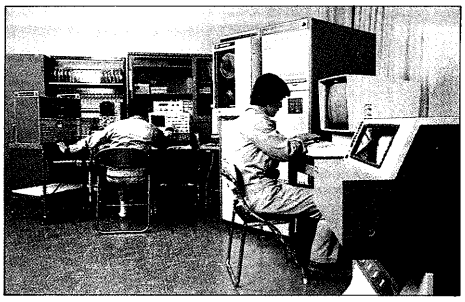
Computerization



Mini-computer PF 1400 newly installed at the Research Institute.

The Society's use of computerization has expanded year by year. To keep pace with the times, plans have been made to replace the current host computer, FACOM M-160AD, which is now installed in the head office of the Society, with a new larger capacity model FACOM M-180 II AD (4MB) in the near future. The important matters related to computerization which occurred during the year under review were as follows:

1. System of Estimating Noise in Ships

In recent years, in consideration of the need to improve environmental conditions for operating and living in ships, many countries have been paying attention to the control of shipboard noise. Technical investigations have been carried out by the IMCO as well as by the IACS. Under such circumstances, attempts must be made to establish a process for estimating noise levels in cabins and various working spaces at the design stage.

The classification society intends to prepare a system that will enable it to respond to inquiries from shipowners, shipbuilders and others in connexion with technical problems related to noise. With these considerations in mind, the Society undertook the development of a programme system to estimate shipboard noise, and this system was just recently completed. Data on sources of noise, as well as on the physical values connected with the propagation of sounds and their penetration through interior structural materials around cabins, are accumulated in this system and arranged for easy reference, as occasion demands, in order to permit estimation of noise in ships. This system is to be further expanded in the future by increasing the amount of available data through measurements carried out on actual ships and machinery.

2. Programme for Calculating the Rate of Area Cleaned by the Crude Oil Cleaning System

In accordance with the Protocol 1978, established in relation to the International Convention for the Prevention of Pollution from Ships, 1973, tankers which use crude oil to clean all their cargo oil tanks must ensure that the total area shielded from the direct jet of the cleaning device does not exceed 10 percent of the total area in case of the horizontal plane and 15 percent in case of the vertical plane. A programme has been designed to prepare a shadow diagram by calculating the rate of area cleaned based upon these requirements (see Fig. 1).

In the year under review, the Society carried out calculations for 48 tankers in accordance with this programme.

3. Mini-Computer for NK Research Institute

The Research Institute of the Society located at Mitaka recently received a new mini-computer PF 1400. This mini-computer has an IC memory of 256 KB and is provided with two sets of character displays, as well as peripheral equipment, such as a magnetic disc, a magnetic tape, two floppy disc units, a line printer and a GPIB adapter, among others.

This mini-computer has its own small-scale computing ability, and can also be connected on-line with the large-sized FACOM M-160AD computer at the Society's head office. It can thus make computations by utilizing the function of the main computer. In addition, this mini-computer can be connected with various kinds of measuring devices and used for rapid disposition of measurement data.

This mini-computer is expected to make a large contribution to research activities at the Research Institute.

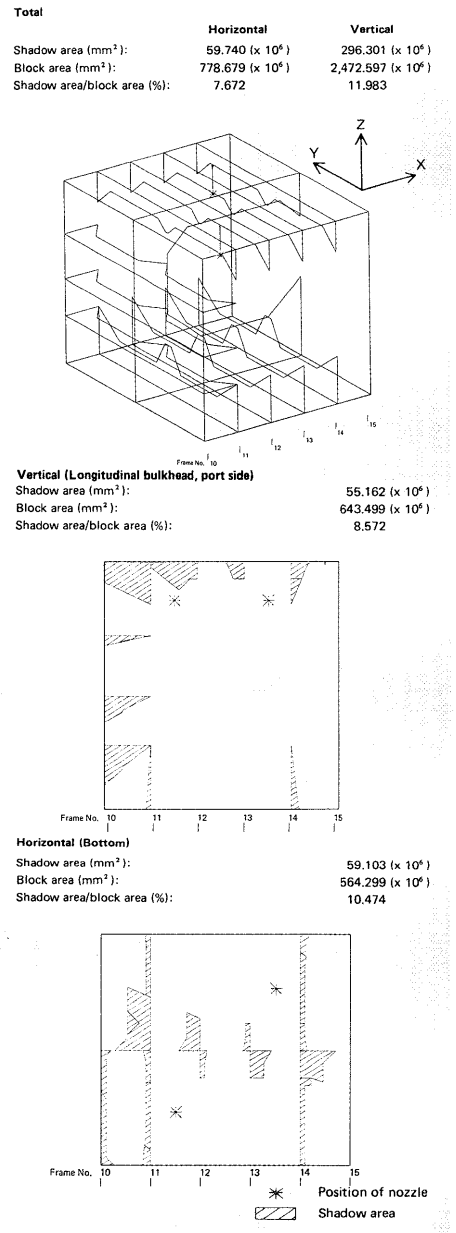


Fig. 1 Computer-calculated Tank Shadow Diagrams