

COMPLEX STORM IN THE NORTH ATLANTIC

The S/S Richard D. Lyons, February 1966

A true story of seamanship and survival

PROLOGUE

The Historical and Meteorological Background

The winter of 1965-1966 was destined to go down in the annals of the sea as one of the wildest and most merciless of the twentieth century.

According to the historical meteorological data, that period was marked by an exceptionally aggressive, negative phase of the

North Atlantic Oscillation (NAO).

This atmospheric pattern dramatically weakened the Azores high-pressure system, opening a free, deadly corridor for the formation of explosive cyclones – those we now call “bomb cyclones”.

These systems swept the shipping lanes with winds of hurricane force.

On 3 February 1966 — the very same day the “Richard D. Lyons” sailed from Bremen — ESSA-1 was launched, one of the first fully operational weather satellites, and on 28 February ESSA-2 followed.

Mankind was taking its first steps in observing the weather from space.

The first grainy black-and-white images reaching the laboratories on the ground revealed enormous spiral vortices of cloud over the North Atlantic.

They were the visual confirmation of what the marine weather bulletins named with awe: a “Complex Storm”.

A system with multiple centres of low pressure revolving around one another, creating a chaotic, unpredictable field of winds and giant waves.

Caught in this clashing of ocean and atmosphere was an ageing hull of the Second World War, manned by thirty-two Greek seamen.

This is their true story, from the records of Chief Officer Christoforos (then 28 and now 88 years old).

His grandson Christoforos (9 years old) begged Grandfather Christoforos to write down this and other short true stories from his many voyages in the Northern and Southern hemispheres of the earth. That is why Grandfather dedicates it to his beloved grandson Christoforos.

The Previous Voyage: From New Orleans to Southampton and Bremen

In January 1966 the “Richard D. Lyons” crossed the Atlantic with 10,000 tons of soya beans from New Orleans: 5,000 tons for Southampton, England, and 5,000 for Bremen.

Chief Officer Christoforos had been serving on the ship since August 1965. The Captain at the time, a very good seaman but elderly, fell ill on that voyage and was landed at Southampton.

The shipowners sent in his place Captain Giorgos, from Oinousses, the island they themselves came from. They had found him with difficulty and reckoned that he would manage with the help of the Chief Officer.

The new Captain knew the sextant well, but not English; whatever was written in English passed through the Chief Officer. He had married late in life, and the first thing he took out of his suitcase was the photograph of his nine-year-old son, which he pinned to the mirror of his cabin.

From Southampton the ship continued to Bremen with the rest of the cargo. Already on that short passage, the radio operator's weather bulletins lay unread on the chart.

The weather bulletins were received over the wireless by the radio operator ("Marconi", as seamen call him), written in English, and he brought them up to the bridge. Neither the Captain nor Second Officer Michalis, who kept watch with him, knew English. They were read only by the Chief Officer and Second Officer Nikos, when they came up for their own watches.

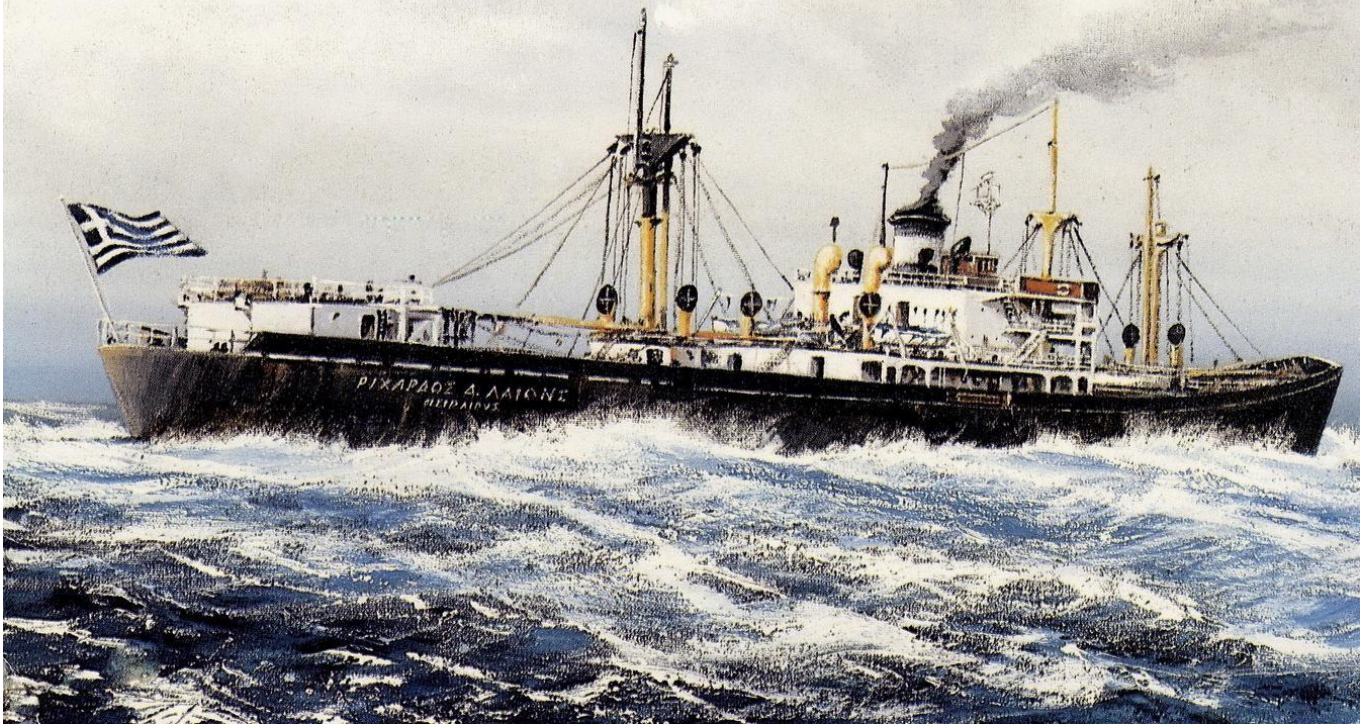
Part 1: The Battle of Bremen and the Loading Plan

Afternoon of 1 February 1966, 15:00 hours.

In the frozen port of Bremen in West Germany, the Liberty-type cargo steamer S/S "RICHARD D. LYONS", under the Greek flag, had just completed the discharge of 5,000 tons of soya beans by suction elevators within eight hours.

The ship, manned by 32 Greek seamen as the law required for ships under the Greek flag, belonged to the company "Lyras Bros Ltd", based in London. She had been built in 1945 and was bought by Lyras Bros in 1946 on one inviolable condition: that her name should never be changed, in honour of the American/Canadian pilot Richard D. Lyons, who had fallen in the Second World War.

1965



1965, Painting of the ship "RICHARD D. LYONS"

The next voyage, according to the ship's new Charter Party, which had reached the ship ten days earlier from the owners' offices in London, was a high-risk mission: loading bulk fertilizer of two kinds (M.O.P. and S.O.P.), bound for Norfolk and Richmond, Virginia, in the USA.

The two kinds of fertilizer must not be mixed, because each would be discharged at a different port. For that reason separations had to be laid between them, so that each cargo would come out clean at its own port. And fertilizer does not forgive water: if it gets wet, the cargo is lost.

The North Atlantic in winter is the most dangerous sea area in the world.

Chief Officer Christoforos (28 years old, from Lemnos), armed with his knowledge from the Hydra Merchant Marine Academy and its special

courses in ship stability, worked without sleep for three days to draw up the loading plan.

The “Richard D. Lyons” was one of the last Liberty ships, fortunately strengthened with an external steel belt 1 ½ inches thick and 1.5 feet wide that ran the whole length of the hull, a little below the deck.

Bulk fertilizer, however, was a difficult cargo. If the weight was not distributed correctly, if too much was loaded at the ends (bow and stern), the ship was in danger, as she passed over the enormous waves, of bending and breaking in two.

