Finding Detail Report

LB ROBERT

Finding Number: 186.0
Report Generated Date: 29-Nov-2022

THIS REPORT HAS BEEN PRODUCED FROM FREEDOM AND IS SUBJECT TO ERRORS AND CHANGES THAT MAY OCCUR OUTSIDE THE FREEDOM APPLICATION. ABS ASSUMES NO RESPONSIBILITY FOR ERRORS OR ACTIONS TAKEN BASED ON THE INFORMATION HEREIN. ABS'S ENTIRE RESPONSIBILITY AND LIABILITY IS GOVERNED BY THE LICENSE AGREEMENT FOR ABS MYFREEDOM PORTAL

186.0 Outstanding

Service Type:	Class Certification	**Associated Task:**	Repair Survey (Class)	**Status:**	Closed
Criticality:		**Opened In Report:**	HOM3601428	**Last Visit Date:**	16-Feb-2019
Closed in Port:	Houma Port	**Asset Name:**	STRUCTURE/Aft Leg	**Failure Alert:**	No
Closed in Report:	HOM3601428	**Closed in Task:**	Repair Survey (Class)	**Closed Date:**	16-Feb-2019

Description:

Indications found inaft Leg and leg to Pad Connection

Timeline

186.0 Recommendation

Criticality:	NOT SPECIFIED	**Due By Task:**	N/A	**Report Number:**	HOM3601428
Port:	Houma Port	**Last Visit Date:**	16-Feb-2019	**Due Date:**	N/A
Failure Type:	Fractured	**Failure Descriptor:**		**Recommended Action:**	NOT SPECIFIED

Description:

186.0 Rectification

Report Number:	HOM3601428	**Port:**	Houma Port	**Rectification Date:**	16-Feb-2019
Failure Type:	Fractured	**Failure Descriptor:**		**Rectification Action:**	Modified

Description:

Theaft legs pad was separated from the leg by torch cutting the existing weld right above the pad. Once the pad was cut free the leg was elevated up to expose the fractured area above the top of the leg tower to be able to commence repairs. On all legs fractures were found at the top of the gear rack structure at the top gear motor. 11 feet of new gear rack was used to replace all sections cropped and renewed at this time.

A 6 foot section of rack was removed from the forward and aft sides of the leg, after removal of the rack this area was non-destructively tested via UT and MPI and indications were found. All other indications were air arc gouged to sound metal and then non-destructively tested via MPI and shear wave andfound satisfactory. These areas were also welded, ground smooth, ndt prior to installing new gear rack.

As per owners representative more gear rack was removed for a total length of 11 feet on each side. These areas were UT andMagnetic Particle examined and found satisfactory prior to installing new gear rack. Once all of the gear rack was welded, a 24, 48 and 72 hour hold was carried out on the weldments and found satisfactory.

A total area length of 28 ft was air arc gouged in way of indications found in the pad to leg weldment. The depth of weld varied from 1/2 inch to 1.5 inches in depth. Once all gouging was completed this area was Magnetic Particle inspected and found satisfactory prior to welding.

Falcon Global engineering elected at this time to add more weld to the pad to leg weld and then grind (contour grind) the weld to provide more weld to reduce fractures and to provide a smooth surface to reduce stress risers in this area. ABS Engineering had no comment about the additional weldment as the original design met the requirements. Plates were

welded to the top of the pad to prevent the welded area from contacting the leg well.

Due to fractures found in all 3 legs at this time, Falcon Global decided to install 4 - 30 ft x 2-1/8 inchinch x 16 inch Belly Plates (flat bar) in each of the 3 legs. The plates would extend 15 feet above and 15 feet below the rack fractures found on each leg or at 38 ft above the top of the pad which is the top of the gear rack structure. Computer modeling had shown areas of concern in these areas. By adding these "Belly Plates" it would reduce the stress in these areas by 15-20% as indicated by Falcon Global. The belly plates would be placed on each side of the vertical gear rack from the inside of the leg, meaning the plates backed up the rack and strengthened the legs in this area. A 2 inch x 8 inch flat bar was positioned in the leg at New Construction centered vertically over the backside of the gear rack thus providing backup structure to the gear rack. The "Belly Plates" were positioned 3 inches to the right and left of the vertical 2 inch x 8 inch flat bar so the welders could have enough room to weld the belly plate on the side next to the flat bar. The Belly Plates were welded continuously full length except in the area where the horizontal pipe braces tied into the flat bar (about 6 inches of weld).

