SAFETY FOLDER
FOR MOORING

Statoil

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The contents of the safety folder are part of the new procedures for mooring.

Validity

The mooring procedures which are described in this folder apply in principle to all vessels in the Statoil portfolio, which call at the supply bases. The exception is vessels which require a special mooring procedure. This includes specialised vessels and vessels greater than a certain size

Here, mooring means 1) when the vessel docks alongside the quay) & 2) when it casts off
This includes shifting berth within the same base.

Purpose

The purpose of this safety folder is to ensure the safety of the personnel who moor the vessels which are operated by Statoil.

Scope

The safety folder includes 10 chapters

Mooring must be carried out by shore personnel

Mooring must always be carried out by mooring personnel ashore – who have received necessary training and who are familiar with the local mooring conditions and risk factors involved in mooring. These must be notified of all needs for movements to/from and within the base, cf. item 1.1

Vessel crew

Crew members on board Statoil operated vessels are not allowed to jump ashore and carry out mooring on their own!

If personnel from the vessel jump ashore and moor their own vessel, this must be reported and an RUH form be filled out!

This does not exclude qualified crew from the vessel from participation ashore in mooring, as long as the captain considers it necessary, as long as crew members can:

- Safely move between the vessel and shore via the ship's gangway. (*This presupposes that crew must not jump between the vessel and shore to lay out or take in the gangway)*
- Be put ashore with an MOB boat in a safe manner.

In no way does this exempt the vessel from its duty to announce arrivals, departures and other movements, as well as to operate in accordance with this procedure.

Note:
Any vessel personnel who might be participating in mooring at the base, must follow the requirements for the mooring watch in this procedure; for example, requirements related to clothing and protective gear, cf. Item 2. This is also the case if work is carried out in connection with setting extra hawsers in adverse weather conditions

Archiving of forms

The base mooring officer is responsible for keeping and filing (in a separate binder) forms filled out in connection with mooring

This applies to the following:

- Training form for new employees
- Pre-job talk – form (PJT)
- RUH form
- as well as any other forms which are filled out in connection with mooring

New employees

Immediate supervisors are also responsible for reviewing the contents of the safety folder and carrying out the training plan for new employees who will be involved in mooring. See Chapter 9

Responsibility and authority

Immediate supervisors are responsible for ensuring that mooring personnel on their base are familiar with the contents of the safety folder and follow it in their work. Individual employees performing mooring must also be able to document a review of the safety folder.

The safety folder for mooring has been reviewed and approved by the local mooring officer and Statoil locally:

Mooring officer	**Statoil ASA**

CONTENTS

1. NOTIFICATION & COMMUNICATION

1.1 NOTIFICATION PROCEDURES FOR VESSELS

1. **Vessels must always notify mooring personnel on location before arrival.**
2. **The minimum notification time for the various supply bases is 1 hour before arrival. For departure and shifting berths the vessel must notify the mooring watch as soon as the time is set.**
3. **It is important that the mooring watch always is available by phone.**
4. **Mooring personnel must always be at the quay – prepared to carry out mooring when the vessel arrives.**
5. **If a vessel docks without notifying the mooring watch in advance, this must be reported and a RUH form filled out!**

1.2 UHF RADIO & COMMUNICATION WITH VESSELS

1. **Mooring personnel must always use UHF radio communication**
2. **Upon arrival at/departure from the quay, the vessel and mooring personnel must establish radio communication on the specified mooring frequency channel.**
3. **Mooring personnel must by radio communication make sure that;**
   - **Hawsers and springs are pulled and made fast on bollards in mutual understanding with the vessel**
   - **The hawsers must be pulled in / run out in mutual understanding with the vessel**

Frequencies which are to be used during mooring:

Platform / field	Prefix	Channel no.	Channel name	TX – MHz	PL TX	RX – MHz	PL RX
Mooring channel 1	FORTØY	168	FORTØY1	459.3000	Nil	459.3000	Nil
Mooring channel 2	FORTØY	169	FORTØY2	459.0750	Nil	459.0750	Nil
Mooring channel 3	FORTØY	170	FORTØY3	458.6500	Nil	458.6500	Nil

NOTE; All mooring personnel must have received training in the use of UHF communication!

