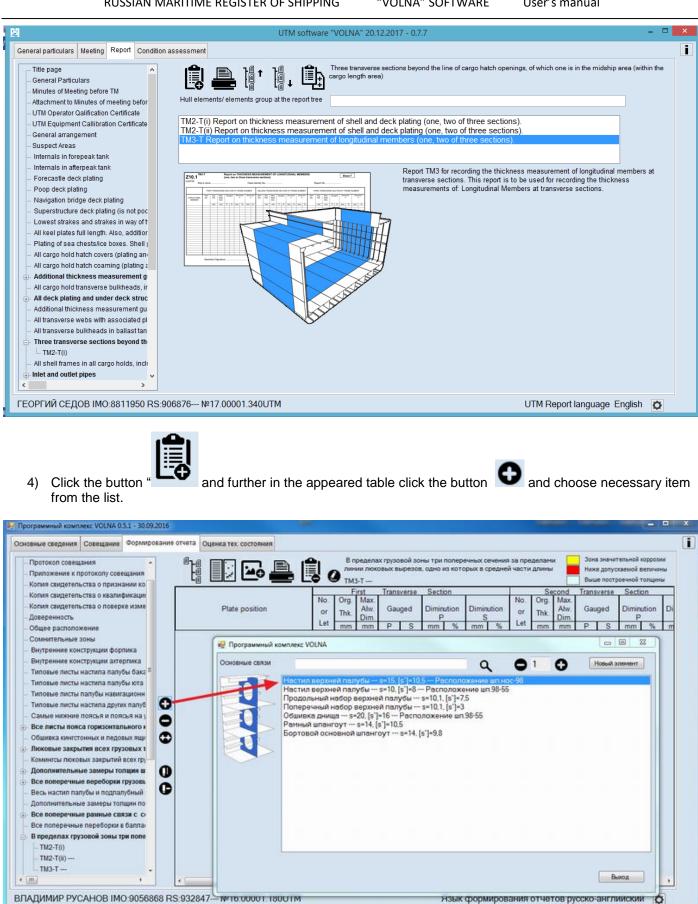
The process of drawing up of this form is the same as for forms TM 2i and TM 2ii.

- 1) In the item tree it is necessary to find and click appropriate item containing words "transverse sections" and
- Clarify location of sections on the basis of actual thickness measurements of deck and bottom plating as follows:

<u>ġ</u>	UTM software "VOLNA" 20.12.2017 - 0.7.7 – C	
General particulars Meeting Report Condition	n assessment	i
Plating of sea chests/ice boxes. Shell        All cargo hold hatch covers (plating an     All cargo hold hatch covers (plating a)	Three transverse sections beyond the line of cargo hatch openings, of which one is in the midship area (within the cargo length area)	
Additional thickness measurement g     All cargo hold transverse bulkheads, ir     All deck plating and under deck struc	ATTENTION, in accordance with RS Rules, selected section for thickness measurement should be determined as worst subject to thickness measurement of upper deck and shell plating.	
	Section, proposed by RS surveyor (fr) 45 80 120	
All transverse webs with associated pl     All transverse bulkheads in ballast tan     Three transverse sociates beyond	Worst section, subject to thickness 45 80 120 measurement of upper deck and shell plating. The line of cargo hatch openings, of which one is in the midship area (within the cargo length area)	
All shell frames in all cargo holds, incl Inlet and outlet pipes	(Should be corrected if worst section is different to section proposed by RS Surveyor)	
<ul> <li>Sea chests pipeline</li> <li>Bulkeads of superstructures, deckhous</li> <li>Companion hatch coamings and ventil</li> </ul>		
Seating of winch, windlass and capstai Chain lockers		
Cofferdams, void spaces Air and sounding pipes of ship's comp: Trunk for logs and depth sounders	ОК	
Main and auxiliary mechanism seating: Shafting tunnel		
Masts Structures of launching appliances of li Rudder blade, steering and fixed nozzle		
- Tanks located outside the double botto		
ГЕОРГИЙ СЕДОВ ІМО:8811950 RS:	906876 Nº17.00001.340UTM UTM Report language English 🔯	
🚞 🐫 🐼 🍯 🕈	- 💿 🔥 📕 🛅 🧀 O O, 🗤 🖳 🛷 📟 🗉 - 🖬 O O O O	2 111 24,1

- 3) then choose an appropriate form from the list in the following window:
- TM2i (for TM registration of primary members of deck plating, or
- TM2ii (for TM registration of primary members of bottom and deck plating or
- TM3 (for TM registration of miscellaneous items in transverse section).

User's manual



The process of drawing up of measurements in IACS recommended forms differs from the process applied in RS forms (RTM).

IACS forms require to enter average thickness in the appropriate cells. In this software it is possible to enter all measurements taken and the average thicknesses will be introduced in the table further.

5) To draw up measurements it is necessary to click appropriate cell, the software offers to enter free number of measurements (enter appropriate value, click "Enter" and so on).

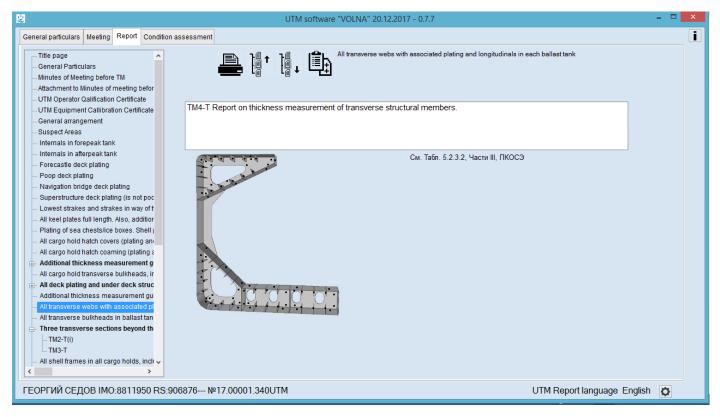
User's manual

сновные сведения Совещание Формировани	ие отчета Оценка тех. состояния			
Протокоп совещания     Приложение к протоколу совещания     Приложение к протоколу совещания     Колия свидетельства о квалификаци     Колия свидетельства о поверке изме     Доверенность     Общее расположение     Сомительные зоны     Внутренние конструкция ахтерлика     Типовые писты настила палубы бака     Типовые писты настила палубы бака     Типовые писты настила палубы канистонных и ледовых ящиенты     Типовые писты палубы канистонных и педовых ящи     Локовые закрытия всех грузовых т     Комингсы поковых закрытий всех гру     Дополнительные замеры толщин по     Все поперечные переборки грузовы     Дополнительные замеры толщин по     Все поперечные переборки в балпа-     В поределах грузовых зоны три попе     _пи2-т()	Plate position Продолыный набор верхней палубы	B пределах грузовой зоны три полерен- линия люковых вырезов, одно из которе TM3-T	ых в средней части длины Више л Second Transve No. Oro. Max. Beog замер С С State auge	начительной коррозни опускаемой величины построечной топщины rse Section

#### *TM4*

Tabular form TM4 is intended for drawing up of transverse items within ship's spaces.

During selection of an appropriate item from the tree (for instance, all transverse webs....) the following window will appear:



2) Then it is necessary to enter description of the space in the field "Tank description" and to choose appropriate form from the list as follows:

User's manual

	отчета Оценка тех. состояния	
Титульный лист Общие сведения Протокоп совещания Протокоп совещания Протокоп совещания Колия сандетельства о признании ко Колия сандетельства о поверке изме Довереность Общее расположение Соминтельные зонов Внутренне конструкции актерлика Внутренне конструкции форпика Внутренне конструкции актерлика Типовые писты настила палубы кота Типовые писты настила палубы кота Типовые писты настила палубы кота Типовые писты настила палубы кота Типовые писты настила палубы кота Самые никти настила палубы кота Самые никти настила палубы кота Самые никти носста упахогитального и Общивка кинстонных и педовых ящи Поковые закрытия всех грузовых т Команстов покосвых закрытий всех гру Дополнительные замеры топщин по Все поперечные переборки грузов Весь настип палубы и подпалубный Дополнительные замеры топщин по Все поперечные переборки в балла-	<image/>	of

3) Further in the window "LOCATION OF STRUCTURE" it is necessary to describe location of the space.

LOCATION OF STRUCTURE Fr. No.125 - 154, PS	<b>√</b> ?

4) To add the line in the table to click the button **O**, and then to choose an appropriate item:

🛃 Программный комплекс VOLNA 0.5.1 - 30.09.2016								x I
Основные сведения Совещание Формирование	е отчета Оценка тех. состояния							i
⊕ Титульный лист Общие сведения Протокоп совещания	1	Bce none nogkpenn TM4-T Ba		борки в балласт	ных танках, включая	Huck	а значительной коррозии ке допускаемой величины ие построечной топщины	
<ul> <li>Приложение к протоколу совещания</li> <li>Копия свидетельства о признании ко</li> <li>Копия свидетельства о квалификации</li> </ul>	Structural member	ltem	Original Thickness mm	Maximum Alawable Dim. mm	Gauged	Diminution P mm %	Diminution S mm %	
<ul> <li>Копия свидетельства о поверке изме</li> <li>Доверенность</li> </ul>								
<ul> <li>Общее расположение</li> <li>Сомнительные зоны</li> </ul>	Программный комплекс V Основные связи	OLNA			Q 0		Новый элемент	
Внутренние конструкции форпика     Внутренние конструкции ахтерпика     Типовые писты настила палубы бакс     Типовые писты настила палубы кота     Типовые писты настила другки палуб     Самые никтые поясья и поясья на у     Самые никие поясья и поясья на у     Собщивка канстонных и педовых ящи		ка поперечной пе;	реборки — з	=14. [s`]=9.8				
Поковые закрытия всех грузовых т Команска посеж закрытий всех гр Дополнигальные закеры толцин в Все поперечные переборки грузова Весь настии палубы и подпалубный Дополнительные замеры толцин по Весь поперечные амеры толцин по Все поперечные амеры толцин по								
Все поперечные переборки в балли — TM4-T Ballast tank No.1								
⊕ В пределах грузовой зоны три попе - <							Выход	
ВЛАДИМИР РУСАНОВ IMO:9056868 R	S:932847-					17	3	

5) To enter empty fields (item index and gauged thicknesses).

The process of drawing up of measurements in IACS recommended forms differs from the process applied in RS forms (RTM).

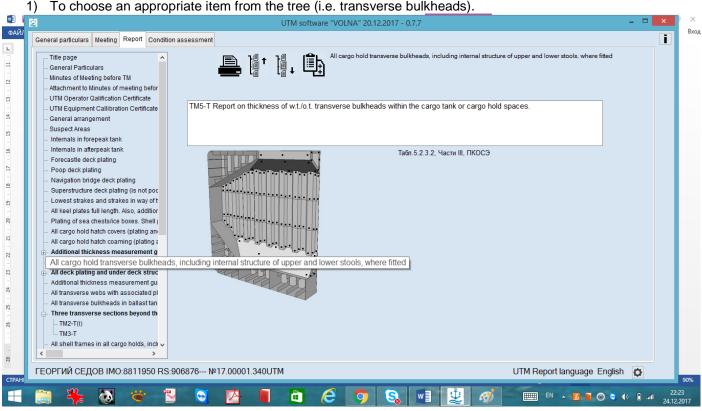
IACS forms require to enter average thickness in the appropriate cells. In this software it is possible to enter all measurements taken and the average thicknesses will be introduced in the table further.

6) To draw up measurements it is necessary to click appropriate cell, the software offers to enter free number of measurements (enter appropriate value, click "Enter" and so on).

🐖 Программный комплекс VOLNA 0.5.1 - 30.09.2016	-					-				x
Основные сведения Совещание Формирование	отчета Оценка тех. состояния									i
⊕-Титульный лист Общие сведения - Портокоп совещания	12 🗠 🚔 🚺	Boe no nogxpe TM4-T I	перечные пер плений Ballast tank No		тных танках, включа	я систему	Hate	е допускаем	ной коррозии юй вепичины юй топщины	
<ul> <li>Приложение к протокопу совещания</li> <li>Копия свидетельства о признании ко</li> <li>Копия свидетельства о квалификации</li> </ul>	Structural member	Item	Original Thickness mm	Maximum Alawable Dim, mm	Gauged	Dimir F		Dimin S		
<ul> <li>Копия свидетельства о поверке изме</li> </ul>	Общивка поперечной переборки	W1	14.0		12.9 12.9		7.9			
— Доверенность	общивка поперечной переборки	W1	14,0	4,2	12,8 12,9	1,1	7,9	1,1	7,9	
<ul> <li>Общее расположение</li> </ul>						N 💀 80	од замер	- 0	8	
Сомнительные зоны     Внутренние конструкции форпика										
<ul> <li>Внутренние конструкции актерпика</li> </ul>						3	амер			
- Типовые листы настила палубы бака						- I <b>X</b>				
– Типовые листы настила палубы юта 🚯							13,9			
– Типовые листы палубы навигационн						6	12,8			
- Типовые листы настила других палуб							12			
— Самые нижние поясья и поясья на у 😨										
Все листы пояса горизонтального к										
<ul> <li>Общивка кингстонных и ледовых ящи</li> </ul>										
Элоковые закрытия всех грузовых т П										
- Комингсы люковых закрытий всех гру Дополнительные замеры толщин ш								1		
								начение		
<ul> <li>Все поперечные переборки грузовь</li> <li>Весь настил палубы и подлалубный</li> </ul>							2.9	пачонис	'	
<ul> <li>Весь настил палуоы и подпалуоныи</li> <li>Дополнительные замеры толщин по</li> </ul>							-,0			
						11.0				
Все поперечные переборки в балла							▲ġ ((	כ		
TM4-T Ballast tank No.1								-		
В пределах грузовой зоны три попе -						_				
·										
ВЛАДИМИР РУСАНОВ ІМО:9056868 R	S:932847 №16.00001.180UTM			Язык	формирования	отчетов	в русско-	английс	кий 🖸	-

#### TM5

Tabular form TM5 is intended for drawing up of measurements of transverse bulkheads in cargo holds.



To choose an appropriate item from the tree (i.e. transverse bulkheads).

2) To describe the space in the field "Tank description" and to choose form from the list as follows.

