

“Prevent, Don’t Cure”

Circular 02/10/14

Subject: Incorrect launching of the Free-Fall Lifeboat – Important Issue!

In connection to our “*Don’t Cure, Prevent*” policy, we would like to bring to the attention of our Clients what could go wrong during a Free-fall Lifeboat launching.

Watch the video on the link below:

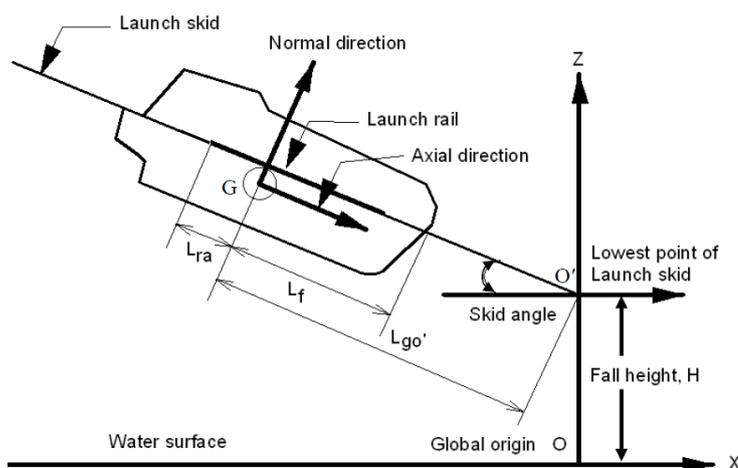
https://www.youtube.com/watch?v=3_keBUBKmcU

According to **Life-Saving Appliances (LSA) Code Chapter IV par. 4.7.3:**

“4.7.3.1 Each free-fall lifeboat shall make positive headway immediately after the water entry and shall not come into contact with the ship after a free-fall launching against a trim of up to 10° and a list of up to 20° either way from the certification height when fully equipped and loaded”

Understanding the quote:

A free-fall lifeboat, when installed properly, falls freely into the sea, thus generating kinetic energy. This energy propels the lifeboat away from the vessel during and immediately after water entry.



The configuration of the freefall is shown in the picture illustrated below.

The free-fall height of the boat is measured from the surface of the water to the lowest point of the launching skid. The factors which primarily affect the launch behavior are:

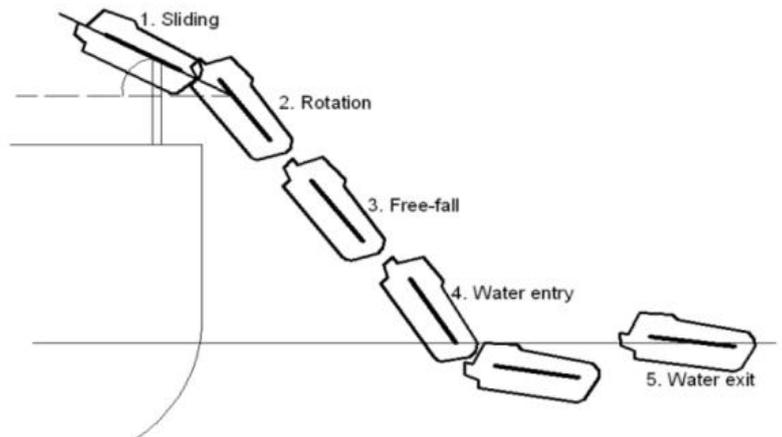
- *mass distribution*
- *length and angle of the launch skid*
- *freefall height*

The above parameters interact to affect **the orientation and velocity** of the lifeboat at the time of water impact, **the acceleration force** which is experienced by its occupants and **the headway** made by the lifeboat immediately after water entry.

There are four phases comprising the launch of the free-fall launching into the water:

1. *Sliding or ramp phase*
2. *Rotation restricted fall phases*
3. *Free-fall phases*
4. *Water entry phase*

The *sliding or ramp phase* is the first phase of the launching of the lifeboat. This phase begins when the boat slides along the skid and the phase ends when the center of gravity passes a certain point very close to the end of the skid. At this time, the lifeboat begins to rotate and slides towards the end of the skid.



The *sliding of the boat phase* begins when the lifeboat is released and the phase ends when the center of gravity is crossing a point close to the end of the launch skid.

The *rotation phase* begins as the sliding ends and it continues until the boat is no longer in contact with the launch skid.

The *free-fall phase* begins at the end of the rotation phase and continues until the boat touches the water surface. The rate of rotation increases until the boat is no longer in contact with the skid at which time *the free-fall phase begins*. The *free-fall phase ends* when the bow comes into contact with the water.

The *water entry phase* begins at the end of the *free fall phase*. During the water entry phase, the boat is acted upon by hydrostatic and hydrodynamic forces.

Conclusion

According to the above video, there are indications of improper installation of the freefall lifeboat. More specifically, the subject launching most probably failed due to incorrect *length and angle of the launch skid and/or freefall height*.

We remain at your disposal for more details,

Prevention at Sea