



U.S. Coast Guard Marine Safety Center News

HOT Issues Regarding Control Verification Plan Review

Status of Retroactive Fire Safety Amendments (RFSA) Plan Review

From the design review standpoint, the major focus of the U. S. Coast Guard implementation plan has been to evaluate the level of compliance of existing foreign passenger vessels with international regulations regarding separation of escape stairways from enclosed spaces in which fires are likely to originate. The compliance date for all existing vessels was October 1, 1997. In accordance with the Coast Guard's Navigation and Vessel

Inspection Circular (NVIC) 4-95, "Fire Safety Standards for Foreign Passenger Vessels Constructed before 1 October 1994", plans showing all details of compliance should have been submitted to the USCG Marine Safety Center no later than April 1, 1997. In accordance with Coast Guard inspection policy, if plans have not been submitted to the USCG Marine Safety Center, the vessel agent will be advised that intervention may result if evidence of compliance with the 1992 Amendments is not provided.

To date, 80 percent of the foreign passenger ships that have indicated an intent to trade from U.S. ports within the next year, have submitted the necessary plans and begun the RFSA control verification process. Of this number, 43 percent have essentially completed the plan review process. Approximately 27 existing foreign ships that have expressed the intent of trading from U.S. ports have not yet contacted the USCG Marine Safety Center.

CONTENTS

<i>Status of Retroactive Fire Safety Amendments (RFSA) Plan Review</i>	1
<i>Top 10 Issues Found During Existing Ship RFSA Plan Review</i>	2
<i>RFSA Exam Scheduling</i>	3
<i>Top 10 Hot Issues for New Vessel Designs</i>	3
<i>More on the Issue of Smoke Detection vs. Heat Detection</i>	5

Top 10 Issues Found During Existing Ship RFSA Plan Review

While conducting RFSA CVE plan review on existing ships, the Coast Guard has become aware of a number of common issues that are causing problems in completion of plan review. The ten most problematic issues are discussed here.

1. SOLAS 1960 Part H compliance

Proof of SOLAS 1960 Part H compliance has proven to be a major stumbling block for some ships. During plan review and control verification inspection, the Coast Guard has found some ships do not comply with Part H in their entirety. Often observed areas of deficiency have included the absence of continuous bulkheads (deck to deck), improper structural fire protection (not in accordance with the applicable tables), ventilation ducts not dampered or separated in way of stairways or main vertical zone boundaries, dead-end corridors and inadequate escape arrangements.

2. Smoke detection vs. heat detection

The attempt to use heat detectors rather than the required smoke detectors in spaces such as public toilets, pantries, cold rooms, et cetera, has been continuous. SOLAS Regulation II-2/41-2.2 clearly states that service spaces "shall be equipped with a smoke detection and alarm system..." Please see the extended discussion of this issue at the end of this newsletter.

3. Lobbies

The use of lobbies, particularly dead end lobbies, to separate prohibited spaces from directly accessing the stairs has been the initial solution used by many designers. The Coast Guard continues to discourage the use of any

lobbies when there are better ways to remove access. The tendency for inner doors of lobbies to be left open is one of the biggest faults of the lobby solution.

4. Smoke detectors in small spaces

A purported interpretation has surfaced stating spaces of less than 2 square meters may forgo the required fire detection. To date, the Coast Guard has not seen a documented interpretation of this nature from any organization or flag state. Smoke detectors are required in all accommodation and service spaces by SOLAS regulation 41-2.2, regardless of size.

5. Direct access issues

We continue to receive plans showing direct access from unauthorized spaces to stairways. These spaces include the following: offices, machinery spaces, storerooms, print shops, projection rooms, lockers, pantries, shops, beauty parlors, back offices without A-class separation, and waiting rooms.

6. Fire door indicators

The absence of fire door indicators on "all" stairway fire doors has been a widespread problem. Many installers opted not to indicate doors such as normally locked doors or normally closed doors. The latest unified interpretation to Regulation II-2/41-2.4.2 permits normally locked doors to have no indicators. All other fire doors on stairways, MVZ's and galleys shall be indicated.