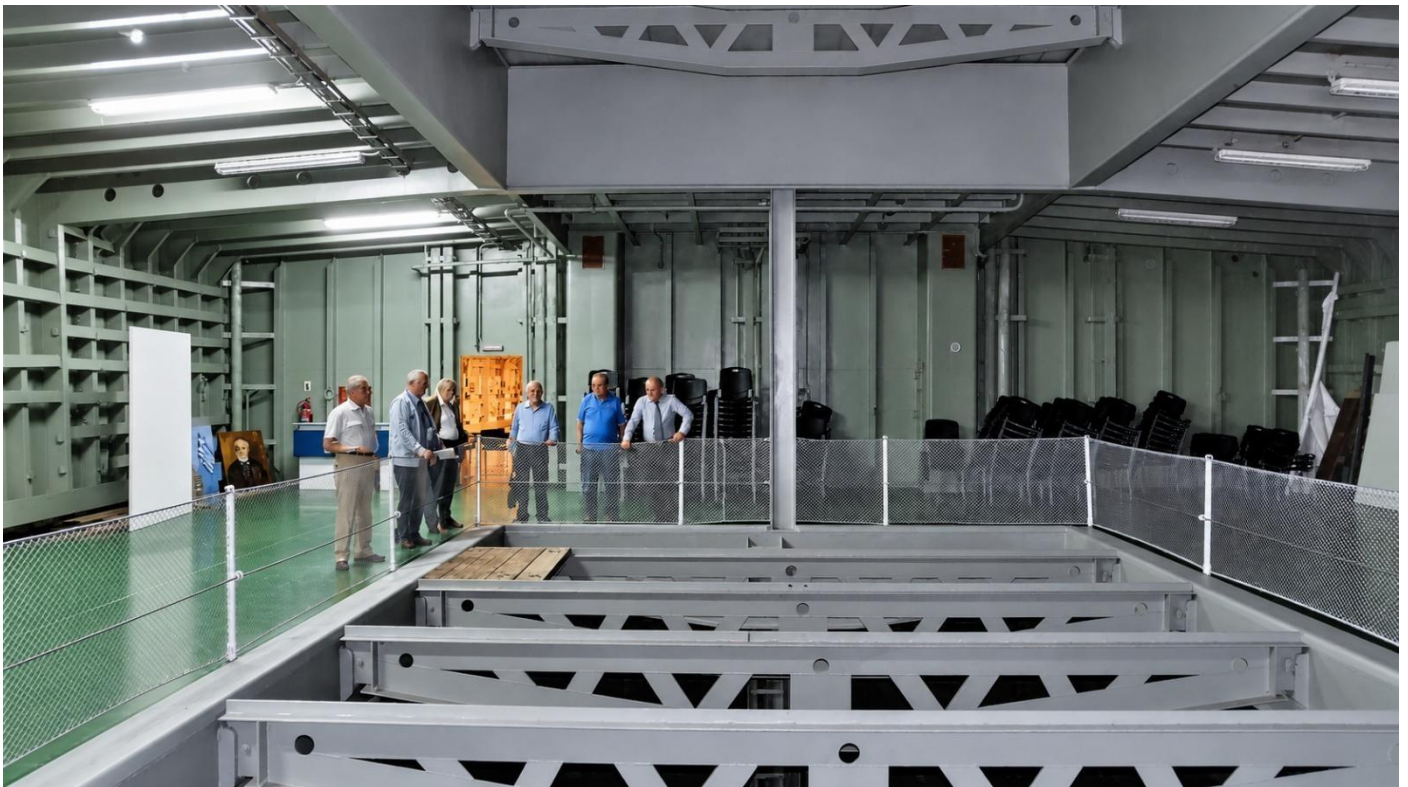
To help someone who is not a seaman understand: if you hold a pencil horizontally by its two ends and bend it, it will snap in the middle. The same thing happens to a ship with too much weight in the bow and the stern when a big wave lifts her amidships. The Liberty ships had been built in haste, for the needs of a war, and they had their limits. The “Richard D. Lyons” was by now twenty-one years old and would be sailing loaded down to her load line.

For the safety of the cargo, the Chief Officer had the foresight to order 5 new tarpaulins (one for each hold), several coils of one-inch rope for making safety nets (over the three tarpaulins on each hold) and 400 new wooden wedges to secure the tarpaulins firmly.

In an age before modern steel hatch covers with rubber seals, the wooden hatch boards, which had to be sealed with three layers of tarpaulin (held by the wooden wedges) and new nets of one-inch rope, formed a watertight “overcoat” against the tons of sea water.



2015. The tarpaulins, the wedges and the new tarpaulin securing bars, on the HELLAS LIBERTY in Piraeus.



2015. The 'tween deck (intermediate deck, or "kouradoros") of the HELLAS LIBERTY in PIRAEUS. Visitors: the 1958 graduates of the Hydra Merchant Marine Academy.

At 5:00 in the afternoon, the German stevedores' foreman — a lame man with glasses — walked into the Chief Officer's office.

He presented a plan of his own that would finish the loading quickly, by 11:00 the next morning.

The Chief Officer, seeing how dangerous the plan was, refused categorically.

When the German began to protest about the cost and the time needed to separate the cargo, the tension reached its peak.

"I will go to the Captain," the foreman threatened.

"All right, let's go together," replied the Chief Officer, taking with him not only the plan but also his suitcase.

In the office of the Captain, who did not know English well, the Chief Officer explained the situation and delivered his ultimatum:

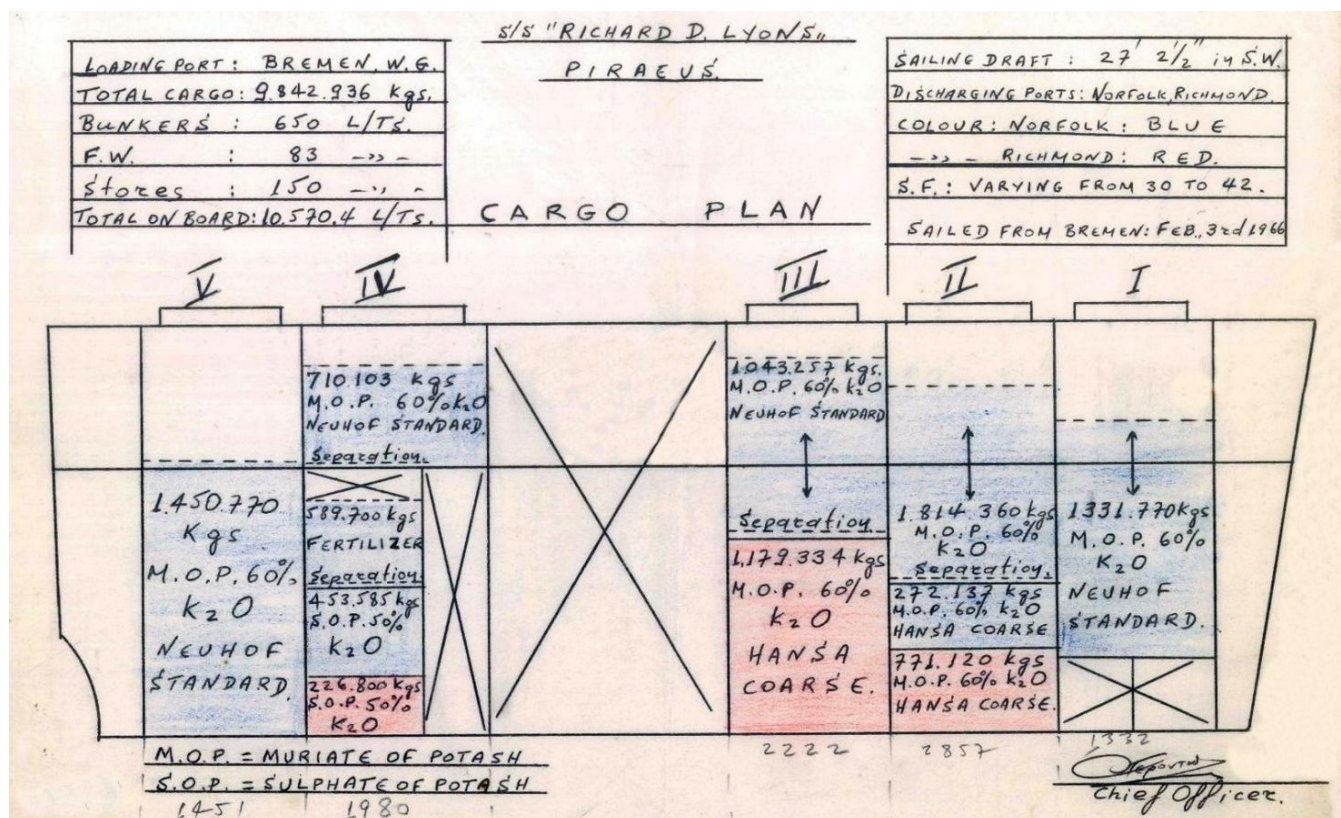
"If you accept the foreman's plan, I ask you to relieve me at once of my duties as chief officer, and I am returning to Greece immediately.

