

**DEPARTMENT OF TRANSPORTATION  
UNITED STATES COAST GUARD**

U.S. Coast Guard (G-MMT-4)  
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NVIC 7-80  
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NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 7-80

Subj: Use of Fire Detection Systems Which are Not Approved Under 46 CFR 161.002

1. PURPOSE. The purpose of this Circular is to facilitate and encourage the use of fire detection systems on U. S. flag vessels.
2. BACKGROUND. Fire detection systems are presently required in designated areas of Passenger Vessels (46 CFR 76.05), Cargo and Miscellaneous Vessels (46 CFR 95.05), and in unattended machinery spaces of inspected vessels (NVC 1-69). These required systems must be Coast Guard approved under the specification for Fire Protective Systems in 46 CFR 161.002. Whenever extra fire detection equipment is installed in these or other inspected vessels, present -regulations require that the additional unrequired equipment and its installation also be of an approved type. It has been suggested that the type of fire detection equipment used in buildings might improve safety and therefore should be permitted aboard vessels.
3. DISCUSSION. Use of nonapproved fire detection systems may be acceptable as excess equipment provided that they do not endanger the vessel or crew in any way. It has been determined that non-Coast Guard-approved detection equipment listed and labeled by a nationally recognized testing laboratory may be considered "equivalent" for use as excess equipment. However, they cannot be substituted for required equipment. Since these non-Coast Guard-approved systems may not have been tested for durability, vibration resistance corrosion resistance, and other properties important to marine use, no trade-off s may be permitted by their presence nor may watches and/or patrols be reduced. In order to avoid such hazards as explosion and electrical shock, the installation of all fire detection equipment must conform to the requirements of Subchapter J, Electrical Engineering, especially the hazardous location electrical installation regulations in 46 CFR 111.80-5.
4. ACTION. Non-Coast Guard-approved fire detection equipment meeting the above guidelines may be installed as excess equipment as follows:
  - a. Single station units. Single station detection units may be installed without Coast Guard review provided the complete unit is listed and labeled as a single station unit by a nationally recognized testing laboratory. These units consist of a detector, control and alarm sounding device in a single housing which may be powered by battery, compressed gas, mechanical devices, or may plug into an electrical outlet. If single station units are to be installed using fixed wiring, however, the plan review provisions in paragraph b. apply.
  - b. Fixed installations. Fixed installations are multiple component systems or single station units with fixed 115-120 volt AC wiring. Testing laboratories do not list complete fire detection Systems, they only list the system's assemblies or subassemblies. Consequently a fixed system proposed for a specific vessel will have to undergo a Coast Guard plan review to ensure safety and compatibility of the equipment . This NVC should be noted on

the plan or submittal letter for such installations as a reminder that the equipment is in excess of requirements.

- c. Plan review and inspection. Coast Guard marine inspection offices may permit installation of fire detection equipment using the above guidelines. Reviewed plans may be marked "EXAMINED" rather than "APPROVED" to avoid misunderstandings. In addition, the installed system may be inspected for compliance with the plans and may be tested to verify that it functions as intended.