

SEALED BID SALE #2517S070

ATTACHMENT #2



ART ANDERSON ASSOCIATES
VALUE BEYOND ENGINEERING®

CTAMH075 (2016)

Alaska Marine Highway System M/V Taku History and Condition

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Date: 11 August 2016

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1. Introduction

Alaska Marine Highway System (AMHS) hired Art Anderson Associates (AAA) to conduct an independent vessel appraisal of the M/V TAKU. This appraisal was conducted in July of 2016 using the most recent information available regarding the vessel's configuration, condition, and regulatory and class inspections. It is the goal of this effort to describe the characteristics, condition, and value of the M/V TAKU for the purpose of a potential sale.

2. References

- a. M/V Taku- 2009 Fleet Condition Survey
- b. Ultrasonic Inspection Report (Report # 37434) dated 4/17/2012 by Certified Inspection Services, Inc.
- c. Main Engine Rebuild Report and Invoice, MAK, 19 JAN 2011
- d. #1 Auxiliary Engine Rebuild Report and Invoice, NC Cat, 12 NOV 2010
- e. #2 Auxiliary Engine Rebuild Report and Invoice, NC Cat, 31 JAN 2014
- f. #3 Auxiliary Engine Rebuild Report and Invoice, NC Cat, 21 MAR 2014s
- g. 2009 Ship Survey M/V Taku by Protective Coating Consultants Inc
- h. 2010 Ship Survey M/V Taku by Protective Coating Consultants Inc

3. Vessel History and Characteristics

The M/V Taku was named after the Taku Glacier, which is located in Southeast Alaska. The vessel was designed by Phillip F. Spaulding and Associates of Seattle, Washington and built at the Puget Sound Bridge & Dry Dock in Seattle. The M/V Taku was one of three sister ships that made up the original AMHS fleet and has served the state of Alaska admirably since her commissioning in 1963. The general characteristics of the M/V Taku are listed below:

Length: 352 feet

Beam: 73 feet, 7-1/2 inches

Gross Tonnage: 2,625

Service Speed: 15.5 knots

Designed to carry 370 passengers, the M/V Taku has a vehicle deck consisting of 6 lanes totaling 1,340 linear feet. She has 6 four-berth and 32 two-berth cabins as well as two wheelchair-accessible (ADA) passenger cabins. Crew accommodations include eight officer cabins and two person staterooms for the 35 other crew members.

The major vessel upgrades are listed below:


- Repowered and had the staterooms upgraded (1981).
- Repowered again (1992).
- Life rafts and the car deck structure were upgraded (1996).

- Upgrades to meet SOLAS accomplished (2000).
- A new controllable pitch propeller system was installed. This included controls, shafting, and the propellers. There was a complete refurbishment to the passenger spaces during this availability as well (2006-2007).
- The marine evacuation system was changed out in order to meet the current SOLAS Life Saving requirements (2011).

The M/V TAKU served many large inside passage communities with routes primarily between Ketchikan and Skagway, Alaska until it was officially taken out of service on July 20, 2015. The vessel is currently pier-side in Ketchikan, Alaska, USA.

4. Regulatory and Class Certificates

M/V TAKU

- USCG Subchapter H, Lakes Bays and Sounds
- ABS Unrestricted Ocean Service, Ferry Service (A1, Ferry Service, , AMS)
- USCG Official Number: 290756, IMO Number: 5351052, ABS Class Number: 6304349

In its last year of operation in the Alaska Marine Highway System the M/V TAKU held certificates from the United States Coast Guard (USCG), International Maritime Organization (IMO) for compliance with Safety of Life at Sea (SOLAS) and International Ships Management (ISM) and was classed by the American Bureau of Shipping (ABS).

Title 46 of the Code of Federal Regulations (CFR) governs vessels flagged in the US. To obtain a valid USCG Certificate of Inspection (COI) for a new vessel, plans must be approved by USCG Marine Safety Center (MSC) in Arlington, VA. The M/V TAKU underwent initial plan approval during its construction and has maintained a COI throughout its operating life. Annual vessel survey and 5-year dry docking survey is required to maintain a COI.

Prior to being laid up, the M/V TAKU held a COI for operation as a passenger vessel (Subchapter H) operating in Lakes, Bays and Sounds. In accordance with the most recent COI the approved operational area was, "The sheltered waters off the west coast of North America as defined in 46 CFR 42.03-35". This COI expired in June 2015. A copy of the most recent USCG COI has been included in this report in Appendix A.

Any vessel flagged by a port state participating in the IMO Convention, and making port calls between two participating states, must meet the International Convention for Safety of Life at Sea (SOLAS). The M/V TAKU previously held valid SOLAS certificates, and currently holds other IMO certificates, such as the International Ship's Management (ISM) Certificate of Compliance and Safety Management Certificate. A full of list IMO certificates is provided in Appendix B.

