

# The Britannia Steam Ship Insurance Association Limited

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## Heavy Weather and Cargo Damage

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- Captain Neale Rodrigues, Britannia, Divisional Director
- Captain Alistair Roaf, Brookes Bell Principal Master Mariner
- Stephen Hunter, Britannia Fleet Manager
- Captain Slav Ostrowicki, Britannia Loss Prevention Manager



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# Heavy Weather and Cargo Damage



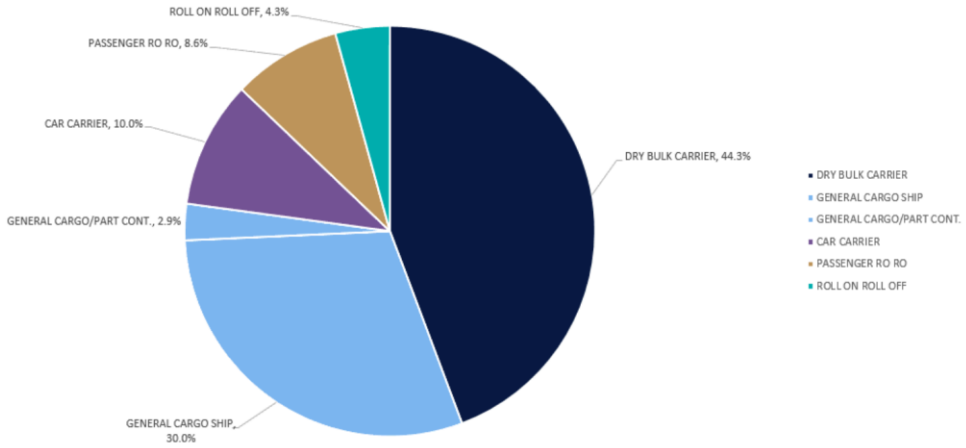
## Loss Prevention Perspective

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# Claim data – Number of incidents

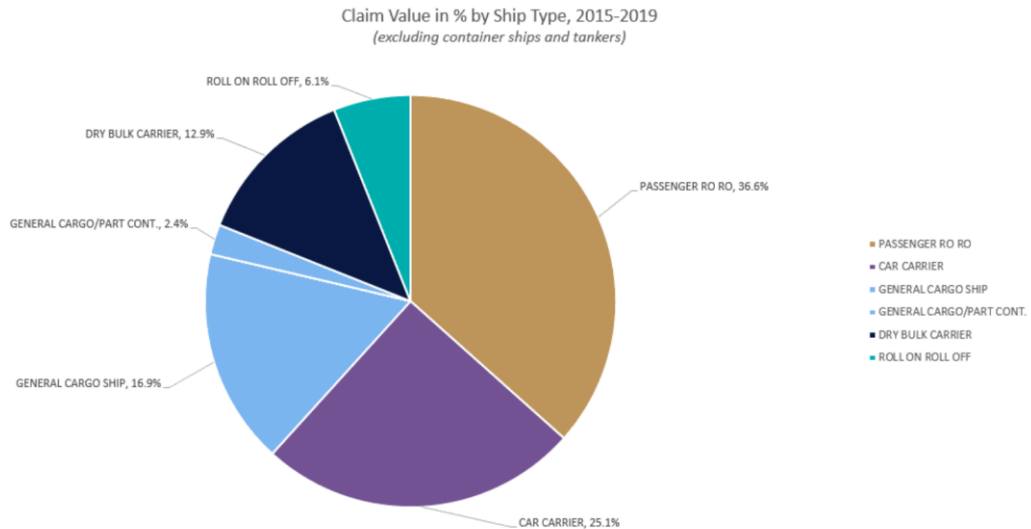


Number of Incidents in % by Ship Type, 2015-2019  
(excluding container ships and tankers)



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## Claim data – Claim value



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## Damage or Loss of Cargo – Claim types

Claim types where heavy weather is a factor:

- **Physical damage:** cargo shifting, breaking, collapsing, falling.
- **Wet damage:** cargo affected by water ingress to cargo spaces.
- **Cargo lost overboard:** deck cargoes.
- **Contamination** resulting from physical damage of adjacent cargo.