2. CLOTHING & EQUIPMENT

The mooring watch must use the following clothes / equipment;

- Service uniform / work clothes
- Hard hat
- Gloves
- Safety shoes
- Visibility clothing (reflective vest, jacket, or similar)
- Flotation vest or life jacket (during the mooring operation)
- NOTE! Always remember to bring along a UHF radio

In addition;

- Mooring personnel should have a headlamp / torch easily accessible
- Mobile phone should be brought along – in case of an emergency!

Cell phone

UHF radio

Headlamp

3. RISK FACTORS AND ACTIONS WHEN MOORING

1) People who jump between the vessel and the quay

Risk: Personnel who jump to the quay, fall into the water, or fall and injure themselves on the quay. Particularly great risk in winter when quays are slippery.

Action: It is strictly prohibited for crew to jump ashore from their ship to perform mooring and/or handle the gangway

2) The painter which is thrown from the vessel to the quay.

Risk: Mooring personnel and other personnel on the quay can be "hit" by the painter!

Action: It is important to prepare the quay prior to mooring and to make sure that no others are present on the quay during mooring.
Watch out for the painter when this is thrown / shot from the vessel – so that no one is hit. Tying "hard objects" to the end of the painter is forbidden on the vessel.

3) Mooring - fastening hawsers on bollards.

Risk: Danger of being pulled into the water by the hawser, as well as the risk of pinching/crushing arms and legs/feet between hawsers and bollards!

Action: It is important to focus on not getting hands/feet in between the mooring loop and the bollard when the hawser is going to be tautened. It is particularly important to focus on this when the hawser is going to be removed from the bollard. If communication is not satisfactory, it may happen that a vessel begins to heave in the hawser too abruptly.

4) Radio communication

Risk: Poor radio communication can lead to ambiguities and misunderstandings between mooring personnel onboard the vessel and mooring personnel on the quay. For example, it has happened that the vessel has tautened the hawsers – without the mooring personnel on the quay being aware of this – and whom have thus been pulled into the water, or had hands/feet crushed between hawser and bollard!

Action: It is important that mooring personnel have received good training in the use of radio communication – and have good communication with the vessel. particularly when the hawsers are going to be tautened / slackened!

3.1 Risk assessment of mooring

The table below contains an analysis of the specific activities and risk factors in connection with mooring and actions to be implemented by mooring personnel in order to reduce / eliminate these risk factors

	ACTIVITY	WHAT HAZARD?	ACTION
1	**Preparation of the quay!** Check safety issues such as; - Manhole covers are in place. - The quay is free of hoses over the necessary area - No vehicle(s) / personnel are present unnecessarily on the quay	Poor preparation can have serious consequences during the mooring. Open manholes, parked vehicles and other obstacles can create dangerous situations for involved personnel.	Clear the quay well before the vessel's arrival See to it that manhole covers are in place, that vehicles which will hinder the work are removed, and that no hoses are lying about the quay area.
2	**Secure the quay frontage!** Make sure that the quay frontage and the rest of the quay is orderly so that it is possible to carry out mooring and other work in connection with the vessel calling at port.	Obstructions on the quay frontage can damage the ship and also lead to spills.	Clear the quay frontage well before arrival of ships.
	ACTIVITY	**WHAT HAZARD?**	**ACTION**
3	**Establish communication with the vessel!**	A lack of communication may result in; 1) Unclear guidelines for carrying out work 2) ... and reduced opportunities for direct notification between the involved parties to avoid potential hazards.	Make certain that mooring personnel have direct communication on the UHF band with the vessel.