The M/V TAKU is currently classed by the American Bureau of Shipping (ABS) as a passenger and vehicle ferry for unrestricted ocean service. The class certificate currently issued to M/V Taku expires 09 January 2018. It should be noted that the annual hull survey and annual machinery survey were due in January of 2016 and have not been accomplished. Once the vessel is taken

out of “Laid-Up” status, these surveys will need to be accomplished to maintain vessel class certification.

A stability test witnessed by the U.S. Coast Guard was conducted on the M/V TAKU in Portland, Oregon, on April 29, 2011. On the basis of that test, stability calculations have been performed, however these calculations will not be sufficient for the operation of the M/V Taku by an operator that is not AMHS and therefore a Load Line Certificate will need to be obtained. The U.S. has certain requirements for unrestricted Domestic Load Line Certificates which are very similar to the requirements for an International Convention on Load Lines Certificate (ICLL). Therefore, if the vessel has an ICLL certificate it will not likely need to obtain a domestic load line certificate. This determination will be made by the local US Coast Guard OCMI prior to mobilizing the vessel. The ABS Class Certification is included in Appendix C of this report.

5. Vessel Condition

A review of the USCG and ABS survey history, as well as condition and hull surveys from previous dry dockings were reviewed to analyze the state of the ship’s coatings, structure and machinery. Recommendations from the vessels captain and chief engineer were also considered during the review of the vessel’s condition. A summary of the findings from this review has been included below. Complete data from the latest hull, mechanical and paint condition surveys can be found in the references listed in section 2.

It should be noted that prior to the vessel leaving the pier in Ketchikan, the local USCG Officer in Charge Marine Inspections (OCMI) must be notified of the potential move and a USCG representative will be required to perform an inspection.

5.1. US Coast Guard Inspection Items

In order to maintain a valid COI, the M/V TAKU underwent annual inspections by the USCG. During these inspections any deficiency not immediately corrected, is recorded and tracked by form CG-835, otherwise known as 835s. Since the vessel is officially in a “laid-up” status, there are no current 835s. It is expected that upon reapplication for a COI, the USCG will create a new list of 835s likely to match the list just prior to lay-up. For this reason, the most recent list of 835s, valid just prior to the vessel being laid-up is provided in this report.

Prior to lay-up there was only one open CG-835 as reported by the vessel captain.

- CG-835 Issued May 2015: Port lifeboat port side engine requires a head bolt.

5.2. Ship Maintenance Records

The Ship Maintenance Records (SMR) were kept until the vessel was taken out of service on 7/20/2015. The SMR was used by the vessel’s crew to track maintenance needs and deficient conditions identified during operation. Below is the last “Active SMR Report” for M/V TAKU as reported on March 11, 2016. It is anticipated that most of the SMRs will require adjudication prior to re-entry of the vessel into ferry service.

Date	SMR No.	Title	Priority	Scope
28 Oct 15	TAK Stwd 15 0001	Crew Mess Deck	1 Major Equipment Failure	Replace Crew Mess Deck Flooring
28-Oct-14	TAK STEW 15 0002	Galley Griddle & Equipment Stand	1 Hazardous Situation	Install New True Service Refrigerated equipment stand and New Lang Grill
28-Jan-15	TAK ENG 15 0009	MSD Repair	2	MSD repair
28-Mar-15	TAL ENG 15 0011	STBD reduction gear input shaft seal	1	Replace input shaft seal
24-Jan-15	TAK ENG 15 0013	Sea Suction Butterfly Valve #3 Fire Pump	1	Replace #3 Fire Pump Sea Suctions and #3 Fire Pump Suction Manifold Sea Suction 5" Cameron WKM Dynacentric Fire Rated Butterfly Valve as per ABS
4-Feb-15	TAK ENG 15 0014	Breaker insulation for port switch bard distribution panel	1	Remove fuses and replace with breaker
24-Jan-15	TAK ENG 15 0015	Replace Port and Starboard Lifeboat Hydraulic Manifold Blocks	1	Replace Manifold Block for Bowsing Gear Accumulator Charging and Manifold Block for Safety of Over pressurization

5.3. Vessel Condition Survey

In 2009, AMHS hired an engineering consultant to perform a fleet condition survey which included survey of the M/V TAKU. As a result of the assessment, a list of "Fleet Condition Survey Items (FCSI)" was created as a means to track the findings until corrected. Below is a summary of the FCSI's labeled as Priority 1 (Immediate Concern: Mission Critical, Regulatory and/or Safety) and Priority 2 (Problematic: Reoccurring problem areas or equipment). Other FCSI's labeled as lower priority (three through five) have not been summarized in this report. See Reference (a) for the complete Fleet Condition Survey on the M/V TAKU. The FCSIs listed below have been broken up by priority and then again by associated Ship's Work Breakdown Structure (SWBS) group. The reference column refers to the FCSI ID Number provided in the Fleet Condition Report (see Reference (a)). AMHS has confirmed that these Survey items remain valid and have not been adjudicated.