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## Contributory factors

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- Preparation for sea
- Condition of hatch covers, access hatches, deck fittings
- Cargo stowage and securing
- Stability considerations
- Avoiding heavy weather
- Ship handling in heavy weather; adjusting course and speed



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## Preventive measures

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- Company procedures and SMS
- Cultivating the safety culture and good seamanship
- Training and experience
- Maintenance, inspections and tests
- Passage planning; weather routing
- Monitoring and avoiding heavy weather
- Shiphandling knowledge

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## Overview – What is Heavy Weather? – It Depends

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### What is Heavy Weather? – It Depends



SOLAS Regulation 31, Danger Messages, refers to wind strengths of Beaufort scale force 10 and above.

A high speed ferry could have a maximum operating parameter in the order of 3.5 metres significant wave height.

An oil major may include guidance in its SMS to avoid areas where the forecast significant wave height is greater than 7.0 metres or the wind strength is greater than Beaufort scale force 9.

In reality, it depends on many factors.

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## Factors to Consider

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### Some Factors to Consider



IMO MSC.1/Circ. 1228 (2007): REVISED GUIDANCE TO THE MASTER FOR AVOIDING DANGEROUS SITUATIONS IN ADVERSE WEATHER AND SEA CONDITIONS.

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## What are my Ship's Limitations

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### What are my Ship's Limitations?

In the case of lashed cargo CSS Code Annex 13 in determining lashing strength notes:



“.1 In the case of marked roll resonance with amplitudes above  $\pm 30^\circ$ , the given figures of transverse acceleration may be exceeded. Effective measures should be taken to avoid this condition.

“.2 In the case of heading into the seas at high speed with marked slamming impacts, the given figures of longitudinal and vertical acceleration may be exceeded. An appropriate reduction of speed should be considered.

“.3 In the case of running before large stern or quartering seas with a stability which does not amply exceed the accepted minimum requirements, large roll amplitudes must be expected with transverse accelerations greater than the figures given. An appropriate change of heading should be considered.”

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## What are my Ship's Limitations?

### Non-cohesive bulk cargoes:

If your vessel rolls at angles greater than the angle of repose of the cargo, could the cargo shift?

- For cargoes which do not have the flow properties of grain then the angle of repose should be greater than  $30^\circ$ . IMSBC Code

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If You Can, Avoid Heavy Weather

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## If You Can, Avoid Heavy Weather.

SOLAS Regulation 34 – Safe Navigation and Avoidance of Dangerous Situations:

“The voyage plan shall identify a route which:

.....

.3 anticipates all known navigational hazards and adverse weather conditions”

Code of Safe Practice for Cargo Stowage and Securing (CSS Code):

“One way of reducing excessive accelerations is for the master, as far as possible and practicable, to plan the voyage of the ship carefully so as to avoid areas with severe weather and sea conditions. The master should always consult the latest available weather information.”

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## Avoiding Heavy Weather

Monitor weather forecasts.

Make positive decisions to avoid forecast heavy weather where possible.

Have a sufficient reserve of bunkers to allow routeing around heavy weather.

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## Weather Routeing

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### Weather Routeing

#### IMO MSC/Circ.1063:

“The weather routeing services available to mariners however, remain largely unregulated, and in some cases operate as an enhancement for commercial expedience rather than directly as a safety precaution.”

“The commercial expedience of the voyage can sometimes place undue pressure on masters to follow routes that introduce risks that may prove unacceptably high.”

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## Weather Routing

Generally, numerical weather forecasts are very good but not perfect.

For example the UK Met Office website states:

- Our inshore waters and shipping forecasts were 98.3% and 96.1% correct to within 1 Beaufort force category
- A gale warning was issued for over 95% of gales that occurred

The longer the forecast range the less accurate it will be.

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If You Cannot Avoid Heavy Weather

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## If You Cannot Avoid Heavy Weather

Complete your SMS heavy weather checklist. If you do not have one, see the Bridge Procedures Guide.

