



National Science Foundation Wire Pool

A User's Guide to the UNOLS Wire Database

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Section A: Introduction

The UNOLS Wire Pool Database assists Vessel Operators and their designees with managing their tension members. At the time the database was developed there were only a few types of wire ropes and cables in use. Over time the database has grown to include a variety of types and sizes of cables, wire ropes and synthetics in use on the National Science Foundation (NSF) academic research fleet. Some of the general all-encompassing terminology that was appropriate in the early Wire Pool days such as wire and cable are now often referred to as tension members. Today a distinction is made between wire and cable with wire referring to wire rope and cable to a tension member with internal conductors or other means of transmitting data such as optical fiber. The name, Wire Pool, harkens back to when the pool consisted of only wire rope but for now there are no plans to change the name despite it being a little antiquated.

Conventions used in the Wire Pool Database and in this User's Guide.

Each tension member in the database is assigned a Wire Pool reel number. If the tension member was purchased by the Wire Pool for future distribution it is given a designation that begins with the letters NSF. A reel purchased by the Wire Pool for future distribution would have a reel number with the following format: NSF-XX-YY###. The XX is the last two digits of the year the tension member was purchased, the YY is a code for the type of tension member and ### is a sequential number. The code for the type of tension member may be a single character or multiple characters. An example of an NSF reel number is NSF-18-C120. The 18 refers to the year the tension member was purchased. The C is a code for .322 Electromechanical cable and the number that follows indicates it was the 120th reel of .322 cable purchased by the Wire Pool. Other codes used by the Wire Pool are shown in [Table 1](#).

Table 1: Tension member codes and corresponding descriptions

Tension Member Code	Description
C	.322" dia. Electromechanical Cable
CX	Coax Cable
EO	Electro Optical Cable
FO	Power Optic Cable, i.e. .681
H	Hydrographic Wire, i.e. .25" or .375" dia.
T	Trawl Wire, i.e. 1/2" or 9/16" dia.
SYNT	Synthetic

If a vessel has a tension member that was not originally distributed by the Wire Pool but it wants to include it in the vessel's wire database it is given an OTH number. The OTH (OTHER) number has the following format: OTH-###. The ### is a sequential number. Unlike the NSF number the OTH number does not contain a standard code for the type of tension member since the vessels tend to purchase a variety of products outside the standard complement of tension members available from the Wire Pool. An example of an OTH number is OTH-003 where the 003 indicates the third OTH reel logged in the database.

Underlined items in the Database indicate they are linked to additional information and can be "drilled into" by clicking on the underlined expression. For consistency between the User's

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Guide and the Database itself, titles that are bold or bold and underlined in the Database are similarly bold or bold and underlined in the User's Guide. Apart from the User's Guide Table of Contents, list of Figures and list of Tables which are linked to the appropriate section in the User's Guide, the underlined titles embedded in the User's Guide do not redirect the user to other pages. The italics words in the User's Guide identifies terminology that appears in the Database.

There are certain actions that can only be initiated by the Database Administrator or Wire Pool manager. One is re-assigning a tension member to a different vessel and the other is moving a tension member to a different institution. If your institution has more than one vessel and you want to move a tension member from one vessel to another you will need to contact the Database Administrator or Pool manager. Although not normally requested at the user level, a tension member cannot be moved from one institution to another without the assistance of the Database Administrator.

This User's Guide explains how to navigate the Database to accomplish some very specific tasks. In so doing there are many details embedded in the instructions. At the end of select sections an abbreviated list of instructions has been included for those who no longer desire all the details.

Contacts

The upper part is mainly contact information. It includes the names of the *Primary* and *Secondary contacts*, as well as their contact information. Also listed in this section are other users who are authorized by the *Primary contact* to edit the database as well as read-only users. Section D of this User's Guide will explain how to **Edit the contact list**.

Wires Assigned to this Vessel

The section in the middle of the **UNOLS WIRE POOL SHIP REPORT** is called **Wires Assigned to this Vessel** and as the title indicates it contains the wires and cables that are assigned to the vessel including those that may not currently be in use. This section has detailed information about each tension member including the *Wire size and type*, the *Date distributed to this institution*, its *Current length (m)*, the date of *Last lubrication* and the current *Wire Status*. In addition, the user can request new wire (**Request wire**) as well as request to have wire that may not have come from the NSF Wire Pool included in the vessel's database (**Report a reel**). More information on each of these is provided in section E below. Specific events can be recorded for each tension member listed in the **Wires Assigned to this Vessel**. Section F describes how to navigate the **Wires Assigned to this Vessel** section.

Safe Working Load Information

At the bottom of the **UNOLS WIRE POOL SHIP REPORT** is a section titled **Safe Working Load Information**. This table contains information that pertains to the safe use of each tension member that is currently in use on the vessel. Much of the information in this section is about how the tension member and associated over boarding equipment is configured on the vessel and whether the vessel is following the requirements of Appendix A of the UNOLS Research Vessel Safety Standard. The minimum sheave diameter in the over boarding sheave train, sheave grooving, break test results, the chosen factor of safety and the tension logging frequency are part of the **Safe Working Load Information**. How to edit and update this information as well as the details of requesting a break test are found in section G below titled Updating Safe Working Load Information.

