

SUB-COMMITTEE ON CARRIAGE OF
CARGOES AND CONTAINERS
6th session
Agenda item 8

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**UNIFIED INTERPRETATION OF PROVISIONS OF IMO SAFETY, SECURITY,
AND ENVIRONMENT-RELATED CONVENTIONS**

**Draft updated version of the unified interpretation of paragraphs 6.9.1.1
and 6.9.1.2 of part A-1 of the IGF Code**

Submitted by IACS

SUMMARY

Executive summary: The annex to this document provides a draft updated version of the unified interpretation of paragraphs 6.9.1.1 and 6.9.1.2 of the IGF Code

Strategic direction, if applicable: 6

Output: 6.1

Action to be taken: Paragraph 8

Related document: None

Introduction

1 The International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code), which was adopted by resolution MSC.391(95), provides an international standard for ships using low-flashpoint fuel, other than ships covered by the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code). Part A-1 of the IGF Code addresses specific requirements for ships using natural gas as fuel.

2 IACS members, acting as recognized organizations, have discussed how to implement the requirements of the IGF Code and have found some requirements that need further clarification in order to facilitate their global and uniform implementation.

Discussion

IGF Code, part A-1, paragraph 6.9.1

3 Paragraphs 6.9.1.1 and 6.9.1.2 of the IGF Code state:

"Control of tank pressure and temperature

6.9.1.1 With the exception of liquefied gas fuel tanks designed to withstand the full gauge vapour pressure of the fuel under conditions of the upper ambient design temperature, liquefied gas fuel tanks' pressure and temperature shall be maintained at all times within their design range by means acceptable to the Administration, e.g. by one of the following methods:

- .1 reliquefaction of vapours;
- .2 thermal oxidation of vapours;
- .3 pressure accumulation; or
- .4 liquefied gas fuel cooling.

The method chosen shall be capable of maintaining tank pressure below the set pressure of the tank pressure relief valves for a period of 15 days assuming full tank at normal service pressure and the ship in idle condition, i.e. only power for domestic load is generated.

6.9.1.2 Venting of fuel vapour for control of the tank pressure is not acceptable except in emergency situations."

4 Paragraph 6 of the annex to MSC.1/Circ.1558 provides the following unified interpretation of paragraphs 6.9.1.1 and 6.9.1.2 of the IGF Code:

"Liquefied gas fuel tanks' pressure and temperature should be controlled and maintained within the design range at all times including after activation of the safety system required in 15.2.2 for a period of minimum 15 days. The activation of the safety system alone is not deemed as an emergency situation."

5 Based on further experience, IACS has identified the need to further develop the unified interpretation of paragraphs 6.9.1.1 and 6.9.1.2 of the IGF Code.

6 IACS understands that some LNG fuel tanks that are unable to accumulate pressure for 15 days without opening of the pressure relief valves (PRVs) will need to accommodate the boil off gas by some other method. A safety action in any part of the gas fuel system shall not affect the capability of maintaining the tank pressure below the set pressure of the PRVs. IACS considers that to meet the IGF Code requirement for those tanks that are not able to accumulate pressure for 15 days, segregation and redundancy will be required in the fuel supply system; or some other means to maintain tank temperature and pressure within acceptable limits, such as a reliquefaction system, independent thermal oxidation unit, etc.

7 To further clarify the above understanding and provide examples of acceptable arrangements, IACS has developed a draft update to the unified interpretation of paragraph 6.9.1 of the IGF Code, a copy of which is provided in the annex to this document.

Action requested of the Sub-Committee

8 The Sub-Committee is invited to consider the comments and analysis provided above; the draft updated unified interpretation as set out in the annex to this document; and take action, as appropriate.

ANNEX

**DRAFT UPDATE TO THE UNIFIED INTERPRETATION PROVIDED IN PARAGRAPH 6
OF THE ANNEX TO MSC.1/CIRC.1558***

Liquefied gas fuel tanks' pressure and temperature should be controlled and maintained within the design range at all times including after activation of the safety system required in 15.2.2 for a period of minimum 15 days. The activation of the safety system alone is not deemed as an emergency situation.