User's manual

UTM software "VOLNA" 20.12.2017 - 0.7.7		
General particulars       Meeting       Report       Condition assessment         Title page       General Particulars       All cargo hold transverse bulkheads, including internal structure of upper and lower stools, where         Minutes of Meeting before TM       Attachment to Minutes of meeting before         UTM Operator Calification Certificate       General arrangement         Suspect Areas       Internals in forepeak tank	, fitted	
<ul> <li>Internation in offerpeak tanks</li> <li>Internation in afterpeak tanks</li> <li>Forecastle deck plating</li> <li>Poop deck plating</li> <li>Superstructure deck plating (is not pool</li> <li>Lowest strakes and strakes in vay of the additional strakes in vay of the additional strakes in vay of the additional thickness measurement of a cargo hold hatch covers (plating and under deck structure deck structure additional thickness measurement of additional thickness</li></ul>		of
ГЕОРГИЙ СЕДОВ IMO:8811950 RS:906876 №17.00001.340UTM UTM Report language	English	ð

3) Then, in the appeared window "LOCATION OF STRUCTURE" to enter information on location of the space.

LOCATION OF STRUCTURE Frs No.125 - 154, PS	✓ ?
FRAME NO.: 125	

4) To add a line in the table to click the button **O**, and further to choose an appropriate item.

User's manual

🛃 Программный комплекс VOLNA 0.5.1 - 30.09.2016		-							-			• x
Основные сведения Совещание Формирование	отчета Оценка тех	состояния										i
Титульный лист     Общие сведения     Протокоп совещания		🗠 🚔 [	0		е поясья и поясь вреборок в грузон ank No.1				scex	Ниже д	начительной корроз опускаемой величи гостроечной топщин	ны
<ul> <li>Приложение к протоколу совещания</li> <li>Колия свидетельства о признании ко</li> <li>Колия свидетельства о квалификации</li> </ul>	Structu	ral member	Index	Original Thickness	Maximum Alawable	Gauç			inution P		nution S	
-Копия свидетельства о поверке изме				mm	Dim. mm	Р	S	mm	%	mm	%	
<ul> <li>Доверенность</li> <li>Общее расположение</li> </ul>		Программный комп	Mexic VOLM	A							00	
Сощее расположение     Сомнительные зоны     Е		Основные связи					C	٦.	01	0	Новый элемен	
<ul> <li>Внутренние конструкции форпика</li> </ul>			бшивка г	оперечной п	ереборки s=`	14, [s`]=9,8						
<ul> <li>Внутренние конструкции актерпика</li> <li>Типовые листы настила палубы бака</li> </ul>												
— Типовые листы настила палубы юта 💽												
<ul> <li>Типовые листы палубы навигационн</li> <li>Типовые листы настипа других палуб</li> </ul>												
Самые нижние поясья и поясья на з												
TM5-T Ballast tank No.1												
Все листы пояса горизонтального												
Общивка кингстонных и ледовых ящи     Общивка кингстонных и ледовых ящи     Общивка кингстонных и ледовых ящи												
Комингсы люковых закрытий всех гру												
Э- Дополнительные замеры толщин ш												
Все поперечные переборки грузовь												
<ul> <li>Весь настил палубы и подпалубный</li> <li>Дополнительные замеры топщин по</li> </ul>												
Все поперечные рамные связи с с												
Все поперечные переборки в балла												
<ul> <li>В пределах грузовой зоны три попе –</li> </ul>											Вьоход	
× m →	L						_	_				a.
ВЛАДИМИР РУСАНОВ IMO:9056868 R	S:932847 №16	6.00001.180UTM			5	Язык фо	рмиров	ания от	гчетов	русско-ан	нглийский 🕻	¥

5) To draw up empty fields (item index and gauged thicknesses).

The process of drawing up of measurements in IACS recommended forms differs from the process applied in RS forms (RTM).

IACS forms require to enter average thickness in the appropriate cells. In this software it is possible to enter all measurements taken and the average thicknesses will be introduced in the table further.

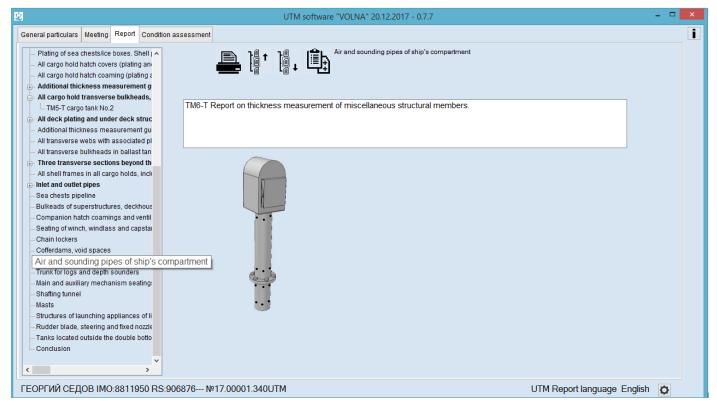
6) To draw up measurements it is necessary to click appropriate cell, the software offers to enter free number of measurements (enter appropriate value, click "Enter" and so on).

Программный комплекс VOLNA 0.5.1 - 30.09.2016 Основные сведения Совещание Формирование	отчета Оценка тех, состояния									-		×
Титульный лист     Общие сведения     Потокоп совещания	11 🖸 🛥 🚔 🚺	0	Самые нижни поперечных п TM5-T Ballast	е поясья и поясь ереборок в грузо tank No.1				icex	Ниске да	ачительной пускаемой і остроечной	величины	
<ul> <li>протокон совещания</li> <li>Приложение к протоколу совещания</li> <li>Копия свидетельства о признании ко</li> <li>Копия свидетельства о квалификации</li> </ul>	Structural member	Index	Original Thickness	Maximum Alawable		uged	F	-	Dimir	3		
Копия свидетельства о поверке изме			mm	Dim. mm	Р	S	mm	%	mm	%		
_Доверенность	Обшивка поперечной переборки	W1	14,0	4,2	13,4	13,6	0,6	4,3	0,4	2,9		
<ul> <li>Общее расположение</li> </ul>	Обшивка поперечной переборки	W2	14,0	4,2	13,4	13,7	0,6	4,3	0,3	2,1		
Сомнительные зоны	Обшивка поперечной переборки	W3	14,0	4,2	13,3	13,1	0,7	Ввод заме		3 23	1	
<ul> <li>Внутренние конструкции форпика</li> </ul>	Обшивка поперечной переборки	W4	14,0	4,2	13,7		0,3	our and	Part			
<ul> <li>Внутренние конструкции ахтерпика</li> </ul>								Замер	13.9			
<ul> <li>Типовые листы настипа палубы бака</li> </ul>									10,0			
– Типовые писты настила палубы юта 🖸								13.4	1			
<ul> <li>Типовые листы палубы навигационн</li> <li>Типовые листы настила других палуб</li> </ul>								13.8	3			
Самые нижние поясья и поясья на з												
- TM5-T Ballast tank No.1												
Все листы пояса горизонтального												
– Обшивка кингстонных и ледовых ящи 🕕								_				
С. Пютовые заклытия всех глизовых т												
Комингсы люковых закрытий всех гру								_	~	2		
Дополнительные замеры толщин ш												
Все поперечные переборки грузовь									е значе	ние		
<ul> <li>Весь настил палубы и подпалубный</li> </ul>								13,6				
<ul> <li>Дополнительные замеры толщин по</li> </ul>								_	$\sim$			
Все поперечные рамные связи с о								140	$(\mathbf{C})$			
Все поперечные переборки в балла												
В пределах грузовой зоны три попе -							Ľ			£.		
·	L						_	_	_	_		1
ВЛАДИМИР РУСАНОВ IMO:9056868 R	S:932847 №16.00001.180UTM			1	Язык фо	ормиров	ания от	четов р	усско-ан	глийски	й <mark>Ф</mark>	

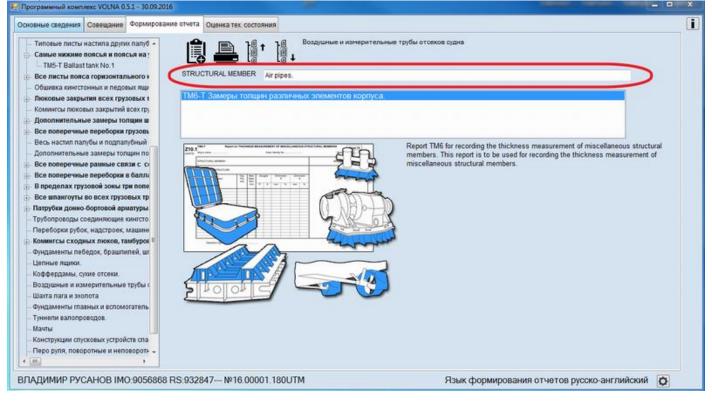
#### TM6

Tabular form TM6 is intended for drawing up of miscellaneous items which are not mentioned in forms TM1-TM5, TM7 and TM7(31).

1) To choose relevant item from the tree (for instance, air and sounding pipes)



#### 2) To describe the structural member in the field "STRUCTURAL MEMBER".

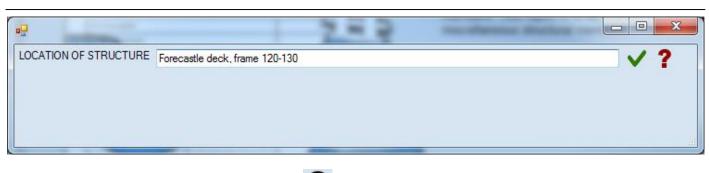


3) Further, in the window "LOCATION OF STRUCTURE" to enter necessary in formation on location of the structure, for example:

RUSSIAN MARITIME REGISTER OF SHIPPING

**"VOLNA" SOFTWARE** 

User's manual



4) item.

To add a line in the table to click the icon , and further in the appeared window to select an appropriate

	отчета Оценка тех. состоя									
Сомнительные зоны	1 🛛 🖂		Воздушные и и	змерительные т	рубы отсеков судна	_	Зона значительной корроз Ниже допускаемой величи			
<ul> <li>Внутренние конструкции форпика</li> </ul>			THE TAIL			_	Выше построечной толщин			
<ul> <li>Внутренние конструкции ахтерпика</li> </ul>								_		
Типовые листы настила палубы бака			Original	Maximum	Gauged	Diminution	Diminution			
Типовые листы настила палубы юта	Structural men	iber Ind	ex Thickness	Alawable		P	S			
Типовые листы палубы навигационн			mm	Dim. mm	P S	mm %	mm %			
<ul> <li>Типовые листы настила других палуб</li> </ul>		рограммный комплекс	VOLNA			_		23		
Самые нижние поясья и поясья на з		Por parameters scowithics.	TOUTH				(21-1			
Все листы пояса горизонтального и	Осно	вные связи					Новый элеме	тнт		
Общивка кингстонных и педовых ящи		Стенка воздушной трубы / выгородки [Диаметр 150мм, шп. 125-130] s=12, [s']=8.4 (Шп. № -)								
<ul> <li>Люковые закрытия всех грузовых т</li> <li>Комингсы люковых закрытий всех гру</li> </ul>		Стенка воздушной трубы / выгородки (Диаметр 150/ни, шл.125-130) — s=12, (s)=6, (Шл. № -) Стенка воздушной трубы / выгородки (Диаметр 129/ни, (шл.120-130) — s=10, (s)=7-(Шл. № -)								
Дополнительные замеры толщин ш										
Все поперечные переборки грузовь										
Вась изстип полибы и поплолибный										
Дополнительные замеры толщин по										
Все поперечные рамные связи с си										
Все поперечные переборки в балла										
В пределах грузовой зоны три попе										
Все шпангоуты во всех грузовых тр 🅕										
Demodeus nause finnense ansemus s										
Трубопроводы соединяющие кингсто										
Переборки рубок, надстроек, машини										
Комингсы сходных люков, тамбурог										
Комингсы сходных люков, тамбуров										
- Комингсы сходных люков, тамбурог Фундаменты лебедок, брашпилей, шг										
<ul> <li>Комингсы сходных люков, тамбурог</li> <li>Фундаменты лебедок, брашпилей, шг</li> <li>Цепные ящики.</li> </ul>										

5) To draw up empty fields (item index, gauged thicknesses).

The process of drawing up of measurements in IACS recommended forms differs from the process applied in RS forms (RTM).

IACS forms require to enter average thickness in the appropriate cells. In this software it is possible to enter all measurements taken and the average thicknesses will be introduced in the table further.

6) To draw up measurements it is necessary to click appropriate cell, the software offers to enter free number of measurements (enter appropriate value, click "Enter" and so on).

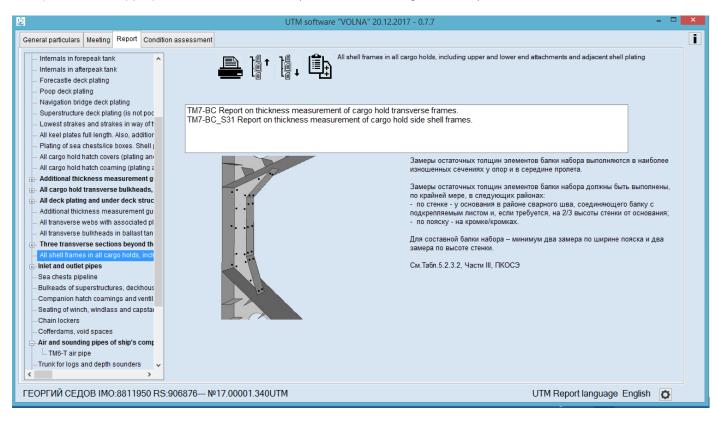
User's manual

Программный комплекс VOLNA 0.5.1 - 30.09.2016     Основные сведения Совещание Формирование	отчета Оценка тех. состояния											×
Сомнительные зоны     Внутренние конструкции форпика     Внутренние конструкции ахтерпика	1 🕞 🛥 🚊	0	Воздушные и і TM6-T Air pipe	камерительные т s.	грубы отсе	ков судна			Ниске до	ачительной опускаемой остроечной	величины	
<ul> <li>Типовые листы настила палубы бака</li> <li>Типовые листы настила палубы юта</li> <li>Типовые листы палубы навигационн</li> </ul>	Structural member	Index	Original Thickness	Maximum Alawable	Gau		Dimir F		5	-		
- Типовые листы настила других палуб			mm	Dim. mm	Р	S	mm	%	mm	%		
— Самые нижние поясья и поясья на з	Стенка воздушной трубы / выгородки [Ди	Section 1		3,6	11,3	10,6	0,7	5,8	1,4	11,7	-	
Все листы пояса горизонтального и Все листы пояса горизонтального и С пояса горизонтального и С пояса и С пояса горизон и С пояса и С пояса и С п	Стенка воздушной трубы / выгородки [Ди	Section 2		3,6	10,6	11,0	1,4	11,7	1,0	8,3		
<ul> <li>Общивка кингстонных и ледовых ящи</li> </ul>	Стенка воздушной трубы / выгородки [Ди	Section 3	12,0	3,6	10,5	10,7	1,5	12,5	1,3	10,8		
Э- Люковые закрытия всех грузовых т — Комингсы люковых закрытий всех гру							🛛 🖉 B	вод замер.	0	8		
Дополнительные замеры толщин ш												
Все поперечные переборки грузовь								Замер				
Data second second second second								_		_		
<ul> <li>Весь настил палуоы и подпалуоныи</li> <li>Дополнительные замеры толщин по</li> </ul>								10,4				
💮 Все поперечные рамные связи с ос 🔂								10,8				
Все поперечные переборки в балла								10,8				
В пределах грузовой зоны три попе												
🕀 Все шпангоуты во всех грузовых тр 🌐												
<ul> <li>Патрубки донно-бортовой арматуры</li> <li>Трубопроводы соединяющие кингсто</li> </ul>												
<ul> <li>Переборки рубок, надстроек, машини</li> </ul>									~	?		
• Комингсы сходных люков, тамбурог								реднее	значен	40		
<ul> <li>Фундаменты лебедок, брашпилей, шт</li> </ul>								0.7	0.10 1011			
— Цепные ящики.												
<ul> <li>Коффердамы, сухие отсеки.</li> <li>Воздилици на и изморитори и на точби.</li> </ul>							1		2			
<ul> <li>Воздушные и измерительные трубы</li> <li>TM6-T Air pipes.</li> </ul>								₩ê ((	$\mathbf{O}$			
< m >										0		
	C-022947 No16 00001 1901 ITM								00000 000	rouñora	a 👝	1
ВЛАДИМИР РУСАНОВ IMO:9056868 R	5.85204/ Nº 10.00001.16001M			,	Язык фо	лимиров	ания от	четовр	сско-ан	плииски	й <b>Ф</b>	