Section C: Getting Started

Access to the Wire Pool Database is password protected. Users must have a password that is assigned by the Database Administrator. Access will allow the user to see only the tension member(s) that have been identified as being associated with their vessel(s). The URL for the database is: <http://cis.whoi.edu/science/PO/wiredb/index.cfm>. This takes the user to a login page that asks for the user's name and password. To get an assigned username and password or if there are any questions about the database, contact the Database Administrator or Wire Pool manager at unolswirepool@whoi.edu. Once the primary contact has access to the database other users can be added provided the primary contact approves.

Section D: Who can access the database, the levels of access and how to change access levels

As noted in section C each user of the Database should have their own login. This is useful since changes made to the database references the name of the person who entered the information. Users have varying levels of access which reflect their level of responsibility for the tension members on their vessel. The *Primary contact* typically has the title Marine Superintendent or Director of Marine Operations or something similar. The tension members assigned to a vessel are a resource of the National Science Foundation and as such must be kept in good condition with regular maintenance. Generally speaking, it is the responsibility of the *Primary contact* to see that their vessel(s) maintains the tension members that they have received from the National Science Foundation. Most *Primary contacts* choose to delegate that responsibility and it is usually assigned to the person identified as the *Secondary contact*. The *Secondary contact* is often the person who is organizing the maintenance activities, updating the information in the Database, requesting break tests and depending on the organization may actually submit requests for new wire. They are an alternate person to contact if the *Primary contact* is not available. In addition, there can be *Other authorized users* who have both read and write privileges and *Read-only users* that have read-only access. **Table 2** shows the actions permitted for each level of access.

Table 2: Allowable actions for each of the levels of access to the Wire Pool Database

Activity	Primary contact	Secondary contact	Authorized user	Read-only user
Move a reel to another vessel at your institution	Contact Wire Pool Manager or Database Administrator			
Move a reel to another institution	Contact Wire Pool Manager or Database Administrator			
Add Primary Contact	Contact Wire Pool Manager or Database Administrator			
Add a New User	Y	N	N	N
Add/Edit Secondary Contact	Y	N	N	N
Add/Edit Authorized User	Y	Y	N	N
Add/Edit Read-Only User	Y	Y	N	N
Edit Contact Information for Self	Y	Y	Y	Y
Request Wire	Y	Y	Y	N
Report a Reel	Y	Y	Y	N
Enter Events	Y	Y	Y	N
Request A Break Test	Y	Y	Y	N
Update Safe Working Load Information	Y	Y	Y	N

D.1 Adding a New User

The *Primary Contact* can request the addition of a new user. Users can be given full access to the data base with read and write privileges or they can be designated as a read only user and therefore could view the data base but not make any changes. The *Primary contact* also designates the *Secondary contact*. The responsibility for adding new users rest solely with the *Primary contact*. If the *Secondary contact* wants to add a new user, they must either ask the *Primary contact* to do it through the database or ask the *Primary contact* to send an email to the Database Administrator, or Wire Pool manager requesting the addition of the new user. The Wire Pool wants to make sure the *Primary contact* is aware of and approves of adding a new user who will have access to the vessel's wire database. The Database Administrator can always add individuals as well as designate a new *Secondary contact* if the change is authorized by the *Primary contact*.

The procedure to add a new user is two-fold. First the *Primary contact* goes to **Edit Contact List** on the **UNOLS WIRE POOL SHIP REPORT**. This will take you to a new window (see Figure 2) with an option to **Request a new authorized user for “vessel name”**, circled in red on Figure 2. If there is more than one vessel listed for the institution this window will give the option of requesting a new user for each of the vessels if desired. Clicking on **Request a new authorized user for “vessel name”** takes you to a page requesting information about the new user. By clicking **Send** at the bottom of the information page the request goes to the Wire Pool Database Administrator.

The next step is dependent on the Database Administrator approving the new contact and may take a day or two for this to occur. Once the contact has been approved, the *Primary* or *Secondary contact* can assign the level of access they want that person to have. To do so go to **Edit contact list**. This takes you back to the page shown in Figure 2. For each vessel, if there is more than one, there is a pull-down list under the title **Other authorized contacts (with full access)**: and another pull down list under the title **Other authorized contacts (read-only)**. These are identified in Figure 2 with the purple arrows. Both pull down boxes should have the name of the contact(s) you requested be added as an authorized user (if it was approved by the Database Administrator). If you want the new contact to have full access use the upper pull-down box. If you want the new contact to have read-only access use the lower box. Select the person’s name from the pull-down menu and click on the corresponding button to the right of their name indicating that you want to add them as a contact. Having done so the new contact and their level of access is listed on the **UNOLS WIRE POOL SHIP REPORT** page.

