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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
CHARLESTON DIVISION

Gusto III Charter, Inc.,)

Plaintiff,)

v.)

Royal Insurance Company of America,)

Defendant.)

C/A No. 2:00-2205-18

ORDER

This matter was heard by the court during a bench trial conducted on August 15, 2001.

I. Background

On February 2, 1999, Defendant Royal Insurance Company of America ("Insurer") sold Plaintiff GUSTO III Charters, Inc. ("Insured") a yacht insurance policy ("Policy") for the GUSTO IV ("vessel"). The Insurer's coverage included losses resulting from a "latent defect."

From the date the Insurer sold the Policy, February 2, 1999, until July 11, 1999, the vessel operated without incident for approximately forty-three hours. At the end of this period, the vessel's transmissions and engines had less than one thousand hours of operation. Without warning, on July 11, 1999, due to delamination of the transmission clutch plates, the vessel's starboard transmission failed, which also caused its starboard engine to fail.

The Insurer denied coverage, arguing that plaintiff had not shown a prima facie case and arguing various exclusions. A prima facie case of coverage under the "latent

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defect" definition required that the Insured show the following:

1. A hidden
2. flaw in the material;
3. existing at the time of manufacture of the machinery; and
4. that is not discoverable by ordinary means of testing.

The Insurer argued the following exclusions, which, as affirmative defenses, it had the burden to prove:

1. Delamination of fiberglass;
2. Design defect;
3. Inherent vice;
4. Wear and tear;
5. Gradual deterioration;
6. Dampness of atmosphere; and
7. Non-disclosure.

The Insured presented evidence of charges relating to damage to the starboard transmission and the starboard engine. The Insurer disputed certain of these charges.

II. Evidence Presented at Trial

A. Insured's Prima Facie Case of Latent Defect

At trial, testimony was presented by the marine mechanic who disassembled the vessel's starboard transmission and starboard engine after the incident, W. Glenn Allen; the owner of the vessel, Dennis Lee; the vessel's captain, Timothy A. Scalise; and a marine surveyor who testified for the Insurer, Neil K. Haynes, II. Physical evidence was

also presented—the clutch plates from the vessel's transmission, photographs of the transmission, and a sample of oil containing delaminated clutch material.

1. Hidden

The owner of the vessel, Dennis Lee, testified that before the purchase of the vessel, he had performed every checking procedure Florida Marine Tech directed,¹ including a hull survey, an engine survey, an oil analysis, and a transmission survey,² but there was no indication of a potential problem with the transmission.³ Mr. Lee also commissioned a survey of the whole vessel, which was performed by Reeve Marine Surveyors.⁴

Mr. Lee further testified that the report and analysis indicated an abnormal but not a severe amount of water.⁵ He testified that he received a report from Florida Marine Tech that everything was serviceable.⁶ Both Mr. Lee and the vessel's Captain, Timothy Scalise, testified that the surveys included both transmissions, the generator, and an oil

¹ Tr. 39, lines 8-17.

² Tr. 39, lines 5-7; Report from Florida Marine Tech of the Palm Beaches, Inc., Joint Exhibit B.

³ Tr. 39, line 21 - p. 40, line 3.

⁴ Joint Exhibit A.

⁵ Tr. 41, lines 14-18.

⁶ Tr. 40, lines 14-22. The report of Florida Marine Tech of the Palm Beaches, Inc. reflects 950 actual hours on both port and starboard main engines and indicates both port and starboard engines as serviceable. (Joint Exhibit B).

analysis.⁷ Mr. Lee testified that he was given "a clear shot to leave the boat yard" as long as the oil was monitored.⁸

Both marine mechanic Glenn Allen and marine surveyor Captain Neil Haynes testified that the cause of the failure of the starboard transmission and starboard engine was delamination of the fiber pads on the vessel's transmission clutch plates.⁹ Captain Neil Haynes testified that the presence of a fiber-steel plate in this transmission would have been disclosed in the vessel's starboard specifications;¹⁰ however, he then testified that this particular gear box was offered with both the fibrous packs and the bronze packs, and that there was a good possibility that the vessel could have had both types in the same vessel.¹¹ Further, he testified that the serial numbers would not indicate the type of clutch pack.¹² Captain Haynes also testified that the part number does not identify whether it is a fibrous clutch plate or a bronze clutch plate.¹³

⁷ Tr. 40, line 25 to p. 41, line 2; Tr. 56, lines 12-13. The oil analysis, which was performed for Florida Marine Tech of the Palm Beaches, Inc., by the Motorcheck Oil Analysis Clinic, was entered as Joint Exhibit C.

⁸ Tr. 40, lines 11-13.

⁹Tr. 5, line 4; Tr. 75, lines 14-15.

¹⁰ Tr. 82, lines 12-16.

¹¹ Tr. 94, line 21 to p. 95, line 1.

¹² Tr. 95, line 25 to 96, line 3.

¹³ Tr. 105, line 16-19. The vessel was manufactured in 1988. Captain Haynes testified that the manufacturer of the clutch plates, Capital Gear, went out of business in 1989.