Item Priority 1

SWBS GROUP 100- Hull Structure:

Title	Details	Reference
Deck and Safety Drawings General Arrangement - Corrections	Several compartments on the Cabin Deck are shown incorrectly on the General Arrangement drawing.	5138
Deck and Safety Drawings SOLAS - 74: II-2/21(c)(i)(1) Second Deck	Neither the MMR nor AMR have continuous fire shelters from the lower part of the space.	4949
Deck and Safety Drawings SOLAS - 74: II-2/21(c)(i)(2) Second Deck	Neither the MMR nor AMR have a doorway access that provides a safe escape route to the embarkation deck.	4950
Deck and Safety Drawings SOLAS - 74: II-2/20(a) & (b)	Bulkheads bounding main vertical zones or horizontal zones must meet the minimum fire integrity prescribed in Table 1 of SOLAS '74, Regulation II- 2/20.	4966
Deck and Safety Drawings SOLAS - 74: II-2/20(a) & (b)	Bulkheads not bounding either main vertical zones or horizontal zones must meet the minimum fire integrity prescribed in Table 2 of SOLAS '74, Regulation II-2/20.	4967
Deck and Safety Drawings SOLAS - 74: II-2/20(a) & (b)	Decks forming steps in main vertical zones or bounding horizontal zones must meet the minimum fire integrity prescribed in Table 3 of SOLAS '74, Regulation II-2/20.	4968
Deck and Safety Drawings SOLAS - 74: II-2/20(a) & (b)	Decks not forming steps in main vertical zones nor bounding horizontal zones must meet the minimum fire integrity prescribed in Table 4 of SOLAS '74, Regulation II-2/20.	4969
Deck and Safety Drawings SOLAS - 74: II-2/22(b) Sun/Bridge Deck	Sun deck - gyro room (cat. 10) and cleaning gear locker (cat. 9) and Boat deck cleaning gear locker (cat. 9) all have access to enclosed space with combustibles.	4971

SWBS GROUP 200- Propulsion Plant:

Title	Details	Reference
Deck and Safety Drawings SOLAS - 74: II-2/33(b) Hold 74	Lube oil storage tank valve in the AMR is not fitted with a remote operator.	4961

SWBS GROUP 400- Command and Surveillance:

Title	Details	Reference
Deck and Safety Navigation Equipment Gyro Repeater	There is no gyro repeater in the steering gear compartment.	3930

Second Deck 150 Steering Gear Room		
Deck and Safety Security and signage Fire Alarm Label Plates Cabin Deck 128	Update signage to match current alarm type.	5135

SWBS GROUP 500- Auxiliary Systems:

Title	Details	Reference
Mechanical and Electrical Systems HVAC Controls Main Deck	No specific control for each fan in the Emergency Room exists	3898
Mechanical and Electrical Systems Ancillary Machinery MSD Units Hold 125 Center	The existing system is not compliant with the current CFRs, as it is a Type I system	3974
Deck and Safety Drawings SOLAS - 74: II-2/33(a)(iv)(1) Second Deck	The main engine's diesel oil day tank is free-standing.	4947
Deck and Safety Drawings SOLAS - 74: II-2/32(l)(i) Hold 103	There is no fire screen door between the MMR and shaft alley	4940
Deck and Safety Drawings SOLAS - 74: II-2/32(b)(iii) Second Deck 82 Port	The fire pumps are started locally or remotely from near the EOS, but manually	4941
Deck and Safety Drawings SOLAS - 74: II-2/32(g)(iii) Second Deck 65 Starboard	No foam fire extinguishers are installed on the ship. All fire extinguishers are dry chemical or CO2.	4942, 4943, 4944
Deck and Safety Drawings SOLAS - 74: II-2/30(e)(i)	One fire station with a single 50 foot hose can reach all areas at present. The second station requires two (or more) hoses to reach all areas.	4945
Deck and Safety Drawings SOLAS - 74: II-2/8(d)(vii)	The CO2 room is ventilated by a mechanical air supply and a natural exhaust, through a door mounted louver. The door must be an "A" class fire door.	4946
Deck and Safety Drawings SOLAS - 74: II-2/34(d)(iii) Main Deck	There are no release mechanisms on the manually operated watertight doors in the AMR and MMR.	4951
Deck and Safety Drawings SOLAS - 74: II-2/34(e)	Fire extinguisher controls are currently in the vehicle space which is not safe.	4952