Figure 2: Requesting a new authorized user and assigning their level of access

The screenshot displays the 'AIWPS contacts | Ship report |' interface. It is divided into three main sections:

- Primary contact for AIWPS:** Rick Trask, Director of Research. Includes a note: 'If this person is no longer the Primary contact, please advise the Wire Pool Manager, Rick Trask (see contact information above).' A 'Change secondary contact' button is present.
- Vessel contacts for AIWPS:**
 - R/V Tension Member:** Secondary contact: Andrea Harvey. Includes a note: 'This is the person to contact with information or questions if the Primary contact is not available.' Below are two pull-down menus for 'Other authorized users (with full access):' and 'Other authorized users (read-only):'. The 'with full access' menu is currently empty, and the 'read-only' menu is set to 'none'. A red circle highlights the 'Request a new authorized user for R/V Tension Member' button.
- R/V Wire Rope:** Secondary contact: Andrea Harvey. Includes a note: 'This is the person to contact with information or questions if the Primary contact is not available.' Below are two pull-down menus for 'Other authorized users (with full access):' and 'Other authorized users (read-only):'. The 'with full access' menu is currently empty, and the 'read-only' menu is set to 'George Washington'. A red circle highlights the 'Request a new authorized user for R/V Wire Rope' button.

Abbreviated guide for Adding a New User

- Go to **UNOLS WIRE POOL SHIP REPORT**
 - Click on **Edit Contact List**
 - Click on **Request a new authorized user for “vessel name”**
 - Fill in the information requested about the new user.
 - Click on **Send**
 - After the new user has been approved by the database administrator, the level of access to the database can be established.
 - Click on **Edit Contact List**
 - To grant full access, go to the pull-down menu under **Other authorized contacts (with full access)** and select the user’s name. To grant read-only access, go to the pull-down menu under **Other authorized contacts (read-only)** and select the user’s name.
 - Click on the button to the right of their name either **Add contact for “vessel name”** or **Add read-only contact for “vessel name”** to give them the desired level of access.
-

D.2 Changing the Level of Access for an Existing User

To change the level of access an authorized user has, the authorized user’s name must first be removed from their current level of access. To the right of the person’s name are two options, [edit info] and [remove]. By clicking on [edit info] you can edit the contact information for that person. By clicking on [remove] you remove their current status. Their name will then appear in the pull-down menus and their new level of access can be assigned.

The *Secondary contact* can only be changed by the *Primary contact* or by the Database Administrator if authorized by the *Primary contact*. The pull-down box below the current *Secondary contact* has the names of all users. The *Primary contact* can select a name and click on the **Change secondary contact** button to change the secondary contact. The name of the previous secondary contact can be given a new level of access if so desired.

If any currently authorized user no longer needs access to the data base their status can be made **inactive** by the Database Administrator. Notify the Wire Pool using unolswirepool@whoi.edu with the desired change.

Abbreviated guide for Changing the Level of Access for an Existing User

- Go to **UNOLS WIRE POOL SHIP REPORT**
- Click **Edit Contact List**
- Go to the user’s name whose access is to be changed
- Next to the user’s name there are two buttons **[edit info]** and **[remove]**. Click **[remove]**.
- To Change the *Secondary contact*
 - Only the *Primary contact* can change the *Secondary contact*. Go to the pull-down menu under **Secondary contact** and select the user’s name.

- Click on the button to the right of their name, **Change secondary contact** to identify the named user as the new secondary contact.
- To Change the level of access for other users
 - To grant full access, go to the pull-down menu under **Other authorized contacts (with full access)** and select the user's name. To grant read-only access, go to the pull-down menu under **Other authorized contacts (read-only)** and select the user's name.
 - Click on the button to the right of their name either **Add contact for "vessel name"** or **Add read-only contact for "vessel name"** to give them the desired level of access.

Section E: How to request a new tension member or add a tension member to a vessel's database

In the middle of the **UNOLS Wire Pool Ship Report** there is a section titled **Wires Assigned to this Vessel**. On the right-hand side immediately above this section there are two common processes the user can initiate from the Database. One is **Request Wire** and the other is **Report a reel**. The **Request Wire** tab is to be used when a vessel would like to request a tension member from the Wire Pool. The **Report a Reel** tab is used when a vessel has a tension member that was not previously distributed by the Wire Pool but it would like to include that tension member in the vessel wire Database. **Figure 3** shows with red circles the location of the **Request Wire** and **Report a reel** tabs on the **UNOLS Wire Pool Ship Report**.

Figure 3: Location of Request Wire and Report a Reel

| [Ship reports for AIWPS](#) | [R/V Tension Member Ship Report](#) | [R/V Wire Rope Ship Report](#) | [Logout](#) |

UNOLS WIRE POOL SHIP REPORT **R/V Wire Rope** Logged in: Rick Trask

UNOLS
UNIVERSITY NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

Contact information: unolswirepool@whoi.edu
Wire Pool Manager: Rick Trask 508-289-2395
Database Administrator: Andrea Harvey 508-289-3530

Institution: American Institute of Wire Pool Studies Vessel name: R/V Wire Rope Shipping address: 266 Woods Hole Road Mail Stop 19 Woods Hole MA 02543 Office phone: 508-555-5557 Fax: <p style="text-align: center;">Update information</p>	Primary contact: Rick Trask Title: Director of Research Address: 266 Woods Hole Road Woods Hole MA 02543 Office phone: 508-555-5556 Cell phone: 508-555-5555 Email: rtrask@whoi.edu Fax: <p style="text-align: center;">Edit contact list</p>	Secondary contact: Andrea Harvey Title: Associate Director of Research Address: 266 Woods Hole Road Mail Stop Nineteen Woods Hole MA 02543 Office phone: Cell phone: Email: aharvey@whoi.edu Fax: <p style="text-align: center;">Other authorized users: Barbara Callahan [Edit] Read-only users: George Washington</p>
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Per UNOLS Wire Pool Policy, transfer of UNOLS wire to another vessel or institution requires prior approval