2. Flaw in the Material

Glenn Allen testified that as a mechanic, he was taught that delamination was not supposed to occur,¹⁴ that he had never seen another gear delaminate the plates like this, although he thought he had worked on thirty marine transmissions over a six-year period,¹⁵ and that delamination of the clutch plates happened because there was a failure due to the bonding material.¹⁶

The clutch plates themselves were presented as an exhibit.¹⁷ The fiber paddings were in various states of delamination, ranging from one clutch plate appearing completely intact, several with the padding detached and some sections missing, others with all padding missing from at least one side, to others with all padding delaminated. There were also many pieces of fiber padding of various sizes, which had separated from the clutch plates.

3. Existing at the Time of Manufacture

Marine mechanic Glenn Allen testified about evidence that eliminated possible causes of the delamination other than a defect existing at the time of manufacture. Captain Neil Haynes testified that delamination is when a material separates from itself, either from failed glues or from overheating, and the particles actually break down and

¹⁴Tr. 7, lines 19-25; Tr. at p. 9, lines 12-19.

¹⁵ Tr. 8, lines 3-8.

¹⁶ Tr. 36, lines 5-10.

¹⁷ Plaintiff's Exhibit 2.

come apart.¹⁸

Marine mechanic Glenn Allen testified that based on his training and experience as a mechanic, a possible cause of delamination is excessive heat.¹⁹ There was no evidence of excessive heat in the starboard transmission because the clutch plates and the drive rings, which are between the clutch plates, had not turned blue with excessive heat.²⁰ Captain Neil Haynes also testified that there was no evidence of extreme heat in the transmission.²¹

Captain Neil Haynes testified that the presence of moisture can cause breakdown in the bonding agent or the glue on the plates.²² Glenn Allen testified that if there had been excessive water in the transmission, it would break down the oil, show excessive heat, and the components would not be lubricated with oil like they should be.²³ The evidence showed that there was only a slight trace of water,²⁴ and Allen also testified that in other transmissions he had worked on, it was not unusual to see that trace of water in the transmission.²⁵

Mr. Allen further testified that there are from two to four gallons of oil in the

¹⁸ Tr. 76, lines 21-25.

¹⁹ Tr. 12, line 23 to p. 13, line 3.

²⁰ Tr. 13, lines 5-7.

²¹ Tr. 104, lines 13-17.

²² Tr. 77, lines 12-14.

²³ Tr. 13, lines 21-25.

²⁴ Tr. 14, lines 3-5.

²⁵ Tr. 14, lines 11-17.

transmission,²⁶ that it would take a half gallon of water to give a clear indication that water was being introduced into the transmission,²⁷ and that at the time he took the transmission apart, there was just a trace of water in the bottom of the case,²⁸ little more than one tenth of a percent of water, or .0013 water.²⁹ Mr. Allen also testified that there was no evidence that the oil cooler had allowed salt water to get into the transmission.³⁰

4. Not discoverable by Ordinary Means of Testing

Glenn Allen, the marine mechanic who disassembled the transmission and engine after the incident, testified that to discover whether there is a danger of delamination of clutch plates, one would have to pull the transmission off the engine and tear it apart.³¹

B. Insurer's Evidence of Exclusions

1. Delamination of Fiberglass; Design Defect; and Inherent Vice

Glenn Allen testified that in his deposition he had said that the delamination of the organic disks was essentially a design issue;³² however, he testified at trial that he was not a chemist and did not know the make up of the compound used in clutch plates,³³ that he was not a design engineer of transmissions, and was not an expert in the design of

²⁶ Tr. 14, lines 18-23.

²⁷ Tr. 18, lines 15-18.

²⁸ Tr. 15, lines 2-7.

²⁹ Tr. 16, lines 13-19.

³⁰ Tr. 17, lines 3-5.

³¹ Tr. 19, lines 17-18.

³² Tr. 31, lines 18-20.

³³ Tr. 27, line 18 to p. 28, line 19.

transmission clutch plates.³⁴ He further stated that the delamination was solely a result of the failure in bonding material.³⁵ Mr. Allen testified that the bonding material failed, but he also testified that he did not know whether the failure was due to bad design or badly carrying out of the design.³⁶ Insurer's counsel objected to Glenn Allen's testifying about why delamination occurs on the basis that he was not qualified to so testify.³⁷

Captain Neil Haynes, a marine surveyor, testified that he had experience with diesel engines but was not a diesel mechanic,³⁸ and that although he had given certain opinions about the clutch plates in this case, before the day of trial, he had never actually looked at the clutch plates in this case.³⁹ Before realizing on the witness stand that the clutch plate pads in this case were not made of fiberglass, Captain Haynes compared the characteristics of bronze versus fiberglass, stating that bronze is a strong metal for its weight and corrosion resistant, but is a heavier metal and more expensive.⁴⁰ On the other hand, fiberglass will delaminate, absorb water, is subject to osmotic problems, and can be affected by heat.⁴¹

³⁴ Tr. 35, line 25 to p. 36, line 4.

³⁵ Tr. 36, lines 5-9.