Title	Details	Reference
Deck and Safety Drawings SOLAS - 74: II-2/23(b)	In general, for automatic fire dampers, the operating mechanisms are not readily accessible, nor are they marked in red light-reflecting color.	4953
Deck and Safety Drawings SOLAS - 74: II-2/23(b)	No visible indicators are provided on fire dampers.	4954
Deck and Safety Drawings SOLAS - 74: II-2/25(b)	Ductwork is not insulated in accordance with the structural fire protection requirements of either SOLAS '74, Regulation II-2/20 or Regulation II-2/25.	4955
Deck and Safety Drawings SOLAS - 74: II-2/25(d)(iii)	Short lengths of ductwork must be reviewed in order to determine combustibility.	4956
Deck and Safety Drawings SOLAS - 74: II-2/34(b)(iii)	MMR door to vehicle space crossover is a manually operated watertight door. Manually operated water tight doors exist between the AMR/MMR and the MMR/shaft alley.	4957
Deck and Safety Drawings SOLAS - 74: II-2/23(d), '74: II-2/23(h)	Must verify the construction of all doors and door frames in "A" class divisions, have the means of being secured when closed, and able to resist fire.	4958
Deck and Safety Drawings SOLAS - 74: II-2/17(c) Second Deck 74	Crowns (overheads) and casings of Category A machinery spaces must be of steel construction adequately insulated and openings therein, if any, must be suitably arranged and protected to prevent the spread of fire.	4962
Deck and Safety Drawings SOLAS - 74: II-2/34(d)(i)	Fire dampers for the MMR supply and exhaust ventilation and for the AMR supply ventilation are manually operated. The AMR is exhausted through the MMR via an opening in the uptakes. The opening between the 2 spaces cannot be closed.	4973
Deck and Safety Drawings SOLAS - 74: II-2/34(d)(ii) Second Deck 70	Means of control must be provided for permitting the release of smoke. Smoke can be released from the AMR and MMR through the MMR exhaust fan.	4974
Deck and Safety Drawings SOLAS - 74: II-2/23(b)	Where new fire dampers will be needed, such as for the vehicle space, and where dampers must be relocated to provide manual closing from each side of the division, suitable locations will have to be identified.	4976
Deck and Safety Drawings SOLAS - 74: II-2/23(b)	Structural fire protection insulation is fitted only on the galley exhaust ductwork.	4977
Deck and Safety Drawings SOLAS - 74: II-2/25(a)	Many ventilation systems for the accommodation spaces pass through the vehicle space, which is a separate fire zone.	4978

Title	Details	Reference
Deck and Safety Drawings SOLAS - 74: II-2/25(c)	There are no fire dampers installed in the vehicle space exhaust systems; affecting closures of these systems by means other than fire dampers would be difficult.	4979
Deck and Safety Drawings SOLAS - 74: II-2/25(d)(i)	Flexible connections at fan are not incombustible. Conduct full survey of affected locations.	4980
Deck and Safety Drawings SOLAS - 74: II-2/25(d)(ii)	Many ducts require installation of fire dampers and/or upgrades of fire insulation in order to achieve proper fire integrity of the division.	4981
Deck and Safety Drawings SOLAS - 74: II-2/25(FC)	No ability to restart the fans from outside the machinery spaces is possible.	4982
Deck and Safety Drawings SOLAS - 74: II-2/25(j)	The ducts are steel and fitted with automatic fire dampers; however, the fan flexible connections are not incombustible.	4983, 4984

SWBS GROUP 600- Outfit and Furnishings:

Title	Details	Reference
Painting and Structure Tanks and Voids Cofferdam above aft Water Tank Second Deck 1-131-1 P&S	The void tank top is heavily corroded from standing water.	3917
Deck and Safety Drawings SOLAS - 74: II-2/19(b) Second Deck	All corridor bulkheads where not required to be "A" class must be "B" class divisions that extend from deck to deck. Crew's quarters "B" bulkheads do not extend to overhead.	4963, 4964, 4965
Deck and Safety Drawings SOLAS - 74: II-2/34(c)	Windows must not be fitted in machinery space casings.	4972
Deck and Safety Drawings SOLAS - 74: II-2/32(m)(i)(2)	There are six complete fireman's suits on board, but no personal equipment in this space.	4959
Deck and Safety Drawings SOLAS - 74: II-2/32(m)(iii)	The two (2) Emergency gear lockers are located on the bridge deck and main deck (widely spaced). No personal equipment is located at either locker.	4960
Deck and Safety Drawings SOLAS - 74: II-2/26(b)(ii), II-2/23(h), II-2/24(c)	Special attention must be given to the fire integrity of windows facing lifeboat/raft embarkation areas as well as below those areas.	4975

SWBS GROUP 800- Integration/Engineering:

Title	Details	Reference
Deck and Safety Drawings SOLAS - 74: II-2/21(a)(ii)	Both exits from the forward observation lounge on the boat deck lead into the same stair tower.	4970
Deck and Safety Drawings SOLAS - 04: III /26.2.5	Life raft transponders not verifiable because life rafts are packed and certified by a 3rd party.	4985
Deck and Safety Life Saving Marine Evacuation Slides	Replacement of the current escape chutes with LSA slides has been recommended.	5015
Deck and Safety Drawings Vessel Record Plan	The vessel record plans (paper and electronic) need to be organized, sorted scanned and logged in to a standard system.	5025
Deck and Safety Drawings Naming Convention Hold	Update the tank & void names on the vessel to create a standard for all future reference to the tanks & voids.	5137
Deck and Safety Security and Signage in Passenger Area	Update the signage to a more uniform style throughout the passenger areas of the ship.	5139
Deck and Safety Drawings Stability Software Program	The vessel does not currently have any stability software that could act as an active damage control tool.	5173
Deck and Safety Drawings USCG Guidelines for Passenger Weight Standards	For each vessel undergoing a stability evaluation (stability test), the new average weight per person should be incorporated into the stability calculations.	5183