All he cares about is spending less money and going home to sleep. He does not care whether we drown in the Atlantic."

The Captain did not understand the foreman's English, but he was a seaman and he understood the figures for the holds. Besides, all charter parties contain the term that the loading of the ship shall be at the master's discretion. Nobody, therefore, can go against the master's decision on loading.

The Captain was convinced. The foreman was obliged to follow the Chief Officer's plan. The ship was loaded with accuracy to the kilo, a total of 9,842,936 kilos (9,843 tons) of fertilizer, ideally distributed: 1,332 tons in No. 1 hold, 2,857 in No. 2, 2,222 in No. 3, 1,980 in No. 4 and 1,451 in No.

5. Together with fuel and stores, the total weight reached 10,570.4 tons, sinking the Liberty to a draught of 27 feet 2 ½ inches in salt water.



The original loading plan of the ship, which lay hidden in a folder for 60 years.

On 3 February 1966, the S/S "RICHARD D. LYONS" sailed from Bremen.

The ship went slowly down the River Weser, heavily laden, with a German pilot on the bridge. The pilot gave his instructions in English, the Chief Officer translated them and the Captain gave the order to the helmsman.

The Men of the Bridge and the Watches

To follow the story, someone who is not a seaman needs to know how the bridge of a cargo ship works. The twenty-four hours are divided into watches of four hours, and each officer keeps two watches a day. The Chief Officer always keeps, on all ships, the 04:00-08:00 and 16:00-20:00

watch. On each watch the officer has two sailors with him: the helmsman and the stand-by man (the “skapoulos”).

Michalis, from Piraeus, kept the 08:00-12:00 and 20:00-24:00 watch. He was a “praktikos” – an uncertificated officer: he performed the duties of second officer without a certificate, on experience alone. He had started as a deck boy, became a sailor for ten years and a bosun (“lostromos”) for another ten and more. He knew the ship like the palm of his hand, but he lacked the theory, and that is why he could not obtain a regular certificate. He kept this watch so that the Captain would be close to him most of the time.

On this watch Captain Giorgos helped Michalis to work out the noon position. With the sextant you measure, in degrees, the height of the sun above the horizon. You do not “chase” it: you let it climb by itself, and the moment it stops climbing is true noon. You also note the time by the chronometer, and with these two you calculate on paper the position of the ship. Here the Captain was a different man: the old art of the seaman he knew well.

Nikos, from Kefalonia, was a certificated Second Officer and kept the 12:00-16:00 and 00:00-04:00 watch. He had not attended a Merchant Marine Academy. In those years one could go to sea as a cadet with a high-school leaving certificate. After four years at sea and one year of preparatory tuition he would sit the examinations for the second officer’s certificate, after another five years for the chief officer’s and after another five for the master’s. That is why captains were usually fifty years old or more.

The ten thousand Greek cargo ships then sailing needed officers, and there were not enough certificated men for all of them. So many ships also had an experienced “praktikos” on the bridge.

The Chief Engineer, Mastro-Kosmas, did not keep a watch. He went down to the engine room only in great need. He took his walk on deck, came up to the bridge at the time of the morning watch and played backgammon with the Captain. The watches in the engine room were kept by the Second Engineer (the same watch as the Chief Officer, 04:00-08:00 and 16:00-20:00) and by the two Third Engineers on the other two watches. The engineers were assisted by the oilers, the firemen and the wipers.

The work on deck was in the hands of the bosun (“lostromos”), who received instructions from the Chief Officer (every morning at 07:00) on the maintenance of the ship. He was excellent and hard-working, present everywhere and tireless.

The Chief Officer was the only unmarried man in the crew. On Lemnos his parents and his five sisters were waiting for him. His mother, 48 years old at the time, whenever bad weather struck the island would go round the churches and the country chapels lighting candles, even if her son was on the other side of the world in a flat calm.

Part 2: In the Heart of the Complex Storm

(1st Day of the Storm, 8 February)

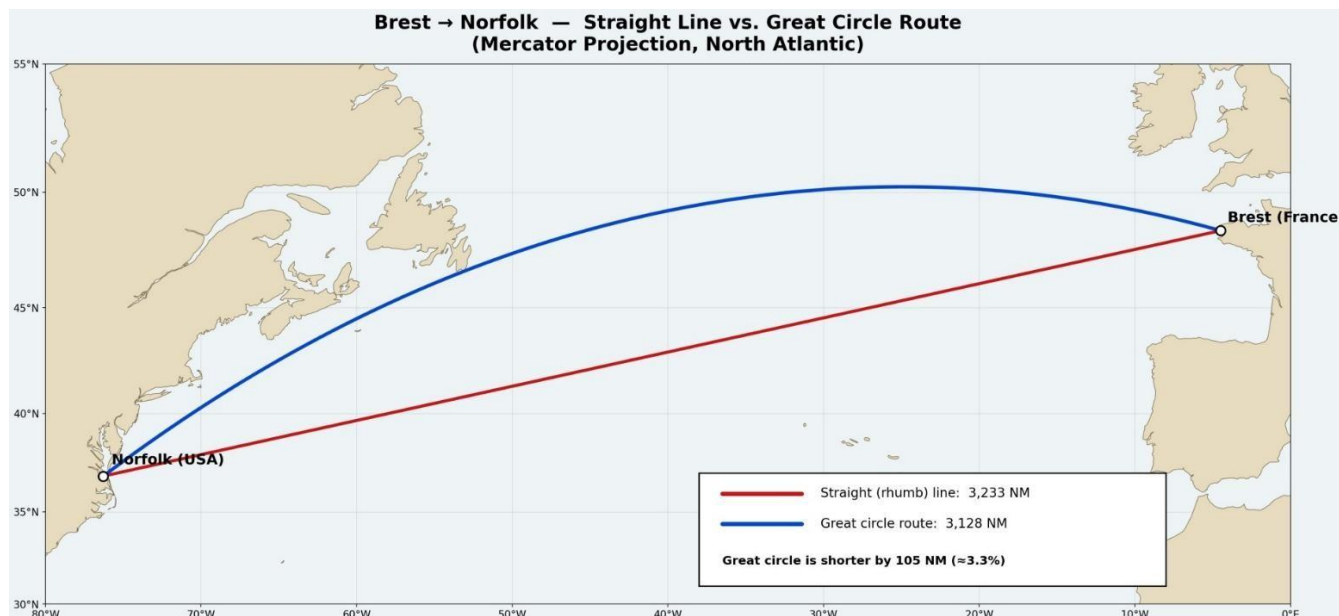
Only a few days after sailing, in the heart of the North Atlantic, the mistake of the Captain (Giorgos, 56 years old) in choosing the great-circle route at that time of year came to the surface.

The Captain had chosen this course in order to gain one day on the voyage. But he could not read the weather bulletins, which were written in English.

The great-circle arc is the shortest route between two points on the sphere of the earth. On the nautical chart it does not appear as a straight line but as a curve, which rises towards the north. The Captain drew it in pencil from the exit of the English Channel to the American coast, straight for Norfolk. In winter, however, this route passes through the worst storms of the North Atlantic.

The Chief Officer, who was reading the weather bulletins, proposed that they go further south, towards the Azores, so as to leave the low-pressure systems well to the north: they would lose one day, but they would sail in better weather. The Captain replied that the Atlantic always has weather in February. It was his first voyage on a ship of the company and he wanted to arrive on time. From that day the Chief Officer asked the radio operator to bring every weather bulletin to him first, whatever the hour.

Chief Officer Christoforos was already serving on the ship when the Captain took over at Southampton, in place of the previous one, who had fallen ill. It was a time when experienced Greek masters were hard to find, since more than ten thousand Greek cargo ships were then sailing all the seas of the world.



(Illustration) Blue: great-circle arc. Red: straight line.

At noon on 7 February the radio operator went to the bridge and handed the officer of the watch the weather bulletin, which warned mariners of the development of a “**Complex Storm**” in the North Atlantic area.