All belly plate, leg and rack welds were examined visually and then non-destructively tested via MPI and found satisfactory.Once the belly plates were welded and non destructively tested the pad was moved back into position and welded 100% as original to the leg. MPI and Shear Wave was carried out on the weldment at 24,48 and72 hour hold checks. All checks were witnessed and found satisfactory

ABS approved welding procedures (WPS), welder qualifications, nondestructive (NDE) testing reports and material certifications (MTRs) were examined/witnessed, as deemed necessary, found to be satisfactory, and in compliance with applicable 2019 ABS rules, requirements, and pertinent regulations.

Finding Detail Report

LB ROBERT

Finding Number: 187.0
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187.0 Outstanding

Service Type:	Class Certification	**Associated Task:**	Repair Survey (Class)	**Status:**	Closed
Criticality:		**Opened In Report:**	HOM3601428	**Last Visit Date:**	16-Feb-2019
Closed in Port:	Houma Port	**Asset Name:**	STRUCTURE/Port Fwd Leg	**Failure Alert:**	No
Closed in Report:	HOM3601428	**Closed in Task:**	Repair Survey (Class)	**Closed Date:**	16-Feb-2019

Description:

Indications found inPort Leg and leg to Pad Connection

Timeline

187.0 Recommendation

Criticality:	NOT SPECIFIED	**Due By Task:**	N/A	**Report Number:**	HOM3601428
Port:	Houma Port	**Last Visit Date:**	16-Feb-2019	**Due Date:**	N/A
Failure Type:	Fractured	**Failure Descriptor:**		**Recommended Action:**	NOT SPECIFIED

Description:

187.0 Rectification

Report Number:	HOM3601428	**Port:**	Houma Port	**Rectification Date:**	16-Feb-2019
Failure Type:	Fractured	**Failure Descriptor:**		**Rectification Action:**	Inserted

Description:

Repairs to Port, Stbd and Aft Legs and Pads

Theport legs pad was separated from the leg by torch cutting the existing weld right above the pad. Once the pad was cut free the leg was elevated up to expose the fractured area above the top of the leg tower to be able to commence repairs. On all legs fractures were found at the top of the gear rack structure at the top gear motor (38 ft above top of pad when it is fully retracted).11 feet of new gear rack was used in replacing all rack found fractured.

A 6 foot section of rack was removed from the forward and aft sides of the leg, after removal of the rack this area was non-destructively tested via UT and MPI and indications were found. All other indications were air arc gouged to sound metal and then non-destructively tested via MPI and found satisfactory. All welded areas were ground smooth and again checked for indications with non found. following these checks new gear rack was installed.

Indications found on Forward Side of Port Leg @ 38 feet above top of pad behind and in the area of gear rack as noted below

2L inch x 3/8w inch x 1/2 inchdeep
3 inch x 1 inch x 5/8 inch Deep
2.5 inch x 1.25 inch x 3/8 inch Deep
1/2 inch x 4 inch x 1/8 inch Deep

2 inch x 2.5 inchx 5/16 inch Deep
2.5 inch x 1.125 inch x 3/8 inchDeep
2.25 inch x 1 inch x 1/4 inchDeep
2 inch x 2.25 inchx 5/16 inch Deep
1 inch x 2 inch x 1/4 inchDeep
1 inch x 2 inch x 1.4 inchDeep
1.25 inch x 2 inch x 1/4 inchDeep
1 inch x 2.5 inch x 5/16 inch Deep
16 inch x 1.25 inch x 3/8 inch Deep
1.25 inch x 16 inch x 3/8" Deep

Indications found on aft side of Port Leg @ 38 feet above top of pad

2 inch x 1 inch x 1/4 inch deep
14 inch x 2 inch x 1/4 inch deep
6 inch x 2.25 inch x 3/16 inch deep
4 inch x 1.5 inch x 3/8 inch deep
2 inch x 1 inch x 1/4 inch deep

As per owners representative more gear rack was removed for a total length of 11 feet on each side of each leg. These areas were UT and Magnetic Particle examined and found satisfactory prior to installing new gear rack. Once all of the gear rack was welded, a 24, 48 and 72 hour hold was carried out on the weldments and found satisfactory following 100% examination by UT and MPI. .