Item Priority 2

SWBS GROUP 500- Auxiliary Systems:

Title	Details	Reference
Mechanical and Electrical Systems Piping Freshwater System Second Deck 65	The piping is pitting on the bottom of the lines and causing leaks throughout the ship.	3880
Mechanical and Electrical Systems Ancillary Machinery Fuel Transfer Pump Hold 80	The fuel transfer pump should be replaced with a larger pump.	3885
Mechanical and Electrical Systems HVAC Electric Humidifiers Gallery Deck	Install new electric humidifiers throughout the ship and remove disconnected steam humidifiers.	3896
Mechanical and Electrical Systems HVAC - Accommodation Spaces D	The ducting should be cleaned and replaced as necessary.	3897

Title	Details	Reference
Mechanical and Electrical Systems HVAC Damaged Ducting Main Deck 70-71 Starboard	One piece of exhaust ducting has been damaged from contact with vehicles and should be repaired.	5124
Painting and Structure Superstructure Discharge Piping Vents - Rust Bleeders Cabin Deck	Replace all vents to eliminate running rust.	5426
Mechanical and Electrical Systems Piping Boiler Condensate Tank Hold Fr. 65 Starboard	The existing boiler condensate return tank is rusted, scaled and pitted. Replace with new tank.	5435

SWBS GROUP 600: Outfit and Furnishings

Title	Details	Reference
Public Spaces /Purser Heads Men's Toilet/Shower Cabin Deck 5-130-5 Starboard	The Cabin Deck Men's Toilet/Shower should be refurbished in the next couple years.	3849
Deck and Safety Life Saving Lifeboats and Davits Sun/Bridge Deck 75 Both P&S	The remaining two lifeboats should be replaced with new, lighter boats.	3943
Public Spaces /Purser Joinery Forward Observation Lounge - Leaking F Boat Deck 6-29-0	Reseal the windows. Remove joiner panel to determine the extent of corrosion that has occurred.	5133
Painting and Structure Windows and Doors Stateroom Windows Cabin Deck	Leaking windows will need to resealed.	5140
Public Spaces /Purser Furnishings TV Lounge Chairs Cabin Deck 5-108-2 Port	Replace the removed arm rests from the end of the rows of chairs in which they were removed.	5395

5.4. Hull Condition Based on Ultrasonic Testing Data

On April 16th, 2012 AMHS hired a non-destructive testing contractor to perform an Ultrasonic Inspection onboard the M/V TAKU. The ultrasonic inspection reveals the thickness of the hull plate and structural components being investigated. The data below is a summary of the results of the ultrasonic inspection and report submitted to AMHS. The maximum deterioration found on

the vessel's hull is 19% in the main deck plating. The tables below are the locations in which wastage was found to exceed 15% and 10%. Standard rule of thumb in shipboard structure evaluation is to immediately replace wasted structural steel when the nominal thickness has deteriorated by 25% or more. Steel plate exceeding 15% wastage is typically recommended for replacement, since those plates will likely exceed the 25% deterioration criteria in the near future. For plates with wastage less than 15%, but exceeding 10%, it is recommended that these be placed on a regular surveillance program. For the complete UT Survey of the M/V Taku, see Reference (b).

15% Wastage or Greater:

Location	Nominal Thickness (Inches)	Average Thickness (Inches)	Percent Wastage
Main Deck (Deck Plating) #107	.500	.425	15%
Main Deck (Deck Plating) #139	.500	.407	19%
Main Deck (Deck Plating) #156	.500	.422	16%
Girth Belt (Frame 34-1/2) #2	.375	.316	16%
Forepeak Tank #3	.375	.321	15%

10% Wastage or Greater:

Location	Nominal Thickness (Inches)	Average Thickness (Inches)	Percent Wastage
Main Deck (Deck Plating) #45	.437	.388	11%
Main Deck (Deck Plating) #47	.437	.394	10%
Main Deck (Deck Plating) #69	.500	.448	11%
Main Deck (Deck Plating) #129	.437	.394	10%
Main Deck (Deck Plating) #130	.437	.390	11%
Main Deck (Deck Plating) #144	.500	.445	11%
Main Deck (Deck Plating) #153	.500	.449	10%
Main Deck (Deck Plating) #157	.500	.453	10%
Girth Belt (Frame 34-1/2) #1	.375	.326	13%
Girth Belt (Frame 34-1/2) #2	.375	.322	14%
Forepeak Tank #1	.500	.452	10%

5.5. Main and Auxiliary Engines

As part of the analysis of the vessel propulsion machinery, Art Anderson Associates spoke with the vessel's chief engineer to obtain information about the main and auxiliary engines. The following is information regarding the total hours on each engine and the hours remaining until the next scheduled rebuild. Along with this information, the chief engineer provided vendor submitted rebuild reports and invoices from the last repair for each engine. Those reports are listed in References (c) through (f). Information regarding engine condition was obtained in June of 2016.