Request wire Report a reel

Wires Assigned to this Vessel								Event
Wire size and type	Manu. Reel No.	Wire Pool Reel No.	Date distributed to this institution	Current length (m)	Last lubrication (see Policy)	Wire Status		
0.322 EM	Q4512-C2	NSF-04-C125-A-A	Nov 2020	3,000	Dec-11-2020	In storage ashore for future use by this institution	Select: <input type="text"/>	
9/16 3x19		QTH-103-B	Oct 2020	5,000	Dec-13-2020	In use or onboard vessel	Select: <input type="text"/>	

Vessel Name: R/V Wire Rope **Safe Working Load Information**

The wires listed below are those reported above as "In Use or On-board Vessel", which are required to be in compliance with Appendix A: Rope/Cable Safe Working Load Standards in [UNOLS Research Vessel Safety Standards](#).

1	2	3	4	5	6	7	8	9	10	11	12	13	14
System Description	Wire Pool Reel No.	Rope/Cable	NBL (lbs)	TBL (lbs)	Test Date	ABL (lbs)	Minimum Sheave DIA (in)	Grooving Code	D/d	Tension Logging Freq.	FS	SWL (lbs)	Comments
Std Markey Winch	QTH-103-B	9/16 3x19	32500	33000	1/20/2021	32500	28.00	A	50	20.0 Hz	2.0	16250	
				Report or request new break test			Edit SWL info =>						

To request a break test for wires in storage:

Wire Pool Reel No.	Rope/Cable	Request
NSF-04-C125-A-A	0.322 EM	Report or request new break test

E.1 Requesting Wire from the Wire Pool

To submit a request for wire from the Wire Pool, click on **Request wire**. This will bring up a form called: **Initiate a Request for Wire or Cable for “institution name”**.

The requestor must enter the date when the wire will be needed, the size and type of wire/cable being requested and the length in meters that is needed.

Most important is the explanation as to why a new wire or cable is being requested. Space is provided under *Explanation of Request* for all the details about why a new tension member is needed. Please enter as much information as possible in order to make a convincing argument why a new tension member should be distributed. Failure to provide adequate information will delay the decision. Please include:

- The type of work that will be done with the new tension member.
- What federally funded projects will be supported by this new tension member?
- Why can this work not be done with the tension member presently on the vessel?
- If the request is for a cable to replace one that is currently on the vessel, what efforts were made to maintain the existing wire/cable to prolong its life.
- Please provide evidence that the vessel has been a good steward of the NSF resources (wire and cable) previously supplied?

The Wire Pool manager takes the request and bundles it with information about the available inventory and whether the requesting vessel has kept their Wire Pool Database up to date. In particular, the **Safe Working Load Information** on the **UNOLS WIRE POOL SHIP REPORT** will be reviewed to make sure it is up to date and in compliance with Appendix A of the UNOLS Research Vessel Safety Standard. The package of information is sent to NSF by the Wire Pool manager for their review. The Wire Pool manager will inform the requestor of the NSF's decision.

Abbreviated guide for Requesting New Wire

- Go to **UNOLS WIRE POOL SHIP REPORT**
- Click on **Request Wire**
- Enter the date needed, the type and size of tension member being requested and the length required.
- Enter a detailed explanation of why a new tension member is required. Lack of information will delay the processing of the request.
- Click on either **Submit** to submit the request or **Cancel** to return to the **UNOLS WIRE POOL SHIP REPORT**
- The request will be reviewed by the Wire Pool Manager and NSF.

E.2 Adding a tension member to a vessel's wire database

To add a tension member that was not previously distributed by the NSF Wire Pool, go to the **UNOLS WIRE POOL SHIP REPORT** page. In the middle of the **UNOLS Wire Pool Ship Report** there is a section titled **Wires Assigned to this Vessel**. On the right-hand side immediately above this section there are two common processes the user can initiate from the Database. One is **Request Wire** which was discussed in the previous section. The other is **Report a reel**. This section describes the procedure to be followed when a user wants to

include a tension member, not distributed by the Wire Pool, in their vessel's Database. Click on **Report a reel** to bring up a form called: **Report a reel for "vessel name"**.

Not every field needs to be filled out on this form.

Date reel was reported in use:

If you know the date when the vessel received the wire/cable it can be entered here. The default is the current date if nothing is entered.

Is this a wire rope, cable or synthetic tension member?

Click on the appropriate button and hit *Next*.

See the appropriate section (wire rope, cable or synthetic) below.

E.2.1 Adding a Wire Rope

If the tension member is a *Wire Rope* fill in the following information:

Diameter (in) Select the diameter from the pull-down menu. If it is not listed, enter the diameter (in) in the box adjacent to *If diameter not listed, enter here*.