A total area length of 23 ft was air arc gouged in way of indications found in the pad to leg weldment. The depth of weld varied from 1/2 inch to 1.5 inches in depth. Once all gouging was completed this area was Magnetic Particle inspected and found satisfactory prior to welding.
Falcon Global engineering elected at this time to add more weld to the pad to leg weld and then grind (contour grind) the weld to provide more weld to reduce fractures and to provide a smooth surface to reduce stress risers in this area. ABS Engineering had no comment about the additional weldment as the original design met the requirements. Plates were welded to the top of the pad to prevent the welded area from contacting the leg well.

Due to fractures found in all 3 legs at this time, Falcon Global decided to install 4 - 30 ft x 2-1/8inch x 16 inch Belly Plates (flat bar) in each of the 3 legs. The plates would extend 15 feet above and 15 feet below the rack fractures found on each leg (Or centered at 38 feet above top of the pad when fully retracted. Computer modeling had shown areas of concern in these areas. By adding these "Belly Plates" it would reduce the stress in these areas by 15-20% as indicated by Falcon Global. The belly plates would be placed on each side of the vertical gear rack from the inside of the leg, meaning the plates backed up the rack and strengthened the legs in this area. A 2 inch x 8 inch flat bar was positioned in the leg at New Construction centered vertically over the backside of the gear rack thus providing backup structure to the gear rack. The "Belly Plates" were positioned 3 inches to the right and left of the vertical 2 inch x 8 inch flat bar so the welders could have enough room to weld the belly plate on the side next to the flat bar. The Belly Plates were welded continuously full length except in the area where the horizontal pipe braces tied into the flat bar (about 6 inches of weld)

All belly plate, leg and rack welds were examined visually and then non-destructively tested via MPI and found satisfactory.Once the belly plated were welded and NDT the pad was

moved back into position and welded 100% as original to the leg. MPI and Shear Wave was carried out on the weldments at 24, 48 and 72 hour checks. All checks were witnessed and found satisfactory.

ABS approved welding procedures (WPS), welder qualifications, nondestructive (NDE) testing reports and material certifications (MTRs) were examined/witnessed, as deemed necessary, found to be satisfactory, and in compliance with applicable 2019 ABS rules, requirements, and pertinent regulations.

Finding Detail Report

LB ROBERT

Finding Number: 214.0
Report Generated Date: 29-Nov-2022

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214.0 Outstanding

Service Type:	Class Certification	**Associated Task:**	Special Periodical Survey - Hull 2	**Status:**	Closed
Criticality:	Recommendation	**Opened In Report:**	5150474	**Last Visit Date:**	30-Jun-2022
Closed in Port:	Houma Port	**Asset Name:**	Arrangement/Structure/Structural System/Stbd Fwd Leg	**Failure Alert:**	No
Closed in Report:	5150474	**Closed in Task:**		**Closed Date:**	30-Jun-2022

Description:

During the NDT of the leg spun can welding , a fracture observed in length of 8'

Timeline

214.0 Rectification

Report Number:	5150474	**Port:**	Houma Port	**Rectification Date:**	30-Jun-2022
Failure Type:	Fracture	**Failure Descriptor:**	In Weld	**Rectification Action:**	Rewelded

Description:

Subject area has been gouged and rewelded. After the completion of the repair all welding seam has been visually inspected and checked with a means of NDT to the satisfaction of the attending surveyor.

Procedures, welding qualifications of welder performing the repair have been verified.

214.0 Recommendation

Criticality:	Recommendation	**Due By Task:**	N/A	**Report Number:**	5150474
Port:	Houma Port	**Last Visit Date:**	30-Jun-2022	**Due Date:**	28-Sep-2022
Failure Type:	Fracture	**Failure Descriptor:**	In Weld	**Recommended Action:**	Gouge and Reweld

Description:

Subject fracture is to be repaired to the satisfaction of the attending surveyor.

Finding Detail Report

LB ROBERT

Finding Number: 215.0
Report Generated Date: 29-Nov-2022

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215.0 Outstanding

Service Type:	Class Certification	**Associated Task:**	Special Periodical Survey - Hull 2	**Status:**	Closed
Criticality:	Recommendation	**Opened In Report:**	5150474	**Last Visit Date:**	30-Jun-2022
Closed in Port:	Houma Port	**Asset Name:**	Arrangement/Structure/Structural System/Aft Leg	**Failure Alert:**	No
Closed in Report:	5150474	**Closed in Task:**	Special Periodical Survey - Hull 2	**Closed Date:**	30-Jun-2022

Description:

During the NDT of the Jackhouse deck connection welding, a fracture observed in length of 1'

Timeline

215.0 Rectification

Report Number:	5150474	**Port:**	Houma Port	**Rectification Date:**	30-Jun-2022
Failure Type:	Fracture	**Failure Descriptor:**	In Weld	**Rectification Action:**	Rewelded

Description:

Subject area has been gouged and rewelded. After the completion of the repair all welding seam has been visually inspected and checked with a means of NDT to the satisfaction of the attending surveyor.

