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### Introduction

As ships have grown larger in recent years, maritime accidents, such as damage to Harbor facilities, collisions, and groundings, have also become larger and more expensive. As you know, there have been unprecedentedly catastrophic accidents recently, such as the grounding and sinking of large passenger ships, the driving of large passenger ships onto coral reefs, collisions between large ships, and the like.

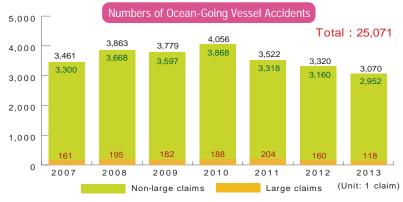
In this paper, we analyze the trends and causes of large claims handled by our Club over the seven year span between 2007 Policy year (hereafter referred to as "PY") and 2013PY, and present countermeasures which can be used to reduce the incidence of these accidents. Large claims involve multiple stakeholders, so it requires a significant amount of time to resolve them. This is why some of the large claims which have occurred recently are not included in this analysis. It is therefore important to note when comparing insurance compensation amounts that this analysis does not necessary reflect the most current trends.

Trends over the last seven years for ocean-going vessels and coastal vessels are described below.

### Ocean-going vessels

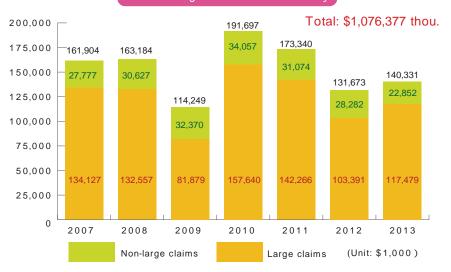
Graphs 1 and 2 show, for each PY, the total number of ocean-going vessel accidents between 2007PY and 2013PY, and total insurance claim pay-outs and forecast insurance claim pay-outs (hereafter referred to as "insurance money"). Insurance money of \$100 thousand or more are positioned as "large claims", and are indicated in yellow on the graphs.

Over the seven year period from 2007PY to 2013PY there were 25,071 ocean-going vessel accidents and approximately \$1,076,377 thousand in insurance money. Of these, 1,208 were large claims, accounting for \$869,339 thousand in insurance money. As Graph 3 shows, the number of accidents has tailed off since the peak in 2010PY, and in 2013PY there were 3,070 accidents. In 2013PY the number of large claims had fallen to 118. The accident rate (number of accidents ÷ number of entered vessels at the start of the PY) was 1.50 in 2010PY, but fell to 1.28 by 2013PY, a decrease of approximately 15%. It is possible to conclude that when there is a high number of accidents, many vessel owners create and implement accident countermeasures, so these falls indicate that these countermeasures have been successful, but by that same token if those countermeasures become pro forma, it will result in increased accident rates. One cannot allow oneself to be lured into complacency by the fact that accident rates and the numbers of accidents are falling. On the contrary, accident countermeasures must be vigilantly maintained. The number of large claims fell to 118 in 2013PY, but actual insurance moneys varied significantly by accident. The simple mean payout over the seven year period was \$153,768 thousand but most of that corresponded to large claims.



[Graph 1. Numbers of Ocean-Going Vessel Accidents between 2007PY and 2013PY]

#### Ocean-Going Vessel Insurance Money



[Graph 2. Ocean-Going Vessel Insurance Money between 2007PY and 2013PY]



[Graph 3 . Numbers of Ocean-Going Vessel Accidents, Entered Vessels, and Accident Rates per entered vessel between 2007PY and 2013PY]

Looking at the percentage of ocean-going vessel accidents and insurance money corresponding to large claims, while there were only 1,208 large claims (roughly 5% of the total number of accidents), these accounted for \$869,338 thousand in insurance money (roughly 81%).