Manufacturer: Enter the manufacturer if known.

Construction: Select the wire rope construction from the pull-down menu. If it is not listed, enter the information in the box adjacent to *If construction not listed, enter here*.

Manufacturer's design designation: Enter the manufacturer's product design number or code if known.

Material/Fiber: Enter the wire rope material if known.

Breaking Strength (lbs.) Enter the manufacturer's minimum breaking strength (lbs.) for the wire rope.

Current length (m): Enter the length of the wire rope in meters.

Is the tension member: In use or onboard the vessel or is it In storage ashore for future use.

Upload pertinent documents (PDF only): If there are any .pdf documents associated with the wire rope they can be uploaded.

Click on *Report* to submit the form.

E.2.2 Adding a Cable

If the tension member is a **Cable** the following information will be requested:

Diameter (in) Select the diameter from the pull-down menu. If it is not listed, enter the diameter (in) in the box adjacent to *If diameter not listed, enter here*.

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Manufacturer: Enter the manufacturer if known.

Construction: Select the cable construction from the pull-down menu. If it is not listed, enter the information in the box adjacent to *If construction not listed, enter here*.

Manufacturer's design designation: Enter the manufacturer's product design number or code if known.

Material/Fiber: Enter the material of the cable strength member if known.

Breaking Strength (lbs.) Enter the manufacturer's minimum breaking strength (lbs.) for the cable.

Current length (m): Enter the length of the cable in meters.

Is the tension member: In use or onboard the vessel or is it In storage ashore for future use.

Upload pertinent documents (PDF only): If there are any .pdf documents associated with the cable they can be uploaded.

Click on *Report* to submit the form.

E.2.3 Adding a Synthetic

If the tension member is a **Synthetic** with no conductors the following information will be requested:

Diameter (in) Select the diameter from the pull-down menu. If it is not listed, enter the diameter (in) in the box adjacent to *If diameter not listed, enter here*.

Manufacturer: Enter the manufacturer if known.

Construction: Select the construction of the synthetic tension member from the pull-down menu. If it is not listed, enter the information in the box adjacent to *If construction not listed, enter here*.

Material/Fiber: Enter the material of the synthetic strength member if known.

Manufacturer's product name: Enter the name the manufacturer uses for this tension member.

Breaking Strength (lbs.) Enter the manufacturer's minimum breaking strength (lbs.) for the synthetic tension member.

Current length (m): Enter the length of the synthetic tension member in meters.

Is the tension member: In use or onboard the vessel or is it In storage ashore for future use.

Upload pertinent documents (PDF only): If there are any .pdf documents associated with the synthetic tension member they can be uploaded.

Click on *Report* to submit the form.

A database administrator reviews all requests for adding a reel to a vessel's wire database. If any additional information is needed the administrator will contact the requestor. The reel will appear in the vessel wire database once it is approved by the administrator. There may be a delay between the time the request is submitted and when it appears in the vessel's database.

Abbreviated guide for Reporting a Reel

- Go to **UNOLS WIRE POOL SHIP REPORT**
- Click on **Report a reel**
- Enter the date the reel was reported in use if known.
- Select the appropriate tension member classification, *Wire Rope*, *Cable* or *Synthetic*.
- Click on **Next**
- Enter as much information as possible. There are a few required fields.
- Click on either **Report** to submit or **Cancel** to go back to the previous page
- The request will be reviewed by the Wire Pool Manager or Database Administrator and upon approval will appear in the vessel's wire database.

Section F: Navigating and Editing the Wires Assigned to this Vessel section

The middle of the **UNOLS WIRE POOL SHIP REPORT** there is a section titled **Wires Assigned this Vessel**. This section provides basic information about each of the tension members assigned to the vessel including those that might not be on the vessel but rather in storage ashore. The information includes: *Wire size and type*, *Manu. Reel No.* (manufacturer's reel number, if known), the *Wire Pool Reel No.*, *Date* the reel was *distributed to this institution* or reported by the vessel, *Current length*, date of *Last lubrication* and *Wire Status*.

F.1 The Wire Pool Reel No.

The *Wire Pool Reel No.* is underlined and can therefore be drilled into for more information about that specific reel. By clicking on the reel number, it will bring up a page that has three sections titled, **Reel information**, **Status** and **Event History**.

F.1.1 Reel Information

The **Reel information** is a compilation of known information about the reel. Some of it is helpful to the user but most of it is to help the Wire Pool Database Administrator. The information includes; tension member *size* and *type*, the name of the *Manufacturer*, the *Manufacturer's Design No.*, the *Manufacturer's Reel ID*, the *Purchase order number* of the original order, *NSF Grant number* when it was purchased, the *Date received in the pool*, the original Pool storage location where it was delivered, the *Drum type* it was delivered on, and the *Nominal breaking load*.

F.1.2 The **Status** shows the institution and vessel to which the wire is currently assigned.

F.1.3 Event History

The **Event History** is a historical record of the events that are related to the tension member. The intent is to create a record that includes as much information about the tension member from the time it first arrived at the Wire Pool to the time when it is finally retired. The completeness of the record depends on the diligence of the authorized database users to enter the information. The result of all tests conducted by the Wire Pool are uploaded in the Event History. Section F.2 below describe how events pertaining to the tension member can be added to the Event History by the users.