³⁶ Tr. 36, lines 11-14.

³⁷ Tr. 7, lines 12-15.

³⁸ Tr. 75, lines 7-8.

³⁹ Tr. 89, lines 9-13.

⁴⁰ Tr. 72, lines 17-23.

⁴¹ Tr. 73, lines 1-5.

Captain Haynes testified (1) that Capital Gear offered this particular gear with bronze plates or with fiberglass plates at the time this vessel was built in the late eighties,⁴² (2) that other manufacturers offered bronze clutch plates,⁴³ (3) that bronze clutch plates would be more durable and resilient than fiberglass clutch plates,⁴⁴ (4) that fiberglass clutch plates had a propensity to delaminate,⁴⁵ (5) that properties of bronze as opposed to fiberglass were known in the field at the time of manufacture,⁴⁶ (6) that moisture caused the clutch plates in this case to delaminate gradually over time,⁴⁷ and (7) that it was his understanding that the residue that came off the clutch packs that delaminated off the underlying steel plates that was found in the bottom of the gear case was fiberglass.⁴⁸ After testifying about all of these comparisons between bronze clutch plates and fiberglass clutch plates,⁴⁹ Captain Haynes admitted that the clutch material in this case was not fiberglass.⁵⁰ However, Captain Haynes also stated that the clutch plate

⁴² Tr. 80, lines 6-13; 20-22.

⁴³ Tr. 80, lines 16-18.

⁴⁴ Tr. 81, lines 3-5.

⁴⁵ Tr. 78, lines 4-5.

⁴⁶ Tr. 81, lines 6-8.

⁴⁷ Tr. 78, lines 7-10.

⁴⁸ Tr. 81, lines 18-21.

⁴⁹ In later testimony, Captain Haynes stated that there were legitimate design reasons for production of organic clutch plates, because such plates would hold more horse power and were cheaper. Tr. 104, lines 2-6.

⁵⁰ Tr. 86, line 16 to p. 87, line 1.

was made from an organic material that was put together like fiberglass.

Captain Neil Haynes testified that in his opinion the loss resulted from a design specification applicable to all fiber plates, as opposed to a manufacturing defect, affecting these particular plates. He noted that other similar organic fiber-steel gears suffered delamination problems,⁵¹ and as knowledge with gear boxes progressed, people changed from using the organic material to using solid, solid bonded, or center board score plates.⁵² Captain Haynes said that knowing what he knows now, if he were presented with a transmission of this generation along with the oil reports he had seen, he would advise a potential client that the gear box is no longer in manufacture, that parts availability could be a problem, that service would be extremely expensive, and that the fiber plates involved had a potential for water delamination.⁵³ However, Haynes testified that in 1988, when the clutch plates were manufactured, it would not have been known that there was a design defect.⁵⁴ He further said that no one he surveyed told him that there had been any factory recall by the manufacturer,⁵⁵ and with all his knowledge, he would not have been able to know whether the vessel's clutch plates contained fibrous material or fiberglass material.⁵⁶

⁵¹ Tr. 82, lines 7-11.

⁵² Tr. 82, lines 3-6.

⁵³ Tr. 106, lines 4-13.

⁵⁴ Tr. 97, lines 11-12.

⁵⁵ Tr. 100, lines 10-15.

⁵⁶ Tr. 100, lines 18-24.

The Insurer argued that use of fiber clutch plates was an “inherent vice,” which tied into the design defect theory. Thus, the same discussion of evidence relating to “design defect” applies.⁵⁷

2. Wear and Tear and Gradual Deterioration

Both vessel owner Dennis Lee and Captain Timothy Scalise testified that the oil report and oil analysis done before the incident did not indicate foreign matter in the transmission,⁵⁸ and it was only about forty-three hours of operation before the failure of the transmission occurred.⁵⁹ Glenn Allen testified that after the incident, he found clutch material pieces in the oil and the gear housing.⁶⁰

Furthermore, Captain Scalise testified that he checked the oil before cranking the vessel on the day of the casualty, and there was no delaminated clutch pieces in the oil.⁶¹ He stated that on the day of the casualty, the vessel was used in a Billfish tournament for about twelve hours,⁶² and when leaving the marina to take the vessel back to Toler’s cove, less than one-hundred yards from the slip, the transmission and engine failed.⁶³

Glenn Allen further testified that the grooves in the clutch plates did not show a

⁵⁷ Tr. 125, lines 8-13.

⁵⁸ Tr. 41, lines 23-25; Tr. 57, lines 10-12.

⁵⁹ Tr. 59, lines 13-24.

⁶⁰ Tr. 4, lines 10-13.

⁶¹ Tr. 61, lines 9-14.

⁶² Tr. 61, line 16 to p. 62, line 1.