	ACTIVITY	WHAT HAZARD?	ACTION
4	**Casting or shooting heaving line / painter!**	Mooring personnel can fall into the water and drown.	Only personnel with relevant experience must be used during the operation. All mooring personnel must be wearing life vests, visibility clothing, helmets, gloves and safety shoes during mooring. Review of PJT or SJA before mooring. Be aware of their own position and maintain a safe distance to the edge of the quay/embankment.
		Mooring personnel can fall into the water and be pulled into the vessel's propeller.	Be aware of their own position, and maintain a safe distance to the edge of the quay or embankment.
		Crushing hazard between the quay and ships.	Same as the above item.
		Heaving line can hit mooring personnel and cause impact injuries.	Mooring personnel must observe personnel on the vessel who throw heaving line toward the quay. The heaving line must fall down on the quay and then be picked up! Catching the heaving line in mid-air is not allowed!
	ACTIVITY	**WHAT HAZARD?**	**ACTION**
5	**Shift hawser to bollard!**	Ropes can get tangled in the vessel's thrusters and pull mooring personnel into the water.	Avoid coiling heaving line around hands or other parts of the body when receiving, Hold heaving line and hawsers away from thrusters and propellers.
		Mooring personnel can fall into the water and drown.	Same as above
		Mooring personnel can fall into the water and be pulled into the vessel's propeller(s). Crush hazard in ropes.	Use protective gear, including flotation vest as described above. Be aware of their own position, and maintain a safe distance to the edge of the quay or filling.
		Crushing hazard between the quay and ships.	Be aware of their own position, and maintain a safe distance to the edge of the quay or filling.

			Avoid coiling heaving line around hands or other parts of the body in connection with warping. Avoid standing in/on ropes.
			Be aware of your own position. Keep a safe distance from the quay or embankment.

	ACTIVITY	WHAT HAZARD?	ACTION
6	**Lay ropes around bollard!**	Crushing hazard between bollard and ropes.	Avoid holding rope in loop when fastening on the bollard
7	**Ropes tautened from vessel!**	Danger of blows from ropes which can part during tautening. A mooring bollard from the vessel can in extreme cases loosen and be hurled toward the quay	Be aware of their own position in relation to ropes from the vessel when these are tautened. Avoid standing behind the bollard when this is taking place, as well as increase the distance to the bollard(s).
	ACTIVITY	**WHAT HAZARD?**	**ACTION**
8	**Evaluate the mooring with involved personnel after the job is completed**!	A lack of evaluation may result in experiences which are relevant for safe working, not coming to the benefit of the involved personnel.	

4. Explanation of the procedures

1. During mooring and when the vessel casts off, it is forbidden for the vessel's crew and mooring personnel to jump between the vessel and the quay. Use of a gangway is required for all movements between the vessel and quay during the stay.
   - It must not occur that personnel jump between the vessel and the quay to handle the gangway

2. If it is apparent that one person cannot carry out the mooring assignment in a safe manner, extra personnel must be summoned.

   - Important factors which determine the number of people are;
     - Weather, other conditions, reduced lighting (evening, dark?)
     - Quays where it is difficult to moor
     - Quays where the hawsers must be pulled through uneven terrain (rock fills, inter-tidal areas, etc.)
     - Type and size of the vessel

3. Mooring personnel on the quay must in addition to work clothes and service uniforms (security guards), wear helmets, goggles, gloves, safety shoes and clearly visible clothing.

4. Approved flotation vests must always be worn by mooring personnel.
   - Flotation vests must always be kept easily accessible and must be used during mooring

5. Wearing rings (wedding band, etc.) is forbidden for mooring personnel.
   - There is a general ring ban for all operational personnel in Statoil

6. Mooring personnel must always check that the area has been cleared for mooring, and ensure that any obstacles (cars, containers, etc.) have been removed before mooring begins.
   - Neither must non-essential personnel be present in the quay area

7. The mooring personnel must always take great care and keep their own safety in mind.
   - When two or more people perform mooring together, they must secure each other and help each other with each individual hawser!

8. Upon arrival at the quay, mooring personnel must establish communication with the vessel via crew on the deck and UHF radio communication (A specified frequency which must be used for mooring)

9. Mooring personnel must interrupt the mooring in mutual understanding with the vessel, if this becomes necessary due to safety-related considerations.

10. The vessel's crew must make sure that no dangerous objects have been fastened at the end of the painter. – Only a standard rubber buoy / ball may be used at the end of the painter.