In this regard, the following applies:

Unless the gas fuel tank is capable of maintaining the tank pressure below the pressure of the tank pressure relief valves for a period of 15 days by pressure accumulation (assuming full tank at normal service pressure and the ship in idle condition) other methods of boil off control in accordance with 6.9.1.1 should be available at all times.

The boil off control should be capable of being maintained after the automatic safety action. This should be achieved by independent fuel supply lines all the way from the fuel tanks to the consumers and more than one means of consuming 100% of the boil off rate, or other equivalent means to control pressure and temperature.

- **Examples of acceptable arrangements are shown in figures 1 and 2:**

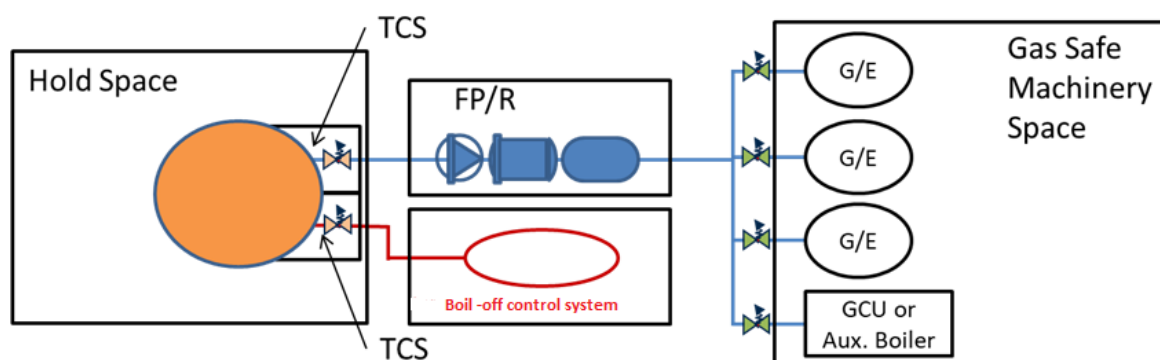
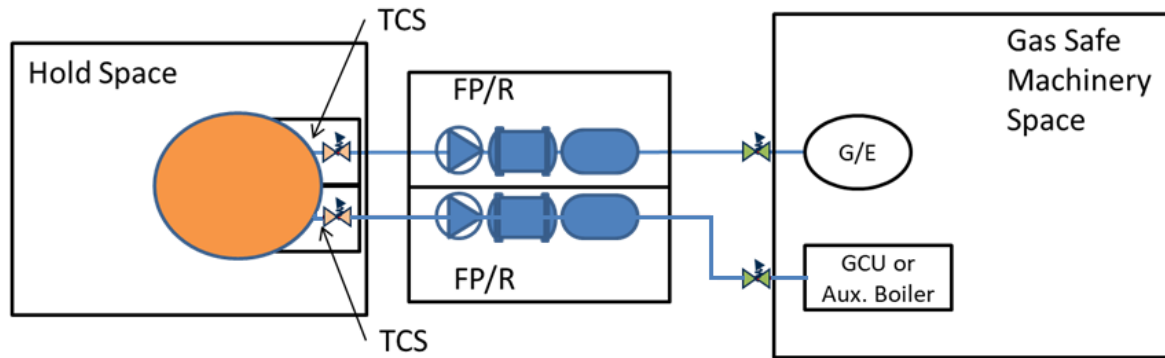


Figure 1: Fuel supply from two tank connection spaces and independent fuel supplies all the way from the fuel tank to the consumers, or other means to control pressure and temperature.

* Shown as additions/deletions.



* Each gas consumer is to be provided with "double block and bleed" valves arrangement.

Figure 2: Fuel supply from two tank connection spaces and independent fuel supplies all the way from the fuel tank to the consumers.