7. Sprinklers in cold storage and other spaces not originally covered by existing sprinkler installations

In reviewing the sprinkler system coverage on Method II ships the Coast Guard has uncovered many spaces which were not originally included in the coverage area. The retroactive requirement for automatic sprinklers is

therefore not automatically satisfied by old Method II sprinkler systems or by systems designed under SOLAS 74 prior to the 1992 Amendments. Spaces commonly found lacking the coverage are cold stores, stores, corridors, stairways and electronics spaces.

8. Enclosed promenades

A new unified interpretation has been added addressing the contents and construction of enclosed promenades. These spaces should have no significant fire risk and the furnishings are restricted to deck furniture. Permanent openings must provide natural ventilation. Several existing ships have increased the accommodations spaces by utilizing enclosed promenades and the issue has been uncovered during the RFSA review process.

9. Open information counters

Open information counters placed within stair boundaries must be at least 50% open to the stair. In addition, open information counters must be furnished to stairway standards, meaning the furniture shall be fixed, fire resistant (up to six seats per stairway, per deck) or non-combustible and not restrict escape routes. Equipment within the open information counter is limited to one day's supplies. No office equipment is allowed in an open information counter. Offices are required to be separated from stairways and may not directly access stairways.

10. Spaces "originally within the stairways"

A number of SOLAS 74 ships have been found to have storage lockers, pantries, etc. located within the stairways. This is direct evidence that these ships do not comply with Regulation II-2/26 of SOLAS 74. Spaces may only exist within the stair on pre-SOLAS 74 ships where the rules were more permissive on the matter.

RFSA Exam Scheduling

It has become increasingly common that owners schedule only several hours to complete the RFSA Inspection. U.S. Coast Guard Navigation and Inspection Circular 4-95 makes it clear owners should plan for up to two full days to complete the RFSA exam. The most successful exams have occurred when consecutive days are allotted.

Top 10 Hot Issues for New Vessel Designs

With the realization that the new "unified" interpretations have been forwarded by the forty-second session of the IMO Sub-Committee on Fire Protection to the Maritime Safety Committee for approval, the Coast Guard has begun applying these interpretations. The interpretations will not be retroactively applied to existing ships. Some of the interpretative issues commonly encountered in plan review are discussed below.

1. Control station automatic sprinklers

Automatic sprinklers are required in control stations on new passenger ships carrying more than 36 passengers. The unified interpretation to Regulation II-2/36 was removed as amendatory. Therefore, the use of manual valves is no longer permissible. Other fixed systems, installed in lieu of automatic sprinklers, must be a type which is approved by the flag administration and presented to the Coast Guard in plan review.

2. Dead-end corridors

Designers have done an excellent job of finding ways to eliminate dead-ends on new ships. However, there are still some cases where dead-ends are found on new ships. These may

be allowable in service areas, or in short service space and crew stateroom lobbies with normally locked doors. It is preferable to include the dead-end lobby as part of the space it accesses.

3. Documented "equivalents"

At times ships are designed with unique features which do not comply with certain SOLAS regulations. The Coast Guard will not accept an "equivalent" design unless it is fully documented by the flag state in accordance with Regulation I/5. Proper use of this regulation will allow many of the creative arrangements highly desired in the cruise industry. Use of the Coast Guard's concept review policy is encouraged for such designs.

4. Fire separation between Type 2 spaces

Table 26.1 of Regulation II-2/26 has a note that allows the reduction of bulkheads between spaces of category 2 (stairways, elevators, escalators). The Coast Guard will not accept use of this reduction in certain instances. For example, where a lift is separate from a stairway on other decks, the structural fire protection should not be reduced at the only deck where the lift adjoins a stairway.