11. Mooring personnel must be extra observant when the painter is cast / shot, so that everyone may avoid getting hit. (As well as no other personnel being on the quay)

12. Placement of hawsers/springs is done in mutual understanding with the vessel's crew.
    - Via communication on UHF band radio

13. When mooring at the bollards. Ensure that ropes do not get stuck under / on the quay.
    - NOTE! Crush hazard (fingers, arms and feet)

14. It is particularly important that mooring personnel and crew onboard the vessel signal to each other during mooring, so that undesirable incidents are avoided.

5. PRE-JOB TALK (PJT)

Prior to most ordinary mooring operations there will not be a need to conduct a "Pre-job talk".

In addition, there will usually be a separate mooring procedure for vessels above a certain size.

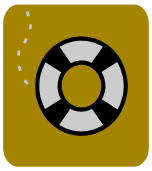
But if there are conditions which make the operation more difficult or which entail an increased risk for the personnel involved – a *"pre-job talk"* must be conducted prior to the mooring operation.

The pre-job talk – (PJT) is conducted with a view to identifying risk factors, and implementing preventive measures which reduce/eliminate the risk, so that the mooring can be carried out in a safe manner.

Conditions which require that the mooring personnel conduct a *"pre-job talk"* prior to the mooring operation, include;

- **Bad weather (strong wind?, high waves?)**
- **Poor visibility (the quay is not illuminated?, mooring at night?, heavy snowfall?)**
- **Poor footing (ice-covered quay? snow?)**
- **Vessel & size (large and heavy hawsers?)**
- **Or a combination of several of the factors described above**

On the following page is the form for conducting the "pre-job talk"


5.1 Checklist for "pre-job talk" (PJT)

Vessel:	**Quay:**	**Time:**	**Date:**

	CHECKPOINTS	YES	NO
1.	Is the quay area cleared and any obstacles removed?		
2.	Are there any other operations in progress on the quay area?		
3.	Do we have all the required equipment / protective gear for the job?		
4.	Has UHF radio communication been established with vessel?		
5.	Do we have enough personnel to handle the mooring and the hawsers?		
6.	Must the hawsers be pulled across the inter-tidal zone/a rock-filling, etc.?		
7.	Are the hawsers large and heavy?		
8.	Is there a poor surface on the quay area (slippery, snow, ice)?		
9.	Is the weather/visibility adverse (dark, rain, snow, insufficient lighting)?		
10.	Is the weather adversely affecting the vessel / the mooring (wind & waves)?		
11.	Is there a special mooring routine for the vessel in question?		
12.	Will the painter be shot from the vessel? If yes, then be aware!		
13.	If casting off - Are there more than one hawsers on the same bollard?		
14.	Have all personnel received training in mooring?		
15.	Other things which require special attention?		

Item No.	If you have gotten a "**red reply**" to one of the above questions, please describe here which actions have been implemented in order to reduce the risk factor(s):

Signature (responsible for mooring): _____

6. (RUH) - REPORTING UNDESIRABLE INCIDENTS

What is an undesirable incident?

An <u>undesirable incident</u> is for example:

- **Breach of normative document (procedures, routines, regulations, etc.)**
- **Potential accident ("near miss")**
- **An accident (with or without personal injury)**
- **Potential or actual material damage**

Why "report" an undesirable incident?

- **Undesirable incidents must be reported in order that actions may be implemented to prevent similar incidents occurring in the future.**

- **Reporting of undesirable incidents is also important in relation to lessons learned – including to be able to inform other units in the organization about hazards relating to a specific work operation.**

When to fill out an RUH form?