#### *TM7*

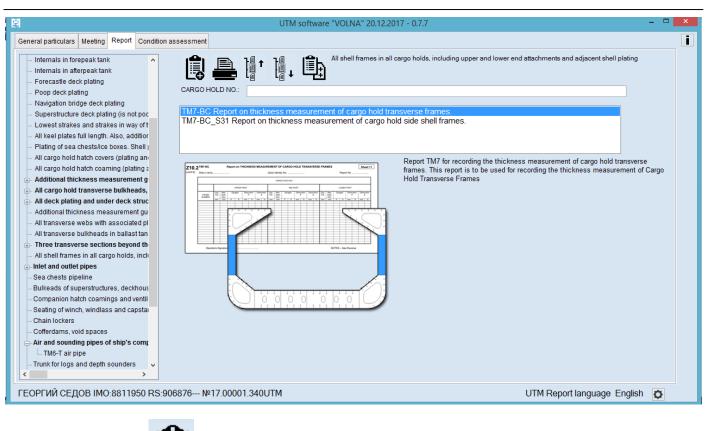
Tabular form TM7 is intended for drawing up of cargo hold side shell frames.

1) To select appropriate item from the tree (shell frames in cargo holds....)



2) To select an appropriate form (TM7-BC) and enter cargo hold No, in the field "CARGO HOLD No."

User's manual







3) Click the button and then to add the line click the icon
4) Further in the appeared table to choose an appropriate item.

овные сведения Совещание Формирование	отчета Оценка тех. со	стояния											
Копия свидетельства о квалификация - Копия свидетельства о поверке изме		- E		ниски		е соединения	ых трюмах, вк и примыкающ				Ниже допус	тельной коррозн жаемой Величин роечной толщин	ны
Доверенность			1000	ALC: 101	UPPER	PART				MID	PART		T
Общее расположение Сомнительные зоны	Frame n	umber	Org	Max. Alw.	Gauged	Diminution	Diminution	Org.	Max. Ahv.	Gauged	Diminution	Diminution	0
Внутренние конструкции форпика			Thk.	Dim.	onegee	P	S	Thk.	Dim.	oungen	P	S	Т
Внутренние конструкции актерпика			mm	mm	PS	mm %	mm S	mm	mm	PIS	mm S	mm %	1 1
Типовые листы настила палубы бака		Программный ко	мплекс V	OLNA								00	22
Типовые листы настипа палубы юта	1	Основные связи						0	a	01	0	Новый элемен	нт
Типовые листы палубы навигационн			-							•	•		Personal R
Типовые листы настила других палуб	8		Бортов	ой осн	овной шпак	нгоут s=14	. [s]=9.8						
Самые нижние поясья и поясья на			-										
Все листы пояса горизонтального 🛙 🏹 🥿													
Общивка кингстонных и ледовых ящи													
Люковые закрытия всех грузовых т													
Комингсы люковых закрытий всех гру													
Дополнительные замеры толщин ш 🛛 😳													
Все поперечные переборки грузовь													
Весь настип палубы и подпалубный													
Дополнительные замеры топщин по 🏾 🕕													
Rea nononeuru la nativu la censu c. ce													
Все поперечные переборки в балла													
В пределах грузовой зоны три попе													
Last sector of the sector sect													
Last sector of the sector sect													
Все шпангоуты во всех грузовых тр — TM7-BC CARGO HOLD NO.:1													
Все шпангоуты во всех грузовых тр — ТМ7-ВС CARGO HOLD NO.1 Патрубки донно-бортовой арматуры			-										
Все шпангоуты во всех грузовых тр — ТМ7-ВС CARGO HOLD NO.:1 Патрубки донно-бортовой арматуры Грубопроводы соединяющие кингсто			-										
Все шпангоуты во всех грузовых тр — ТМ7-ВС CARGO HOLD NO.:1 Патрубки донно-бортовой арматуры			-									Выход	_

5) To draw up empty fields (frame number and gauged thicknesses).

The process of drawing up of measurements in IACS recommended forms differs from the process applied in RS forms (RTM).

IACS forms require to enter average thickness in the appropriate cells. In this software it is possible to enter all measurements taken and the average thicknesses will be introduced in the table further.

User's manual

6) To draw up measurements it is necessary to click appropriate cell, the software offers to enter free number of measurements (enter appropriate value, click "Enter" and so on).

Программный комплекс VOLNA 0.5.1 - 30.09.2016	-	<u>.</u>										-	-	-			•	x
Основные сведения Совещание Формирования	ие отчета Оценка тех. состояния																	
<ul> <li>Копия свидетельства о квалификации </li> <li>Копия свидетельства о поверке изме</li> <li>Доверенность</li> </ul>	°la 📄 🛥 🚔 [			оние ко 7-ВС С/	HLEBA	е соеди HOLD N							ay 📕	Ниже Выше	допуск	ельной корро звемой велич оечной толци	ины	
<ul> <li>Общее расположение</li> </ul>		010	Max.	UF	PER	PAR	ar 🛛			Org.	Max.	_	MID	PART				
<ul> <li>Сомнительные зоны</li> <li>Внутренние конструкции форпика</li> </ul>	Frame number	Org. Thk.	Alw. Dim.	Gau	ged	Dimir		Dimin S		Thk.	Alw. Dim.	Gau	uged	Dimin P	tion	Diminution S	П	
<ul> <li>Внутренние конструкции актерпика</li> </ul>		mm	mm	Ρ	S	mm	%	mm	%	mm	mm	Ρ	S	mm	%	mm %	n	
<ul> <li>Типовые листы настила палубы бака</li> </ul>	1	14,0	4,2	12,9	13,8	1,1	7,9	0,2	1,4	14,0	4,2	13,7	Beog	замер		• *	14	
<ul> <li>Типовые листы настила палубы юта</li> </ul>	2	14,0	4,2	13,7	13,0	0,3	2,1	1,0	7,1	14,0	4,2	13,			-		14	
<ul> <li>Типовые листы палубы навигационн</li> </ul>	3	14,0	4,2	13,7	13,9	0,3	2,1	0,1	0,7	14,0	4,2	13,	3ar	мер	13,8	8	14,	
<ul> <li>Типовые листы настила других палуб</li> </ul>																		
<ul> <li>Самые нижние поясья и поясья на з развити поясья на заправлять на з При на заправлять на заправл При на заправлять на заправ При на заправлять на заправ На заправлять на з При на заправлять на заправл На заправлять на з При на заправлять на заправл На заправлять на заправлять на заправлять на за</li></ul>												- 11		13,8				
Все листы пояса горизонтального »     Обшивка кингстонных и ледовых ящи												- 11	•	13,7				
												- 11	•					
Люковые закрытия всех грузовых т Комингсы люковых закрытий всех гру												- 11						
<ul> <li>Дополнительные замеры толщин ш</li> </ul>	5											- 11						
• Все поперечные переборки грузовь	·											- 11						
<ul> <li>Весь настил палубы и подпалубный</li> </ul>												- 11						
— Дополнительные замеры толщин по 🕕															~	?		
Все поперании на рании на свези с ст													000	nuoo (	-	-		
<ul> <li>Все поперечные рамкые сыли с сод</li> <li>Все поперечные переборки в балла</li> </ul>	,												13,8	днее : :	shave	BING		
В пределах грузовой зоны три попе													13,0	,				
<ul> <li>Все шпангоуты во всех грузовых тр</li> </ul>													_	- 1				
- TM7-BC CARGO HOLD NO.:1													24	<b>ė (</b> (	3)			
Патрубки донно-бортовой арматуры.													_	- 4				
<ul> <li>Трубопроводы соединяющие кингсто</li> </ul>												C	_	_	_			
<ul> <li>Переборки рубок, надстроек, машини</li> </ul>																		
<ul> <li>Комингсы сходных люков, тамбурот -</li> </ul>																		
·	•		1								_						•	
ВЛАДИМИР РУСАНОВ ІМО:9056868 R	ВЛАДИМИР РУСАНОВ IMO:9056868 RS:932847 №16.00001.180UTM Язык формирования отчетов русско-английский 🔯																	

# TM7 (S31)

Tabular form TM7 (S31) is intended for drawing up measurements of cargo hold side shell frames on bulk carriers for which UR S31 applies.

1) To select an appropriate item from the tree (shell frames in cargo holds).

	UTM software "VOLNA" 20.12.2017 - 0.7.7	- 🗆 🗙
General particulars Meeting Report Condition	on assessment	i
Internals in afterpeak tank     Forecastle deck plating     Poop deck plating	All shell frames in all cargo holds, including upper and lower end attachments and adjacent shell plating	
<ul> <li>Navigation bridge deck plating</li> <li>Superstructure deck plating (is not poc</li> <li>Lowest strakes and strakes in way of t</li> <li>All keel plates full length. Also, addition</li> <li>Plating of sea chests/ice boxes. Shell j</li> </ul>	CARGO HOLD NO.: TM7-BC Report on thickness measurement of cargo hold transverse frames. TM7-BC_S31 Report on thickness measurement of cargo hold side shell frames.	
All cargo hold hatch covers (plating an     All cargo hold hatch coaming (plating a     All cargo hold hatch coaming (plating a     Additional thickness measurement g	Z10.2         NUT OC SLIT Report to TROCORSES WARAUMENEEDT OF CARGO PROJ. BREE SHELL FRAMES         Descrition         Report TM7-S31 for recording thickness measurement of cargo hold side shell frames under UR S31. This report is to be used for recording the thickness measurement of Cargo hold Transverse Frames for application of UR S31	
<ul> <li>All deck plating and under deck struc</li> <li>Additional thickness measurement gu</li> <li>All transverse webs with associated pl</li> <li>All transverse bulkheads in ballast tan</li> </ul>		
Three transverse sections beyond th     All shell frames in all cargo holds, inc     Tirree CARGO HOLD NO1     Inlet and outlet pipes     Sea chests pipeline	Description for the second sec	
Sea create preserve of the second secon	A 0.25h	
Cofferdams, void spaces     Gardans, void spaces     Air and sounding pipes of ship's comp     Trunk for logs and depth sounders     Main and auxiliary mechanism seating:      ✓		
< >		
ГЕОРГИЙ СЕДОВ IMO:8811950 RS	:906876 №17.00001.340UTM UTM Report language English	Ø

2) To enter cargo hold No. In the field "CARGO HOLD No." and choose form TM7-BC-S31

User's manual

овные сведения Совещание Формирова	ние отчета Оценка тех. состояния
Копия свидетельства о поверке изме - Доверенность Общее расположение Сомнительные зоны Внутренние конструкции форпика Внутренние конструкции форпика Бнутренние конструкции актерпика Типовые писты настила палубы бака Типовые писты настила палубы кта Типовые писты настила палубы кта	Сапсолнительные замеры толщин шпангоутов и их концевых соединений в грузовых тримах (ACS UR S31) Сапсо HoLD No: 1 ТМ7-ВС Замеры толщин шпангоутов грузовых тримов. ТМ7-ВС S31-Замеры толщин шпангоутов грузовых тримов (S31)
пловые писты настила других палуб Самые нихимие поясья и поясья на Все писты пояса горизонтального о Общинах анисточных и перевых лаци Люковые закрытия всех грузовых т Коминесы писковых закрытий сех гру Доволинительные закирытий сех гру Доволинительные закирытий сех гру Све полеречные переборки г балла Все полеречные переборки в балла Все полеречные переборки в балла Все полеречные переборки в балла Все полеречные переборки в балла В пределах грузовой зоны три пое Все полеречные переборки в балла В пределах грузовой зоны три пое Все шанктоуты во всех грузовых тр Патрубка домо-борговой ариатуры Пороборки рубок, надстроек, машин Коминска скорных люкос, тайбурог Фундаменты лебедок, брашлилей, иг целные лациюх.	212 With the restrict transmer of control and and the transmer of transport is to be used for recording the thickness measurement of cargo hold aide shell frames under UR 331. This report is to be used for recording the thickness measurement of Cargo Hold Transverse Frames for application of UR 331.
АДИМИР РУСАНОВ ІМО:9056868	RS:932847№16.00001.180UTM Язык формирования отчетов русско-английский 🔯

3) To enter side of the ship in the window as follows (PS or STBD) and click

•		
Side (Port/stb.):	PS	✓ ?

4) Further the following table will be created containing information from the file with norms. It s necessary to add gauged thicknesses in the rows (tm) for each zone.