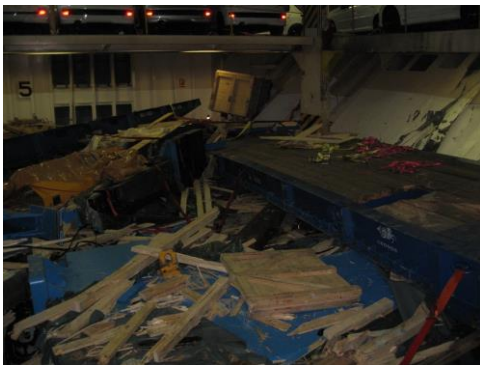
Implement Adverse Weather procedures as set out in the Code of Safe Working Practices, Chapter 11. Basically, avoid going out on deck unless the Master says it is required and then follow the guidance.

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## If You Cannot Avoid Heavy Weather

Refer to IMO Circ. 1228



Adjust course and speed as appropriate, check lashings and add lashings.

CSS Code Chapter 7:

The following actions may be considered:

- .1 alterations of course to reduce accelerations;
- .2 reductions of speed to reduce accelerations and vibration;
- .3 monitoring the integrity of the ship;
- .4 restowing or resecuring the cargo and, where possible, increasing the friction; and
- .5 diversion of route in order to seek shelter or improved weather and sea conditions.

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Keep Records – Someone may want to know why their cargo got delayed, wet, broken, lost.

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**Keep Records – Someone will probably want to know why their cargo was delayed, wet, broken, lost.**

Ensure the deck logbook entries are comprehensive and accurate.

If your vessel rolls heavily, and you observe the angle on an inclinometer, note where the instrument is located. The bridge inclinometer often reads a greater maximum angle than the one in the engine room.

Remember waves look bigger when going into them and the bow is pointing down into the trough.

Video evidence of the conditions can support the logbook entries.

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**Keep Records – Someone will probably want to know why their cargo was delayed, wet, broken, lost.**

Retain all weather forecasts and warnings received prior to and during the heavy weather. This could include :

Those issued by Official Sources such as National Governments and METAREA coordinators (received via GMDSS equipment).

Weather routeing company forecasts and correspondence.

Screenshots from on board weather software.

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**Keep Records – Someone will probably want to know why their cargo was delayed, wet, broken, lost.**



Retain evidence that the vessel was seaworthy:

Heavy weather checklist.

Evidence that hatch covers and other deck openings were weathertight prior to departure.

Evidence that the cargo was properly secured and the lashings/securing were fit for purpose. Photographs.

Evidence that the vessel met the appropriate stability criteria.

If there is an 'event' during the heavy weather, consider saving the VDR.

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## Heavy Weather and Cargo Damage

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### P&I Claim Handler's Perspective



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## Focus on Cargo Claims



Particularly with regards to dry bulk and break bulk cargo vessels



But many of the elements I will discuss are also common to container ships

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## The Hague-Visby Rules

When a cargo carrying vessel has been unable to avoid the effects of heavy or extreme weather and as result cargo on board has become damaged, the carrier of the cargo may have a defence to claims for that cargo damage.

This is per Article IV Rule 2 of the Hague and Hague Visby Rules.

This rule states:

***“Neither the carrier nor the ship shall be responsible for loss or damage arising or resulting from ... (c) Perils, dangers, and accidents of the sea and other navigable waters...”***

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## What is a “peril” or “danger” of the sea?



- A challenge is that there is no clear definition of heavy weather in the Hague-Visby Rules
- The Rules refer to “perils” and “dangers”
- This has led to the many different jurisdictions having different interpretations of the term “heavy weather” and applying different legal interpretations, determining when the defence can or cannot be used
- For countries that have not adopted the Hague-Visby Rules and, for example, have their own maritime code, there are even more varying and often more strict interpretations of what is considered “heavy weather”

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## Not at least force 9/10? Forget it!



