

2023 RDV GATOR REPAIRS

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October 2023

Summary:

The RDV GATOR was inspected by Transport Canada in 2016 and failed inspection because of multiple deficiencies. The largest of which being the damage to the hull during ice breaking activities at Suncor Basemine. The repairs were never made as the cost was assessed to be too high. The vessel sat in NACG's South Common yard until it was moved to Ruth Lake in 2020.

Sept 2023 a reassessment of the cost to repair the Gator was conducted, and the decision was made to repair the vessel and put it back to work.

Sept 30, 2023, the first hull plates on the bow were cut off. Work began on the port bow removing the damaged hull plating, progressing to the Starboard side. The cut sections were used as templates to cut the new steel. The removed shell plating was 3/16" steel plate, the new shell plating was 1/4" Plate. Two ribs were cropped and renewed due to being tripped (bent). All welding was completed by Tizzco's welding by a CWB certified welder and standard ship building procedures were followed. Pressure tests were completed on all voids and any leaks that were found were sealed/repared. Void spaces were cleaned, and any sludge, water or debris vacuumed out.

New shafts were ordered several years ago to replace the old worn-out shafts. The new shafts were installed with new cutlass bearings. And the propellers installed.

The Engines had not been run for 7 years, so a technician was brought in to complete all checks and change fluids in preparation to start the engines. During initial inspection coolant was found in the oil filters, oil pan and other oil systems. A much more in-depth inspection was conducted, and it was concluded that the oil coolers on both engines were likely leaking. The engines were reassembled with new coolers and gaskets. Fluids were topped up and the engines started. The engines were run for a short time to get to temperature and flush any remaining coolant out and further tests were completed. An oil change and valve set were completed. Some issues were encountered regarding the cooling system during the reassembly fill and bleed process. Air was getting into to system somewhere. A series of test were conducted. During those tests it was discovered that the thermostats on both engines needed replacing.

The port side engine display in the wheelhouse was not working and ultimately was replaced. When the new display was installed, it was discovered that the ECM on the port engine had a fault as well. A new ECM was ordered and installed along with arc suppressor diodes on both engines to prevent the damage from happening again.

Painting was completed on the main deck and hull using Carboguard 890 and other parts of the vessel like rails hatches and the outside of the engine room and quarters were painted with Krylon Iron Guard.

The electrical systems were tested, and any deficiencies were corrected. Light bulbs replaced with LEDs. All navigation lights were tested and confirmed working. All bilge high water float switches were tested,

and deficient switches were replaced. A broken high water bilge switch mount in the #3 void was re-affixed to the watertight bulkhead. There are two separate fire alarm systems. The Ansul engine fire monitoring system was tested, batteries replaced and recertified by Levitt Safety. The secondary fire alarm system had a couple of faults. Upon inspection end of line resistors were found to be missing in the engine room line and the upper accommodation line. These resistors were replaced, and the system tested. One of the heat sensors in the upper accommodation needed replacing.

The electrical was gone through and several obsolete or extra cables were eliminated and removed. Functional heaters were installed in the wheelhouse and mid deck (upper accommodations). An intercom system was installed so crew could speak to the wheelhouse from mid deck and engine room. The 15-amp house battery charger was replaced. The shore power connection on the back deck was damaged so it was replaced.

The bilge pump required minor maintenance and was made functional again. All bilge lines were chased, and valves checked for function. Fuel shutoff valves and sounding tubes were seized but were made functional again. Any grease nipples that were found were greased.

The Horn was no longer functional and was replaced. The jog stick was replaced as the handle was broken off. New rudder mounting clamps were fabricated and the old clamps replaced. The steering systems were disconnected, and the hydraulics drained several years ago. This was done to prevent damage to the rudders during ice breaking. All these systems were reconnected and made functional again.

Fire fighting hoses on the aft deck were replaced and Fire extinguisher mounts that were damaged were replaced. All safety equipment for the vessel has been stowed in a sea can until the vessel goes to work. But there is a dedicated life raft, life rings, fire extinguishers, fire buckets and fire axes along with first aid kits, eye wash and manual sounding devices.

*See "TABLE 1: DEFICIENCIES LIST AND CORRECTIONS" and associated photos or documentation.