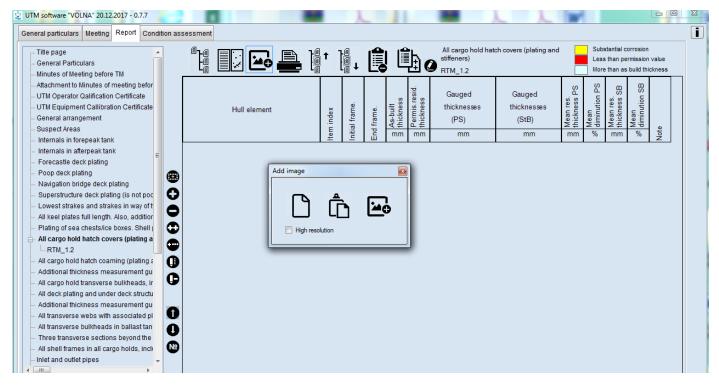
итульный лист Общие сведения Тротокоп совещания	1		До сое ТМ	дине 7-ВС_	ний в .831 (	rpyso ARG	вых тр	а толщие номах (И D NO.:1						Hate	а значит ке допус ше постр	каемой	величин топщин	ы
Триложение к протоколу совещания	Frame	Org	tren		NE .		Dimir	ution	Org	tren	tcoat	EB	Dimi	nution	Ora.	tren	ZON tcoat	
Сопия свидетельства о признании ко		Thk.	angen (	1000	- ·		China	auton .	Thk	in with	1001	ATEL	Unit	ouron .	Thk.	arson.	10011	T
Сопия свидетельства о квалификации	No.	-	-				-	1	-			2			12	-	2	+
Сопия свидетельства о поверке изме		10,0	8	mm e	9.2		<u>mm</u>	%	10.0	8	mm	 9,4	mm	%	mm 10.0	mm	 9	-
Товеренность	1	100000000	8	9	9,4	-	9 5	5		8	9	9,6	0,0	0		8	9	9.
Общее расположение	2	10,0	-	9	9,5				10,0	-	9	9,0	0,4	9	10.0	8	-	-
Сомнительные зоны	3	10,0	8	-	41.		1	3	10,0	8	- I		0,3	3	10,0	8	9	9,
Внутренние конструкции форпика	4	10,0	8	9	9,9	-	-	1	10,0	8	9	9,8	0,2	2	10,0	8	9	9,
Внутренние конструкции ахтерпика Типовые писты настила палубы бака	5	10,0	8	9	9,1	1	9	9	10,0	8	9	9,5	0,5	5	10,0	8	9	9.
Типовые писты настипа палубы юта	6	10,0	8	9	9,4	¢	6	6	10,0	8	9	9,9	0,1	1	10,0	8	9	9.
Tunner in an an an and in the second second		10,0	8	9					10,0	8	9	1			10,0	8	9	1
Типовые листы настипа других палуб	8	10,0	8	9		_			10,0	8	9		-		10,0	8	9	
Самые нижние поясья и поясья на у	9	10,0	8	9					10,0	8	9				10,0	8	9	
Все листы пояса горизонтального	10	10,0	8	8					10,0	8	9				10,0	8	9	
Общивка кингстонных и ледовых ящи	11	10,0	8	9					10,0	8	9			8 3	10,0	8	9	
Пюковые закрытия всех грузовых т	12	10,0	8	9					10,0	8	9				10,0	8	9	
Concerning a manufactor of a damage course and	12	10,0	8	9					10,0	8	9				10,0	8	9	
Дополнительные замеры толщин ш	14	10,0	8	9					10,0	8	9			Ş	10.0	8	9	Г
RTM_1.5 CARGO HOLD NO.:1	15	10,0	8	9					10,0	8	9				10.0	8	9	
TM7-BC_S31 CARGO HOLD NO.:1	16	10,0	8	9					10,0	8	9				10,0	8	9	T
Все поперечные переборки грузовь	17	10,0	8	9					10,0	8	9			1 0	10,0	8	9	t
Весь настил палубы и подпалубный	18	10.0	8	9					10.0	8	9			1	10.0	8	9	t
Дополнительные замеры толщин по	19	10.0	8	9					10.0	8	9				10.0	8	9	t
Все поперечные рамные связи с с	20	10.0	8	9		1			100000	8	9				10.0	8	9	t
Все поперечные переборки в балла- 🚽			-	-	1	1		-		-	-			-		-		-

# 2 Attachment of sketches

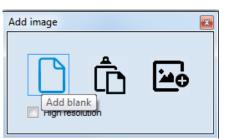
# 2.1 Attachment of ready-made figure.

1) To attach figure it is necessary choose appropriate tabular form in the tab "Report" and to click icon





2) To choose applicable option for creation of sketch as follows:



2.1) to create new figure with the software "VOLNA" choose icon

Add image	×
Insert from clipboard	l

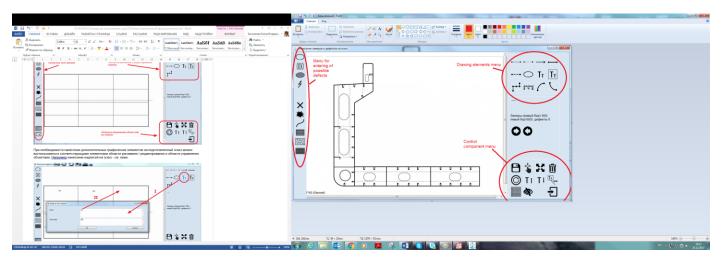
2.2) to insert figure from a clipboard



- 2.3) To attach ready-made figure
  - 3) If option 2.3 is chosen it is necessary to select relevant file with figure from a computer folder (file shall be of jpg, bmp, tif, PDF format).

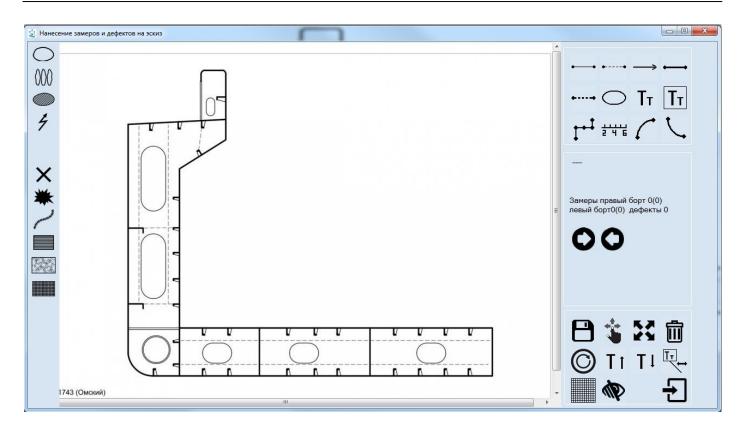
🔾 🗢 🔚 🕨 Библио	теки 🕨 Изображения 🕨		🔻 🍫 Поиск: Изоб	іражения
порядочить 🔻 Нов	ная папка			•
Избранное	Библиотека "Изображения"		Voonga	очить: Папка 🔻
🔠 Недавние места 😑	Включает: 3 места		лоряд	
〕 Загрузки				
	<ul> <li>Изображения (пусто)</li> <li>С:\Пользователи\002bas</li> </ul>			
Рабочий стол	C. (TIO/IBSOBATE/IN/002Das			
詞 Библиотеки		Эта папка пуста.		
📑 Видео				
📑 Документы	<ul> <li>Общие изображения (2)</li> </ul>			
📔 Изображения	С:\Пользователи\Общие			
👌 Музыка				
🚺 Баскакова Елена				
📜 Компьютер				
🏭 Windows (C:)				
work (D:)				
🔮 DVD RW диско	NVIDIA Образцы			
TOSHIBA (F:)	Corporation изображений			
DB002 (\\rshea 👻				
14	файла:		✓ All Graphics 1	

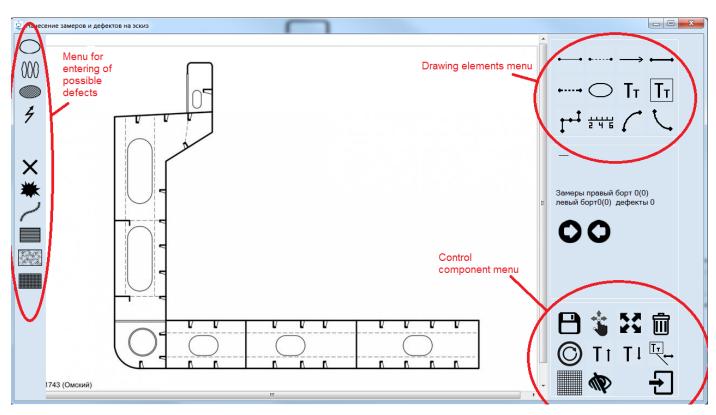
4) Under relevant item in the tree a new item with figure will be created. By clicking on it the view mode will be available.





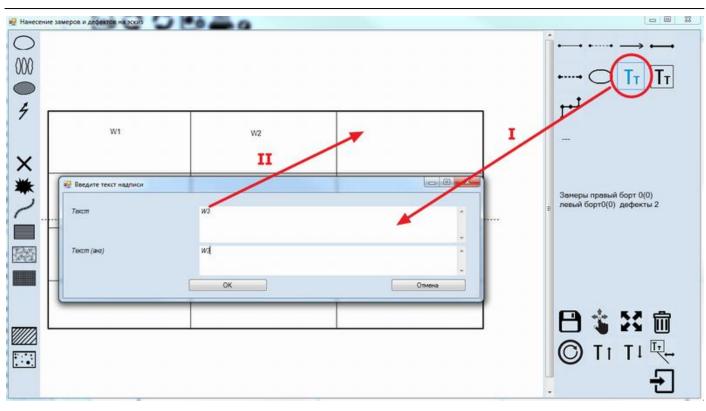
5) To amend sketch it is necessary to enter editor mode by clicking on icon





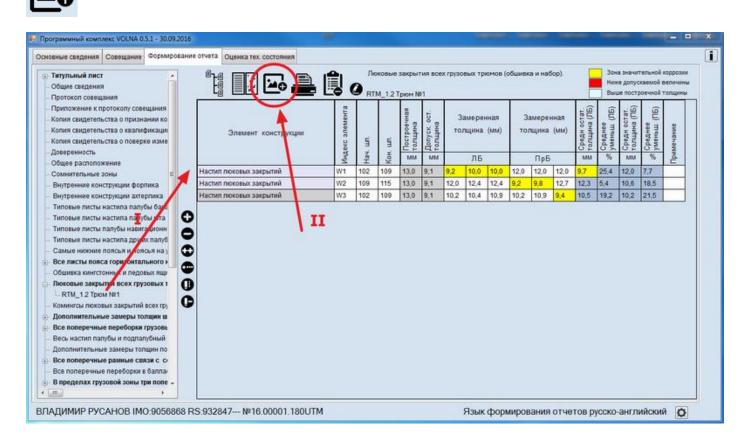
6) To add necessary graphic item on the ready-made sketch to use the "Drawing element menu"/ "Control component menu", for instance to add the text:

User's manual

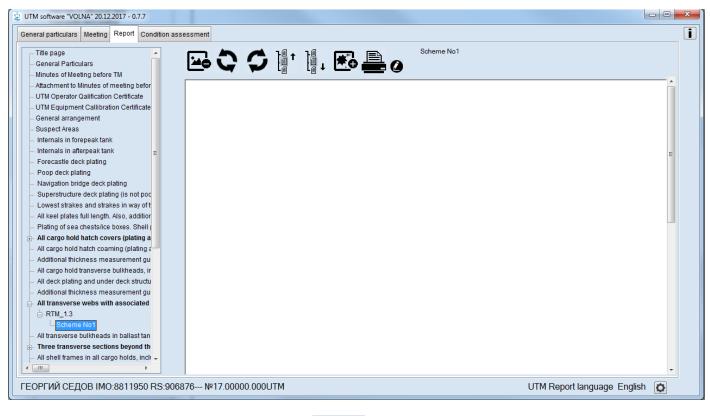


#### 2.2 New sketch creation:

1) To create new sketch – to select appropriate tabular form from the tree of tab "Report" and click the button



- $\square$
- 2) Then to choose an appropriate option for creation of sketch and click "Add blank"-
- 3) The new item «Scheme No.» will appear in the tree and white zone in the right part of the screen as follows:





4) Then move to editor mode by clicking icon

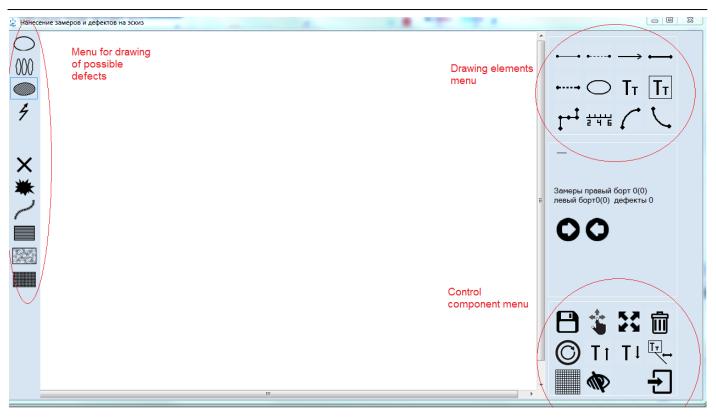
🖳 Программный комплекс VOLNA 0.5.1 - 30.09.2016		- • · ×
Основные сведения Совещание Формирование от	чета Оценка тех: состояния	i
Тигульный лист     Общие сведения     Протокол совещания		
<ul> <li>Приложение к протоколу совещания</li> <li>Копия свидетельства о признании ко</li> <li>Копия свидетельства о квалификаци</li> <li>Копия свидетельства о поверке изме</li> </ul>	п	Î
— Доверенность — Общее расположение — Соминтельные зоны — Внутренние конструкции форпика		
— Внутренние конструкции актерпика — Типовые писты настипа папубы бака — Типовые писты настипа папубы юта — Типовые писты папубы навигационн		E
<ul> <li>Типовые писты настипа друпк палуб</li> <li>Самые нижние поясыя и поясыя на )</li> <li>Все писты пояса горизонтального )</li> <li>Общивка кингстонных и ледовых ящи</li> </ul>	I	
Поковне закрытия всех грузовых :     ETIL 1.2 Торых №1     Const №1      Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Const №1     Cons		
<ul> <li>Дополнительные замеры толщии в</li> <li>Все поперечные переборки грузовь</li> <li>Весь настил палубы и подлалубный</li> <li>Дополнительные замеры толщин по</li> </ul>		J
Все поперечные рамные связи с сі     Все поперечные переборки в баллаі -     «      т.      н.		-
ВЛАДИМИР РУСАНОВ ІМО:9056868 RS:	932847 №16.00001.180UTM Язык формирования отчетов русско-английский	٥

5) The editor window will appear:

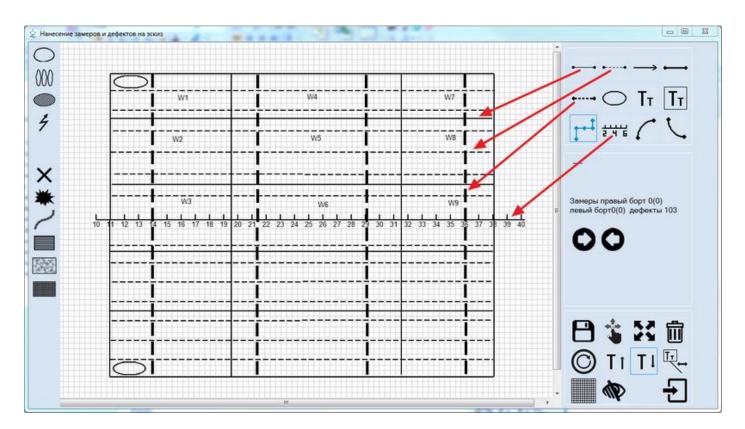
RUSSIAN MARITIME REGISTER OF SHIPPING

**"VOLNA" SOFTWARE** 

User's manual



6) Using "Drawing elements menu" user creates own sketch, for instance:



# 3 Instruction for drawing up of residual deformations/cracks/fractures/raptures, etc.

# For more information about types and methods of assessment of residual deformations, crack/fractures/raptures – refer to Annex 2 to the RS Rules for classification surveys of ships in service.

