

SHIP STRUCTURE LABORATORY

TECHNOLOGICAL UNIVERSITY – DELFT

SOME COMPLEMENTARY REMARKS ON REPORT 80

„DEVELOPMENT OF A STRAINCYCLE COUNTER
FOR USE ON BOARD SHIPS“

by

IR H. J. ZUNDERDORP

IR J. CH. DE DOES

SHIP STRUCTURE LABORATORY

SSL 88

Delft Technological University

Mekelweg 2, Delft

The Netherlands.

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ir.H.J.Zunderdorp en ir.J.Ch.de Does.

The strain cycle counter, described in report nr. 80 of the Ship Structure Laboratory (Delft Technological University, the Netherlands) was installed on a dutch destroyer for a short period. Main purpose was testing of the instrument and comparison with other instruments of similar type.

The strain cycle counter was connected with a complete Wheatstone bridge of wire resistance strain gages, that were fitted as indicated in fig. 1. By using strain gages at port and starboard side of the vessel only the vertical bending moment with reference to the ship was measured.

As the weather was very nice on the trip from Holland to the North Atlantic only rather small bending moments were exerted upon the ship. The total range of the instrument was adjusted in such a way, that the highest levels corresponded with 3000μ strain tension and 3000μ strain compression. A typical record of an observation is shown in fig. 2.

Our first experiences with this instrument are favourable. No difficulties were met with the instrument itself. However the total stress range from $+3000\mu$ strain to -3000μ strain was somewhat too large in view of the fine weather. As no technicians of the Laboratory were on board it was not possible to change over to another range. Secondly the still water bending moment of a ship of this type is rather sensitive for the fuel consumption and this results in a shifting of the zero adjustment.

The good experiences have led to the decision to make a permanent test setup with the strain cycle counter on a ship of the Dutch merchant marine.

Delft, June 1962

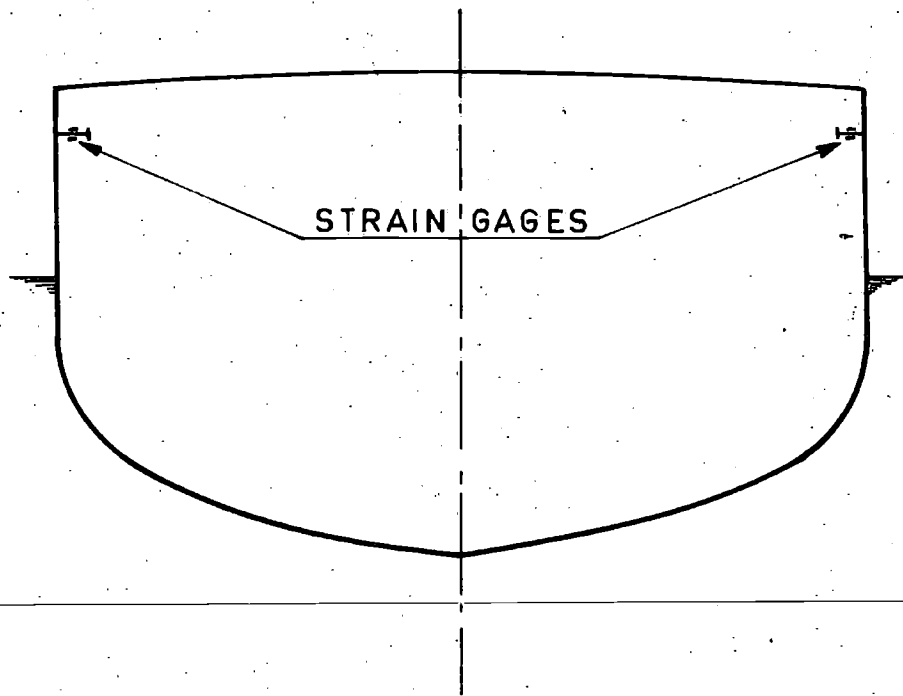


FIG. 1

FIGURE 2