TABLE 1: DEFICIENCIES LIST AND CORRECTIONS

ITEM #	DEFICIENCY	Corrected? YES/NO	What was the correction?	Supporting Documents Attached?	Type of supporting Document
1	Sounding plugs made operable	YES	Plugs made loose and antisieze applied		
2	Forward Port hole glass replaced	NO			
3	Shell plating (Port and Starboard) 10 cms forward ofWTBH # 2 all the way forward to the bow. Crop and renew within the chalk line.	YES	3/16" Shell plating cropped and renewed with 1/4" plating. Voids pressure tested post repairs.	YES	Photos
4	Frame #20 (Port and Starboard) to be cropped and renewed from the deckhead to bilge to the point where it joins the 1/4" plate.	YES	Frame #20 port and Starboard were cropped and renewed from deckhead to bilge	YES	Photos
5	Keel to be cropped and renewed 20 cms just aft of WTBH #1.	YES	minor bend. Straightened	YES	Photos
6	Void space #3. Base for the high water sensor to be rewelded in place.	YES	Bilge high water sensor mount secured to Water tight bulkhead	YES	Photos
7	The starboard rudder support has fallen off. To be renewed.	YES	Renewed	YES	Photos
8	All doubler plates under the rake to be removed.	YES	Removed	YES	Photos
9	Void Space #3, Stbd, Shop Vac out all the water.	YES	all water and sludge cleaned out	YES	Photos
10	The Lazarette has 1.5" to 2" of sludge that has to be scraped out.	YES	all water and sludge cleaned out	YES	Photos
11	The port, aft stay on the wheelhouse top is to be replaced. All four require suitable bull dog clamps and turnbuckles.	YES			
12	The square railing's four vertical posts on the port side are to be cropped and renewed 20 cms at their bases. Weld to the deck.	YES	Railings cropped and renewed as required	YES	Photos
13	252cms rub rail (Pipe) on Port Fwd to crop and renew	YES	Rub rail cropped and renewed	YES	Photos
14	Add one life raft suitable for the compliment.	YES	15 Man life raft serial # XDC 1FF27L112 is dedicated to the GATOR	YES	Paperwork
15	Replace the two 762mm life rings. The life rings also require buoyant rope.	YES	New life saving equipment is available and stored in a sea can until the vessel goes to work		
16	The fuel shut off valves are seized. make operable.	YES	Fuel shut off valves are now operational, new bungs are installed and antisieze put on the threads	yes	Photos
17	Pull both shafts for examination.	YES	Old shafts are out, new shafts are installed		
18	Batteries need replace	YES	all batteries were replaced		
19	Shore power damaged, need replace	YES	Shore power hook up replaced and damaged housing removed	YES	Photos
20	Horn not functional	YES	New horn installed		

21	Bilge Alarms tripping	YES	Faulty bilge high water sensors removed and replaced, no more alarm		
22	Ansul Fire alarm not functional	YES	Levitt replaced battery and checked system	YES	Paperwork
23	Fire alarms tripping	YES	two zones in alarm were missing end of line resistors, resistors replaced system tested and functioning		
24	Steering not functional	YES	Steering was disabled, hydraulics drained and items diconnected. All systems were reconnected, hydraulics topped up and bled, ram was siezed but made free. Steering functional		
25	Engines need checked and started	YES	Coolant leak in oil coolers, coolers replaced. Thermostats replaced, oil changed, valve set completed. Port Display replaced, port ECM replaced		
26	Port Engine display not functioning	YES	Replaced		
27	Port Engine ECM Faulty	YES	replaced		
28	Bilge Pump not functional	YES	Pump made funtional, greased and tested several times. Requires AC power		
29	Nav lights not all functional	YES	bulbs replaced, broken housings replaced	YES	Photos
30	Bilge system valves Siezed	YES	valves made functional		
31	house battery charger not functional	YES	replaced battery charger	YES	Photos
32	Shafts not installed	YES	shafts installed, aligned, packing installed		
33	Propeller not installed	YES	propellers installed	YES	Photos
34	Paint needs to be redone	YES	hull repainted with Carboguard 890, deck repainted with Carboguard 890, accomodations and engine room painted externally with Krylon Iron Guard	YES	Photos
35	Rudder Mounts gone or in poor condition	YES	replaced		
36	Rudders not mounted	YES	rudders mounted	YES	Photos
37	Broken Jog stick	YES	replaced	YES	Photos
38	Fire hoses old and cracked	YES	replaced	YES	Photos
39	Heater in wheelhouse not working	YES	replaced	YES	Photos
40	No Heater in Galley	YES	Installed	YES	Photos
41	Push Knees Damaged	YES	Replaced	YES	Photos
42					
43					
44					
45					