Port Main Engine (MAK 8M453C):

- Current Total: 110,845 Hrs.
- Rebuilt at 88,395 Hrs.
- Complete rebuild due in 1,549 Hrs.

Starboard Main Engine (MAK 8M453C):

- Current Total: 111,224 Hrs.
- Rebuilt at 88,050 Hrs.
- Complete rebuild due in 1,549 Hrs.

#1 Auxiliary Engine (Caterpillar D379B):

- Current Total: 112,032 Hrs.
- Rebuilt at 92,105 Hrs.
- Complete rebuild due in 73 Hrs.

#2 Auxiliary Engine (Caterpillar CAT D379B):

- Current Total: 97,755 Hrs.
- Rebuilt at 80,057 Hrs.
- Complete rebuild due in 2,302 Hrs.

#3 Auxiliary Engine (Caterpillar CAT D379B):

- Current Total: 93,570 Hrs.
- Rebuilt at 88,838 Hrs.
- Top end rebuild due in 5,268 Hrs.

The chief engineer also provided the following input regarding the remaining thickness for machining on the engine block sealing surface.

"In my estimation there is at least one rebuild cycle left in all the auxiliary engines.

The blocks have been "Z-stepped" in the area where the liners set into the deck of the block. Z-step is the final machining process on these blocks, there is no more material to be removed should the liner insets need further machining.

I believe the main engines have at least a few rebuild cycles left in them. I do not know how many hours the Matanuska's engines have on them; these should last at least as long, given proper care. I was told that these blocks have a more durable alloy than the

Matanuska blocks. That is why they do not have the deck to liner leaks that the Matanuska has been plagued with for years.”

5.6. Paint Condition Surveys

In 2009 and again in 2010, AMHS hired a coating system specialist to conduct an inspection of the vessels overall preservation system. The inspector focused on areas of concern, identified previously, as well as areas known to be susceptible to corrosion. After completion of each survey a Paint Condition Report was submitted to AMHS. The results of the surveys are summarized in the tables below for both the 2009 and 2010 surveys. Please obtain References (g) and (h) to view the complete paint survey reports and associated photos. It is AMHS policy to use International Paints in all paint and hull coating specifications. The typical AMHS painting schedule, excerpted from the M/V Taku SOLAS Upgrades and Renovation project in 2010, is included in Appendix D.

2009 Paint Condition Survey Results:

Exterior Hull:

Location	Details
Solarium, Superstructure, Mast, Sun Deck	These areas are in very good coating condition. The crew is maintaining these areas very well.
Underwater Hull	Antifouling is delaminating from epoxy on both Starboard and Port sides in the belly. Many blisters throughout the hull coatings and delamination is taking place all over the underwater hull.

Interior Structure:

Location	Details
Bow Thruster Room, Fr. 19 to Fr. 35	Generally space is in good condition. Area used for storage, coatings have some scratches.
Engine Room and Shaft Alley	Corrosion/holes in OHD in engine room. This area is the deck of the control room. There is currently aluminum diamond plate in the control room to cover the holes in the deck.
Port and Starboard #2 Wing Voids, Fr.103 to Fr. 117.	These are dry voids. There is some sweating that takes place so there is staining of rust on the decks, but no serious corrosion issues.

Location	Details
#4 Port Wing Void and Cross Flood Trunk, Fr. 131 to Fr. 145.	Water appears to be coming down manhole when washing the car deck and is collecting just below ladder and on the skin plate at lowest point in void. Active corrosion taking place from inboard BHD out approximately 12-14 feet. Above this area the void is in good condition.
Upper Void (Cofferdam) above unused #4 P&S Potable Water Tanks, Fr. 131 to Fr. 145.	Upper cofferdam void is the space between Potable Water Tanks and Car Deck. Steel on top of the Potable Water Tanks in Upper Cofferdam Void is very thin from corrosion.
Steering Gear Room	A salt water leak at Steering Gear is causing water to collect in the bilge under the Port and Starboard Steering Gear. This is causing corrosion and undercutting of the welds.
Port and Starboard #2 Wing Voids, Fr.103 to Fr. 117.	These are dry voids. There is some sweating that takes place so there is staining of rust on the decks, but no serious corrosion issues.
#4 Port Wing Void and Cross Flood Trunk, Fr. 131 to Fr. 145.	Water appears to be coming down manhole when washing the car deck and is collecting just below ladder and on the skin plate at lowest point in void. Active corrosion taking place from inboard BHD out approximately 12-14 feet. Above this area the void is in good condition.
Upper Void (Cofferdam) above unused #4 P&S Potable Water Tanks, Fr. 131 to Fr. 145.	Upper cofferdam void is the space between Potable Water Tanks and Car Deck. Steel on top of the Potable Water Tanks in Upper Cofferdam Void is very thin from corrosion.
Steering Gear Room	A salt water leak at Steering Gear is causing water to collect in the bilge under the Port and Starboard Steering Gear. This is causing corrosion and undercutting of the welds.
Centerline Double bottom void, Fr. 137 to Fr. 145, accessed from steering gear room.	Decks are in very bad condition, however BHD and OHD are in relatively good condition. This void is located under the aft part of the #4 P&S Potable Water Tanks that are not in use.
#3 Port Wing Void, Fr. 117 to Fr. 131.	Moisture collecting right at Skin-plate and inboard bulkhead. Weld is undercutting at bulkhead and deck.