The term “Complex” means that the system may include multiple centres of low pressure, converging or merging wave disturbances along fronts, an occluded front or a warm seclusion near its mature stage.

The lowest central pressure may shift from one centre to another, so the most dangerous wind field is not necessarily at the marked centre of the low.

The Chief Officer drew the Captain’s attention to the approaching complex system of low pressures, but the Captain replied that he had been through plenty of low-pressure systems and that we should not be afraid of it.

In the afternoon of the same day the barometer began to fall below 990 millibars, and during the night it dropped to 960.

The barometer measures the pressure of the atmosphere. When its needle falls quickly, bad weather is approaching, and the lower it falls, the stronger the storm will be.

That same afternoon the sky to the west turned a dirty yellow and the wind was strengthening in gusts. The Chief Officer asked for everything that could move to be double-lashed, because during the night nobody would be able to go out on deck any more. The bosun and the sailors put double lashings on the derricks (the ship's cargo booms) and on the lifeboats, secured the anchors, tightened the nets over the hatches and rigged lifelines along the whole length of the deck. The carpenter hammered the wedges home again, one by one.

The ship found herself trapped in a Complex Storm, with winds of hurricane force, which would raise monster waves, of very great height and with a length three times the length of the ship herself.

At 04:30 on 8 February, the fifth day since sailing and the first day of the storm, on the Chief Officer's watch, the first sign came: the swell, which travels faster than the storm itself. Great waves 12–15 metres high, running towards the south-east, without strong wind. The ship began to pitch, at first so gently that anyone asleep would not have woken. By daybreak the barometer was showing 950 millibars.

The Chief Officer sent the stand-by man (the second sailor of the watch; the other sailor was the helmsman) to wake the Captain and tell him to come to the bridge urgently.

Five minutes later, when the Captain saw the size of the waves, he crossed himself and said: "Holy Mother of God."

The Chief Officer asked him for a 180-degree turn, so that the ship could avoid the storm now, while she could still turn without danger (because the worst was yet to come), but the Captain replied that it was already too late and that if the ship turned she would capsize.

He also mentioned that when he was called to the bridge, he found a photograph of his nine-year-old son (which he had pinned to the mirror of his cabin) lying on the floor. He took it as a bad omen.

As time passed and day broke, the weather grew worse and worse.

Convinced, then, that the ship would be lost and that there was no salvation, the Captain looked at the Chief Officer: "Do whatever you can," he said in a faint voice.

He turned his back, locked himself in his cabin and abandoned himself to his fate, waiting for the end.

The Chief Officer told Michalis and Nikos that the Captain was not well and that he had entrusted the ship to him. All three were afraid. But they knew that the ship was correctly loaded and the engine was running, and that, if they watched every wave, one by one, they would make it. The two Second Officers stood by his side from the first moment.

The responsibility for the lives of 32 men and for a ship with a cargo of 10,000 tons fell on the shoulders of Chief Officer Christoforos (28 years old) and of the two Second Officers, Michalis (42) and Nikos (28). The barometer fell to 940 millibars. The sight from outside was terrifying. The loaded Liberty, sitting deep in the water because of her enormous weight, looked like a half-submerged mass of iron.

The sky was a heavy, torn grey carpet, and the wind shaved the crests off the waves, turning the air into a dense, horizontal layer of freezing spray.

Visibility was almost nil. The strong wind carried, at a speed of over 100 miles an hour, enormous masses of sea water which, if they found you in their path, would take you with them.

The ship climbed the steep slope of the waves at an angle of 20 degrees. She did not meet them head-on, because the bow (with the 1,332 tons in No. 1 hold) would have buried itself in the water and never risen again. But neither could she turn beam-on, because the wave would have capsized her instantly.



1966, On the Bridge (at the Wheel) of the S/S RIC

Part 3: The Voice Pipe and the 19 Revolutions

(2nd Day of the Storm, 9 February)

One of the Second Officers was glued to the brass voice pipe, which connected the bridge directly with the engine room, and passed on the Chief Officer's orders. The other permanently replaced (because of the storm) the sailor at the wheel. The voice of Michalis travelled through the pipe down into the bowels of the ship, where the engineers were struggling with the steam engine and the propeller shaft.

"Hold 19... Up to 23... Give me 25!"

The engine revolutions were adjusted second by second: 19 as the minimum, and 23 to 25 only when the rudder did not respond.

To understand how little that was: the Liberty's engine delivered its full power, 2,500 horsepower, at 76 revolutions.

It was a dance of death.

Exactly as many revolutions were needed as would make the ship "answer" her helm, holding the 20-degree heading (that is, with the direction of the waves 20 degrees on the port or the starboard bow of the ship). If the revolutions fell below 19, the rudder would go "dead" and the weather would turn the ship beam-on.

When the rudder did not respond, the revolutions went up to 23 or 25 until it did, and came straight back down to 19. With more speed, her momentum would have smashed the heavy bow against the wall of water.

As the ship climbed to the crest of the wave and then ran downhill, the stern came out of the water and the propeller raced in the air with a roar, making the whole engine shudder, before plunging again into the next abyss.

When the propeller comes out of the water, it spins in the void without resistance and the engine “runs away”. At that moment the engineers had to shut off the steam and, as soon as the propeller bit into the water again, give it back.

This happened on every big wave, day and night, in the heat of the boilers and the deafening noise of the steam engine. Even Mastro-Kosmas, who kept no watch, went down to the engine room.

What was wanted was for the enormous waves to pass underneath the ship, so that she stayed afloat, at the lowest possible speed.

The sea caused terrible damage on the outside.

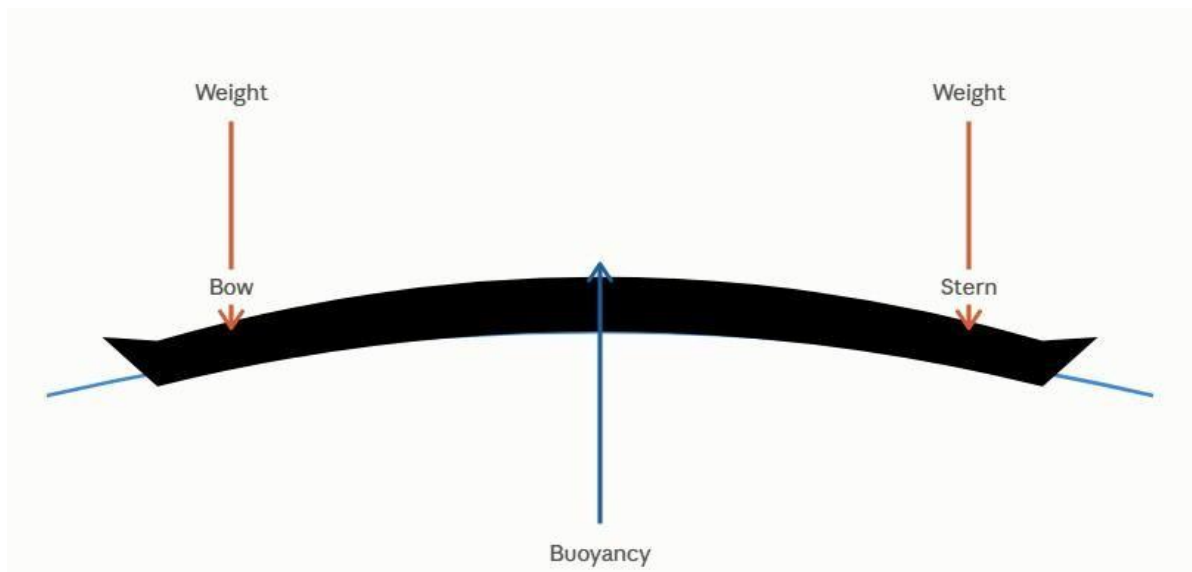
The rails and the plating on the wings of the bridge were smashed and a ventilator was bent, as if struck by a hammer.

And yet the ship was holding. The triple tarpaulins and the nets with the new wooden wedges (which the Chief Officer had forced through in Bremen) were keeping the holds watertight.

And most important of all: the frame of the Liberty was taking the terrifying bending stresses without breaking.