⁶³ Tr. 62, lines 4-8.

lot of wear and tear and were in good shape. He testified that if the clutch plates were getting to the end of their useful life, the grooves would not be so well-defined.⁶⁴ Rather than a gradual process, he said that the clutch plate materials had been flung off, taking the thrust out of the engine.⁶⁵

Mr. Allen stated that the clutch plates were supposed to stay together, do their job, and gradually wear down,⁶⁶ and it was fair to say that one of the clutch plates appeared to be like it was supposed to be, completely whole and with the padding on it, and the others were in various states of delamination.⁶⁷

Captain Neil Haynes testified that the cause of the loss was delamination, gradual deterioration, and wear and tear.⁶⁸ However, when asked whether the delamination could have occurred within one hour, he said that he could not answer that,⁶⁹ and that once a transmission with fibrous clutch plates fails, it is catastrophic.⁷⁰

The Insurer conceded that the Insured had shown there was not excessive heat or an active leak in the oil cooler, due to lack of sodium in the two oil analysis results.⁷¹ The

⁶⁴ Tr. 5, lines 19-25.

⁶⁵ Tr. 6, lines 13-14.

⁶⁶ Tr. 9, lines 24-25.

⁶⁷ Tr. 9, lines 8-11.

⁶⁸ Tr. 76, lines 13-17.

⁶⁹ Tr. 102, lines 14-17.

⁷⁰ Tr. 103, lines 1-3.

⁷¹ Tr. 124, lines 18-23.

vessel's Captain, Timothy Scalise, testified that the oil analysis performed prior to purchase did not state anything about abnormally high sodium,⁷² and Captain Neil Haynes also testified that the oil analysis did not indicate an abnormal or severe level of sodium.⁷³

3. Dampness of Atmosphere

Captain Neil Haynes testified that there would be more problems with condensation if the vessel were laid up because there would not be any mechanical heat, which has a tendency to burn off condensation.⁷⁴ He also testified that photographs of the transmission at the time of the tear down showed rust visible inside the transmission, indicating moisture over a period of time.⁷⁵ However, he admitted that at the time the samples were taken, the highest concentration of water in the transmission was .3 percent, or 3 tenths of one percent,⁷⁶ that on the oil reports there was an indication that the water amount was abnormal but not severe,⁷⁷ and that both reports recommended only keeping a watch, resampling at 25 to 50 hours, and resampling at 200 hours for metal levels.⁷⁸ Captain Haynes also admitted that upon examining the actual clutch plates, he did not

⁷² Tr. 57, lines 6-9.

⁷³ Tr. 86, lines 8-11.

⁷⁴ Tr. 77, lines 21-24.

⁷⁵ Tr. 79, lines 18 to p. 80, line 1.

⁷⁶ Tr. 89, lines 3-8.

⁷⁷ Tr. 89, lines 16-25.

⁷⁸ Tr. 89, lines 12 to p. 90, line 22.

know if it was rust or resin, or whether it was a sealing material used for the plate itself.⁷⁹

The Motorcheck Oil Analysis⁸⁰ reflects that on or about January 25, 1999, the transmission oil analysis indicated .002 water in the port transmission and .003 water in the starboard transmission. This report classified the .002 water in the port transmission as within normal limits and the .003 water in the starboard transmission as abnormal but not severe.

Marine mechanic Glenn Allen testified that dampness of the atmosphere, ambient atmosphere, caused condensation in the gear,⁸¹ but in his view, water really posed no problem at all.⁸² He stated that if water broke down the oil, and there was lack of lubrication, it would show signs of excessive heat, but there was no such signs to be seen in the gear.⁸³ Mr. Allen said that as a mechanic, he did not consider the level of water in the vessel to be a big problem and the oil had not emulsified. He testified that if one gets a high level of water in the oil, the oil will turn milky. As a result, when the oil is checked each morning, it would give an indication of water in the transmission.⁸⁴ Mr. Allen also stated that there are three to four gallons of oil and that it would take a half

⁷⁹ Tr. 93, lines 11-13; Tr. 101, lines 2-5.

⁸⁰ Joint Exhibit C.

⁸¹ Tr. 30, lines 17-19.

⁸² Tr. 29, lines 14-20. An engine survey prior to purchase detected the presence of a trace of water in the gear box.

⁸³ Tr. 29, lines 14-20.

⁸⁴ Tr. 18, lines 5-11.

gallon to a gallon of water to give a clear indication that water is being introduced into the transmission.⁸⁵

Captain Timothy Scalise testified that prior to purchase of the vessel, the oil analysis showed that only a light concentration of water was present, indicated with an "A" for abnormal, rather than an "S" for severe.⁸⁶

The oil report stated as follows:

Slight trace of water present. Most probably due to condensation. Copper reading high, most probably due to water. (Water tends to raise the numbers.) Suggest changing oil and re-sampling at 25 to 50 hours. Copper should go down.

(Joint Exhibit C).

Captain Scalise testified that following the suggestions of the report, all oils and fluids in both the main engines, the transmissions, generators, and the oil filters were changed.⁸⁷ Captain Scalise identified the bill for \$520 from Gary Gillespie of Marine Group of Palm Beach, Inc.,⁸⁸ who did all the service work on the engines, which included changing the oil in the starboard transmission, and changing the filter.⁸⁹ Further, he testified the oil was monitored after it was changed.⁹⁰

Captain Scalise testified that he checked the oil before cranking the vessel the day

⁸⁵ Tr. 18, lines 15-18.