- For me generally as a claim handler, looking for claim defences on your behalf, I wish to see that the wind force was at least 9 or 10 at the time of the incident. This is for a heavy weather defence to have any possibilities
- The worse the weather was, the better are my chances of arguing a claims defence
- However, I will look to push the point, whenever I can, to get the best possible claims settlement

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## The Beaufort Scale



Wind Force	Description	Wind Speed			Specifications	Probable Wave Height		Sea State
		km/h	mph	knots		meters	Max	
0	Calm	<1	<1	<1	Smoke rises vertically. Sea like a mirror	--	--	0
1	Light Air	1-5	1-3	1-3	Direction shown by smoke drift but not by wind vanes. Sea rippled	0.1	0.1	1
2	Light Breeze	6-11	4-7	4-6	Wind felt on face; leaves rustle; wind vane moved by wind. Small wavelets on sea	0.2	0.3	2
3	Gentle Breeze	12-19	8-12	7-10	Leaves and small twigs in constant motion; light flags extended. Large wavelets on sea	0.6	1.0	3
4	Moderate Breeze	20-28	13-18	11-16	Raises dust and loose paper; small branches moved. Small waves, fairly frequent white horses	1.0	1.5	3-4
5	Fresh Breeze	29-38	19-24	17-21	Small trees in leaf begin to sway; crested wavelets form on inland waters. Moderate waves, many white horses	2.0	2.5	4
6	Strong Breeze	38-49	25-31	22-27	Large branches in motion; whistling heard in telegraph wires; umbrellas used with difficulty. Large waves, extensive foam crests	3.0	4	5
7	Near Gale	50-61	32-38	28-33	Whole trees in motion; inconvenience felt when walking against the wind. Foam blown in streaks across the sea	4.0	5.5	5-6
8	Gale	62-74	39-46	34-40	Twigs break off trees; generally impedes progress. Wave crests begin to break into spindrift	5.5	7.5	6-7
9	Strong Gale	75-88	47-54	41-47	Slight structural damage (chimney pots and slates removed). Wave crests topple over, spray affects visibility	7.0	10.0	7
10	Storm	89-102	55-63	48-55	Seldom experienced inland; trees uprooted; considerable structural damage. Sea surface largely white	9.0	12.5	8
11	Violent Storm	103-117	64-72	56-63	Very rarely experienced; accompanied by widespread damage. Medium-sized ships lost to view behind waves. Sea covered in white foam, visibility seriously affected	11.5	16.0	8
12	Hurricane	118+	73+	64+	Devastation. Air filled with foam and spray, very poor visibility	14+	---	9

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## So force 9/10= Reject claim?



It is rarely that simple...

- As a general rule in most jurisdictions, the heavy weather defence is only available to carriers who have exercised due diligence to make their vessel seaworthy before and at the beginning of the voyage. Certainly, this is the case in English law
- This requirement is clearly set out in Article III, Rule 1, of the Hague and Hague-Visby Rules
- Also, the shipowner is usually expected to have acted reasonably during the heavy weather. This can mean taking clear action such as slowing down and /or adjusting the course according to the best possible weather routing guidance

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*The pressure to  
keep to the ship's  
schedule*

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*Find the risk  
balance*

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## Always Properly Prepare for Rough Seas



- Crews should always have motivation to ensure that cargo is well secured. Shifting cargo is a threat to the safety of the crew and also to the entire vessel in the worst cases

But also because (IMPORTANT):

- If there is any way the cargo claimant can reasonably criticise the actions on board the vessel, both before and during the voyage, and if those criticisms were contributing factors as to why the cargo damage occurred, it will not then be realistically possible for me, as your claims handler, to maintain a full heavy weather defence.... or possibly not to maintain any heavy weather defence at all.

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## Common Claim Factors that undermine the Heavy Weather Defence

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Aside from the weather and sea conditions sometimes not being bad enough, the main factors that I see that undermine the heavy weather defence are:

1. The stow arrangement and the condition & adequacy of dunnage and lashing gear.
2. The condition of the hatch covers (and also, for container ships, the condition and maintenance of the container sockets on the deck).
3. The weather routing.
4. Engine problems and engine failure putting the vessel in a dangerous situation.

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## Preventative Measures and Record Keeping

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Actions to help yourself and also your claim handler?

- By keeping detailed records of maintenance and inspections done by the crew and any 3rd parties. Have clear SMS safety procedures and follow those procedures, keeping records.
- Regularly check and renew the rubber sealant on the hatch coamings as required.
- Regular ultrasonic testing of hatch covers.
- Having clear checklist prior to sailing and be clear which crew members are doing which tasks. For example, checking that hold hatches and openings are closed prior to sailing.

