

NAUTICAL NOTES

NOTE NO 6

27.08.92

MACGREGOR TYPE HATCHES - INSPECTION AND TESTING



This note has been written to ensure a better standard of surveys from our surveyors during hatch inspections.

There has been much misunderstanding in the past regarding hatch surveys and hose tests but after the A. Bilbrough/MacGregor Seminar in May 1992 it was felt that this was a necessary next step in our series.

There is of course a great deal of experience built into our surveys from an operational viewpoint and this is intended to standardise our procedures.

MacGregor hatches should be so fitted that steel to steel contact between the hatch and the coaming is continuous. This will allow approximately a 30% penetration of the rubber by the compression bar and that is the designed situation.

It is not part of the design situation that quick acting cleats or cross joint wedges are required for weathertight integrity. They are required only to restrain the hatch from moving at sea.

It is also necessary to ensure that the various panels meet horizontally and there is no vertical displacement between them as this will indicate that full watertight integrity is patently not achievable.

Steel to steel contact should be obtained between hatches and coaming and between the various panels on the cross joints.

If steel to steel contact is good and rubbers are deeply compressed coamings should be checked to determine whether the coaming has worn away allowing the hatch cover to drop thus compressing the rubber beyond its normal compression ratio. Coamings should be built up flat and horizontal thus supporting the hatchway panels correctly and allowing the rubber to be checked properly. If hatchways have been built up then a putty test would have to be carried out to determine whether the correct compression of hatch rubbers is taking place.

For a hose test to be undertaken the hatch will be closed and the hatch inspected as follows:

- To ensure that there is steel to steel contact between the hatch and the coaming.
- That quick acting cleats and cross joint wedges are not used to achieve watertight integrity.
- The hose test should be undertaken using a good quantity of water to flood the tops of the hatches and the coamings with around 2 to 3 bar pressure on a couple of fire hoses.
- Entry into the hold will give an indication as to whether any water has obtained entry. Judgement as to who should be on deck to ensure good test water as against hold inspection may be necessary.

For a hatch inspection check the following:

- Grooving on hatch coamings rest bar
- Corrosion on compression bar
- Wear down on side plate chock
- Weld failures in seal retaining plates
- Check loadbearing pads for wear down
- Check cross joint seal retaining bars and cross joint rest bar
- Check rubber for compression, grooving and cuts
- Cleanliness of runways etc
- Check hydraulic oil in use - if in doubt request a sample. Pressures may be up to 6000 psi - hose failure could be dramatic.

- The action of quick acting cleats and wedges should be checked to ensure that the hatch is suitably restrained for the seagoing condition.

The figures attached show:-

1. The as-designed situation for the hatch side
2. The as-designed transverse seals and contacts.
3. The as designed load bearing pad.
4. The more usual problem areas causing damage to compression and hatch rest bars.
5. Problem areas in the transverse section.
6. To show the areas where weld failure may occur due to over compression caused by wear down in the hatch rest bar.
7. To show where over load on the hatch rest bar can occur due to wastage in the hatch panel side plate.

(4 pages of diagrams - Figs 1-7 attached)

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