Cargo Stowage, Securing And The Damage They May Cause

A cargo that moves at sea rarely produces a single claim. A stow that shifts on a ship can, in one incident, damage the cargo, damage the tank top and side shell plating, put the ship on a list, cost time that charterers will treat as off-hire, and end with a detention on arrival.

The adequacy of a stow depends on the forces acting on the cargo being known, and on the arrangement built on board being able to resist them. The Cargo Securing Manual, the stability plan and the record book matter because they make that assessment reliable and repeatable.

The 2026 inspection campaign

The Paris, Tokyo, Mediterranean and Black Sea MoUs are running a Concentrated Inspection Campaign on cargo securing from 1 September to 30 November 2026. The Paris and Tokyo MoUs published their joint questionnaire on 3 August 2026. Inspections are carried out alongside routine port State control, so a ship will be subject to only one CIC inspection during the period per MoU. Port State control officers will apply the questionnaire, and outcomes may range from the recording of a deficiency to detention of the ship.

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The questionnaire runs to ten questions. PSCOs will establish the following:

1. Whether the campaign is applicable to the vessel.
2. (a) Whether an approved Cargo Securing Manual is on board. (b) Whether the Manual contains clear lashing instructions for all of the stowage situations actually found on board.
3. Whether the relevant officers are familiar with the Manual in respect of container stack and tier weight distribution, and the weight limits established for the tank top, hatch covers and decks.
4. Whether the Manual is being complied with.
5. Whether the cargo plan reflects the verified gross mass of the containers being loaded.
6. Whether the ship has a Cargo Safe Access Plan (CSAP).
7. Whether sufficient approved portable securing devices, of the correct brand and type, are carried to stow and secure the cargo in accordance with the Manual.
8. Whether the fixed securing arrangements and the portable securing devices are in good condition, compatible with the ship, and maintained in accordance with the inspection and maintenance scheme contained in the Manual.
9. Whether the stow complies with bridge visibility requirements.
10. (a) Whether procedures or arrangements covering heavy weather navigation, including measures to prevent loss of cargo, are in place. (b) Where they exist, whether they have been complied with.

Questions 1, 6 and 10 are recorded for information only. A negative answer to any of the others requires a deficiency to be recorded and may lead to the ship being considered for detention.

The sections below deal with what those questions test and with the regulations behind them.

The framework

SOLAS regulations VI/5.6 and VII/5 require cargo to be loaded, stowed and secured in accordance with a Cargo Securing Manual approved by the Administration. The Manual is required on every ship carrying cargoes other than solid and liquid bulk, and is prepared in accordance with the guidelines in MSC.1/Circ.1353/Rev.2.

The Manual is ship-specific and contains the inspection and maintenance scheme for the securing equipment. That scheme, together with the record of inspections, may be kept in a separate document or booklet, provided the Manual refers to it clearly and states where it is kept. The Manual is written in the working language or languages of the ship, and where that language is not English, French or Spanish a translation into one of those three is to be included. That requirement sits in the Preamble to the Guidelines annexed to MSC.1/Circ.1353/Rev.2.

Because the Manual is a document approved by the Administration, it cannot be altered or added to on board. Any change is subject to flag State approval and does not become valid until that approval is issued and the updated Manual is placed aboard.

Underneath sits the CSS Code, adopted by resolution A.714(17) and amended since. The Code treats safe stowage and securing as resting on proper planning, execution and supervision, on the suitability of the ship and its equipment, on the competence of the people carrying out the work, and on the weather and ship motion expected on the voyage.

Stowage situations encountered in practice

A ship carries a wide range of cargoes over its trading life and no manual can anticipate every stowage situation. That is why one of the matters examined at inspections is whether the Manual contains clear lashing instructions for all of the stowage situations actually found on board.

Where a semi-standardized or non-standardized cargo is not covered by the Manual, the adequacy of the securing arrangement is assessed by the method set out in Annex 13 of the CSS Code. The annex does not extend to standardized systems, and containers are excluded from it. That annex was replaced in full by MSC.1/Circ.1623 in December 2020. A considerable amount of guidance still in circulation refers to the older text, so where a calculation is to be made it should be worked from the current text of the Code rather than from secondary summaries.

Two points stand out on securing equipment. The first is that sufficient approved portable devices, of the approved type and in the quantity specified in the Manual, are carried to stow and secure the cargo in accordance with it. The second is that both the fixed securing arrangements and the portable devices are in good condition, compatible with the ship, and maintained in accordance with the inspection and maintenance scheme contained in the Manual.

