

Chapter 1

Hatch covers and wet cargoes

Steel hatch covers have been associated with wet cargoes for many years despite many efforts by the P&I clubs to improve the situation. Why?

1.1 History until the present

The great majority of cargoes arrive at destinations on completion of ocean voyages in dry condition. Despite that, the P&I clubs have correctly reported for many years that claims for wetted cargoes involving hatch covers have been high.

I worked for one of the clubs when I first came ashore in 1976. I found that my colleagues invariably associated steel hatch covers with claims for wet cargoes.

In 1977, The Nautical Institute, together with The Royal Institution of Naval Architects and The Institute of Marine Engineers, held a one day conference in London entitled “Hatch Covers – Design, Installation, Operation and Maintenance”. That reflected concerns regarding steel hatch covers and wet cargoes.

A transcript of the papers¹, questions raised by delegates and responses was published. It makes fascinating and valuable reading even today. Much of what was then said is as relevant today as it was at that time. That is a pity, because it means that many of the problems faced in those days are still with us.

The North of England P&I Association wrote in 2011² :

“ Ask anyone in the marine business which item of shipboard equipment they think causes the largest and most frequent claims and the chances are they will get the answer right – hatch covers. ”

It is clear from the above that concerns regarding wetting of cargo current during the 1970s were not addressed effectively. That means that vast quantities of cargoes have subsequently been wetted.

The unexpected wetting of part of a ship’s cargo can often give rise to

additional costs and losses. Problems can arise during discharge.

Separating wet from dry cargo is often required although questions of quality can arise and cause difficulties. Generally, separation can be inefficient, awkward to arrange and manage at short notice, and costly. This can cause unscheduled delays to a ship and involve inconvenience and costs generally.

Pursuing and defending claims for wet cargoes is inefficient, costly and involves considerable uncertainty and risks.

The claims settled by the P&I clubs must form only a proportion of the total costs of wetted cargoes.



Figure 1 Huge changes have occurred in the shipping industry during the period considered by this guide. This dhow was bringing cargo to MV Clan Maclaren, lying at anchor off Tuticorin, India, in 1971. Liberty ships, such as that in the distance, were then a common sight. Ships and hatch covers have changed since then although some of the problems faced in those days continue to result in wetted cargoes.

¹ Unfortunately this is no longer in print

² North of England P&I Association Loss Prevention Briefing January 2011 “Hatch Cover Maintenance”

In 2010, the classification society Det Norske Veritas (DNV), now the DNV GL Group, wrote³ :

“ The classification societies’ overall objective is to ensure the safe operation of the ship in all sea and weather conditions. As long as the seaworthiness of the ship is ensured, class pays limited attention to the ‘well-being’ of water sensitive cargo. The ingress of a small amount of seawater into the hold does not usually represent any risk to the safety of the ship, but even small amounts of water may do extensive damage to cargoes that are sensitive to seawater, e.g. grain, fertilizer, steel and paper cargoes. ”

My experience over many years has been that even small amounts of sea water can do considerable damage to many different types of cargoes, in addition to those mentioned by DNV. I have found that the number of cargoes which are susceptible to sea water greatly exceeds those which are not harmed by wetting.

The acknowledgement by DNV that the classification societies have in the past paid limited attention to cargo should be welcomed and goes some way to explain the present situation. Their work is formidably difficult.

The P&I clubs and others have published many articles and guides to hatch covers. The majority have been fairly comprehensive and included descriptions, advice and recommendations of great value.

Others have simply added to the confusion.

Although generally valuable, the P&I club articles and guides have tended to over simplify some of the important aspects or have dealt with these imperfectly. In addition, there has been a tendency, unavoidable to an extent, for material introduced some years ago to have been recycled in more recent publications.

The P&I clubs have had many condition surveys carried out, with hatch covers being a main part. By those means the clubs have influenced and improved hatch cover maintenance. That has been separate from the control exercised by the classification societies.

Wetting of cargoes has continued despite the efforts of the classification societies and the various measures adopted by the P&I clubs.

Some surveyors have tended, over many years, to overlook or misunderstand features which prevent water from penetrating the seals of hatch covers. The results of tests have been wrongly interpreted and accepted in preference to measurements demonstrating unsatisfactory conditions.

Above all, unsatisfactory practices which have prevailed over many years have perpetuated the situation. Inertia has ruled and wetting of cargo has continued.

The hulls of ships are subjected to roll, pitch and heave while at sea during heavy weather and therefore flex in various ways. Steel hatch panels, particularly those which are

double skinned, are much stiffer than the ships’ hulls. The designs of modern hatch covers take account of the expected relative movements of panels one to the next and on the hatch coamings.

The features of hatch covers which cope with flexing of hulls, stiffness of panels and weather-tightness have to be kept in satisfactory condition, and correctly operated, otherwise leakages can be expected.

Surveys which I have carried out over many years have often revealed wet cargo lying beneath hatch covers in unsatisfactory condition, having defects likely to allow leakage in adverse sea conditions. Almost all of those ships had satisfied classification society requirements. That corresponds with the acknowledgement by DNV mentioned above.

I have often been surprised to find some ships with hatch covers in poor condition which have traded for year after year without reported wetting of cargo. I have not found that to be of much relevance when a claim does arise.

1.2 Good surveying

Surveyors having various backgrounds and experiences may be required to attend a ship on behalf of one of the parties, such as ship-owners, charterers, their respective P&I clubs or cargo interests, in response to wetting of cargo and possible leakage of hatch covers. Those are the surveyors who are particularly addressed in this book.

³ DNV Managing Risk “Fitness for cargo”

The surveyor is not required to evaluate the work of the ship and hatch cover designers, builders and manufacturers. He must, however, understand simple concepts and, within reasonable limits, recognise and advise upon what he sees and discovers.

It is difficult to be a good surveyor.

Ships are all different, one way or another, and so are cargoes, of which there are an infinite number.

Ships and cargoes evolve over time. Familiarity with a particular ship type or cargo gained previously, perhaps many years ago may, or may not, assist with resolving a challenge which presents itself today.

There are many different types of hatch covers. The surveyor must know enough to investigate wetting incidents and advise correctly regarding all types.

The good news which goes part of the way in dealing with the subject is that a fairly small number of essential principles apply to hatch covers, old and new.

The surveyor who understands these principles can apply them to whatever type of hatch cover he finds when he boards the ship subject of his instruction.

Chapters 2 to 6 set out the essential principles in sufficient detail to be applied to any type of hatch cover. That will assist good surveying. It will also allow the reader to fully understand and benefit from the remainder of this guide.

Understanding the fairly small number of essential principles will greatly assist the surveyor in doing



▲ Figure 2 Lumps of concrete within cement in bulk which is otherwise free running in a hold will cause difficulty and possible harm during discharge, in addition to reducing the value of the consignment.

► Figure 3 Vast changes have taken place in shipping since Clan Maclaren was loading at anchor off Tuticorin in 1971. The majority of cargoes arrive in dry condition.



his job, day by day.

The remainder of the book examines and discusses the manner in which hatch covers deteriorate with age and usage, and the means by which that process is controlled, or not. Reasons for continuing wetting of cargoes are identified, as are anomalous practices.

The subject has proved awkward for many years.

Improvements will only occur with changes.

This book contributes to debate, encourages this to continue and points to ways forward.



▲ Figure 4 The condition of wire rod in coil may change very slightly during carriage by ship, but it should not be wetted by sea water.

This book has been written with a diverse readership in mind. That should not detract from its value to the reader with knowledge and experience of ships and cargoes. A glossary has been included for the benefit of those unfamiliar with nautical terms.