F.2 Entering Event information

Events occurring to the listed *Wire Pool Reel No.* in the **Wires Assigned to this Vessel** section can be added to the Event History. To assist the user there are several common *Events* that are in the pull-down menu. Those events include: *Lubrication*, *Cut back/retermination*, *End for End Wire*, *Split*, *Update Wire Status*, *Disposal Request* and *Upload Documents*. Each *Event*, when selected, brings up a simple form for entering the information about the selected action.

F.2.1 Lubrication Event

If the wire has been lubricated it is important to enter the event into the data base. Select *Lubrication* from the *Event* pull down menu. This will take the user to a simple form that can be filled out and submitted.

Enter the *Date of lubrication*, the type of *Lubricant used*, and indicate the *Length of wire lubricated*, was it the *full length of wire* or a *partial length*. If only a partial length was lubricated indicate the length. Was the lubrication done *In port* or *At sea* and in *Comments* enter any other information that seems pertinent including the type of equipment used to apply the lubricant. If there is a .pdf document containing any information about the lubrication it can be uploaded as well. By clicking *Submit* the information will be added to the tension member's **Event history**.

F.2.2 Cut Back/Re-termination Event

Tension members frequently need to be re-terminated and/or it may have been necessary to remove a length less than 200 meters due to damage, excessive corrosion or was recommended by the Wire Pool due to poor break test results. The end result is that a length of UNUSABLE wire was removed resulting in a shortened tension member.

If, however, the tension member had to be cut and the piece removed is greater than 200 meters and the removed length is in USABLE condition then there is a different event called *Split* that should be used to report the event. The tension member may not be considered usable by the vessel or the institution to whom it was distributed but the NSF resource might be of value to another user or smaller vessel. See more about *Split* in the section below.

The *Cut back / re-termination* event tab provides a form that requests the *Date of the cutback*, the *Length of wire removed*, the *New wire length*, and the *Reason for the cutback*. After entering the information *Submit* the form and the information will be added to the **Event History**.

F.2.3 End for End Wire Event

After a tension member is removed from a winch it may get used again but the end that was originally at the core of the winch drum may become the new working end due to an intervening spooling operation. This can possibly extend the life of a tension member. The *End for End Wire* event requests the *Date* it occurred and the *Reason*. After entering the information *Submit* the form and the event is entered into the **Event History**.

F.2.4 Split (removed usable tension member of 200 m or more)

If a tension member must be cut and the piece removed is greater than 200 meters and the removed length is in USABLE condition, there is an event called *Split* that should be used instead of *Cutback* to report the event. The tension member may not be considered usable by the vessel or the institution to whom it was distributed but the NSF resource might be of value to another user or smaller vessel.

When a split has occurred two segments are created. The two resulting lengths are given the same designation as the parent reel but with the suffix of –A and –B. For example, if *Wire Pool Reel No.* NSF-10-C100 is split in two pieces each resulting length would have a new designation, NSF-10-C100-A and NSF-10-C100-B. It is the responsibility of the vessel to properly identify the two resulting lengths with their new complete NSF reel numbers particularly if one goes into storage. It can sometimes be difficult to know which is which if their lengths are similar.

The *Split* event tab brings up a form to help the user keep track of the two segments. The *Date* when the split occurred is requested along with the *Reason* for the split.

The *Status* of each segment needs to be specified. There are three status options in the pull-down menu. They are: *In use or onboard vessel*, *In storage ashore for future use by this institution*, *In storage ashore and available to other institutions*.

The user can then input the corresponding lengths of what will become Segment A and Segment B. If the entire length of one or the other is not usable an estimate of the usable length of each segment is requested.

Finally, the wire *Condition* for each segment can be selected from a pulldown menu that includes: *good*, *partially damaged*, *poor*, *needs evaluation*, or *unknown*. If the tension member is a cable the *Wire Condition* should be an evaluation of not only its mechanical condition but also its electrical conductors and if applicable the optical fibers. If there is any specific information about the segments it can be added in the *Comments* section.

Once the information is filled in for both Segment A and Segment B it can be *Saved* and the event will appear in the **Event History**. In addition, the two segments will now appear on the vessel **UNOLS WIRE POOL SHIP REPORT**. Each segment will be tracked separately. By clicking on the link to either new segment the **Reel Information** contains a link to the parent reel. Each new segment now has their own event history that starts with the creation of the segment. Any history prior to the split can be obtained through the link to the parent reel.

F.2.5 Update Wire Status

During the life of a tension member it's status may change back and forth from being in use to in storage and eventually to it no longer being needed. This event tab allows the user to easily update the status of the tension member as it changes over time. The status options include: *In use or onboard vessel*, *In storage ashore for future use by this institution*, *In storage ashore and available to other institutions* or *Disposal Requested*. If the tension member is being made available to other institutions, an estimate of the usable length of wire is required. The Wire Pool uses this information to initially determine if the wire or cable will meet the needs of another vessel.