The loading plan, calculated to the kilo, had distributed the weight so perfectly that the ship, despite the

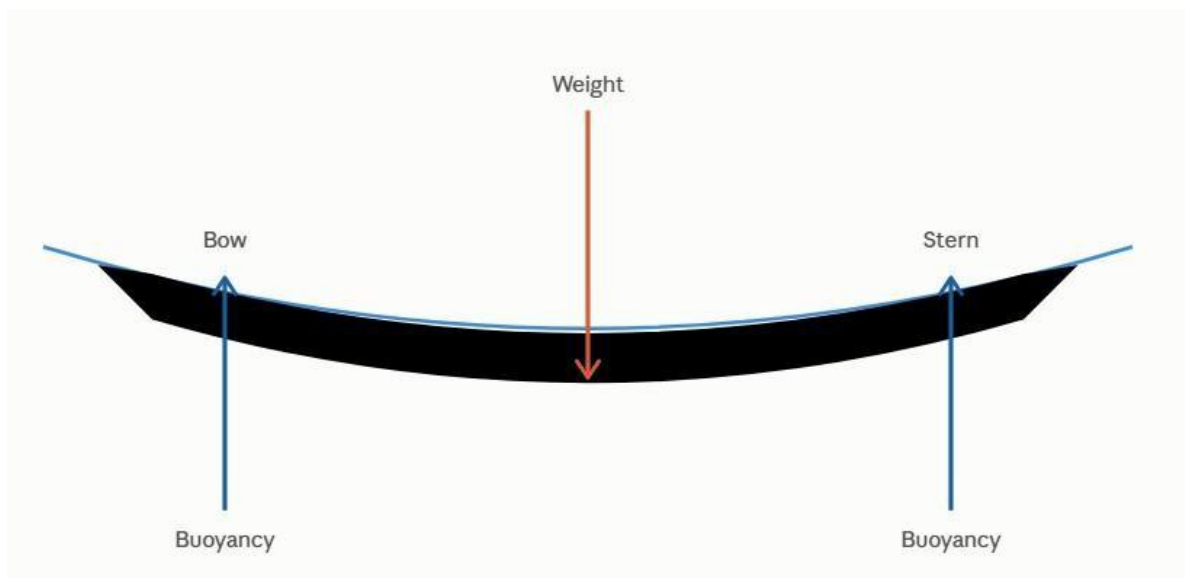
abandonment by her captain, refused to die. Scientific care and Greek seamanship were keeping the “Richard D. Lyons” alive on the razor’s edge.



Hogging (the upward bending or “arching” of the ship). The crest of a big wave is exactly under the middle of the ship, while the bow and the stern hang or rest over the troughs (the hollows) of the waves.



Hogging (the upward bending or “arching” of the ship). The crest of a big wave is exactly under the middle of the ship, while the bow and the stern hang or rest over the troughs (the hollows) of the waves (Illustration).



Sagging (the “dipping” of the ship). The ship spans two wave crests. The bow and the stern receive strong upward buoyancy, while the middle of the ship loses part of its support from buoyancy and tends to drop downwards under its own weight.



(Sagging) The upper deck is under severe compression, while the keel and the bottom plating of the hull are under strong tension (Illustration).

Αρλάρι 1	Αρλάρι 2	Αρλάρι 3	Αρλάρι 4	Αρλάρι 5
Hold 1 1,332 t · bow	Hold 2 2,857 t · midship	Hold 3 2,222 t · midship	Hold 4 1,980 t · stern	Hold 5 1,451 t · stern

Part 4: Giannis the Carpenter from Galaxidi and Hope in the Mess Room (3rd Day of the Storm, 10 February)

In the darkness and the constant shuddering of the hull, the whole crew had by now understood that the danger to their lives was extreme. The fact that the Captain remained out of sight, locked in his cabin, could have spread panic among the ratings.

The Chief Officer knew that if calm was lost, the ship would be lost too. So, from the very first night of the storm, he sent for the ship's carpenter. He was a big, imposing man, born in Galaxidi — a place with a deep seafaring tradition going back generations.

The Chief Officer gave him a mission just as critical as the battle of the revolutions on the bridge: to gather all the seamen who were off watch in the crew's mess room, to stay with them and not to let terror take hold of them. The mess room of the "Richard D. Lyons" turned into a strange refuge of hope in the fury of the "Complex Storm". The men, seated and holding on to the tables and the seats (which were permanently fixed to the ship's steel deck) to cope with the Liberty's terrifying pitching, listened to the plates creaking and the water bursting on the deck with the force of a cannon.

Sitting there with the sailors were the cook, his assistant and the stewards. The bosun sat there too. Before the storm he had been the hardest-working man on deck, but when it broke he changed completely. Like the Captain, he was terrified by the size of the waves and the force of the wind, and he sat silent among the sailors. Only the carpenter tried to give them courage.

There Giannis, the carpenter from Galaxidi, with his solid presence and his deep, confident voice, became their lighthouse. He talked to them

constantly, he heartened them and passed on to them his own unshakeable certainty.

“Don’t be afraid, lads,” he told them, looking each one of them in the eye. “The ship is loaded properly. The loading plan in Bremen was worked out to the kilo, and the shipyard gave its approval. Our plating is holding and the belt is holding. We have great hope; we will get through this storm and come out alive!”

Little by little each man began to tell stories, even jokes, to pass the time. Most of the time it was the carpenter who had the floor.



The mess room of a Liberty-type ship (Illustration)

In the afternoon of the same day (the 3rd day), the storm grew worse. It seems that the “Complex Storm”, with its multiple centres of low pressure, raised great waves from different directions (about 25–30 degrees apart

from one another), so that it was much more difficult to avoid all three wave trains, and the ship began to be covered by the wild waters of the sea for longer at a time.

For one moment, the three waves met and formed one enormous wave, about 500 metres long and about 30 metres high. The central wave, which was also the largest, was coming straight for the bow, at almost zero angle.

When the ship was about halfway up the wave, her low speed did not allow her to go on. The wave made her behave like a surfboard and swept her backwards at a dizzying speed, far greater than any the ship herself could make going ahead.

The ship, with her ten thousand tons of cargo, was sliding backwards down the slope of water, stern first. The water rushing the wrong way over the propeller braked it, until its blades stopped turning.

Then the propeller stopped. The engineers saw this and, terrified, ran to the bridge shouting: "It's all over!" From the bridge they tried to tell them to go back to the engine room at once and increase the engine revolutions. As soon as the revolutions were increased, the ship managed to get over that enormous wave as well.

For the propeller to pick up revolutions again, it took all the steam the boilers could give. The engineers were afraid the pipes would not hold. Mastro-Kosmas, who knew them well, went down with them, and the steam valve was opened all the way.



A Liberty in a great storm in the North Atlantic (Illustration)

Part 5: The Barometer Stuck Fast and the Turn of Death (4th day of the storm, 11 February)

For four days and nights, from 8 to 11 February, time stood still in the North Atlantic. On the bridge, the needle of the barometer had stuck at the terrifying reading of 940 millibars. The ship was deep inside the field of a cyclone with winds of hurricane force, and the storm would not let them go. For 96 hours, the lives of the crew hung by a thread.

Michalis (from Piraeus) and Nikos (from Kefalonia) took turns at the voice pipe and at the wheel, the engineers

kept the engine alive at 19 to 25 revolutions, and in the mess room the big carpenter, Giannis from Galaxidi, kept the men's spirits standing. The fatigue was inhuman, but nobody left his post.

The Chief Officer watched over everything and gave the appropriate orders.

The cook and the stewards made sandwiches and orangeade and took them to the bridge every 2 hours.

Hot food could not be made: no pot would stay on the stove, and the galley fire was put out because it was dangerous. The crew lived on bread, cheese, tinned food and orangeade. The bridge and the engine room, who could not leave their posts, ate first. Nobody complained of being hungry.

On the 4th day of the storm (11 February, the 8th day since sailing) the great decision was taken: the ship had to alter course by 180 degrees. This manoeuvre was a pure suicide mission. For the ship to turn her back to the weather, she had for a few endless minutes to come parallel to the giant waves. If a wave three times the length of the Liberty struck her broadside at the usual 19 revolutions, the ship would capsize instantly. But why make such a dangerous turn? For four days the sea had been pounding the ship from ahead, and the continuous strain would break her. With the weather astern, the ship travels with the waves and is strained far less. The secret was the moment: after a few big waves the sea goes “quiet” for a little while. In that “lull” the full power of the engine had to be given, so that the ship would turn quickly and stay beam-on to the waves for as short a time as possible. Chief Officer Christoforos chose a suitable moment, as the big waves could be seen from afar, bent to the voice pipe and shouted to the engine room:

“Engine! Full ahead! Now!” and to the helmsman, “Hard a-port.”