TABLE 1: DEFICIENCIES LIST AND CORRECTIONS

REFERENCE PHOTOS



ITEM #3 Cropped Starboard Side



ITEM #3 Cropped Port Side



ITEM #3 Internal Starboard Renewed Stitching on Ribs



ITEM #3 Internal Port Renewed Stitching on Ribs



ITEM #3 Starboard Side Renewed



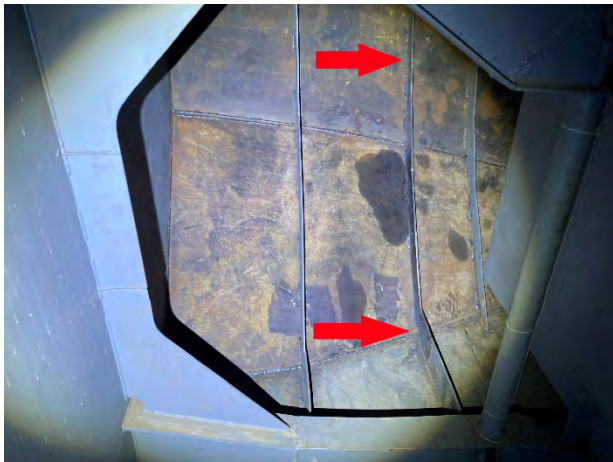
1ITEM #3 Port Side Renewed



ITEM #4 Starboard Side Frame #20 Cropped



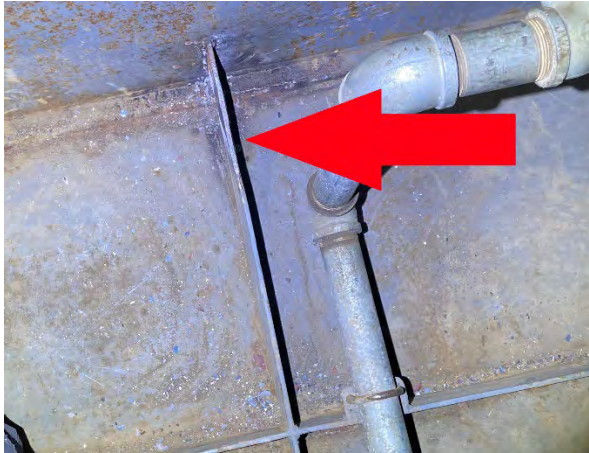
ITEM #4 Port Side Frame #20 Cropped



ITEM #4 Starboard Frame #20 Renewed



ITEM #4 Port Frame #20 Renewed



ITEM #5 Keel Straightened



ITEM #6 Void Space #3 High water Sensor Secured



ITEM #7 Starboard Rudder Supports Renewed



ITEM #8 Doubler Plates Removed



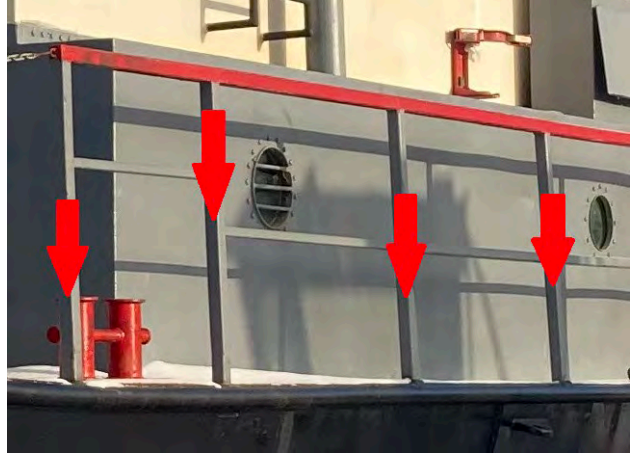
ITEM #9 Void space #3 Water and Sludge Cleaned



ITEM #10 Lazarette Sludge Cleaned



ITEM #12 Cropped Handrails Renewed



ITEM #12 Handrails Cropped and Renewed



ITEM #13 Rub Rail Cropped and Renewed



ITEM #16 Fuel Shut off Valves Made Functional



ITEM #19 Shore Power Cable Repaired



ITEM #31 House Battery Charger Replaced



ITEM #32/33 Shafts and Props Installed Starboard



ITEM #32/33 Shafts and Props Installed Port



ITEM #34 Much of the vessel has been repainted top deck and hull using Carboguard 890 epoxy paint



ITEM #35/36 Replaced Rudder Mounts and mounted Rudders



ITEM #37 Broken Jog Stick Replaced



ITEM #38 Fire Hoses old and worn out replaced



ITEM #39 Heater in Wheelhouse Replaced



ITEM #40 Heater Installed in Galley



ITEM #41 Push Knees Replaced with new lumber

CERTIFICATE OF RE-INSPECTION

This is to certify that the raft detailed below has been surveyed, controlled and tested in compliance with requirements from:
Transport Canada and the manufacturer and in accordance with IMO resolution **A.761 (18)**