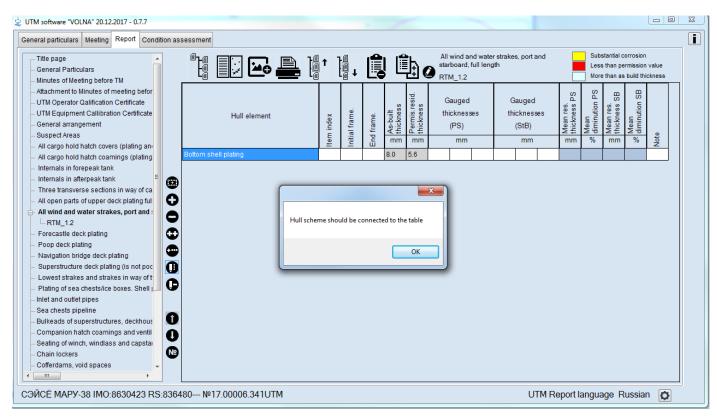
## 3.1Deflection / Rib

To show deflection or rib on the sketch it is necessary

- 1.1 to create sketch according to the instructions above;
- 1.2 to move to the relevant record in the tabular form (structure on which mentioned defects were found) and



; for instance as follows:

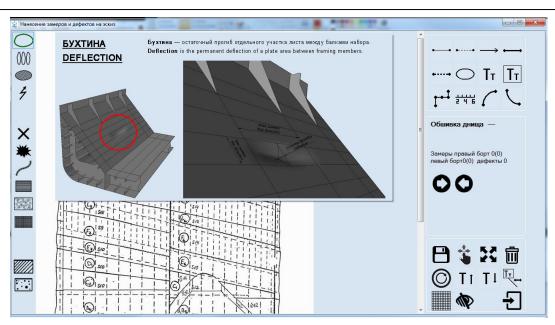


1.3 Then in the appeared window to choose an appropriate defect from the left menu (for deflection-icon

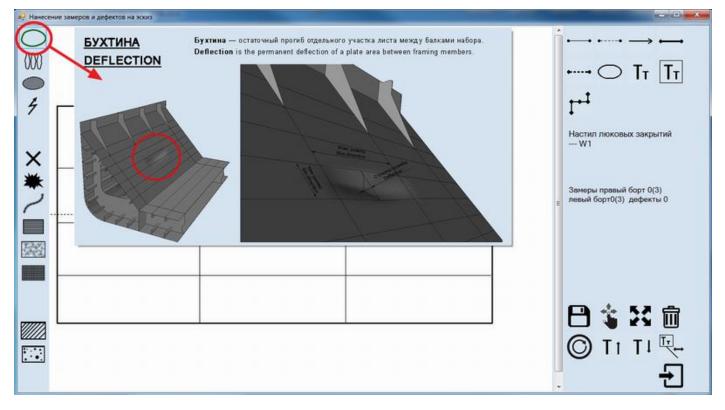


RUSSIAN MARITIME REGISTER OF SHIPPING "VOLNA" SOFTWARE

User's manual



1.4) then to indicate the location of the defect (it is necessary to identify upper left and lower right corners of defect).

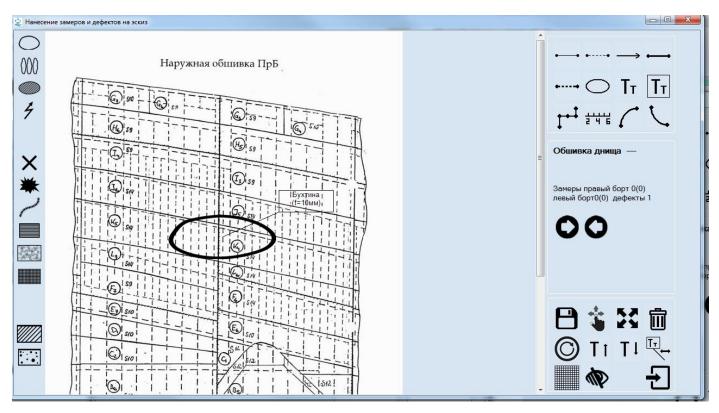


1.5) to enter defects parameters in the following window:

RUSSIAN MARITIME REGISTER OF SHIPPING

u UTM software "VOLNA"	
Deflection and Rib parameters	a
Hull element where Deflection / Rib has been found Rus.	
Eng.	
Side Strake	
Rus.	
First frame	
Last frame	
Frame (mm)	
Max bending deflection (mm)	
Min bending deflection (mm)	
Deflection / Rib is located at the deck, out of line of hatch cover, shirst	ake and bottom shell plating at midle part of the ship.
Oeflection / Rib is located at other side of the ship (not mentioned above	e).
	Ok

1.6) Upon registration of defects parameters - scheme of defect will appear on the sketch.



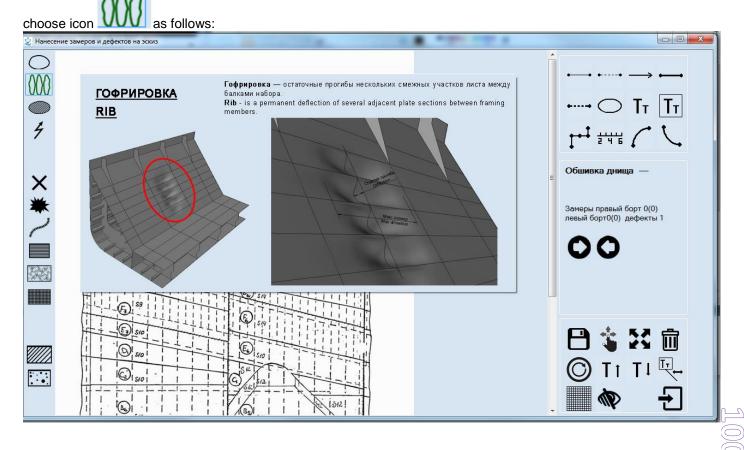
1.7) In the tabular form 2.2 (intended for registration of parameters of deflections/ribs) information on defect and the results of its assessment will appear automatically.

Таблица 2.2 / Table 2.2 РЕГИСТРАЦИЯ БУХТИН И ГОФРИРОВКИ В КОНСТРУКТИВНЫХ ЗЛЕМЕНТАХ КОРПУСА СУДНА DEFLECTION AND RIB REGISTRATION AT THE SHIP'S HULL ELEMENTS												
111		ание судна Ships name	ВЛАДИМИР РУСАНОВ Vladimir Rusanov			PC Nº RS No.	932847			OTYET N Report No		.00001.180UTM
Злемент корпуса Hull element			Шпация Frame	Макс. стрелка прогиба Max. bending deflection	бухтины Min. deflection	Фактическое отношение Actual ratio	Допускаемое отношение Allow. ratio	Фактическое отношение Actual ratio	Допускаем отношени Allow. rati	а Примечание		
					a	f	dimention b	f'/a	f/a	f '/b	f/b	-
Настил люковых закрытий Hatch cover plating	Бухтина Deflaction		Шл:55-56, L, Второй пояс от ДЛ Fr:55-56, L, Second strake from CL		600	54	500			0,09	0,06	требуется ремонт repair is required

In the table 3.3 (summary table of hull defects) information of defect and the results of its assessment will be introduced thereto.

Таблица 3.3 / Table 3.3 Сводная таблица дееектов кортосных конструкций Table of Hull Defects										
	Название судна Ships name	ВЛАДИМИР РУСАНОВ Vladimir Rusanov	PC Nº RS No.	932847	OTVET Nº Report No.	16.00001.180UTM				
Вид дефекта Type of defect		жение дефекта ion of defect		Параметры дефекта Defect parameters						
бухтина deflaction	Настил люковых закрытий55-56, L, Brop Hatch cover plating35-56, L, Second strak		Миникальный размер бухтины (го расположена в других районах нор Frame (mm) = 600 Maximum deflaction (mm) = 54 Minimum size of deflaction(rib) (mm)	Шпация (нн/) = 600 Макимнальная спрелка прогиба (нн/) = 54 Микимнальный размер бухтины (гофрировни) в плане (нн/) = 500 расположины в других районах норпуса судиа (не уназамных выше). Frame (mm) = 600						

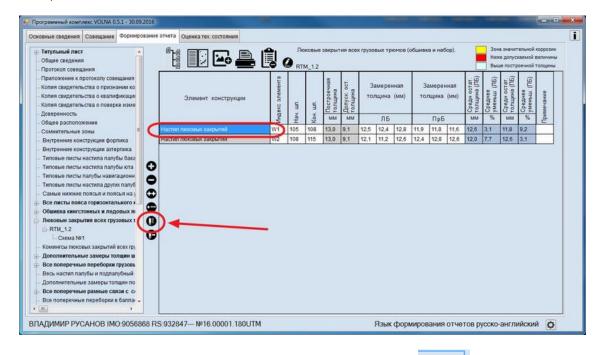
Registration of rib parameters is similar to the describe above for deflections. In the editor mode it is necessary to



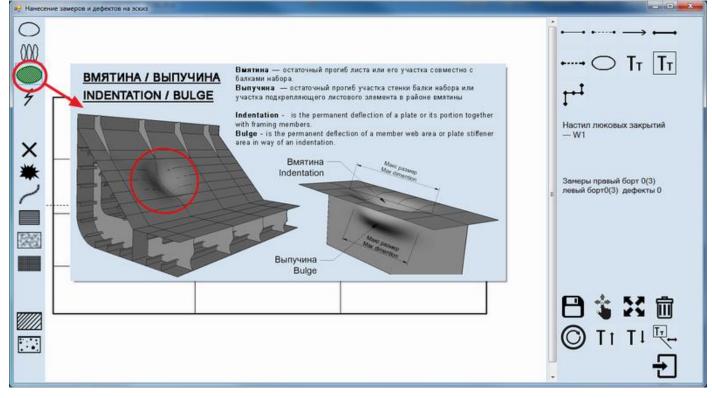
### 3.2 Indentation / bulge

To enter a defect to a sketch it is necessary:

- 1) to move to the relevant record in the tabular form (for item on which mentioned defect is found) and
- 2) to click icon



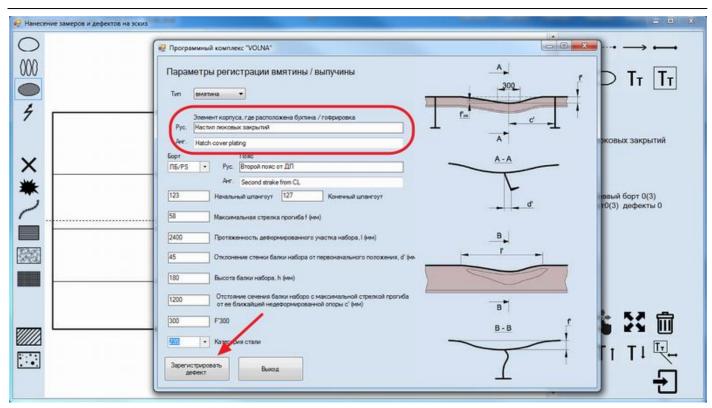
to choose appropriate defects (for indentation/bulge – icon and indicate the upper left and lower right of defect.



4) to enter defects parameters



User's manual



5) upon registration the following sketch will appear.

а- Нанесение замеров и дефектов на эскиз	
BARTIHA (f=58uu)	
	• Настил люковых закрытий W1
× *	Замеры правый борт 0(3) в левый борт0(3) дефекты 1
	C 11 T ↓ ↓

6) in addition information on defect with the results of its assessment will be introduced in the table 2.1 (tabular form for registration of indentations/bulge parameters) automatically.

Таблица 2.1 / Table 2.1																
			ETYCTPALIUR BURTTUH U BUILTYVITH B KOHCTPYNTUBHUX 3/IEMEHTAX KOPRIVCA CYДHA Indentation and Bulge registration at Ship's Hull elements													
111		Название судна Ships name	ВЛАДИМИР РУСАНОВ Vladimir Rusanov				PC Nº RS No.		932847				OTYET N Report No		16.00001.1	SOUTM
Наименование отсека / конструкции:	Выпучина Расп	Расположение вмятины / выпучины					Фактич. отношен. Actual ratio	Допуск. отношен. Allow. ratio	Фактич. отношен. Actual ratio	Допуск. отношен. Allow. ratio	Фактич. отношен. Actual ratio	Допуск. отношен. Allow. ratio	Примечание			
Identification of space / structure:	Indentation Bulge			h мм mm	f' мм mm	l' MM mm	C' MM MM	d" мм mm	<u>f'300</u> мм mm	f'/ľ	f/ľ	f'/c'	f'/c'	ď/h	ď7h	note
Настил люковых закрытий Hatch cover plating	вмятика indention		., Второй пояс от ДЛ Second strake from CL	180	58	2400	1200	45	300	0,024	0,05	0,048	0,1	0,25	0,15	требуется ремонт repair is required

7) mentioned defect with the results of its assessment will be introduced in the summary table of defects of form 3.3 automatically thereto.

Таблица 3.3 / Table 3.3			СВОДНАЯ ТАБЛИЦА ДЕФЕКТОВ КОРП Table of Hull def						
	Название судна Ships name	BJADIMINP PYCAHOB Vladimir Rusanov	PC M <sup>o</sup> RS No.	932847	OTYET Nº Report No.	16.00001.180UTM			
Вид дефекта Type of defect		жение дефекта ion of defect		Параметры дефекта Defect parameters					
вмятина indentation	Настил люковых закрытий 123-127, L, B Hatch cover plating 123-127, L, Second str		Отклонение стенной балки набора о Отстояние сечения балки наборо с Категория стали = 235 Maximum deflaction f (mm) = 58 Deviation wall beams set from the in	Maximum deflaction f (mm) = 58 Deviation wall beams set from the initial position (mm) = 45 Deviation section of the beam set with a maximum deflection = 1200					

Registration of bulge parameters is carried out in the same way as for indentations.