The Liberty’s engine roared. The propeller gave all its power so that the hull would gain the momentum and speed needed for the turn. The

“Richard D. Lyons” took a terrifying, prolonged list, the plates creaked as if about to break, and the water temporarily swallowed the deck. The sea tore the lifeboats from their davits.



Complex Storm in the North Atlantic (Illustration).

But the perfect distribution of the fertilizer, the watertight “overcoat” on the hatches and the strengthening belt kept the hull upright. The ship completed the 180-degree turn and escaped the immediate trap.

Part 6: The Prolonged Nightmare

The relief, however, was very short-lived. After the 180-degree turn, with the weather now astern, the Chief Officer had been almost without sleep for four days and nights.

The Captain at last came up to the bridge, and the Chief Officer asked him to take over for two hours, so that he could sleep a little.

He woke with a start: the ship had taken a heavy list to starboard.

He ran to the bridge and found the “Richard D. Lyons” turned once again into the waves, and the Captain cursing the charterers, who had asked him to alter course.

What had happened in the meantime? Throughout the previous days the ship, instead of making headway towards Virginia, had been driven off by the storm and was now very close to the Azores.

While the Chief Officer was asleep, the Captain telegraphed the owners in London and the charterers in Canada that he was altering course to take on fuel in the Azores.

The charterers replied at once and asked for the ship’s position. The Captain, in his haste, sent a wrong position, which placed the ship near the coast of Canada. On the basis of that position, the charterers replied, quite rightly, that he should go for fuel to Canada and not to the Azores. The same telegrams went to the owners as well.

The Captain then turned the ship towards Canada, that is, back into the storm from which they had only just escaped.

It was in this turn that the ship took the heavy list.

The Chief Officer asked the radio operator to bring the copies of the telegrams. As soon as he read them, he understood at once what had happened: the position that had been sent was not the ship’s position.

The Captain admitted his mistake, but night had now fallen and he refused to turn the ship again in the dark.

In this he was right: at night you cannot see the waves coming, so as to choose the “lull”. Such a turn cannot be made in the dark.

So the “Richard D. Lyons” went on fighting against the weather for another two days.

The barometer stayed low, the sea raged, and the routine with the voice pipe and the propeller revolutions began all over again. The battle for survival was not over; it had merely been prolonged.

The Chief Engineer, Mastro-Kosmas (60 years old), had come up to the bridge when the ship turned back into the waves and took the heavy list. He heard the Chief Officer say that at the moment he woke up (because of the heavy list) he had been dreaming, and in his dream a great giant was watching the movements of the ship from above the bridge. He spoke up at once and said that he knew how to interpret dreams and that this dream was a good one: the giant was Saint Christopher, who once carried Christ on his shoulders (Christo-phoros, “Christ-bearer”) across a wild river and who protects those who travel. Therefore, soon, we would be delivered from the storm.

Mastro-Kosmas also told the story of the Saint. He was a giant, and before he was baptised he was called Reprobus. He stood at a wild river and carried people across on his shoulders. One day a small child asked to be taken over, and in the middle of the river the child grew so heavy that the giant bent under the weight. The child was Christ. “Tonight,” said Mastro-Kosmas, “he has on his shoulders a Liberty with thirty-two souls. He will carry us across.”

At that moment, the radio operator came up to the bridge and reported that another Liberty-type ship had been wrecked and had sunk, most probably because of the same “complex storm”, about 80 miles north-east of the Richard D. Lyons.

Part 7: The Photographer on the Funnel (5th day of the storm)

As if all this were not enough, the next morning a young engine-room wiper on his first trip to sea, without asking anyone, took his camera and decided to climb up onto the funnel to photograph the waves. He asked only another engine-room wiper how to get up to the top of the funnel, and the man showed him an internal iron ladder leading there, provided so that if any problem arose the engineers could reach it from inside the engine room.

So he climbed up alone, opened the safety door and stepped outside. He was lucky, because at that moment the ship had passed the crest of a big wave and was on the other side of it, with the bow down and the stern high.

A great mass of water seized him and carried him in less than a minute to the stern of the ship, where he grabbed the stern rail and so escaped certain death.

But at the speed at which the wave carried him, the right rear part of his pelvis struck a wire rope and he instantly lost all the muscle in that area.

Fortunately the other wiper had also climbed up out of curiosity, and he at once informed the bridge of the whole situation.

Immediately the Chief Officer, the bosun and the carpenter went to the stern of the ship through the engine room, by way of the shaft tunnel that connects the engine with the ship's propeller, and from there they climbed, again inside the ship, to an emergency exit onto the deck.

Nobody could pass along the deck, because the sea would have taken him. The shaft tunnel is a narrow, dark passage deep inside the ship, where you make your way bent double beside the enormous turning shaft. Michalis and Nikos could not leave the bridge, since the Chief Officer was leaving it. So the Chief Officer ordered the bosun to come with him, and he, however frightened he was, raised no objection at all.

At the exit they waited for a wave to pass. The bosun tied a rope round the Chief Officer's waist and held it, so that the sea would not take him, and the carpenter lifted the injured man in his arms.

At the right moment they took him and, following the same route, carried him to a large cabin that was the ship's hospital.

There the Chief Officer, who also acted as the ship's doctor, gave him an injection for the pain, cleaned his wound, obtained medical instructions over the ship's radio on how to stop the bleeding and give him antibiotics, and left an assistant steward to look after him.

Cargo ships carried no doctor. The duties of doctor were performed by the Chief Officer, with the ship's medicine chest. In difficult cases he asked for instructions from doctors ashore by radio (Radio Medical): the radio

operator sent the description of the injury and read aloud the instructions that came back.

Part 8: Material Failure – “We Are Sinking!” (6th day of the storm)

At a hidden point in the outer plating of the hull, where the plate wrapped round the frame, there was a manufacturing defect dating from 1945, when the ship was being built in the shipyard. When the plate was made at the steelmill, the steel at that point had not acquired the homogeneity and strength of the rest of the hull.

For twenty years, this defect had remained invisible. But now, under the terrifying and prolonged strain of the waves and with the barometer steadily low, the plate at that point did not have the same strength as the rest of the hull. This hidden weakness, under the continuous bending stresses (hogging and sagging), began to give way. A dull, terrifying sound — like an explosion of metal — was heard above the roar of the storm, as the steel began to tear, threatening to open a breach in the hull.

The discovery that the material failure had occurred inside the engine room takes the breath away. The engine room is the heart of the ship, and an inflow of water there under such pressure — shooting across the ship from one side to the other — means an immediate danger of the engine stopping.

If the engine stopped, the Liberty would lose her precious 19-25 revolutions, the weather would turn her beam-on and the disaster would

be instantaneous. The result was nightmarish. The sea water, driven by the terrifying hydrostatic pressure of the North Atlantic, began to burst in violently. An inflow of water there under such pressure — a jet that crossed the engine room from one side to the other.

The engineers on watch, seeing the water coming in under such pressure and threatening to drown the generators and the steam engine, lost their composure.

They abandoned their posts, ran up the iron ladders and burst terrified onto the bridge. “We’re sinking! We’re sinking!” they shouted, their faces pale with terror.

If the engine was left unattended and stopped, the “Richard D. Lyons” would immediately lose the 19 to 25 revolutions that were keeping her alive. Without thrust, the rudder would go dead, the giant wave would turn the ship beam-on and the 940-millibar cyclone would send her to the bottom within a few minutes. The fate of 32 men hung once again on the decisions that had to be taken within seconds on the bridge.

In the panic that broke out on the bridge, Chief Officer Christoforos, keeping his proverbial optimism, did not lose a second.

The Chief Engineer, the Second Engineer and the carpenter were called at once, and the four of them ran down the iron ladders into the bowels of the ship and entered the engine room.