⁸⁶ Tr. 57, lines 14-24.

⁸⁷ Tr. 58, lines 8-14.

⁸⁸ Bill from Gary Gallispie of Marine Group of Palm Beach, Inc., Plaintiff's Exhibit 6.

⁸⁹ Tr. 58, line 20 to p. 59, line 10.

⁹⁰ Tr. 58, lines 15-16.

of the casualty, and he saw neither water on the dipstick, nor any emulsified, or milky, oil in either the engines or transmission.⁹¹ He stated that the day of the casualty, the vessel was used in a Billfish tournament for about twelve hours,⁹² and when leaving the marina to take the vessel back to Toler's cove, less than one hundred yards from the slip, the transmission and engine failed.⁹³

4. Non-disclosure

The Insurer cross-examined the vessel's owner, Dennis Lee, on whether he had given the Insurer either the engine survey or the fluid analysis.⁹⁴ Mr. Lee testified that he had given the Insurer everything it asked for but did not remember whether he had given it those reports.⁹⁵ Mr. Lee further testified he did not recall whether he volunteered information concerning the fluid analysis, an event which the Insurer characterized as overheating and that Mr. Lee did not remember, or the vessel's history of being in storage before its purchase.⁹⁶ The Insurer presented no witness regarding whether the Insurer received these items.

⁹¹ Tr. 61, lines 9-14.

⁹² Tr. 61, line 25 to p. 62, line 1.

⁹³ Tr. 62, lines 4-8.

⁹⁴ Tr. 47, lines 20-22.

⁹⁵ Tr. 47, lines 22-24.

⁹⁶ Tr. 48, lines 1-17.

C. Evidence on Damages

1. Transmission

Glenn Allen, the marine mechanic who disassembled the transmission and engine after the incident, testified that it would have cost \$15,000 to rebuild the Capital Gear transmission that failed⁹⁷ and \$14,500 to get a rebuilt transmission.⁹⁸

2. Starboard Engine

Glenn Allen testified that there was damage to the starboard engine of the vessel.⁹⁹ Mr. Allen testified that the transmission failure took the thrust out of the engine, the crankshaft itself, causing excessive heat, which turned the metal parts blue that were making contact, and that the engine could not be rebuilt after it was turned black and blue as it was, because the strength of the metal had been compromised, and no amount of machine work could fix that.¹⁰⁰

Mr. Allen testified that with regard to the total amount of the invoice from Williams Detroit, \$48,948.99, all of the work done was to get the Reliabuilt long block and to properly prepare it to go back into the vessel.¹⁰¹ Captain Neil Haynes testified that the charge for the engine was \$10,279, that the other charges were for items that had to be done in order to get the engine ready to go back into the boat, that those were fair and

⁹⁷ Tr. 22, lines 18-20.

⁹⁸ Tr. 22, lines 21-23.

⁹⁹ Tr. 20, lines 3-5.

¹⁰⁰ Tr. 20, lines 8-15.

¹⁰¹ Tr. 21, lines 13-16.

reasonable charges, and that Williams Detroit Diesel is a reliable service outfit that charges reasonable prices.¹⁰² Mr. Allen testified that \$5,211.25 was reasonable for the work that he and Detroit Diesel did in taking the engine out and putting it back in the boat (the highlighted items on Plaintiff's Exhibit 4).¹⁰³

Mr. Allen testified that the total of \$5,211.25 for taking the engine out and putting it back, from Plaintiff's Exhibit 4, the \$48,984.88 from Plaintiff's Exhibit 5, and the \$14,500 for a rebuilt Capital Gear reflects the total cost to repair the damage resulting from the delamination.¹⁰⁴

Glenn Allen testified that it took about thirty hours to remove the gear from the port engine and put the new drive couplings on and to put the transmissions on the new engines.¹⁰⁵ This labor was necessitated by the loss.

3. Oil Cooler

Glenn Allen testified that replacement of the starboard cooler was directly related to the failure of the starboard engine because clutch materials went through that cooler and were not able to be cleaned out.¹⁰⁶ This charge was included in the Williams Detroit Diesel bill.

¹⁰² Tr. 92, lines 12-24.

¹⁰³ Tr. 23, lines 9-14.

¹⁰⁴ Tr. 23, lines 15-18.

¹⁰⁵ Tr. 35, lines 5-11.

¹⁰⁶ Tr. 33, line 24 to p. 34, line 12.

4. Deduction for Defective Parts

Glenn Allen testified that if the cost of defective parts were subtracted, it would be correct to deduct the cost of the clutch plates.¹⁰⁷ Mr. Allen said that there were eleven clutch plates,¹⁰⁸ and the clutch plates cost a little less than \$40 a piece, so the total would be approximately \$475.¹⁰⁹ He testified that if that amount were subtracted, that would be the damage that resulted from the failure of the bonding agent holding the pads onto the clutch plates without the cost to replace the defective clutch plates themselves.¹¹⁰

5. Unrelated Charges

Glenn Allen testified that the Williams Detroit Diesel invoice included a \$1,651 charge for a turbocharger on the port engine, which was not related to this loss and should be subtracted from the total.¹¹¹ Mr. Allen also stated that although the charges were not segregated, there were approximately \$100 worth of gaskets and like parts that were related to the port engine turbocharger, along with five or six hours of labor.¹¹² The Williams Detroit labor charge is around \$60 per hour.¹¹³

Captain Timothy Scalise testified that he spent thirty-two to forty hours of labor at

¹⁰⁷ Tr. 23, lines 20-24.

