

Subject :

The Year 2000 and GPS Rollover Problem (Part 3)

NKTECHNICAL INFORMATION

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To all concerned:

ClassNK has provided information concerning the "Year 2000 Computer and GPS Rollover Problems", or Y2K problem, as they affect computers, devices with embedded microchips, and GPS systems in its previous Technical Information No. 277 (dated 11 August 1998) and No. 278 (dated 31 August 1998). In the third issue of this series, information is presented on one type of countermeasure that can be taken with respect to the Y2K problem. (The Item No. is in continuation of Technical Information No. 278.)

6. Guideline for responding to the "Year 2000 Problem"

A number of countermeasures can be taken to cope with the Y2K problem as it pertains to ships. Most notable of these is the need for all ship owners, managers, and masters to conduct thorough checks of all shipboard computer systems and other electronic systems with embedded chips and to take necessary action either to change the software programs affected or the microchips of those systems about which any doubt exists as to their proper function. This is particularly important in the case of critical equipment such as navigation and steering systems or main engine control systems, where a thorough investigation and corrective action should be undertaken for each individual system.

Many systems aboard modern ships are equipped with a number of microchips to control machinery, equipment and other installations. In general, it is said that while a microchip which contains a built-in clock may not pose a significant problem by itself, a problem may be caused by an application program. In many cases, such problems can only be recognized or detected by the person who created the program. Therefore, it is often very difficult to check the content and functions of all shipboard programs and systems equipped with microchips in their entirety.

Further, according to some specialists, it is not possible to predict whether the effect of the malfunction of a microchip which is not Y2K compliant would affect only the equipment or device concerned, or would lead to a collapse of an entire system. Under these circumstances, it may be necessary to take a possible collapse of all systems into consideration, which might be caused by malfunction of a particular piece of equipment, in spite of every effort to address the Y2K problem. In preparing for the worst case, it is recommended that preparations be made for suitable countermeasures to be taken in the event of the need to respond effectively.

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The Y2K problem is a common problem which affects all ships regardless their type or size. The Society has, therefore, established a sample model draft of a *Guideline for Responding to Year 2000 Related Problems* which can be accessed on the "Year 2000 Problem" page of its website at (<http://www.classnk.or.jp>) in order to assist all concerned. This model is only a simplified example and is not exhaustive in content.* The intent of such a guideline is to establish procedures that can be taken to ensure the integrity of all vital shipboard systems in the event of any potential problems that may occur. To cope with an accidental shutdown of a part or all control systems caused by the Y2K problem, it is recommended that each Company take necessary steps to address the problems by establishing an adequate individual guideline referring to the above-mentioned model as a simplified, basic example.

When you review the *Guideline for Responding to Year 2000 Related Problems* on the ClassNK website, you will also find separate models of the *Contingency Preparedness Procedures for Year 2000 Related Problems* (Company and Ship, respectively) which may hopefully prove to be of assistance to all concerned.

For further information, please contact the following persons at the Head Office of the Society:

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* Individual companies will have to prepare their own guidelines and specific procedures concerning their particular operating circumstances, ship types, degree of dependence on computerized control and other factors.