F.2.6 Disposal Request

A disposal request should be accompanied by a detailed description as to why the tension member needs to be disposed. The Wire Pool makes an effort to maximize the life of these NSF resources. Even though a wire or cable may no longer be useful to the institution that currently has possession it does not mean that it should be disposed. Tension members are an NSF resource and when distributed to a vessel it is understood that they are to remain assigned to that vessel and be maintained by the receiving institution while in their custody and until they can be reassigned. This includes the time while they are in storage and available to other institutions. Tension members are not to be transferred from one institution to another without the consent of the Wire Pool manager.

There are cables that become no longer useful to any vessel and should be disposed. In those cases, a request for disposal can be made. Disposal requests are reviewed by the Wire Pool manager and are submitted to the NSF for approval. Following NSF approval the institution is notified that the tension member can be disposed.

F.2.7 Upload Documents

The *Upload Document* event should be used if you have a document (.pdf files only) about the tension member that you want to upload and have included in the **Event History**. It can be

anything that provides additional details pertaining to the tension member. The *Upload Document* event tab opens a form that request the event date. The *File type* pull down menu has several general phrases describing common documents that are uploaded. They include: *Wire Log, Lubrication/Maintenance Report, Condition Report, Damage Report, Catastrophic Damage, Wire train, Photographs, Break Test Results* (if done outside of the Wire Pool), *e-kink Test Results, Mandrel Wrap Test Results* (if done by the vessel), *Conductivity Test, Manufacturer Documents and Other file type*. If *Other file type* is selected there is a box to the right for entering a descriptive phrase that best describes the uploaded document. The *File type* selected from the drop-down menu or that which was entered in the *Other file type* box will appear in the **Event History**.

A file can then be selected using the *File to upload* button. The text box called *Description* is for inputting more details about the uploaded document. When drilling into a specific event in the **Event History** the description provides some additional information about the uploaded document without having to open the uploaded document.

Section G. Updating the Safe Working Load Information

The bottom section of the **UNOLS WIRE POOL SHIP REPORT** is titled **Safe Working Load Information**. The tension members listed in this section are only the ones whose **Wire Status** is reported as *In use or onboard vessel*. In this section the user can **Report or request new break test** as well as **Edit** or **Add SWL info**.

G.1 Requesting a break test

For each tension member listed in the **Safe Working Load Information** section there is a tab located in column 5 for requesting a new break test for that specific tension member. By selecting **Report or request new break test** the user is directed to a page where they can either request a break test or report a break test. The NSF Wire Pool is funded to perform break tests on wire samples submitted by the vessels at no cost to the Vessel Operator. The responsibility of the vessel is to provide samples that are 5 to 7 meters long from the working (wet) end of the tension member and ship them to the NSF Wire Pool. To request a break test by the NSF Wire Pool the Vessel Operator should select the **Request a break test** option. More will be said below about **Reporting a break test**.

The Wire Pool encourages the vessels to submit two break test requests and to send two samples from the same reel. One sample should have at least one vessel applied termination typical of what is used at sea so that the vessel terminated tension member can be tested as an assembly. This way the vessel can learn the magnitude of the loads their terminated tension member can withstand. The break test result will be entered into the vessel's wire data base. If by chance the sample breaks below the manufacturer's minimum breaking strength it may be due to the tension member itself or the termination. The Wire Pool will conduct a second break test using the second sample if one is provided. The second sample should also be 5 to 7 meters long and does not need to be terminated. The Wire Pool will terminate the second sample with Wire Pool terminations, break the sample and report the results in the vessel's wire data base. If the first break was low because of the condition of the tension member the second test will confirm that. If the first break was low due to the vessel applied termination, the vessel can look into the ways to improve the termination or the techniques used to apply the termination.

If only one wire or cable sample is provided from the reel and it is supplied with terminations on both ends please include a short piece that is approximately 18" long so that the additional tests that the Wire Pool conducts can be performed on the individual wires that make up the wire rope or cable armor. If there are samples from more than one reel in a shipment please identify which 18" piece is associated with each long sample.

Each long (5-7m) sample that is sent to the Wire Pool should be accompanied by its own break test request form.

The break test request form is accessed by selecting the **Report or request new break test** for the specific wire that needs to be tested. The break test request form should be completed and as noted above a copy sent with the wire sample. The form will populate with known information but will require some input from the user. If the cable has a *Manufacturer's marker tape* it is helpful to have the length number from the tape entered on the form. In addition, select the most appropriate *Wire Condition* from the pulldown menu and indicate if the *Reason for testing* is either *Periodic Testing* or *Evaluating Wire*. The *Evaluating Wire* option is selected

when the tension member is not due for testing but rather may have had an event that caused concern and the vessel wants the tension member tested. If the sample is terminated please indicate the *Termination type* that is applied. Examples of types of terminations include: Poured Socket such as with epoxy or a low melting temperature metal, Compressed Sleeve such a Nicopress® fitting, Helical cable grip termination such as the PMI CABLE-GRIP®, or Wire rope clips such as the Crosby® G-450 Wire Rope Clip. Reusable terminations will be returned to the vessel operators after the testing is completed. The *Length of the sample provided* (as per the guidelines spelled out on the form) is a required field.