Officers are also expected to be familiar with the contents of the Manual, and this is a separate matter from the Annex 13 assessment. At inspection the familiarity is tested in particular through the weight limits established for the tank top, hatch covers and decks, and, on ships carrying containers, through stack and tier weight distribution. Where containers are carried, the verified gross mass is additionally a condition for loading under SOLAS VI/2, and it shall be used in the ship stowage plan.

Beyond the campaign: the damage

The matters examined during the campaign are the same shortcomings that cause loss outside an inspection. The following sections deal with the damage they produce in practice.

Wetting is among the most frequent dry cargo claims. The source is either water entering from outside or condensation forming inside the hold.

The weathertightness of a hatch cover rests on the rubber packing being sound and on the panel seating correctly on the coaming. What holds that seal in heavy weather is the top and side cleats, which keep the panel in place and maintain compression on the packing. For that reason, when the covers are closed after loading, the cleats must all be fitted and set to their correct adjustment rather than simply hardened down.

Leaks usually trace back to deterioration in these elements. The packing may be missing, hardened and no longer resilient, or permanently compressed, the compression bar may be wasted, the drain channels blocked, the panels out of alignment. Ultrasonic testing measures the seal and, unlike the alternatives, shows clearly which area is leaking.

Condensation divides into two cases which are routinely confused. Ship's sweat forms when the air within the hold is cooled below its dew point through contact with the steelwork, and the condensation drips onto the cargo from above. Cargo sweat forms directly on the cargo when warm, moist air is admitted into a hold containing cooler cargo.

Which of the two applies depends on the direction of the voyage. On a ship sailing from a warm port into colder regions, ventilation prevents ship's sweat, while on a ship sailing from a cold port into warmer regions it causes cargo sweat. Whether ventilation should be carried out is determined by comparing the dew point of the outside air with that of the air in the hold, or by the three degree rule, which compares the average cargo temperature at loading with the outside dry bulb temperature. An instruction from charterers to "ventilate whenever possible" does not mean ventilate continuously. In practice the defence rests on the ventilation log, because without a record kept per watch and per hold, showing when ventilation started and stopped and why, it is difficult to demonstrate that the correct decision was taken even where it was.

Shifting usually begins with the cargo travelling a short distance, and the lashing parting comes afterwards. A void left in the stow lets the cargo gather momentum before it meets restraint, so the lashing then takes an impact load rather than a static one. A securing arrangement is calculated against a balance of forces on a cargo item that has not yet moved, which means a device coming into play only once movement has begun cannot be relied on to deliver the strength credited to it. The damage that follows is rarely limited to the cargo, since structural damage and the repair time it brings, together with delay claims under the charter, arise from the same incident.

Damage can also arise without the cargo moving at all. A securing arrangement is calculated on the assumption that the ship will roll in a particular way. Where the distribution of weight breaks that assumption, the transverse force on the lashings exceeds what was calculated, and the damage arises not from the cargo shifting but from the capacity of the twistlocks and lashing rods being exceeded. Weight distribution is therefore not a separate matter from the lashing plan.

Under Turkish law, Article 1178 of the Turkish Commercial Code requires the carrier to exercise the care of a prudent carrier in performing the contract of carriage, and lists among the operations covered by that duty the loading, stowage, handling, carriage, care, custody and discharge of the goods. Article 1141 obliges the carrier to provide a ship that is seaworthy, voyage-worthy and cargoworthy. That obligation attaches at the commencement of the voyage.

Pre-loading surveys: finished steel products

Steel is the cargo most likely to arrive already damaged and most likely to be claimed as damaged in transit. Rust, edge and coil damage and broken banding may be present before loading, and once a clean bill of lading has been issued over them, the shipper's problem becomes the owner's problem. Accurate description of the cargo's condition at the time of shipment, and proper clausing of the mate's receipts and bills of lading, is the most effective defence available.

For these reasons we require a pre-loading survey to be carried out for the carriage of the finished steel products listed below:

- Hot rolled steel in coils or bundles
- Cold rolled steel in coils, packs or bundles
- Galvanized steel
- Stainless steel
- Tin plates
- Wire rods
- Steel pipes
- Structural steel: rebars, channels, angles, beams, bars, strips, forgings and steel rails

The survey records the apparent condition of the cargo as presented, supports the clausing of the shipping documents, and provides the contemporaneous evidence on which any subsequent defence will rest. It also allows the adequacy of dunnage and of the proposed securing arrangement to be assessed before the stow is built rather than after.

A ship that can produce an approved and current Manual, a maintained inventory of securing equipment, and a proper record of the cargo's condition on shipment is in a strong position before a port State control officer, a cargo surveyor or a court. A ship that cannot is exposed whether or not it is inspected.