Tank Coatings:

Location	Details
#1 Deep Ballast Tank, Fr. 8 to Fr. 19	Condition of coating above the Keel areas is in good condition. There are no coatings below the keel area. Welds will probably have to be re-welded because of undercutting.
#1 D.B. Ballast Tank below Bow Thruster Room, Fr.19 to 35	Soft protective coating used in voids. It is difficult to inspect because it never hardens, but it does protect the surfaces.
#2 Double Bottom Ballast Tank, Fr. 35 to Fr. 47	Soft coatings are protecting the steel, but are difficult to inspect.
#3 Voids With Free Standing Potable Water Tanks, #3 Port and Starboard Wing Tanks, Transducer Cofferdam, and #3 Double Bottom P&S Ballast Tanks, Fr. 47 to 61.	Some staining and abrasion, but generally in good condition in main void. Wing tanks and Transducer Cofferdam have semi-hard protectant material in each one. Pitting and corrosion are just starting.
V-1 Sewage Tank, Fr.110 to 112 in Shaft Alley	Tank was abrasive blasted approx. 2 years ago at Todd Shipyard. Paint applied right over wasted steel on OHD is now breaking down again. Weld at deck and bulkhead has heavy coating that is cracking, blistering, and popping off.
Centerline Fixed Ballast Tank, Fr. 117-124, accessed through Aft Crew Quarters	There are 50 tons of sand (Magnetite) in the void for ballast. The sand is absorbing moisture and the wet sand is corroding the steel it is in contact with.

Interior Fixtures:

Location	Details
Cabin Deck-Window Frames	Windows are being repainted, but should also be re-caulked to seal them.

PCCI 2010 Paint Condition Survey Results:

Exterior Hull:

Location	Details
----------	---------

Underwater Hull	Has corrosion on the aft 1/3 of the vessel. This begins from the Rolling Chock aft to the propellers. There is currently spot corrosion on approximately 30% of the Underwater Hull in the stern section. The Underwater Hull coating system is recommended to be removed by abrasive blasting and the K Pack system is to be checked while the vessel is in the water to make sure it is working properly.
Exterior Surfaces (General)	Most of these areas are being maintained by ships force and are in good condition.

Interior Structure:

Location	Details
#2 Void	The same conditions existed from the 2009 survey and it is recommended to abrasive blast the deck and up 6 ft. on the BHD's in the main void and then coat with 2 coats of Intershield 300 epoxy.
#3 Port and Starboard Wing Voids, #4 Port and Starboard Wing Voids	There was pinpoint corrosion on the shell plate starting in the #3 Wing Voids close to where the K Pac system goes through the hull.
New MSD Space	Remove the existing coatings by abrasive blasting and apply new coating.

Tank Coatings:

Location	Details
#1 Deep Ballast Tank	The tank has been cleaned out and there are areas of corrosion up forward and in the aft section of the void that require power tool cleaning and coating.
#4 Potable Water Tanks	Recoat the overhead above the #4 Potable Water Tanks where the steel is to be replaced by abrasive blasting.

Interior Fixtures:

Location	Details
Cabin Deck-Window Frames	Windows on Cabin Deck need caulking.

5.7. M/V TAKU Chief Engineer General Recommendations

NOTE: The following is a list of high priority items that would likely require adjudication if the vessel is to maintain similar service and route. The list below is not intended to be a complete summary of minor issues.

- The boat deck ADA accessible head deck drain needs to be repaired. It is in the overhead of stateroom 11A, the threaded coupling broke off the drain housing and needs to be welded on so new piping can be installed.
- Both aft boat deck heads need steel work to the bulkheads and deck. They currently leak into stateroom 30B.
- Jan. 16, 2016, a leak was discovered on the port air dryer. Currently the starboard air dryer is crossed over to service the port side too.
- The HVAC control air dryer has been bypassed and will need to be replaced prior to the vessel going into service.
- #1 Aux. Engine is due for a complete in frame rebuild.
- Lifeboat Davit bousing gear has been secured due to corrosion on the accumulator brackets.
- Repair of Port Lifeboat Portside Engine is needed. A head bolt broke and crew is still waiting on a replacement part. Parts need to be ordered, the stock request is titled: Kraft Power – Lifeboat Engine, it is in the 2016 IRIS Stock Requests folder.
- Intake and exhaust manifolds have been tightened, however the condition of the exhaust manifold gasket is unknown.
- T-stat needs to be replaced once parts have been ordered.
- #1 exhaust stud has snapped, a new one must be ordered. The engine is back together with no coolant and with DELO 400 40 straight weight overfilled to the top to get as much water out but should not be run. The stop lever seems to be sticking and the crew is looking into a new solenoid spring. The starboard engine does run now.
- Zerex G-05 coolant is on order that meets the ASTM D6210 spec that we have not been meeting using regular green antifreeze. This is to be mixed at a 40% concentration.