Inflatable Liferaft

Identification:

Type: Survitec Zodiac ORIL		Serial Number: XDC1FF27L112	Date of Manufacture: Dec-2011
Fabric Type: Polyurethane	Capacity: 15	Length of Painter: 30 m/inside 1 m/outside	Max Stowage height: 18 m

Cylinders:

Serial No.	Contents CO2	Contents N2	Latest hyd. test
16W126004	3.680kg	0.235kg	Mar-2021

Equipment:

Unit	Type	Serial No.	Expiry date
Emergency pack:	C		
EPIRB:			
HRU test:			
Radar Reflector:			
First aid kit:			

Unit	Serial No.	Date of Manufacture
Humidity/CO2 Sensor:		

Tests:

Nap-test		Gas inflation test		Floor seam test		Load test davit launched	
Yes/No	Yes	Yes/No	No	Yes/No	Yes	Yes/No	No
Latest Test:	Dec-2022	Latest Test:	Mar-2021	Latest Test:	Dec-2022	Latest Test:	

Verification:



Date of inspection: 07-Dec-2022	Service Station name and No. 51234: Survitec Survitec Vancouver (DBC Marine Safety Systems Ltd)	Date issued to ship: 06-Jan-2023
National Marine authority ID No.	Remarks/modification:	

According to manufacturer's recommendation or domestic regulation, this product should be serviced within **12 months** from the date of inspection (above).

Flagstate of ship:

Canada

IMO No.

International call signal

Name of ship:

-

Ship owner:

NORTH AMERICAN CONSTRUCTION GROUP Signature www.survitecgroup.com

Survitec Group, Kingsway, Dunmurry, Belfast, BT17 9AF, Northern Ireland
Telephone: 44 (0) 28 9030 1531 FAX: 44 (0) 28 90621765

Ntumba Mutumbishay

For authorized servicing station

Survitec

1689 Cliveden Ave, Delta, BC, Canada

Phone: 1 604.278.3221
vancouver.service@survitecgroup.com



Ansul Vehicle Fire Suppression Inspection Report

Customer	Equipment Unit #	Date
NACG	BA005	Nov 12, 2023
Levitt WO #	Customer WO #	Equipment Hours
3815082	919537	N/A
System Type	Ansul SCN	

Job Start Check List

Check In With Customer	✓	FLRA Completed	✓	Equipment Locked Out	✓	System Disarmed	✓
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System Overview

#of IR Detectors	# of Heat Detectors	Linear Wire Resistance	NF-40	# Tank Actuators
N/A	N/A	4.7	N/A	N/A
Type of Control Panel	CF210 Version	Dip Switch Settings	Total # Nozzles	# Manual Actuators
SCN	N/A	1 3 5 7	N/A	N/A

Vehicle Information

Manufacturer	Model	Serial Number

Cylinder Information

Tank #	Serial#	Tank Size	Cartridge PSI	Cartridge Size	HT Due	MFG Date	# Nozzle
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							





Ansul Vehicle Fire Suppression Inspection Report

Electrical Component Checks

Description	Tech Code	Pass	N/A	Comments
SCN, ICM, MPN, CF110/210 unit secured and wires properly terminated, no physical damage.	JOL	✓		
All warning lights and audible alarms sound on the control panel.	JOL	✓		
Interface/ICM securely mounted, wires terminated, and no physical damage.			×	
All wire connection properly torqued as per the manufacturers specification. Proper clamp installed			×	
Panel History Download and saved, record version # in comments.			×	
Wiring Harnesses properly secured, no damage, terminated properly.	JOL	✓		
All electrical connections free from dirt and corrosion.	JOL	✓		
Pressure switch is secure and activates equipment shutdown.			×	
Pressure switch operates is secured and cause Alarm on the Panel.			×	
Panel relay(s) shuts down the engine(s) and other auxiliary functions as designed.			×	
Electric manual actuator function tested, causes an alarm condition on panel when activated			×	
IR, Heat, and LHS detectors function tested and operate as designed, causing an alarm condition on the control panel(s).	JOL	✓		
Detectors properly cover the hazard area.	JOL	✓		
IR detector lenses and Linear wire are clean, if not clean with a cloth or rag.			×	
Equipment battery connections are properly fused and connected, voltage acceptable.	JOL	✓		
Internal battery installed, date recorded, and changed as per the manufacturer requirements.	JOL	✓		
Isolation switch functions as designed and tested for operation in the on and off position.			×	
PAD(s) not outdated and correctly installed.			×	
Bypass switch is tested and does not cause a pass on the release circuit tester			×	
Inspect linear wire, make sure linear wire is not rubbing or kinked or in crush or pinch point. Ensure linear wire is 12" from a heat source.	JOL	✓		