Procedures, welding qualifications of welder performing the repair have been verified.

215.0 Recommendation

Criticality:	Recommendation	**Due By Task:**	N/A	**Report Number:**	5150474
Port:	Houma Port	**Last Visit Date:**	30-Jun-2022	**Due Date:**	28-Sep-2022
Failure Type:	Fracture	**Failure Descriptor:**	In Weld	**Recommended Action:**	Gouge and Reweld

Description:

Subject area is to be repaired to the satisfaction of attending surveyor.

Finding Detail Report

LB ROBERT

Finding Number: 219.0
Report Generated Date: 29-Nov-2022

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Finding Detail Report
LB ROBERT : Finding 219.0

Report generated on: 29-Nov-2022

219.0 Outstanding

Service Type:	Class Certification	**Associated Task:**	Special Periodical Survey - Hull 2	**Status:**	Closed
Criticality:	Recommendation	**Opened In Report:**	5150474	**Last Visit Date:**	30-Jun-2022
Closed in Port:	Houma Port	**Asset Name:**	Arrangement/Compartment/Tank/Ballast Tank No.3 STBD	**Failure Alert:**	No
Closed in Report:	5150474	**Closed in Task:**		**Closed Date:**	30-Jun-2022

Description:

Fractures observed on forward bulkhead of Ballast Tank No3 Stbd

Timeline

219.0 Rectification

Report Number:	5150474	**Port:**	Houma Port	**Rectification Date:**	30-Jun-2022
Failure Type:	Fracture	**Failure Descriptor:**	In Base Metal	**Rectification Action:**	Inserted

Description:

Two fractures on the forward bulkhead have been repaired by insert plates sized 24"x24"x1/2" each/
Damaged side shell plating and bottom plating have been repaired by insert plates sized 30"x18"x3/8" and 24"x18"x3/8"
Damaged part of the bulkhead in way of CL has been repaired by an insert plate size 18"x18"x1/2"

All welding seams have been visually checked and subjected to vacuum test and NDT to the satisfaction of attending surveyor. Material certificate, procedures, welding qualifications of welder performing the repair have been verified.

219.0 Recommendation

Criticality:	Recommendation	**Due By Task:**	N/A	**Report Number:**	5150474
Port:	Houma Port	**Last Visit Date:**	30-Jun-2022	**Due Date:**	28-Sep-2022
Failure Type:	Fracture	**Failure Descriptor:**	In Base Metal	**Recommended Action:**	Crop and Renew

Description:

Subject fractures are to be repaired to the satisfaction of the attending surveyor.

Finding Detail Report

LB ROBERT

Finding Number: 222.0
Report Generated Date: 29-Nov-2022

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222.0 Outstanding

Service Type:	Class Certification	**Associated Task:**	Special Periodical Survey - Hull 2	**Status:**	Closed
Criticality:	Recommendation	**Opened In Report:**	5150474	**Last Visit Date:**	30-Jun-2022
Closed in Port:	Houma Port	**Asset Name:**	Arrangement/Compartment/Machinery/Engine Room Port	**Failure Alert:**	No
Closed in Report:	5150474	**Closed in Task:**		**Closed Date:**	30-Jun-2022

Description:

Fracture observed on engine room stbd longitudinal bulkhead.

Timeline

222.0 Rectification

Report Number:	5150474	**Port:**	Houma Port	**Rectification Date:**	30-Jun-2022
Failure Type:	Fracture	**Failure Descriptor:**	In Base Metal	**Rectification Action:**	Inserted

Description:

Fracture has been repaired by insert plate sized 24"x24"x1/2"

All welding seams have been visually checked and subjected to NDT to the satisfaction of attending surveyor. Material certificate, procedures, welding qualifications of welder performing the repair have been verified.

222.0 Recommendation

Criticality:	Recommendation	**Due By Task:**	N/A	**Report Number:**	5150474
Port:	Houma Port	**Last Visit Date:**	30-Jun-2022	**Due Date:**	28-Sep-2022
Failure Type:	Fracture	**Failure Descriptor:**	In Base Metal	**Recommended Action:**	Repair

Description:

To be repaired to the satisfaction of the attending surveyor