At the time the break test request is submitted the vessel operator is also required to provide a copy of the wire history or wire log information with the sample. The minimum requirements of the wire log are listed in section A.3.9 of the UNOLS Research Vessel Safety Standards, Appendix A. UNOLS Rope and Cable Safe Working Load Standards. They are also summarized on the break test request form. The Wire Log can be uploaded using the *Upload Wire Log* button at the top of the completed break test request form or by selecting the *Upload documents* option from the *Event* pulldown menu in the **Wires Assigned to this Vessel** section of the **UNOLS Wire Pool Ship Report**.

To finalize the break test request hit the *Complete request* button at the bottom of the break test request form. This submits the break test request to the Database Administrator and also produces a sheet that should be printed and attached to the wire sample for identification purposes prior to shipping. The address where the sample(s) should be shipped appears in the upper right part of this sheet. The Wire Pool receives a number of samples from many vessels and it is important that the samples are properly identified using a copy of this sheet.

Abbreviated guide for Requesting a new break test

- Go to the **UNOLS WIRE POOL SHIP REPORT**
- In the **Safe Working Load Information** section locate the *Wire Pool Reel No.* and click on **Report or request new break test** that corresponds with that reel number.
- Click on *Click here to submit a wire sample for testing by the Wire Pool Manager.*
- Populate the form with the information requested.
- Click on the *Complete request* button at the bottom
- Click on the *Upload Wire Log* button to submit the required wire log.
- Click on **Print this page** button in the upper right corner of the form.
- Attach a copy of the printed form to the wire sample and send the sample to the shipping address indicated on the form.

Report a break test

Section A.5.2 Method of determining (TBL)- Steel Wires and Cables of Appendix A of the UNOLS Research Vessel Safety Standard states that the Vessel Operator shall send samples to a UNOLS-accepted test facility. The Wire Pool test facility at WHOI is the preferred facility to provide this service. There is no charge for the various tests conducted, tests are automatically reported to the Vessel Operator and entered into the vessel's wire database. In addition, the Wire Pool may make recommendations for re-testing (at no additional cost) if the results are less than satisfactory.

Provisions exist however to enter break test results if they are conducted by a UNOLS-accepted test facility that is not affiliated with the NSF Wire Pool. To do so select the **Report or request**

new break test and then choose the option to **Report a break test**. The user is asked to enter the test results and email a pdf of the test certificate to unolswirepool@whoi.edu. The test results are initially pending until reviewed and accepted by the Wire Pool manager.

G.2 Adding or Editing Safe Working Load (SWL) Information

For each tension member listed in the **Safe Working Load Information** section there is a tab located in column 8 for editing the safe working load information for that specific tension member. The vessel operator is required to input safe working load (SWL) information for each tension member. To operate at increasingly smaller factors of safety, the vessel is required to meet the requirements defined in Appendix A of the UNOLS Research Vessel Safety Standard. Information about the sheaves used to overboard the tension member as well as the frequency that tension data is collected is required. By clicking on the **Add** or **Edit SWL info** tab the user is directed to a page called **Rope and Cable Safe Working Load Parameters** for that specific tension member. The boxes on this form are numbered and coincide with the numbers and corresponding descriptions that appear at the bottom of the **UNOLS WIRE POOL SHIP REPORT**. There are five boxes that the user can input or edit information.

Box 1 with the title *System Description* is for a brief description of the winch system on which the tension member is wound.

Boxes 2-7 are not editable by the user.

Box 8 with the title *Minimum Sheave DIA (in)* is the minimum sheave tread diameter in the entire sheave train that is used to overboard the cable from the winch to and including any portable hanging blocks. Only enter the numerical value (no units) of the diameter in inches.

Box 9 with the title Grooving Code seeks a letter designation as defined in the **Sheave Groove Radii** chart that can be accessed from the link at the bottom of the **UNOLS WIRE POOL SHIP REPORT** adjacent to the number 9.

Box 10 is calculated based on the sheave diameter input in Box 8 and the diameter of the tension member.

Box 11 with the title *Tension Logging Freq* seeks the sampling frequency of the tension monitoring equipment. Only enter the numerical value (no units) of the frequency in Hz.

Box 12 with the title *FS* refers to the factor of safety that will be used for the selected tension member. Factor of Safety (FS) is defined as the ratio of the maximum stress that a material can withstand to the maximum stress estimated for it in its planned use. For the purposes of this standard, FS shall be considered the value selected by the operator. Section A.8 of Appendix A of the UNOLS Research Vessel Safety Standard defines the minimum standards that must be met to select specific FS values.

As a tool to alert the vessel operators to a problem, the values in Boxes 8-13 will be red in color if any information is missing or if the safe working load information that was input does not meet the requirements of Appendix A. A message also appears indicating that **Information is missing OR not consistent with Appendix A**.

Abbreviated guide to Adding or Editing Safe Working Load (SWL) Information

- Go to the **UNOLS WIRE POOL SHIP REPORT**
- In the **Safe Working Load Information** section locate the *Wire Pool Reel No.* and click on **UPDATE SWL INFO** that corresponds with that reel number.
- Enter the new information.

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- Click on the *Save Changes* button at the bottom or if there were no changes click on the *No Changes Made* button.