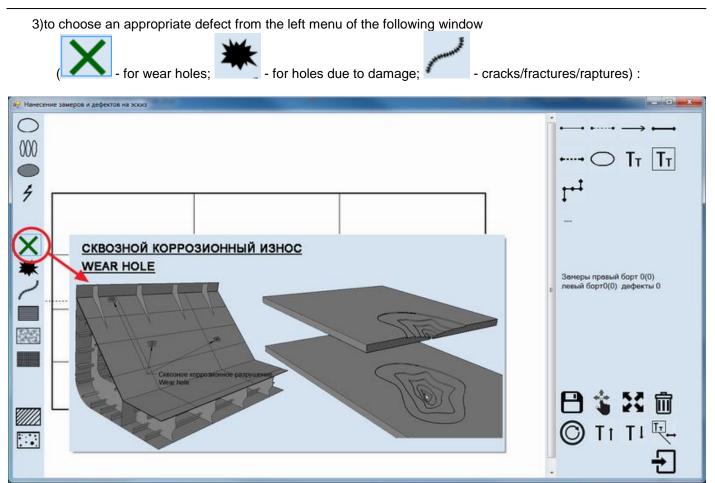
### 3.3Holes due to wear, holes, cracks/fractures/raptures

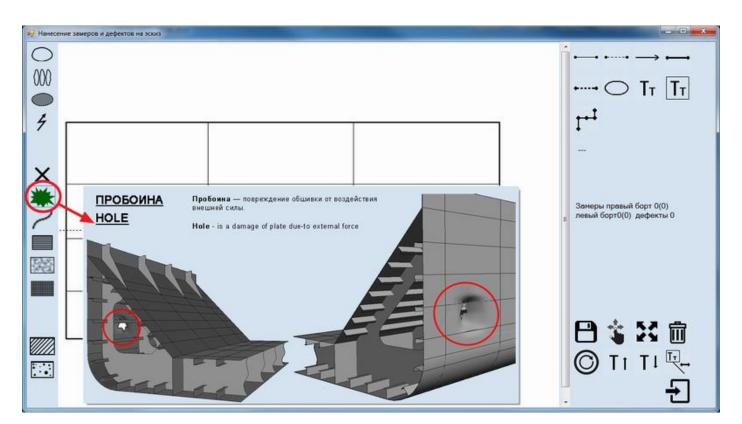
To describe wear hole, hole, crack, fractures, raptures it is necessary:

- 1 to move to the relevant record with item on which mentioned defect was found and
- 2 to click icon

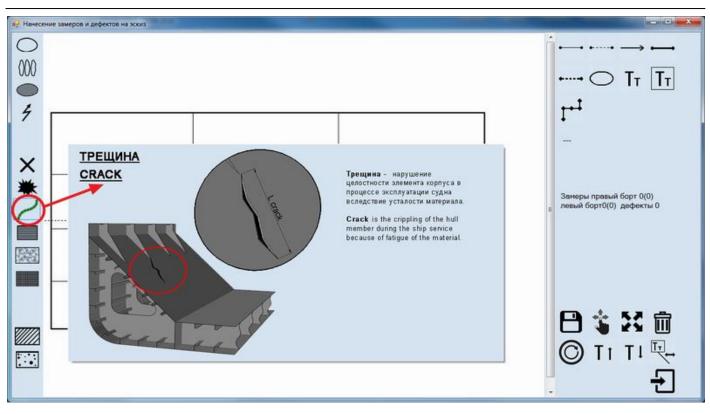
VITM software "VOLNA" 20.12.2017 - 0.7.7  General particulars Meeting Report Condition as: Title page General Particulars Minutes Offketing before TM	sessment	† i . i i i	All wind and water strakes, port and starboard, full length RTM_1.2	Substantial corrosion Less than permission value More than as build thickness
minutes on meeting before Attachment to Minutes of meeting befor UTIN Operator Calification Certificate UTIN Equipment Calification Certificate General arrangement Suspect Areas All Cargo hold hatch covers (plating any	Hull element	ltern index Ingi al frame. End frame. Bathobuit Permis resid. thickness	(PS) (StB)	a Mean res PS Mean res PS Mean minution PS Mean wean Mean of Mean Mean
<ul> <li>All cargo hold hatch coamings (plating Infermals in afferpeak tank Infermals in afferpeak tank</li> <li>Three transverse sections in way of ca All open parts of upper deck plating</li> <li>All open parts of upper deck plating in the strakes, port and the strakes, port and the strakes, port and the strakes, port and the strakes and strakes in way of the plating of sea check plating is not poc Lowest strakes and strakes in way of the plating of sea check plating is not poc Strakes and strakes in way of the plating of sea check plating is not poc Strakes and strakes in way of the plating of sea check plating is not poc Lowest strakes and strakes in way of the plating of sea check plating is not poc Lowest strakes and strakes in way of the plating of sea check plating is not poc Lowest strakes and strakes in way of the plating of sea check plating is not poc Lowest strakes and strakes in way of the plating of sea check plating is not poc Lowest strakes and strakes in way of the plating of sea check plating is not poc Lowest strakes and strakes in way of the plating of sea check plating is not poc Lowest strakes and strakes in way of the plating of sea check plating is not poc Lowest strakes and strakes in way of the plating of sea check plating is not poc Lowest strakes and strakes and strakes in way of the plating of sea check plating is not poc Lowest strakes and strak</li></ul>	Bottom shell plating	80 55		
Seating of winch, windlass and capstal Chain lockers COĂICÉ MAPY-38 IMO:8630423 RS:8364			UTM Rep	port language Russian 🔯



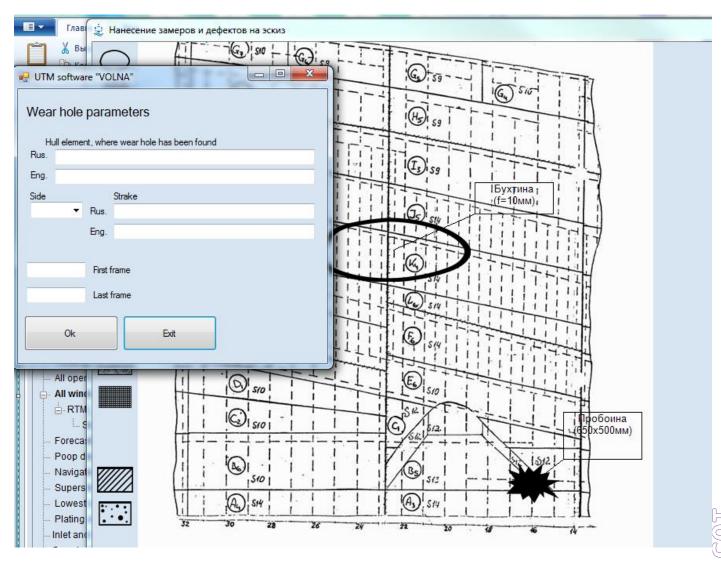




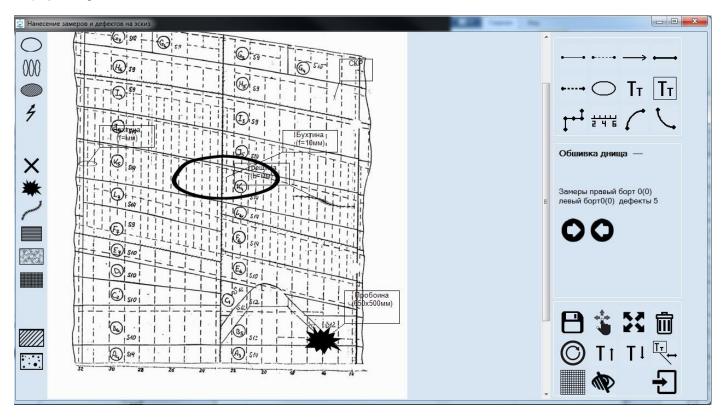




- 4) Upon selection to indicate upper left and lower tight corners of defect on the sketch.
- 5) Then to enter information on defects parameters.



#### 3.6) upon registration the defects will be shown on the sketch:



6) Information on defect will be introduced in the tabular form 3.3 (summary table of defects) thereto.

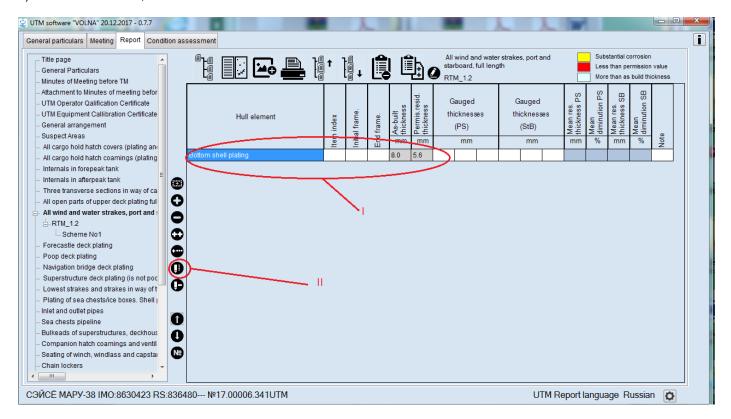
Taónxua 3.3 / Table 3.3			СВОДНАЯ ТАБЛИЦА ДЕФЕКТОВ КОРП Table of Hull defi						
111	Название судна Ships name	ВЛАДИМИР РУСАНОВ Vladimir Rusanov	PC Mº RS No.	932847	OTVET Nº Report No.	16.00001.180UTM			
Вид дефекта Type of defect		жение дефекта ion of defect		Параметры дефек Defect parameters		Примечание Note			
пробоина hole	Настил люковых закрытий 125-126, L, П Hatch cover plating 125-126, L, First strak	ервый пояс от ДЛ e from CL							
сквозное проржавление wear hole	Настил люковых закрытий 124-125, R, B Hatch cover plating 124-125, R, Second st					требуется ремонт repair is required			
трещина crack	Настил люковых закрытий 125-126, R, П Hatch cover plating 125-126, R, First strak		Длина трецины L (crack) в мм = 540 Crack length L (crack) mm = 540	0		требуется ремонт repair is required			

#### 3.4Cement box, steel doubler, composite or polymer doubler.

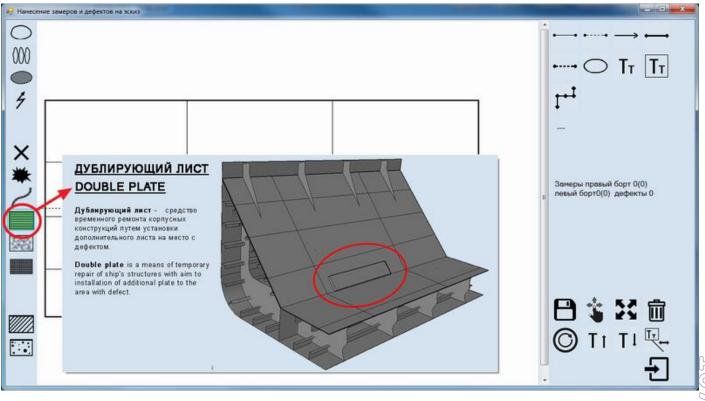
To describe cement box, doublers it is necessary:

1) to move to the record with relevant item where defect is found and

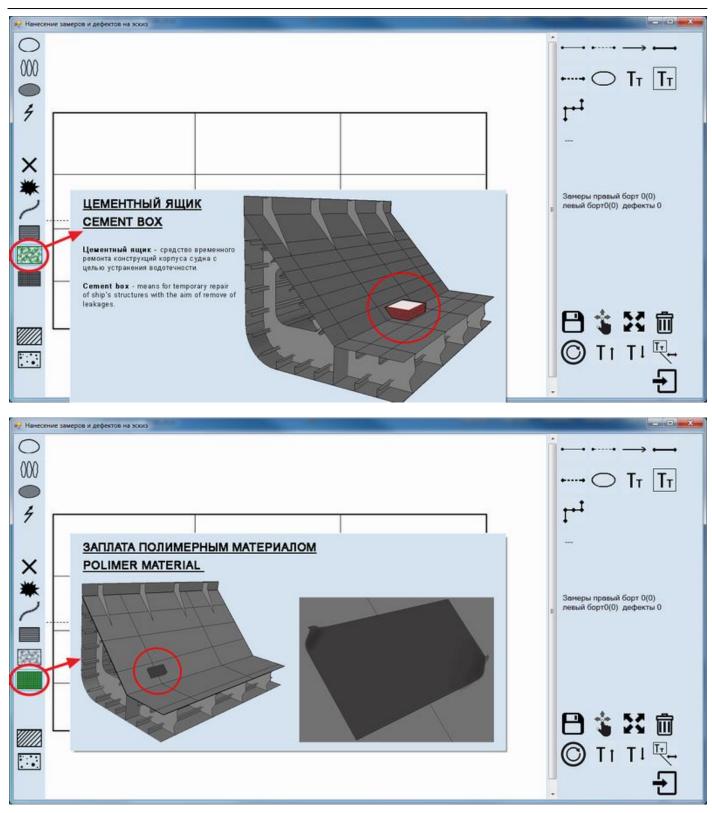
#### 2) to click icon



#### 3) to choose required an appropriate defect from the left menu of the following window:



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4) Then to indicate upper left and lower right corners of the defect on the sketch;

5) To enter parameters of defect in the appeared window:

)	🦉 Програминый комплекс "VOUNA"	
) 	Параметры регистрации дублирующих листов Змемент корпуса, гае расположен дубякрующий лист Рус. Настил локовых закрытий	······································
	Avr. Hatch cover plating Eopr Desc ITG/PS • Pyc. Bropole noise or suitais	Настил люковых закрытий — W1
;	Ант: Second strake from keel 120 Начальный шлангоут 124 Коненный шлангоут	Замеры правый борт 0(3) в певый борт0(3) дефекты 0
9	2500 Длина дублирующего листа (в мен) 650 Шерина дублирующего листа (в мен) Зарегистрировать дерект Выход	
		<b>8</b> \$ 8 ±

6) Upon completion of drawing up of the fields of window the defect will appear on the sketch as follows:

нау Нанесение замеров и дефектов на эскиз	
ООО Дублер (2500x650мм) У Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм) Солок650мм)	
	W1 Замеры правый борт 0(3) левый борт0(3) дефекты 3

7) Information on defect with the results of its assessment will appear in the summary table of form 3.3.