There they found, with relief, something that terror had magnified: the material failure was, after all, on a small scale. It was a hole in the plating, about 2 ½ inches in diameter. Because of the terrifying hydrostatic pressure of the North Atlantic, the water was shooting in with such force

that it gave the impression of a biblical catastrophe, but the quantity was manageable. The big engine-room pumps were started at once and began to swallow the water. The Chief Officer nodded to the carpenter, who acted with cinematic speed. He found a piece of wood, a little larger than the hole in the plating. The Second Engineer helped him. One held the wood (a wedge) and the other managed to drive it in with the sledgehammer. In this way the amount of water coming in through the hole was reduced.

Then the carpenter, helped by the engineers, took a piece of steel plate and quick-setting cement. With steady movements, they built a cement box (a “tabani”, as Greek seamen call it) over the hole, between the two frames of the ship’s skeleton. Within a few minutes, the inflow of the sea stopped completely. The cement set and became one with the steel of the Liberty’s frame.

When the engine room had been emptied of sea water, the engine went on working rhythmically, keeping the precious 19-25 revolutions.

This makeshift repair proved so solid that it kept the ship watertight for the whole of the rest of the voyage, until the moment the vessel safely entered the dock at the Norfolk shipyards.

Part 9: The Azores Stop – Repairs, Hospital and the Replacement of the Captain

After this six-day nightmare, it became clear that the ship could not continue directly to America. The young wiper needed immediate surgery

to be kept alive, the makeshift cement repair in the engine room had to be inspected, and the command of the ship had in effect collapsed. The fuel was not enough for the ship to reach Norfolk.

The Chief Officer, with the Captain's consent, telegraphed the correct position to the owners and the charterers: the fuel is not sufficient to reach Norfolk and there is an injured man who urgently needs hospital treatment, and for that reason we are altering course for the nearest safe refuge: the port of Ponta Delgada in the Azores archipelago.

The telegram also reported the damage: the breach in the engine room, which was now under control, and the loss of the lifeboats. To turn the ship, the Chief Officer again waited for the "lull" between the waves and gave the same orders: "Full ahead" and "Hard a-port". This time the ship turned more easily. The sea had begun to tire.

At daybreak the wind had dropped and the sky was clearing in the east. The men came out on deck for the first time after six days and nights and saw the damage: smashed rails, a bent ventilator, empty and twisted davits, not a single boat. On the horizon, land appeared. They were all there, all thirty-two. The bosun went back to work with his sailors, so that the ship would not enter port looking like a wreck.

When the S/S "RICHARD D. LYONS" limped wounded into port, the response was immediate. An ambulance was waiting on the quay and took the young wiper, who was rushed to the Azores Hospital, where the doctors managed to save him thanks to the correct first aid he had been given at sea. In the end he stayed in the hospital for six months and then returned to Greece.



Ponta Delgada, 12-metre Protective Wall

On top of the harbour breakwater there is a protective wall 12 metres high. Even so, the crests of the waves of the swell were higher.

The ship was moored at the pier inside the harbour, but to move about on deck the members of the crew had to wear oilskins.

When darkness finally fell on that first day, an unearthly, deep silence spread over the Liberty.

The tension of a whole week, in which the lives of 32 men had hung by a thread, was now breaking over their bodies.

The fatigue was beyond anything natural. For the safety of the ship and the running of the generator, the minimum possible watch was set: only

one watchman remained on deck and one oiler in the depths of the engine room.



1966, Ponta Delgada, Azores, S/S "RICHARD D. LYONS"

All the other members of the crew, officers and sailors, collapsed into their bunks in a deep, redeeming sleep.

But the night in the Azores had one more thriller in store. Shortly after midnight, another Liberty-type ship, under the flag of Pakistan, reached the port. She too had been badly battered by the same cyclone. Because the harbour was full of other vessels that had taken refuge there to save themselves, the Pakistani Liberty was obliged to make fast temporarily near the entrance, right at the harbour mouth.

The exhaustion of her own crew seems to have been even more extreme, more crushing. Carried away by the illusion of the harbour's safety, they all fell — without a single exception and without an adequate watch — into a deep sleep.



But the Atlantic had not calmed down completely.

A violent swell, carrying the aftermath of the storm, managed to get into the harbour, pounding furiously the ships moored near the entrance.

In the darkness, the mooring lines of the Pakistani Liberty, made fast by exhausted hands, could not stand the strain. They parted violently.

The strong wind and the currents silently took hold of the huge hull and began to carry it slowly away, out of the protection of the harbour, back into the open sea.

When the single watchman on the deck of the “Richard D. Lyons” looked towards the harbour mouth, he saw an unearthly sight: a ghost ship, without a single light burning, drifting blindly in the black night.

As soon as the drifting Liberty reached open water, she met the big waves and began to roll dangerously, ready to capsize or be smashed on the rocks.

Deep inside the Pakistani ship, the rolling and the wild pitching woke the first members of the crew in terror. When they came out on deck and realised with horror that they were no longer in harbour but back at the mercy of the ocean, they ran in panic to wake their Captain, who was a man of advanced age.

As soon as they shook him awake and told him the merciless truth — that the ship had broken loose and was adrift outside in the swell — the heart of the old seaman could not bear it.

From the sudden, terrifying shock he suffered an instantaneous heart failure and died there, in his cabin, leaving the ship without command at the most critical moment.

In the Azores, however, there are always large ocean-going tugs standing by, precisely to deal with such situations. Their response was immediate. Two mighty tugs, under the Norwegian flag, switched on their searchlights, started their engines and went out into the swell. In the darkness their searchlights found the blacked-out Pakistani Liberty, rolling adrift, beam-on to the weather. A sailor on the tug threw onto her bow the heaving line (“ivilai”, as Greek seamen call it), a thin rope with a weight at the end. With it the Pakistani sailors hauled up the thick towing hawser and made it fast to the bitts on the bow. The hawser came taut, and the tugs pulled the big ship against the sea. Before dawn, the Pakistani Liberty passed through the harbour mouth again and was made fast with new, doubled mooring lines. And so total disaster was averted.

The next morning, the news of the tragedy of the Pakistani ship spread through the whole harbour and shook the crew of the “Richard D. Lyons”.

It was a vivid, chilling reminder of how thin the line was between life and death in the winter Atlantic, and how easily fatigue could prove fatal.

The day after, a heavy, mournful atmosphere spread over the harbour. The funeral of the deceased captain followed in Ponta Delgada, amid deep emotion.

At the same time, a team of surveyors and the superintendent engineer of the company “Lyras Bros Ltd” came on board. The inquiry into the telegrams and the handling of the crisis brought the whole truth to the surface.

In the Deck Log Book everything that happens on the ship is written down, hour by hour: the course, the weather, the orders, the damage.

From the first day of the storm all the entries were in the handwriting of the Chief Officer: the handing over of the ship by the Captain, the 180-degree turn, the breach, the alteration of course. As for the wrong position in the telegrams, the Captain admitted of his own accord that the mistake was his.

The owners in London, seeing the facts recorded in the Deck Log Book and the complete inaction of the Captain who had locked himself in his cabin, acted at once: the Captain was replaced immediately in the Azores. Before he left, he explained to the Chief Officer that the previous month a Liberty commanded by a cousin of his, loaded with iron ore, had been lost with all hands in the Indian Ocean.

That ship belonged to another company and was lost without heavy weather, most probably through an error in loading. When Captain Giorgos saw the first big waves, he thought of his cousin and of his nine-year-old son, and that was one of the reasons he was so afraid. It is worth remembering, however, that in Bremen he himself had approved the correct loading plan. If the ship had been loaded to the foreman's plan, she would have met the same fate.

The whole crew said goodbye to him. You must not blame a man for having been afraid.

The name of the new master, who arrived the following day, was Alekos (50 years old). The command of the ship and the responsibility for the rest of the voyage passed into the hands of the new master and of those who had kept the ship upright.

Captain Alekos had served together with Christoforos on the same ship in 1961, before Christoforos did his national service in the Hellenic Navy. He

had not been through the Academy, but he was experienced, careful and hard-working. They agreed from the first day that they would read every weather bulletin together and that, wherever they disagreed, they would choose the safer course.

After the carpenter's cement box had been inspected, the necessary repairs carried out and the boats replaced with new ones, which arrived by air, the reinforced Liberty was again given clearance to sail, after a stay of three weeks for the temporary repairs and the delivery of the new lifeboats.

In those three weeks nobody left the ship except the Captain. The crew carried out maintenance and repairs, wearing their oilskins ("nitserades") inside the harbour as if they were still out at sea, and in the evenings some of them went to the night spots of Ponta Delgada. For the passage to Norfolk, the new course was laid further south.