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## Continued.....



- Keeping engine maintenance records up to date and be sure to follow engine maintenance schedules.
- Check that your high level bilge alarms are working.
- Keep clear deck log records.
- Regularly check visible cargo lashing gear. Note this check down in the logs and especially check visible lashing again if heavy weather is coming.
- Use a deck cargo clause on face of the B/L for deck cargo, such as “Carried on deck at shipper’s risk, without liability to the carrier howsoever caused”.

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## Loading Break Bulk, Project Cargo in China



- Multiple cargoes. Steel, bagged cargo, vehicles
- Shippers and charterers seem to want to get as much cargo on as possible. Fine in theory but ... think of safety.



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## Start Reviewing the Stow Plan and Asking Questions



- Get a copy of the draft stowage plan as early as you can
- Start actively considering that draft stowage plan
- Actively envisage the stow and the potential areas for non-compliance with the lashing and securing manual

Think of issues such as:

- Tank top weight limitations
- The overall vessel weight limitation and the draft restrictions for where you are going
- Is there the potential for high, unsupported cliff faces of cargo in any of the holds? How is the cargo going to be lashed and secured?
- If there is more than one discharge port, what will the stow look like after discharge at the first port(s)?

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## Avoid Having to Re-stow if You Can



- The whole point of analysing the stowplan early is to try to get the stow correct and safe at the first attempt.
- Your charterer should, in theory, be interested to work with you on that.
- Do be aware that it can be hard work to get the stevedores to apply extra lashings.
- If something is unsafe, persist to find a reasonable solution... this is where the P&I surveyor can be helpful with language.
- Be aware also that if the placement of cargo is completely wrong, stevedores can resist and try to refuse to move the cargo.
- So check that draft stowplan, ask questions about the stow and intended lashing arrangement as the stow is being planned and implemented.

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## What can Britannia do to help?



- Appoint a surveyor for loading/lashing assistance
- Costs for member's account. Precautionary survey

But members please remember:

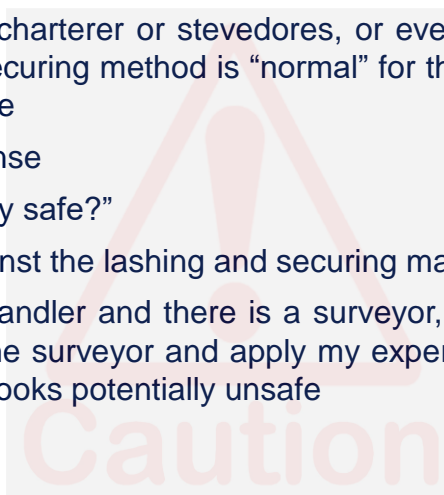
1. The surveyor is not in charge. The Master remains in charge and the surveyor is there to assist
2. The Master should know lashing and securing manual much better than the surveyor. So the Master and crew must remain engaged throughout the loading process and double-check the lashings even if seen by the surveyor

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## Finally, be careful if you hear "This is normal"



- Just because the charterer or stevedores, or even the P&I surveyor, says a stow position or securing method is "normal" for that load port does not make it safe & acceptable
- Apply common sense
- Think: "Is that really safe?"
- Always check against the lashing and securing manual
- If I am your P&I handler and there is a surveyor, I would always also check the reports from the surveyor and apply my experience asking questions, if I see anything that looks potentially unsafe



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## Questions from the audience

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How do we secure a cargo claim against an owner if the ship faces bad weather which prevents them from necessary care? How will an LOP help?

Would be interested in the recent IMSBC Code amendments

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Thank you for listening! We are here to assist 24/7

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For more information: [lossprevention@tindallriley.com](mailto:lossprevention@tindallriley.com)

Website: [www.britanniapandi.com](http://www.britanniapandi.com)

Twitter / Instagram: [@britanniapandi](https://www.instagram.com/britanniapandi)

LinkedIn: [www.linkedin.com/company/britannia-p-i-club](http://www.linkedin.com/company/britannia-p-i-club)

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