Таблица	33/	Table	33
1 accimilate	0.01	10010	w.w

			СВОДНАЯ ТАБЛИЦА ДЕФЕКТОВ КОРПУСНЫХ КОНСТРУКЦИЙ TABLE OF HULL DEFECTS	
1113 e	Название судна Ships name	ВЛАДИМИР РУСАНОВ Vladimir Rusanov	PC Nº 932847 OT4ET Nº RS No. 932847 Report No.	16.00001.180UTM
Вид дефекта Type of defect		инение дефекта tion of defect	Параметры дефекта Defect parameters	Примечание Note
дублирующий лист double plate	Настил люковых закрытий 120-124, L, L Hatch cover plating 120-124, L, Second s		Длина дублирующего листа (в мм) = 2500 Ширина дублирующего листа (в мм) = 650 Double plate length (mm) = 2500 Double plate width (mm) = 650	требуется ремонт repair is required
	Настил люковых закрытий 126-127, L, l Hatch cover plating 126-127, L, First stra		Длина ценентого ящина (в нек) = 600 Шкрина ценентого ящина (в нек) = 600 Cement bax kergih (mm) = 600 Cement bax width (mm) = 600	требуется ремонт repair is required
заплата полимерным материалом polimer material	Настил люковых закрытий 162-163, R, Hatch cover plating 162-163, R, Third stra	Третий пояс от киля ike from keel	Длина заплаты полимерным материкалом (в имн) = 400 Ширина заплаты полимерным материкалом (в имн) = 300 Polimer material length (smn) = 400 Polimer material width (mm) = 300	требуется ремонт repair is required

# 3.5 Local wear, pitting

Local wear is a local reduction in the thickness of hull members (plate sections) in the form of groove, linear and spot wear.

Pitting is a local hull member thickness reduction in the form of separate recesses, rustings, pits, cavities, etc.

The permissible thicknesses for the assessment of local wear and pitting are less than for total wear. So the approach for registration of such areas is as follows (refer also to Annex 2 of RCSSS).

In cases when gauging in any part of a plate is significantly differ from measurements in other parts of plate, TM operator shall assess this area subject to local/pitting wear and perform additional measurements according to the RCSSS. The average magnitude of the extensive scope of measurements in this part of plate shall be registered in the table on total wear.

Basic forms of UTM report where the results on general wear are registered, the single measurements which are identified as subject to repair (highlighted by relevant color) may be revealed. Such measurements are required mandatorily to be additionally assessed. For convenience, the software generates summary table of hull elements with general wear exceeding allowable limits (form 3.4). RS surveyor and TM operator shall analyze information provided in this summary table (form 3.4) with regard to presence of single measurements identified as subject to repair for the purpose to carry out additional measurements (if required by the Rules), their registration in the basic relevant forms of UTM report for general wear, as well as for assessment of such single measurements for local and pitting wear as shown below.

Таблица 3.4 / Table 3.4

#### CBODHAR TAGJNULA KOPTIYCHUX KOHCTPYKUM, OGUWM V3HOC KOTOPUX NPEBUILLAET DOTYCTIVINGE NPEDEJU Summary Table of Hull elements with general wear which exceeds allowable limits

and the second se	Название судна Ships name			PC № RS No.				Отчет Nº Report No.	
Nº No.	Элемент корпуса Hull element	Индекс элемента Element index	Борт Side	Построечная толщина Build thickness мм	Допускаемая ост. толщина Permissible thickness MM	Замеренная толщина Measured thickness MM	Износ Wear %	Средняя остаточная толщина Average residual thickness MM	Примечание Note
				mm	mm	mm	70	mm	

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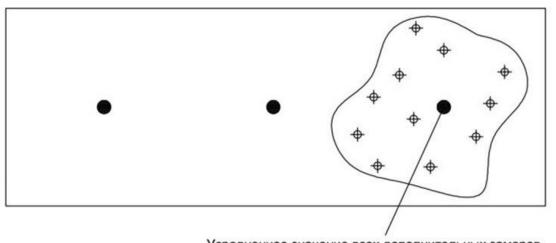
Hull element	index	al frame.	frame.	As-built thickness	Permis.resid. thickness		Gauged licknes: (PS)		Gauged thicknesses (StB)	Mean res. thickness PS	Mean diminution PS	Mean res. thickness SB	Mean
	Item	Initial	End	mm	mm		mm		mm	mm	%	mm	%
Shearstrake	F14	134	152	13,0	9,1	12,9	12,5	12,8		12,7	2,3		
Bottom shell plating	Fk11	152	159	15,0	10,5	146	142	11,3		13,5	10,0		
Bottom shell plating	A12	152	159	15.0	10,5	14,6	14,5	14,8		14,6	2,7		
Bottom shell plating	C12	152	150	200	14,0	21,1	20,5	19,7		20,4	0,0	1	
Side shell plating	D16	15	159	20,0	14.0	19,6	19,7	19,7		19,7	1.5		

Замеры по общему износу

General wear points

Данные замеров заносятся в основные таблицы TM points inserted to main tables

Замеры по местному/язвенному износам -Local / Pitting wear points



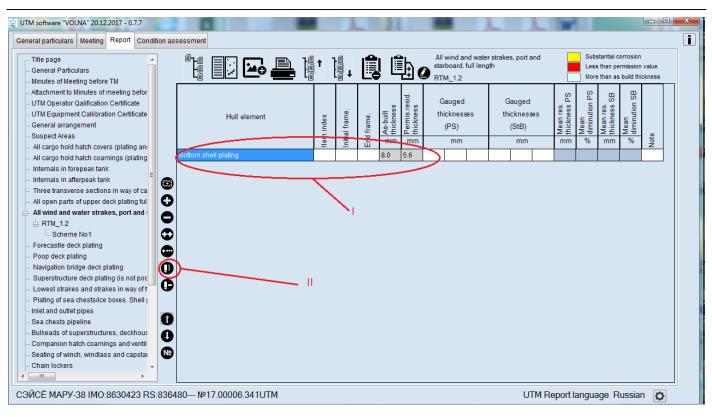
Усредненное значение всех дополнительных замеров Average value of all additional points

To describe defect on the sketch it is necessary:

- 1) in the tab "Report" to move to the relevant table,
- 0 2) to click on the record with item on which mentioned defect is found and click on icon

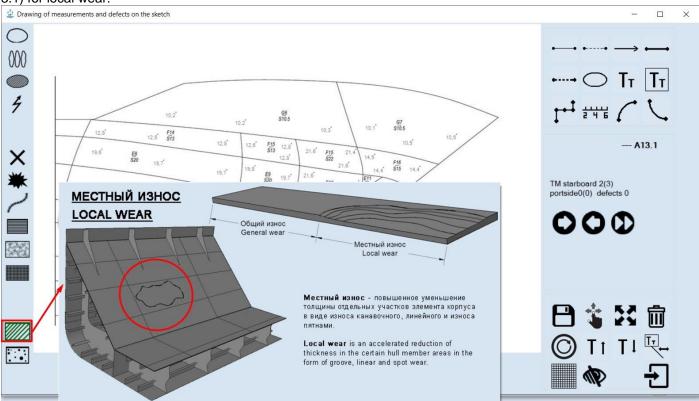
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### 3) To choose an appropriate defect from the left menu of the appeared window:

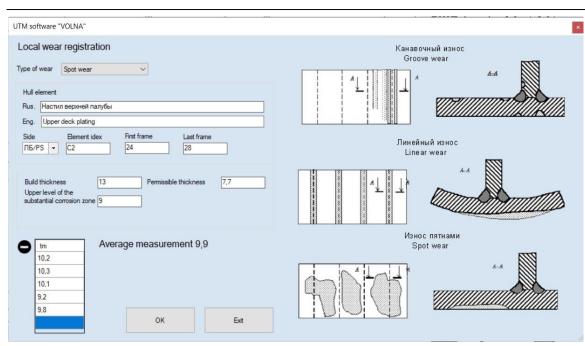
#### 3.1) for local wear:



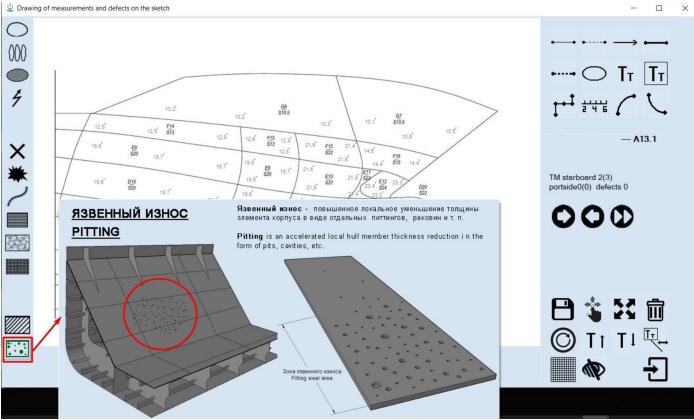
3.2) Then to indicate location of the defect on the sketch.

3.3) To enter parameters of defect in the appeared window as follows:

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## 3.4) for pitting:



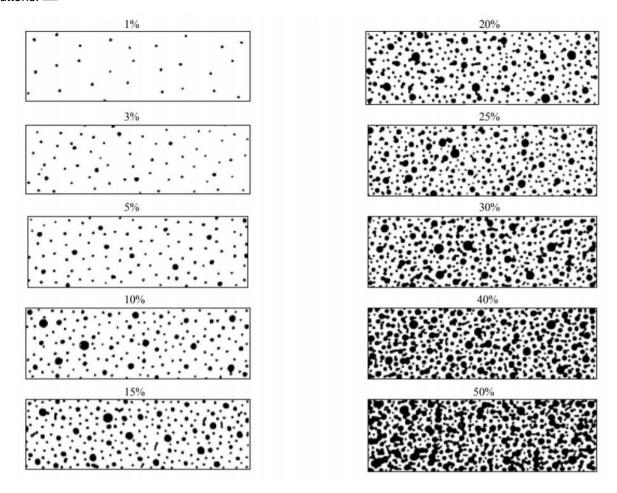
3.5) Then to indicate location of the defect on the sketch.

### 3.6) To enter parameters of defect in the appeared window as follows:

UTM software "VOLNA"

OTHI SOITWARE VOLINA			· · · · · · · · · · · · · · · · · · ·
	Last frame	Язвеннь Pitting o	ій износ corrosion A - A
Image: Provide state st	13 3.6 5.1 1 € nt of pitting in e 5,6		
OK Exit			

3.7) For pitting, there is a field "Pitting Intensity of the plate,%". In the case of the presence of single pits, it is necessary to leave the default value of 1%, and with a pitting Intensity, set the value using the keyboard or using the buttons:



According to the value of the pitting Intensity, the permissible thickness and the upper limit of a substantial corrosion zone automatically change.

UTM software "VOLNA"	×
Pitting registration	Язвенный износ Pitting corrosion
Rus. Бортовая обшивка Eng. Side shell plating Side Bement index First frame Last frame ☐БСРРS ▼ 4 10 13	
Build thickness       12       Permissible thickness       6.6         Upper level of the substantial corrosion zone       8       Min thickness of pitting       5.1         Pitting intensity of the plate, %       50       50       50         Pitting measurements of residual thickness       55       5.8       5.9       6.2         5.1       5.3       5.1       5.6       5.6	
OK Exit	

4) Upon completion of drawing up of defects parameters relevant symbol of defect will appear on the sketch.

эну Нанесение замеров и дефектов на эскиз	
Local wear Pitting	$\begin{array}{c} & & & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ \end{array}$
	Настил люковых закрытий W1 в Земеры превый борт 0(3) левый борт0(3) дефекты 2
	『 日 3 2 前 ② T1 T1 平- 子

5) Information on defect together with the results of its assessment will be introduced automatically:

5.1) for local wear - in the tabular form 2.3 (intended for registration of local wear).

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Таблица 2.3 / Table 2.3



					I		ECTHOFO M3HOC/ Registration	A.			ł		Area with Превыше	ние доп. у	коррозни Il corrosion меньшения Ie diminution
	Название судн Ships nam		IMIP PYCAHOB Imir Rusanov			PC Nº RS No.	9	32847				Отчет № Report No.		16.00001.1	80UTM
Тип местного износа Type of local wear	Злемент корпуса Hull element	Инденс элемента Index of element	Борт Side	Начальный шпангоут Initial frame	Конечный шпангоут Last frame	Построечная топщина Build thickness MM mm	Допускаемая топщина Allowable thickness мм mm	Thickne	изн ss measure	районе м юса ment at the l corrosion мм mm	e area of	Средняя остаточная топщина Average thickness MM mm	Глубина Deep o h1 h1 мм mm		Примечание Note
Износ пятнами	Настил люковых закрытий Hatch cover plating	W1	L	125	129	13,0		12,4	12,8	11,6	11,7	11,9			

5.2) for pitting - in the tabular form 2.4 (intended for registration of pitting).

Taénnya 2.4 / Table 2.4						Pernctpalins Pitting corri					ł	Агеа м Превы	начительной коррозии ith substantial corrosion шение доп. уменьшения d of allolowable diminution
	Hasea S	ние судна hips name	BЛАДИМИР Vladimir f			PC RS N		93284	3			Orver Nº Report No.	16.00001.180UTM
Злемент корпуса Hull element	Инденс зпемента Index of element	Борт Side	Начальный шпангоут Initial frame	Конечный шпангоут Last frame	Построечная толщина Build thickness	Допускаемая топщина Allowable thickness			8 A38ax asurement		Средняя остаточная толщина Average thickness	Максимальная глубина язвины Max. pitting deep	Примечание Note
	etement				MM	MM mm		M	m m		MM mm	MM	
Настил люковых закрытий Hatch cover plating	W1	R	0	0	13,0		6,8	6,5	6,4	6,8	6,1		
					13,0 13,0		5,5 6,4	5,8 6,8	5,9 6.7	6,2 6,8			
					13,0		6,5	6,6	6.8	5,5			
					13,0		5,3	5,1	5,3	5,8			
					13,0		5,9	5,5	5,9	5,6			

# 4 Generation of the Report

To generate a Report in a complete full document it is necessary:

1) to draw up all relevant forms, sketches, attachments).