Part 10: The Arrival at Norfolk and the Final Vindication

The rest of the voyage to Virginia, in March 1966, passed with a calm sea and with the crew's morale fully restored. When the S/S "RICHARD D. LYONS" finally passed the lights of Norfolk, and after discharging at the two ports, she was taken straight to dry dock for the permanent repair of the damage. The work lasted 14 days. The American shipbuilders who examined the hull were left speechless by two things:

- 1. The Strength of the Frame:** Despite the terrifying bending stresses (hogging and sagging), the frame had not suffered the

slightest deformation. The Chief Officer's loading plan in Bremen, calculated to the kilo, had saved the Liberty from breaking in two.

2. The Watertightness of the Cargo:

When the hatch boards were opened, the precious bulk fertilizer was perfectly dry. The three tarpaulins on each hold and the new wooden wedges had withstood the tons of Atlantic sea.

The American surveyors had the damage report in front of them (lost lifeboats, a breach in the hull, six days and nights of storm) and expected to find mud in the holds. They found the two kinds of fertilizer dry and separate, with the separations in place, just as they had been loaded.

In a dry dock the water is pumped out and the ship is left dry, so that the underwater hull — the part of the vessel that lies below the water — can be seen and repaired. There the surveyors found it hard to believe that the carpenter's cement box had been built at sea, in the middle of the storm.

The chartering company, which had claimed compensation for the deviation to the Azores, the delay and the possible damage to the cargo, withdrew every financial claim and issued an official letter of thanks.

Chief Officer Christoforos, Second Officers Michalis and Nikos, and the imposing carpenter Giannis from Galaxidi had written a golden page of maritime history. They had managed to defeat a storm of biblical proportions, to save a shipmate from certain death and to bring 32 men

safe to land, proving the power of Greek seamanship and of scientific precision.

What Became of Them

The young engine-room wiper, when he returned to Greece, spent another six months in hospital until he recovered. He never forgot that ordeal.

In the years that followed he got in touch several times with Chief Officer Christoforos, to thank him for saving his life.

Giannis the carpenter and the two Second Officers (Michalis and Nikos) went on sailing in ships of the same company until they retired. Their friendship lasted many years, and all of them often spoke on the telephone with Christoforos.

The RICHARD D. LYONS herself, which had withstood the great storm of the North Atlantic, did not sail for much longer. The owners sold her to Japan, where she was broken up in February 1968, at Hirao, without her name ever having been changed.

Christoforos had signed on the RICHARD D. LYONS in order to complete one year of sea service, so that he could sit the examinations in Piraeus for the Master's certificate.

He stayed on the ship until 25 February 1967. In July of the same year, he obtained the Master's certificate, Class A, with distinction, and five days later he took command as Master. He commanded three ships of the

same company until the end of 1973. None of the three ships was ever in danger in the 7 years he worked as Master.

In 1974, having completed his pensionable years at sea, he moved with his family to South Africa. There he worked for thirty years as a businessman, and in 2004 he returned to Greece. But the sea never left him. And this story he kept stored away all these years in order to tell it to little Christoforos.

EPILOGUE

The Legacy of Seamanship and the Future

When the wounds of the S/S “RICHARD D. LYONS” had been fully healed at the Norfolk shipyards, this gripping adventure passed officially into the annals of the sea as a triumph of the human will over the fury of nature.

For the thirty-two Greek seamen, the return to dry land was not simply the end of one more voyage, but a second chance at life, won with unimaginable toil, scientific precision and unshakeable faith.

The replacement of the old master and the vindication of the then 28-year-old Chief Officer Christoforos proved that the sea does not forgive arrogance and resignation, but rewards courage, knowledge and a sense of responsibility.

The ageing hull of the Second World War held where other ships gave way, because her men became one with her plates, fighting revolution by revolution, wave by wave.

The carpenter Giannis from Galaxidi, Mastro-Kosmas, Michalis and Nikos became the unsung heroes of a biblical storm, keeping the spirit of the crew standing.

Today, a full sixty years later, Grandfather Christoforos, now 88 years old, looks at his 9-year-old grandson, little Christoforos, and hands over to him these yellowed papers and the hidden loading plan.

These lines are not simply a record of memories from the frozen North Atlantic of 1966.

They are a living legacy of the seaman's art, a proof that however great the "Complex Storm" one may meet in life, with a sound plan, a clear mind and companions one trusts, one will always manage to find the way to the sheltered harbour.

The voyage of the "RICHARD D. LYONS" is over, but her story will go on travelling through the eyes of little Christoforos, keeping immortal Greek seamanship alive on the seas of the world.

Glossary, mainly for little Christoforos and for those who are interested in learning.

Hatch boards (boukaportes): the wooden covers of the hatch opening of a hold, covered with tarpaulins.

Tarpaulin (mousamas): waterproof canvas (cloth) that covers the hatch boards.

Voice pipe (fonagogos): a tube that carries the voice from the bridge to the engine room.

Stand-by man (skapoulos): the second sailor of the watch, the one who is not at the wheel.

Mooring lines (kavoi): the thick ropes with which the ship is made fast to the pier.

Position (stigma): the place of the ship at sea (latitude and longitude).

Millibar: a unit of atmospheric pressure. Normal pressure is about 1013, and the lower the pressure falls, the stronger the storm.

Revolutions: how many times the propeller turns in one minute.

Swell (fouskothalasso): big waves that arrive before the storm or remain after it.

Charterers: the company that hires the ship to carry its cargo.

Shipowners: the owners of the ship.

Hogging / Sagging: the bending of the ship upwards or downwards on the waves.

Liberty: cargo ships built in the USA during the Second World War, more than 2,700 in number. After the war many of them were bought by Greek shipowners.

Chief Officer (ypoploiarchos): the first officer after the master. He is responsible for the loading, the deck and the deck crew, and replaces the master when necessary.

Second Officer (anthypoploiarchos): a bridge officer, below the chief officer. He keeps watch on the bridge and assists in the navigation of the ship.

Bosun (nafkliros): the head of the sailors. He shares out the jobs and supervises the work on deck.

Wiper (katharistis): the most junior member of the engine-room staff. He cleans the machinery and helps the engineers.

Davits (kaponia): the iron arms from which the lifeboats hang and by which they are lowered to the sea.

Bridge wings (vardioles): the open side parts of the bridge, to starboard and to port (the “wings”), from which the officer can see the sides of the ship.

Frames (nomeis): the “ribs” of the ship: the steel members of the skeleton, to which the plating is fastened.

Watch (vardia): the four-hour spell of duty on the bridge or in the engine room. Each officer keeps two watches in the twenty-four hours.

Great-circle arc: the shortest route between two points on the sphere of the earth. On the nautical chart it appears as a curve.

Sextant: the instrument with which the seaman measures the height of the sun or the stars above the horizon, to find the ship’s position.

Chronometer: the ship’s high-precision clock, essential for calculating the position.

Barometer: the instrument that measures atmospheric pressure. When it falls quickly, bad weather is coming.

Radio operator (“Marconi”): the officer who operates the wireless. He receives the weather bulletins and sends the telegrams.

Radio Medical: medical instructions given from ashore, by radio, to ships that carry no doctor.

Pilot: a local seaman who boards the ship and guides her in rivers and harbours.

“Praktikos”: a seaman who performs the duties of an officer on the strength of his experience, without a certificate.

Lostromos: what Greek seamen call the bosun.

Charter Party: the contract between the shipowners and the charterers for the carriage of the cargo.

Derricks (biges): the ship’s cargo booms (cranes), above the holds.

Bitts (bintes): the iron mooring posts on deck, to which the lines are made fast.

Heaving line (ivilai): a thin rope with a weight at the end. It is thrown first, and the thick hawser is then hauled across with it.

Cement box (tabani): a makeshift repair made with cement over a breach in the plating.

Shaft tunnel: a narrow passage from the engine room to the stern, inside which the propeller shaft turns.

Deck Log Book: the ship’s official book, in which the course, the weather and everything that happens are written down hour by hour.

Dry Dock: a dock from which the water is pumped out, so that the ship is left dry and her underwater hull can be repaired.

Underwater hull (yfala): the part of the vessel that lies below the surface of the water.

Oilskin (nitserada): the seaman’s waterproof coat.