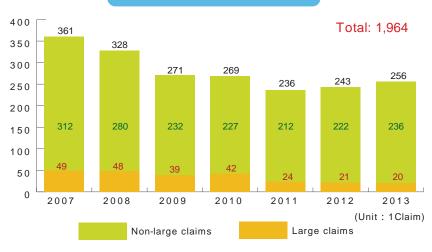
[Graph 4 . Percentage of Ocean-Going Vessel Accidents and Insurance Money Corresponding to Large Claims between 2007PY and 2013PY]

# Coastal vessels

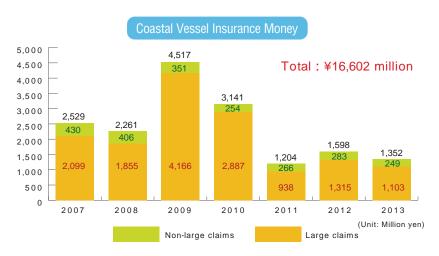
Below is an overview of the trends for coastal vessels. As with ocean-going vessels, Graphs 5 and 6 show, for each PY, the total number of coastal vessel accidents between 2007PY and 2013PY, and total insurance money. Accidents involving coastal vessels with insurance money of ¥10 million or more are positioned as large claims, and are indicated in yellow on the graphs.

There were 1,964 coastal vessel accidents over the past seven years, with insurance money of approximately \(\frac{\pmathbf{1}}{16,02}\) million. Of these, 243 accidents were large claims, with insurance money of \(\frac{\pmathbf{1}}{14,363}\) million. The highest number of coastal vessel accidents was 361, in 2007PY (49 of which were large claims). This number has been falling since then, but, as with ocean-going vessels, accident rates have been rising since 2009PY. As discussed earlier, this may be because accident prevention measures are becoming routine and pro-forma. As with ocean-going vessels, insurance money for coastal vessel accidents vary significantly by the type of individual accident, but were particularly high in 2009PY, at \(\frac{\pmathbf{4}}{4},517\) million. In other PY payments were between \(\frac{\pmathbf{1}}{1},200\) million and \(\frac{\pmathbf{3}}{3},100\) million, the majority of which were for large claims. It can be said that insurance money have also been falling since 2009PY. However, looking at the number of coastal vessel accidents and the percentage of insurance money corresponding to large claims, as shown in Graph 8 below, while there were only 243 large claims (roughly 13% of the total number of accidents), these accounted for \(\frac{\pmathbf{1}}{14,363}\) million in insurance money (roughly 87%).

#### Numbers of Coastal Vessel Accidents

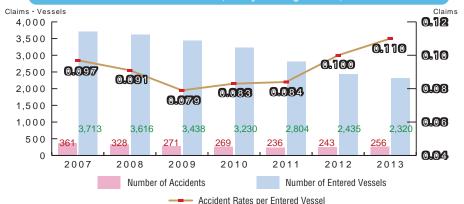


[Graph 5 . Numbers of Coastal Vessel Accidents between 2007PY and 2013PY]

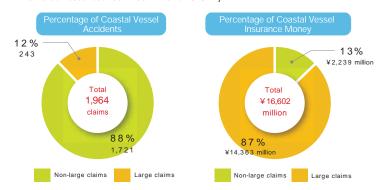


[Graph 6 . Coastal Vessel Insurance Money between 2007PY and 2013PY]

#### Numbers of Coastal Vessel Accidents, Policy-Holding Vessels, and Accident Rates



[Graph 7 . Numbers of Coastal Vessel Accidents, Entered Vessels, and Accident Rates per entered vessel between 2007PY and 2013PY]



[Graph 8 . Percentage of Coastal Vessel Accidents and Insurance Money Corresponding to Large Claims between 2007PY and 2013PY]

As shown above, while large claims account for only a small portion of all ocean-going vessel and coastal vessel accidents, their impact on insurance money is extremely large. Decreasing the incidence of large claims, then would greatly improve insurance performance, creating a beneficial situation for both our members and our club.

For reference, the ocean-going vessel Loss Ratio (insurance money ÷ insurance premiums, hereafter referred to as "L/R") over the past 7 years is 75.9%. This breaks down as 61.3% for large claims and 14.6% for non-large claims. This means that 75.9% of the insurance premiums collected from our members were paid out as insurance money. 61.3% of the collected premiums were paid out for large claims. If the number of large claims were, for example, halved, the overall L/R would fall to 45.2%. The coastal vessel L/R over the past 7 years is 89.4%. This breaks down as 77.3% for large claims and 12.1% for non-large claims. As with ocean-going vessels, if the number of large claims were halved, the L/R would fall to 50.7%. This again shows the tremendous impact large claims have on insurance money, and the importance of reducing the number of large claims.