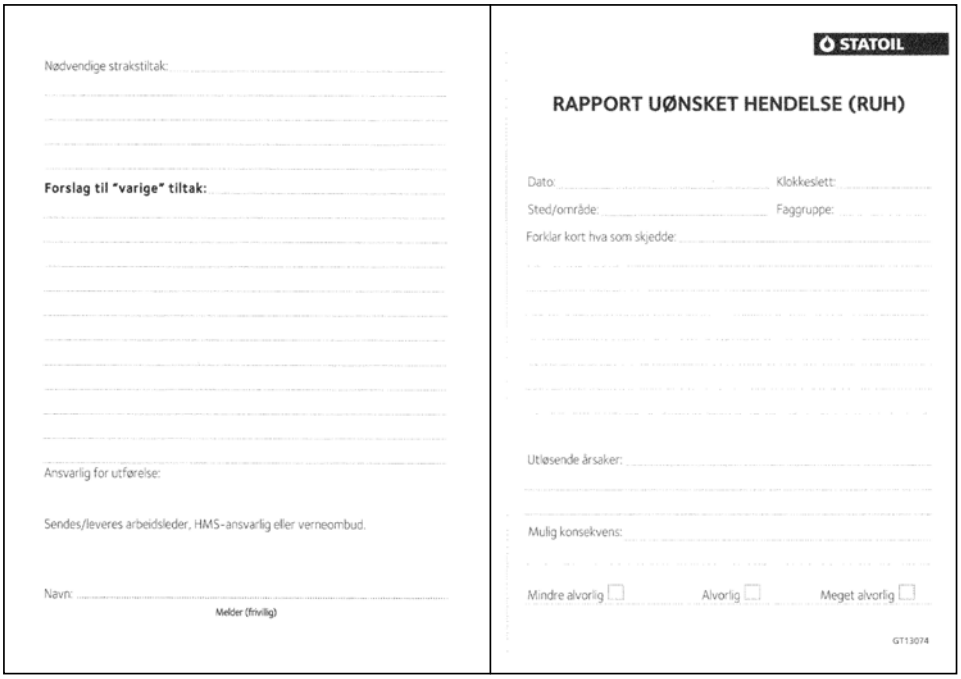
All undesirable incidents must be reported on a separate RUH-form!

How to fill out the form?

See the next page for more info regarding completion of the form

6.1 RUH FORM

Below you see the RUH form which must be filled out if an undesirable incident occurs in connection with mooring / the mooring operation.



Nødvendige strakstiltak:

Forslag til "varige" tiltak:

Ansvarlig for utførelse:

Sendes/leveres arbeidsleder, HMS-ansvarlig eller verneombud.

Navn:

Melder (frivillig)

STATOIL

RAPPORT UØNSKET HENDELSE (RUH)

Dato: Klokkeslett:

Sted/område: Faggruppe:

Forklar kort hva som skjedde:

Utløsende årsaker:

Mulig konsekvens:

Mindre alvorlig ☐ Alvorlig ☐ Meget alvorlig ☐

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INFORMATION related to completion of the form;

- **Signing the form is voluntary**
- **After the form is filled out, it must be sent or delivered to the supervisor, HSE manager or safety delegate**
- **Contact the supervisor, HSE manager or safety delegate for help or more information regarding RUH and completion of form.**
- **A book of forms with the RUH form for completion must always be kept in this safety folder**

7. CARRYING OUT MOORING

The mooring operation from START to FINISH

START

A)

The vessel calls the mooring watch and puts in an order for mooring!

B) ASSESS THE ASSIGNMENT

The mooring watch assesses the mooring assignment, including;

- the number of people which will be required to perform the assignment!

C) PREPARING THE QUAY

Deleted: JETTY

The mooring personnel assemble on the quay before the vessel arrives and clear the quay area.

D) ESTABLISH RADIO

Skal stå Establish radio contact

Mooring personnel establish radio contact with the vessel via UHF

E) CARRY OUT THE MOORING

Mooring personnel perform the mooring operation in mutual understanding with the vessel!

END

7.1 Hawsers from various vessels on the same bollard!

NOTE! The last hawser must always be passed through the loop of the first hawser

If one is mooring with a hawser to a bollard where there is already a hawser from another vessel (moored at another quay) – it is important that the latest hawser is passed through the loop of the other hawser before it is placed around the bollard. See photo 2;

Photo 1

Various vessels moored to the same bollard

Photo 2

The latest hawser (the blue hawser) is passed through the loop of the hawser which already lies around the bollard (the red hawser) – before it is placed around the bollard.

The reason that the mooring personnel must not lay the second hawser directly over the bollard, but pass it through the loop of the first hawser, is to avoid "blocking" the hawser which already lies around the bollard.

If the blue hawser in photo 2 had lain over the red hawser, one would not have been able to "cast off" the red hawser – without removing the blue hawser first.