Battery Date:	Nov 2023	Battery Replacement Date:	Nov 2024	Battery Replaced	Yes
PAD Dates:	N/A	PAD Replacement Date:	N/A	Battery Percentage	N/A

Pneumatic Actuation Components

Description	Tech Code	Pass	N/A	Comments
Disassemble manual/automatic actuators and lubricate, replace receiver gasket.			×	
Remove actuation lines from pneumatic actuators, disassemble clean and lubricate pneumatic actuators. Reinstall pneumatic actuators without N2 cartridge.			×	
Inspect all actuation hoses for physical damage, replace any damaged or weather damaged hoses.			×	
Using a cartridge or regulated N2 source @275PSI pressurize the actuation lines, close valve if cartridge not used. check for proper operation of pneumatic actuators and check valves.			×	
Check all actuators and actuation hoses for leaks when pressurized.			×	
Checks Valves are correctly installed and hold pressure.			×	
Check to ensure all hoses and fitting connections are tight.			×	
Insure all pull pins and tamper seals are installed after testing and servicing the manual actuators.			×	

Actuation and Expelling Nitrogen Cartridges

Cartridge #	Serial #	Cartridge Size	Cartridge Weight	Stamped Weight	Hydro Test Due
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					





Ansul Vehicle Fire Suppression Inspection Report

Distribution Hoses & Nozzles

Description	Tech Code	Pass	N/A	Comments
Hazard area properly covered.			×	
Discharge supply lines free from damage, all hose and fitting connections are tight.			×	
Distribution Tee's are secure and properly mounted. Proper tee orientation.			×	
Nozzle supply lines are free from damage and all connections are tight.			×	
All distribution, and supply lines have been blown out with Nitrogen to ensure they are free and clear of debris.			×	
Correct nozzles and nozzle caps are installed for the system and the hazard.			×	
Nozzles are properly aimed at the hazard(s)			×	
Hoses are within the allowable critical length. 20 times the inside hose diameter			×	
Nozzle brackets are secure and mounted with 2 bolts, or welded.			×	
All primary and secondary supply lines are secured and clamped appropriately as per the manufacturers specs.			×	
Nozzle caps have been replaced annually or reinstalled after a semi-annual test.			×	

System Cylinders

Description	Tech Code	Pass	N/A	Comments
System cylinders are in good condition, and free from damage.			×	
The Cylinder brackets are securely mounted and free from damage or cracks.			×	
Cylinders are secured properly in the brackets as per the manufacturers specs.			×	
Cylinder Gauge is within the correct operating range. 23cuft and 55cuft.			×	
Cartridges are free from damage and are in acceptable weight.			×	
Burst discs are free from damage, no signs of wear and installed in the right orientation.			×	
Quad ring and flat gasket in good condition and greased.			×	
discharge cap Indicator moves freely			×	

System Cylinders

Tank #	Serial#	Tank Size	Dry/Wet Chemical Depth	Chemical Appearance	PH Level	Freeze Point
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						



Tank Deficiencies Notes:

Time Delays

Manual Release	1st Shot	N/A	H/S Active	N/A	Shutdown	N/A
Detection	1st Shot	N/A	H/S Active	Yes	Shutdown	N/A



Ansul Vehicle Fire Suppression Inspection Report

Fire Extinguisher Inspections

Size/Type	Brand	Serial #	MFG Date	HT Due	6yr Due

Annual Inspection of Fire Extinguishers Completed

NOTES:
 Notification only system, horn and strobes activated via LHS wire over hazard area, panel and horn and strobes (2) fully functional. Nacg to install proper amount of fire extinguishers on unit before boat goes into operation

Job Completion

All Discharge Lines Connected	<input type="checkbox"/>	Actuation Lines Attached	<input type="checkbox"/>	Housekeeping Completed	<input checked="" type="checkbox"/>
Tamper Seals In Place	<input type="checkbox"/>	System Status Normal	<input checked="" type="checkbox"/>	Deficiencies Report	<input checked="" type="checkbox"/>
Personal Lock Removed	<input checked="" type="checkbox"/>	System re-armed	<input checked="" type="checkbox"/>	Final Walk Around Complete	<input checked="" type="checkbox"/>

This fire suppression has been inspected and tested as per the requirements as outlined in the manufacturers manual.

Joey Lapointe

Technician Name

Technician Signature

Technician Name

Technician Signature

Jason G

Customer Representative

Customer Signature