¹⁰⁸ Tr. 23, line 23 to p. 24, line 2.

¹⁰⁹ Tr. 24, lines 3-5.

¹¹⁰ Tr. 24, lines 7-9.

¹¹¹ Tr. 32, lines 3-13.

¹¹² Tr. 32, lines 19-24.

¹¹³ Tr. 32, line 25 to p. 33, line 3.

Halsey Cannon Boatyard preparing the vessel for work done on the port engine. This work was not related to the damages in this claim.¹¹⁴ He also said that he spent time unrelated to this loss preparing the engine room to be painted and starting to wax the hull; however, no specific numbers of hours were established for these jobs.¹¹⁵

III. Findings of Facts

After careful consideration of all the evidence, including the testimony of witnesses and documentary and physical evidence, this court makes the following findings of facts:

- A. The GUSTO IV ex HIGH BID is a 55' Super Sport fishing vessel built in 1987 by Ocean Yachts and equipped with marine transmissions (Model no. HY25000) manufactured by Capital Gear.
- B. In January 1999, plaintiff, through its sole shareholder Mr. Dennis Lee, investigated the possibility of purchasing the GUSTO IV. According to Mr. Lee, the GUSTO IV had reportedly been involved in drug smuggling and confiscated by federal authorities. After being laid up for at least one year, the GUSTO IV had been purchased by its then owner.
- C. The plaintiff did not interview prior owners, captains, or repairers concerning the conditions of use, repair, or maintenance of the GUSTO IV. No maintenance records were available prior to the confiscation, but

¹¹⁴ Tr. 65, lines 14-16.

¹¹⁵ Tr. 66, lines 4-13.

Mr. Lee was provided with some receipts from the owner indicating that the oil had recently been changed.

- D.** The Plaintiff also commissioned a hull survey from Reeve Marine Surveyors of Tequesta, Florida, an engine survey by Florida Marine Tech of the Palm Beaches, Inc., and an analysis of the GUSTO IV's fluids by Motorcheck Oil Analysis Clinic of West Palm Beach Florida.
- E.** As to the transmissions, the fluid analysis showed normal wear rated and "no problems" for the port gear. For the starboard gear, however, the analysis showed abnormal levels of water in the oil and reported that "Bearing/Gear wear indicated. Light concentration of water present. Check for source of water entry." (Joint Exhibit C).
- F.** In another part of the report, the Motorcheck report stated in reference to the starboard transmission as follows: "Slight trace of water present. Most probably due to condensation. Copper reading high due to water. (Water tends to raise the numbers.) Suggest changing oil and re-sampling at 25-50 hours."
- G.** Plaintiff purchased the GUSTO IV and had the oil changed. Plaintiff's captain decided to wait fifty hours before resampling the oil.
- H.** After the purchase, plaintiff contracted with defendant for marine insurance coverage for one year. The coverage for the GUSTO IV under Royal Insurance Company of America Policy Number POY 090027 attached at 12:01 Standard Time on February 3, 1999. The policy can be

found at Joint Exhibit D.

- I. On July 18, 1999, the GUSTO IV's transmission failed, which caused the vessel's starboard engine to fail, also contaminating the oil cooler. At this time, the vessel's transmissions and engines had less than one thousand hours of operation, a relatively low number.
- J. At plaintiff's direction, the GUSTO IV was then transported to the Halsey-Cannon Boatyard where it was hauled and blocked. The machinery was subsequently removed and taken to Williams Detroit Diesel in Savannah for inspection and repair.
- K. The disassembly and inspection was performed by plaintiff's marine technician, Mr. Glen Allen. At trial, the parties agreed that the root cause of the engine failure was the delamination of the organic clutch plates in the starboard transmission. Delamination is the deterioration of the bond between the underlying stainless steel disc and the fiber (or organic) crosshatched layer of material that provides the friction necessary for the operation of the transmission.
- L. This delamination was not supposed to occur; instead, the grooves in the clutch plates were supposed to wear down gradually.
- M. The possible causes of delamination were a flaw existing at the time of manufacture, excessive heat, excessive water, or a solvent. There is no evidence of excessive heat, excessive water, or a solvent, leaving the only possibility as a flaw existing at the time of manufacture.