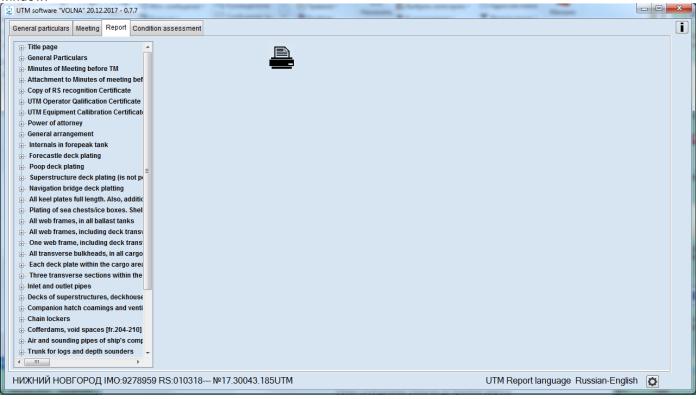
"VOLNA" SOFTWARE

User's manual

l	

2) To print out of the report it is necessary to move to the tab "Report" and click on icon window:

in the following



### and

### to choose option "Full report"

UTM software "VOLNA" 20.12.2017 - 0.7.7	10 containing the second	Parameter and a		
General particulars Meeting Report Condition assessment				i
Title page General Particulars Minutes of Meeting before TM Attachment to Minutes of meeting bef Copy of RS recognition Certificate UTM Operator Qalification Certificate UTM Equipment Callibration Certificate UTM Equipment Callibration Certificate Beneral arrangement Internals in forepeak tank Forecastle deck plating Poop deck plating All keel plates full length. Also, additic Plating of sea chests/ice boxes. Shell All web frames, in cluding deck trans One web frame, including deck trans All transverse bulkheads, in all cargo Each deck plate within the cargo area Three transverse sections within the Intert and outlet pipes Decks of superstructures, deckhouse Companion hatch coamings and venti Chain lockers Cofferdams, void spaces [fr.204-210] Air and sounding pipes of ship's comp Trunk for logs and depth sounders	Full report			
НИЖНИЙ НОВГОРОД IMO:9278959 RS:010318	№17.30043.185UTM		UTM Report language Russian-English	0

4) In the beginning of Report generation verification of possible data mistakes will be carried out by the software "VOLNA".

😟 Generating report			
		Â	
ОК - Титульный лист		E	
ОК - Общие сведения			
ОК - Протокол совещания			
	ОК - Приложение к протоколу совещания		
ОК - Копия свидетельства о квалификации оператора по ЗОТ			
ОК - Копия свидетельства о поверке измерительно	ОК - Копия свидетельства о поверке измерительного оборудования		
ОК - Общее расположение			
	средней части длины судна в районах двух различных груз	зовых	
пространств.			
	айоне пояса переменных ватерлиний по всей длине судна.		
ОК - Z7 Все листы открытых участков настила верхней палубы по всей длине судна. ОК - Настил второго дна			
ОК - 27 Все комингсы люков грузовых трюмов (обц			
ОК - Z7 Все люковые крышки грузовых трюмов (об	шивка и набор)	· ·	
	Statistics		
Actual date of TM completation		Chattering	
13.10.2017	Total number of measurements in RTM tables: 2481	Statistics	
13.10.2017 []]+	Total number of tables: 26		
	Total number of tables: 26		
This is to certify that original report in a hard copy, submited	Total number of attached schemes: 43		
to the ship and to the shipowner, contain operator's			
signatures on all pages of the report.			
Operator sign scan			
Cananta			
Generate			

In this popup window a statistic information for a ship will be introduced thereto (overall number of measurements, including in the report, number of tables, sketches).

5) Then by clicking on button "Statistic" information on measurements for each item from the tree will be generated in file "statTM.pdf", for instance:

Статистика по отчету
Statistic on report

Statistic on report	
Название конструкции	Количество замеров
Structure name	Number of meaurements
Сомнительные зоны	66
Suspect areas	
Z7 Два поперечных сечения в пределах 0,5L средней части длины судна в районах двух различных грузовых пространств. Two transverse sections within 0,5L of mid part of the ship within two different cargo spaces	384
27 Все люковые крышки грузовых трюмов (обшивка и набор)	24
All cargo hold hatch covers (plating and framing)	
27 Внутренние конструкции форпика	435
Forepeak Internais	
27 Внутренние конструкции ахтерпика	408
Afterpeak Internals	
Z7 Все листы открытых участков настила верхней палубы по всей длине судна.	279
All exposed upper deck plating parts along ship's length	
27 Все листы наружной обшивки ПБ и ЛБ в районе пояса переменных ватерлиний по всей длине судна.	570
All wind and water strake plates along ship's length both sides (PS and STBD)	
27 Типовые листы настила палубы бака	95
Representative plates of forecastle deck plating	
27 Типовые листы палубы навигационного мостика	27
Representative bridge deck plating	

6) In the lower right part of the screen of the window of verification of report it is necessary to enter the actual

Actual date of TM completation	

date of completion of thickness measurements in the field

Then this date will be automatically introduced in the section "General particulars" of the Report. 7) Then click "Generate".

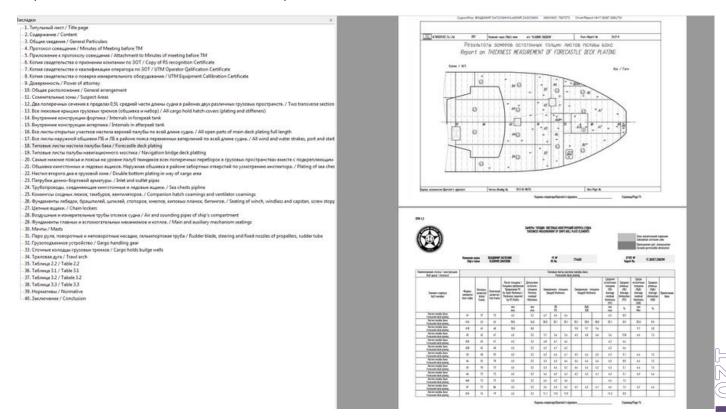
"VOLNA" SOFTWARE

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Generating report	
пространств.	го оборудования средней части длины судна в районах двух различных грузовых ийоне пояса переменных ватерлиний по всей длине судна. ней палубы по всей длине судна. иивка и набор)
Actual date of TM completation 13.10.2017 ■ This is to certify that original report in a hard copy, submited V to the ship and to the shipowner, contain operator's signatures on all pages of the report. V Operator sign scan	Statistics         Total number of measurements in RTM tables: 2481         Statistics         Total number of tables: 26         Total number of attached schemes: 43
Generate	Cancel

Report generating takes approx.. from to 5 minutes depending on the scope of report and unit performance.

Report is created in PDF format in file "result.pdf".



In case mistakes will be found in the report, they will be shown in red color in the window of verification of report.

Until all mistakes are eliminated it will be impossible to generate report and button "generated" will be inactive.

Титульный лист	🔓 🗈 🏦 t 🖺 📋	Типовые листы палубы навигационного мостика
Общие сведения		
Протокол совещания	🕹 Формирование отчета	
Приложение к протоколу совеща	P 7	
Копия свидетельства о признан	OV Assessment DTM 4.2.77 Res average	ной общивки ПБ и ЛБ в районе пояса переменных ватерлиний по
Копия свидетельства о квалифи	ок Анализ тарлицы. КТМ 1.2.27 Все писты наруж всей длине судна. RTM_1.2 Наружная общивка	нов социвки Пр и Лр в рамоне пояса переменных ватерлании по
Копия свидетельства о поверие	осен динне судна, ксти_ст. старужная социала	
Доверенность	Ш Анализ таблицы RTM_1.2 Z7 Типовые листы наст	
Общее расположение	Настип палубы бака Лист с индексом А1 не запол	нена строка
Соминтельные зоны	III August tabaunt DTM 1 2 77 Turger and	убы навигационного местика RTM_1.2 Пеленгаторная папуба
Два поперечных сечения в пре,	Настип папубы надстройки / рубки Лист с индексо	
Все люковые крышки грузовых	Настип папубы надстройки / рубки Лист с индексо	м АЗ не заполнена строка
Внутренние конструкции форми		семи иболее. При
Внутренние конструкции ахтерп		оясья и поясья на уровне палуб твиндеков всех поперечных о должны быть выполнены
Все листы открытых участков н	переборок в трузовах пространствах вместе с под	срепонодни насором. Ктата из поперечнае оп п
Все листы наружной общивки П	ОК Анализ таблицы RTM 1 4 77 Общивка кингсто	нымх и пеловых ящиков. Напосная общияка в районе заболтных
Типовые листы настила палубь		
Типовые листы палубы навига:	-	
Самые нижние поясья и поясья		X
Общивка кингстонных и ледовь		Статисточеские данные
Настил второго дна в грузовой з	Фактическая дата завершения ЗОТ	Общее количество замеров в таблицах RTM: 3405 Статистика
Патрубки донно-бортовой армат	21.08.2017	Ошибки в отчете, найленный в процессе ана
Грубопроводы, соединяющие ки	Подтверждение, что в оригиналах отчета,	Of the konviection of generical table 25 Errors in the report found during the analysis.
Комингсы сходных люков, тамб	направленных на судно и судовладельцу в твердой	Общее количество прикреплённых эскизов: 40
Фундаменты лебедок, брашпили	<ul> <li>копии, имеются подписи оператора на всех страницах отчета.</li> </ul>	
Цепные ящики.		
Воздушные и измерительные тр	Сформировать	
and a second sec	e:	
Фундаменты главных и вспомогат		
Фундаменты главных и вспомогат Мачты		

# 5 Processes of work of the VOLNA software

There are the following processes of work of the software for the sake of convenience for development of reports.

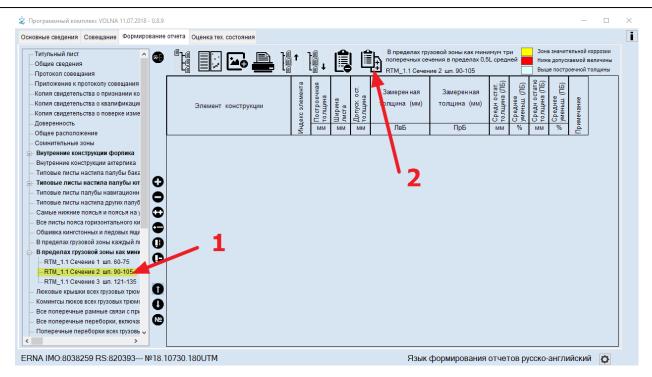
5.1 Processes of data copying:

Software VOLNA gives possibility for user's to copy branches of a report from report of another ship (without copying of measurements of other ship).

For this possibility it is necessary:

- 1. To create table to which data will be copied.
- 2. To go to the report tree and to pick tracking symbol on the branch in which the data from a ship of the same type will be entered and click the button "Copy" (2).





3. in the appeared window all of the reports available on the user's computer will be listed, the information from which may be copied.

🙎 Программный комплекс VOLNA 11.07.2018 - 0.8.9	- 🗆 X
Основные сведения Совещание Формирование отчета Оценка тех. состояния	i
	зоны как минимум три Зона значительной коррозии в пределах 0.5L средней Ниже допускаемой ееличины ил. 90-105 Выше построечной толщины — — — — — — —
Самые         ПАВЛОВСК 18.30823.296           Вселий         MPC-150.338 18.06029.173           Обшивк         SVX4707 PYOTR 18.10209.180           Впреде         ПРОТОН 18.30927.296           В преде         AlbMETLEEDCK 18.60163.252           В преде         CHLLSEA.1 18.10097.180           — RTM	<ul> <li>Индекс</li> <li>Шпангоуты</li> <li>Все данные (только администратор)</li> </ul>
Все уча Патрубк Патрубк Патрубк Патрубк Перебог Коминсо СГВ-ФЛОТ 18.10648.180 СГВ-ФЛОТ 18.10648.180 СГВ-	ОК Отмена
ERNA IMO:8038259 RS:820393 №18.10730.180UTM Язык фор	мирования отчетов русско-английский 🛛 👩

4. To choose the report table forms, from which data will be down loaded.

In the right part of the screen to choose the lines which will be additionally copied.

"VOLNA" SOFTWARE

User's manual

🛓 Программный комплекс VOLNA 11.07.2018 - 0.8.9 — 🗆	$\times$
Основные сведения Совещание Формирование отчета Оценка тех. состояния	i
- Внутренние конструкции ахтерлика - Типовые листы настила палубы бака - Типовые листы настила палубы кот - Типовые листы настила	
Типовы Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын Самын	
ERNA IMO:8038259 RS:820393 №18.10730.180UTM Язык формирования отчетов русско-английский 🚺	

# As a result of copying the following will be provided:

i Основные сведения Совещание Формирование отчета Оценка тех. состояния В пределах грузовой зоны как минимум три поперечных сечения в пределах 0,5L средней Зона значительной коррозии Î٩ Внутренние конструкции ахтерпика 20 Ниже допускаемой величины Типовые листы настила палубы бака Выше построечной толщины RTM\_1.1 Сечение 2 шп. 90-105 Типовые листы настила палубы ют Типовы •  $\times$ Типовы Самые ERNA 18.10565.180 ^ Индекс RNA 18.10565.180
27 Все коминсалноков грузовых трюмов (обшивка и набор)
27 Все коминсалноков грузовых трюмов (обшивка и набор)
27 Все люковые крышки грузовых трюмов (обшивка и набор)
27 Внутренние конструкции форпика
27 Внутренние конструкции форпика
27 Типовые листы настила палубы бака
27 Типовые листы настила палубы бака
27 Типовые листы настила палубы бака
27 Типовые листы настила палубы бака Все лис 🖂 🖬 Обшивн В преде Bce голько администратор) В пред RTM RTM 27 Типовые листы настила других палуб надстройки (не являющимися палубами бака, юта, мостика).
27 Все листы пояса горизонтального киля по всей длине, а также листы поясьев наружной обшивки днища в р
27.1 Поперечные переборки всех грузовых трюмов RTM Люковь Коминг 27.1 Все поперечные переборки в балластных тачках, включая систему подкреплений.
27.1 Все шпангоутные рамы с соответствующей обшивкой и набором в каждом балластном танке.
27.1 В пределах грузовой зоны три поперечных сечения в пределах 0,5L средней части судна.
RTM\_1.1 Сечение 1 шп. 60-75 Все поп Все поп Попере КТМ\_11. Сечение 2 шп. 90-105 КТМ\_11. Сечение 3 шп. 121-135 Патрубки донно-бортовой арматуры. Трубопроводы, соединяющие кингстонные и ледовые ящики. Переборки рубок, надстроек, машинно-котельных шахт. Фундаменты лебедок, брашпилей, шпилей, стопоров, кнехтов, киповых планок, битингов. Все уча Все осн Все уча Патрубк Трубопр Цепные ящики. Воздушные и измерительные трубы отсеков судна Перебор Отмена < Комингс Фундаменты леоедок, орашпилеи, ш U Цепные ящики N Коффердамы, сухие отсеки. Воздушные и измерительные трубы ( 🗸 ERNA IMO:8038259 RS:820393--- №18.10730.180UTM Язык формирования отчетов русско-английский 🛛 🔯



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