5. Means of escape from spaces within spaces

Many new ships are incorporating cabin suites with one or more interior bedrooms. The Coast Guard has been questioning the adequacy of the single means of escape from the bedroom area in the event of a fire in the main cabin space. The use of locally audible smoke alarms has proven to be an effective and low cost alternative to a separate means of escape.

6. Means of escape from public spaces

The arrangement of escapes has always been a difficult design issue for groups of public spaces outside atria. The Coast Guard is still reviewing the details of these arrangements on a case by case basis. The newest ships with automatic sprinklers, smoke detection and extensive requirements for B-Class bulkheads are finding more amenable solutions.

7. Combustible volume calculations

Many new ships are pushing the envelope in the use of combustible moldings, decorations and trim. Flag approved calculations are needed to monitor the expansive use of wood and other combustibles. The calculations are driven by Regulation II-2/34.4. Veneers are also limited by the calorific value requirement (45MJ/m²) of Regulations II-2/34.5.

8. Direct access and service stairways

The regulations concerning direct access to stairways apply to all stairways. The unified interpretation addressing "service stairways" was removed due to its amendatory nature. Therefore, both service and escape stairs must not be accessed directly by spaces other than those listed in Regulation II-2/29. New ship designs will be closely reviewed for compliance with this regulation.

9. 30% opening rule

The new unified interpretation to Regulation II-2/26 reduces the required opening for acceptance of two spaces as one for fire boundary purposes. For the purposes of determining requirements for means of escape under Regulation II-2/28, the Coast Guard still applies a 50% opening rule.

10. "Open deck" spaces in way of upper decks and pool areas

Many upper deck spaces on new ships have overhanging decks in swimming pool areas or upper deck lounges. The difference between

open deck and enclosed space is not clearly defined by SOLAS or interpretation. Typically, spaces with overhangs exceeding 10-12 meters have to be fitted with automatic sprinklers, fire detection as well as low flame spread bulkheads, ceilings and linings.

More on the Issue of Smoke Detection vs. Heat Detection

Regulation II-2/36 does not grant interpretation authority to the administration, and clearly does not intend for heat detectors to be substituted for smoke detectors in service spaces. Supporting this conclusion is the general understanding that smoke detectors are more sensitive, and will detect a fire quicker than heat detectors.

A quote from one heat detector manufacturer's literature clearly states the difference: "In most fires, hazardous levels of smoke, heat, and toxic gases can build up before a heat detector would operate. Independent studies indicate that heat detectors should only be used when property protection alone is involved."

The main concern in using smoke detectors in store rooms, pantries and public toilets is the reduction or elimination of nuisance alarms that occur due to the nature of the spaces. For the purpose of reducing these nuisance alarms, the Coast Guard recommends:

1. Experimenting with all types of smoke detectors, including photo-electric and ionization, to establish which type would be less apt to alarm for each type of nuisance alarm source.
2. Reducing or removing the nuisance alarm sources. For pantries, this could include experimenting with different types of

equipment, and/or changing the location of the equipment in the pantry, or relocating the equipment to a different space (such as the galley).

3. Employing one or more methods of alarm verification technology such as two detectors in one space which must both detect smoke prior to alarming. This would require careful implementation with due regard for the spacing requirements of Regulation 13.
4. Changing detector locations within the space to avoid nuisance factors.

With regard to acceptance by the Coast Guard of cold rooms without detectors, we are aware of fires in refrigerated spaces and have determined that the risk of fire in these spaces is moderate, and worthy of detection in accordance with SOLAS. For cold rooms with a temperature of less than 5 degrees Celsius, the use of heat detectors will be accepted. This is due to an industry-wide consensus that very cold temperatures cause smoke detectors to malfunction. All other cold rooms must be protected by smoke detection as required by SOLAS.

The Marine Safety Center is available to answer questions at any time during the design and construction process. Concept review of novel arrangements and designs is encouraged. Please contact the Chief of the Major Vessel Branch (LCDR Thad Sliwinski) at (202)366-6481 or fax your inquiry to (202)366-3877. We look forward to working with you to make the CVE process smooth sailing.