- N.** The flaw was not discoverable by ordinary means of testing but could only have been discovered by disassembling the transmission.
- O.** Further, there was no observable indication that fibrous clutch plates, as opposed to bronze clutch plates, were used. Neither the part number nor the serial number of the parts would identify the clutch plates as either fibrous or bronze, and the manufacturer, Capital Gears, has been out of business since 1989.
- P.** The Insured and its agents used all ordinary means of testing, without success, to detect defects in the transmission.
- Q.** Based on the following facts, the failure of the bonding material was a flaw in the material:
1. The transmission had a relatively low number of hours of operation;
 2. The starboard transmission and starboard engine failed without warning as a result of delamination of the clutch plate pads, and this event occurred rapidly.
 3. Marine mechanic Glenn Allen testified that delamination was not supposed to occur; rather, the grooves in the clutch plates were supposed to wear down gradually.
 4. All but one of the clutch plates entered into evidence were in a visibly abnormal and defective condition.
 5. Both marine mechanic Glenn Allen and marine surveyor Captain

Neil Haynes testified that the delamination occurred as a result of a failure of the bonding material.

R. Based on the following facts, the flaw in the bonding material of the clutch plate padding existed at the time of manufacture:

1. Marine mechanic Glenn Allen testified that the possible causes of delamination were a flaw existing at the time of manufacture, excessive heat, excessive water, or a solvent. There was no evidence of excessive heat, excessive water, or a solvent, leaving the only possibility as a flaw existing at the time of manufacture.
2. Marine surveyor Captain Neil Haynes testified that the possible causes of delamination, besides a flaw existing at the time of manufacture, were excessive heat or moisture, but there was no evidence of excessive heat. He opined that moisture in the transmission caused the delamination; however, he admitted that he did not know what percentage of water would be necessary to cause delamination and that the highest level of water sampled in the oil was .3 percent, or 3 tenths of one percent. He admitted that the oil report characterized this amount as abnormal but not severe.
3. Mr. Allen testified that it would take half a gallon to a gallon of water to cause this type of problem.
4. Both Captain Haynes and Mr. Allen testified that water resulting

from condensation was a normal occurrence in marine transmissions; thus, although there was some moisture present in the transmission, this trace amount of water should not have caused delamination, absent a defect in the bonding material. Hence, a defect, rather than the moisture, was the cause of the delamination.

- S. Based on the following facts, the flaw was not discoverable by ordinary means of testing:
1. Marine mechanic Glenn Allen testified that the only way to discover the flaw was to disassemble the transmission, which is not an ordinary means of testing.
 2. There was no observable indication that fibrous clutch plates, as opposed to bronze clutch plates, were used. Marine surveyor Captain Neil Haynes testified that neither the part number nor the serial number of the parts would identify the clutch plates as either fibrous or bronze, and the manufacturer, Capital Gear, had been out of business since 1989.
 3. The Insured and its agents used all ordinary means of testing without success to detect defects in the transmission.
- T. The loss did not result from delamination of fiberglass. While the Insurer's arguments were largely based on a mistaken belief that the clutch plate pads were made of fiberglass, the Insurer's expert realized after examining them that they were not made of fiberglass.

U. Based on the following facts, there was not a preponderance of evidence presented that there was a design defect nor was there "an inherent vice":

- 1. There was no evidence presented of what the design of the clutch plate pad bonding material was or whether the bonding material in this case conformed to that design;**
- 2. Marine surveyor Captain Neil Haynes testified that there was no product recall of the clutch plates in question;**
- 3. Captain Neil Haynes also testified that another company also used organic clutch plates;**
- 4. Finally, Captain Haynes testified that in 1988, when the clutch plates were manufactured, it would not have been known that there was a design defect;**
- 5. Neither marine mechanic Glenn Allen nor marine surveyor Captain Neil Haynes, the only expert witnesses who testified at trial, were qualified to testify on the issue of design defect.**

V. Based on the following facts, there was not a preponderance of evidence presented that the delamination occurred as a result of wear and tear or gradual deterioration:

- 1. The transmissions and engines had a relatively low number of operation hours, under one-thousand;**
- 2. The grooves on the clutch plates were not worn; rather, their padding had delaminated;**

3. Marine mechanic Glenn Allen testified that delamination was not supposed to occur;
4. The delamination most likely occurred in less than forty-three hours, based on the fact that there was no clutch pad material in the oil analysis done at the time of purchase of the vessel and the fact that the vessel had only been operated for forty-three hours when the casualty occurred;
5. The delamination most likely occurred in less than twelve hours, because there was no delaminated material present in the oil when Captain Scalise checked it before cranking the vessel the day of the casualty, and the casualty, which resulted from delamination, occurred approximately twelve hours later.

W. Based on the following facts, there was not a preponderance of evidence that the flaw was due to dampness of atmosphere:

1. While both marine mechanic Glenn Allen and Captain Neil Haynes agreed that there was a trace of water in the transmission due to condensation, Captain Haynes admitted that he did not know what percentage of water would be necessary to cause delamination, that the highest level of water sampled in the oil was .3 percent, or 3 tenths of one percent, and that the oil report characterized this amount as abnormal but not severe.
2. Mr. Allen testified it would take half a gallon to a gallon of water

to cause this type of problem.