TRAINING PLAN

NEW EMPLOYEE

8. TRAINING PLAN FOR NEW EMPLOYEES

- **All new employees who are going to carry out mooring – must undergo training in advance!**
- **The local mooring officer is responsible for ensuring that training is carried out!**
- **The local mooring officer is also responsible for approving new mooring personnel!**
- **Participants in this training must have received an introduction to the contents of the safety folder, as well as be able to render the content of the various aspects of mooring, including;**

1. **NOTIFICATION & COMMUNICATION**
2. **CLOTHING & EQUIPMENT**
3. **RISK FACTORS IN MOORING**
4. **THE MOORING PROCEDURE**
5. **PRE-JOB TALK (PJT)**
6. **REPORTING UNDESIRABLE INCIDENTS (RUH)**
7. **LOCAL QUAY & MOORING CONDITIONS**
8. **PREPARING THE QUAY & PARALLEL BULK OPERATIONS**
9. **TELEPHONE LIST – NOTIFICATION PLANS**
10. **PRACTICAL SAFETY ROUNDS AT THE QUAYS (SEE SEPARATE SECTION)**
11. **ASSISTANCE TO BE GIVEN ON THEIR INITIAL MOORING ASSIGNMENTS (SEE SEPARATE SECTION)**

After the training is completed, the training form for new employees must be filled out, signed and archived (see separate section for the training form)

8.1 PRACTICAL SAFETY ROUNDS AT THE QUAYS

To be carried out at the various quays. During the safety rounds, the following points must be reviewed for each individual quay;

1. Location of bollards

2. Location of life-saving equipment (ladders, life-buoys, etc.)

3. Any challenges in relation to pulling the hawsers to bollards?

4. Bulk issues & other parallel operations which take place on the quays. – I.e.; hoses, equipment, personnel and other work which is (or may be) an impediment to the mooring operation. How does one resolve this?

5. As well as other factors which are relevant for mooring that training participants should receive information about!

8.2 PRACTICE

On their first mooring assignment, the person in training must be assisted by experienced mooring personnel.

The person in charge of the training is responsible for ensuring that the person receiving training;

- **Has shown that he/she has a mastery of radio communication.**
- **Communicates well with the vessel**
- **Can let the vessel know when it should tauten / slacken the hawsers to avoid risk situations (crush hazard, being pulled into the water by the hawser, etc.)**
- **Is capable of assessing the risk in each individual mooring operation**
- **Independently evaluate what is a sufficient number of mooring personnel that must be mustered to carry out each individual mooring operation in a safe and secure manner.**
- **Complies with governing documentation, does not "take chances", and always has his/her main focus on safety!**

8.3 FORM FOR NEW EMPLOYEE

Date: _____

After having gone through the training of a new employee, the items that have been reviewed must be ticked and the form signed.

The form must be signed by both the supervisor and the new employee – before being filed.

	The following items have been reviewed with the new employee:	Please tick
1	Notification procedures	
2	Training in the use of UHF radio communication	
3	RISK FACTORS IN MOORING	
4	"Pre-job talk" (PJT)	
5	Clothing & equipment	
6	The mooring procedures	
7	Hawsers from various vessels on the same bollard?	
8	Preparing the quay & challenges with parallel bulk operations at the quay	
9	Telephone list and emergency procedures / instructions	
10	Map of the base and life-saving equipment at the quays	
11	Review of local mooring conditions and challenges	
12	RUH - form for reporting undesirable incidents	
13	Carried out "rounds on all of the quays" – and received information about; ▪ Special issues / challenges at the various quays ▪ Where life-saving equipment is located on the various quays	
14	New employee has carried out mooring under the supervision of experienced personnel and has been approved by immediate supervisor.	

Signatures:

_____ _____

Supervisor **New employee**

THE NEXT FOUR ITEMS (PAGES) MUST BE PREPARED FOR EACH SUPPLY BASE. INCLUDING;

1. Telephone list for the base
2. Emergency instructions for the base
3. Map of the base highlighting the quays & (if possible) the location of rescue equipment (ladders / life buoys, etc.)
4. Local quay conditions