3. Both Captain Haynes and Mr. Allen testified that water resulting from condensation was a normal occurrence in marine transmissions; thus, although there was some moisture present in the transmission, this trace amount of water should not have caused delamination absent a defect in the bonding material. Hence, a defect, rather than the moisture, was the cause of the delamination.

X. There is not a preponderance of evidence that there was any non-disclosure of material facts by the Insured that should prevent recovery.

Y. The Insured is entitled to recover for the following charges, minus the amounts indicated below for charges unrelated to this loss:

1. Loss-related charges:

- a. \$14,500.00, the cost to rebuild a Capital Gear transmission;
- b. \$48,984.88, the cost to get the Reliabuilt long block engine and to properly get it ready to go back into the vessel; and
- c. \$5,211.25, for the service related to taking the engine out and putting it back in the boat.
- d. This total, before subtracting the following unrelated charges, is \$68,696.13.

2. Unrelated Charges:

- a. \$475.00, the cost of the eleven clutch plates, since recovery cannot be had under the policy for replacement of the

defective parts.

- b. \$100.00 worth of gaskets and like parts related to the port engine turbocharger.
- c. \$1,651.00 charge for turbocharger for the port engine, which Glenn Allen admitted was not related to the damages resulting from the clutch pad.
- d. \$360.00 for labor related to the port engine turbocharger;
- e. \$390 (or approximately 40 percent of the Halsey Cannon bill of \$975 for Captain Timothy Scalise's time);
- f. \$3,700.00, the deductible for the policy.
- g. The total of the charges unrelated to the loss is \$6,676.00.

3. Thus, the total amount of damages, before pre-judgment interest, is \$62,020.13.

IV. Legal Analysis

A. Burden of Proof

The Insured bears the burden of showing a prima facie case of coverage by showing that an insurance policy was issued, that the insured suffered a loss, and that the loss was an event covered under the terms of the policy. See Contractors Realty Co., Inc. v. Insurance Co. of North America, 469 F.Supp. 1287, 1292 (S.D.N.Y. 1979). In the present case, the Insured claimed a "latent defect" and bore the burden of proving by a preponderance of the evidence "a hidden flaw in the material existing at the time of manufacture of the YACHT or its machinery which is not discoverable by ordinary

means of testing," as defined by the policy.

In an action on an insurance policy, the Insurer must bear the burden of establishing affirmative defenses by a preponderance of the evidence. See Contractors Realty, 469 F.Supp. at 1293; see also Stonehenge Engineering Corp. v. Employers Ins., 201 F.3d 296, 302 (4th Cir. 2000); Coronet Foods, Inc. v. National Labor Relations Bd., 158 F.3d 782, 788 (4th Cir. 1998). Here, the Insurer claimed exclusions for delamination of fiberglass, design defect, wear and tear, inherent vice, gradual deterioration, dampness of atmosphere, and non-disclosure of material facts by the insured.

By making a prima facie case that the loss is within policy coverage, an insured can shift the burden of proof of going forward with the evidence to the insurer and, if the insurer does not meet its burden, it runs the risk of an adverse holding. See Gibbar v. Calvert Fire Ins. Co., 623 F.2d 41, 45 (8th Cir. 1980).

The fact that insureds are required to prove that the casualty was due to a "latent defect" within the scope of an additional perils or "Inchmaree clause" of the hull and machinery policy does not mean that the insureds have to prove the exact nature of the accident or casualty which in fact caused the loss. See Gibbar, 623 F.2d at 45. Here, the Insured showed that the loss was caused by a failure of the bonding material in the transmission's clutch plate padding and disproved the possible causes other than a defect in the material existing at the time of manufacture.

In Gibbar, the owners of a seagoing vessel established that the vessel's engine operated properly for approximately one hour prior to the mishap that destroyed the

starboard engine. In the present case, the vessel operated properly for 43 hours prior to the casualty. In Gibbar, the vessel had not exhausted its useful life under ordinary expectations. In the present case, the vessel's transmissions and engines had less than 1,000 hours of operation.

In Gibbar, the insured established that mechanical damage from outside elements was unlikely, and metal breakage might have caused the malfunction of the starboard engine. In the current case, the Insured showed that there was no evidence of causes such as excessive heat, excessive water, or solvents in the transmission. As in Gibbar, the Insured here has made a prima facie case that the loss resulted from a latent defect. The Insured has shown a hidden flaw in the clutch pad bonding material.

B. Design Defect

The policy at issue in this case expressly excludes coverage for "Improper design of your YACHT," and the definition of "YACHT" includes machinery. This exclusion is an affirmative defense that the Insurer bears the burden to prove. See Contractors Realty, 469 F.Supp. at 1293. The Fourth Circuit has held that in determining the existence of a design defect, courts should look at "evidence of actual industry practice, knowledge at the time of other injuries, knowledge of dangers, the existence of published literature, and from direct evidence of what reasonable purchasers considered defective at the time." Sexton v. Bell Helmets, Inc., 926 F.2d 331, 337 (4th Cir. 1991). The court also concluded that a "product can only be defective if it is imperfect when measured against a standard existing at the time of sale or against reasonable consumer expectations at the time of the sale." Id.