5.8. M/V TAKU Master General Recommendations

The Master of the M/V Taku was asked to provide any information regarding repairs that may be needed. The following is a summary of the Master's response from an email dated 22 JUN 2016.

- The FEMOM (Fire Equipment Manuals) are out of date. The most recent update was when AMHS engineers came aboard in 12/22/2015 and gathered information about the car deck fire system.
- All ISM planned maintenance has been suspended except for Fire Extinguishers, Fire Stations and the Fire Panel. Many of these items are out of date and will need to be replaced or serviced.
- Equipment from Pacific Radar and Communications North are in need of servicing and a brand new Gyro has not yet been initialized.

The sections above describe the condition of the vessel and include recommendations from past surveys. It is important to note that not all of the recommendations from the surveys may be required for the vessel to be operational. The scope of this report is a summary of the vessels condition based on data available from prior surveys. While AAA feels this report provides an accurate account of the vessels material condition, additional surveys closer to the time of purchasing the vessel are recommended to fully understand the operating condition of the vessels machinery.

Appendix A: M/V Taku COI (expired)

 <p style="text-align: center;">United States of America Department of Homeland Security United States Coast Guard</p> <h2 style="text-align: center;">Certificate of Inspection</h2> <p style="text-align: center;">For ships on international voyages this certificate fulfills the requirements of SOLAS 74 as amended, regulation V/14, for a SAFE MANNING DOCUMENT.</p>	Certification Date: 27 Jun 2014																											
	Expiration Date: 27 Jun 2015																											
	IMO Number: 5351052																											
Vessel Name TAKU	Official Number 290756	Call Sign WI9491	Service Passenger (Inspected)																									
Hailing Port Wrangell AK	Hull Material Steel	Horsepower 8000	Propulsion Diesel Reduction																									
Place Built SEATTLE WA, UNITED STATES	Delivery Date 15Dec1963	Date Keel Laid 01Jan1962	Gross Tons R-2625 Net Tons I-7302																									
			R-1494 I-2496																									
	DWT 260	Length R-316.9 I-316.9																										
Owner STATE OF ALASKA 7559 N TONGASS KETCHIKAN, AK 99901 UNITED STATES	Operator ALASKA MARINE HIGHWAY SYSTEM 7559 NORTH TONGASS KETCHIKAN, AK 99901-9101 UNITED STATES																											
<p>This vessel must be manned with the following licensed and unlicensed personnel. Included in which there must be 14 certified lifeboatmen, 0 certified tankermen, 0 HSC type rating, and 4 GMDSS Operators.</p> <table border="0"> <tr> <td>0 Master</td> <td>1 Master & 1st Class pilot</td> <td>0 Radio Officer(s)</td> <td>1 Chief Engineer</td> <td>0 QMED/Rating</td> </tr> <tr> <td>0 Chief Mate</td> <td>3 Mate & 1st Class Pilot</td> <td>4 Able Seamen/ROANW</td> <td>0 1st Asst. Engr/2nd Engr.</td> <td>2 Oilers</td> </tr> <tr> <td>0 2nd Mate/OICNW</td> <td>0 Lic. Mate/OICNW</td> <td>2 Ordinary Seamen</td> <td>0 2nd Asst. Engr/3rd Engr.</td> <td>2 ASST.</td> </tr> <tr> <td>0 3rd Mate/OICNW</td> <td>0 1st Class Pilot</td> <td>0 Deckhands</td> <td>0 3rd Asst. Engr.</td> <td>1 PATROLMAN</td> </tr> <tr> <td></td> <td></td> <td></td> <td>0 Lic. Engr.</td> <td></td> </tr> </table>				0 Master	1 Master & 1st Class pilot	0 Radio Officer(s)	1 Chief Engineer	0 QMED/Rating	0 Chief Mate	3 Mate & 1st Class Pilot	4 Able Seamen/ROANW	0 1st Asst. Engr/2nd Engr.	2 Oilers	0 2nd Mate/OICNW	0 Lic. Mate/OICNW	2 Ordinary Seamen	0 2nd Asst. Engr/3rd Engr.	2 ASST.	0 3rd Mate/OICNW	0 1st Class Pilot	0 Deckhands	0 3rd Asst. Engr.	1 PATROLMAN				0 Lic. Engr.	
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0 3rd Mate/OICNW	0 1st Class Pilot	0 Deckhands	0 3rd Asst. Engr.	1 PATROLMAN																								
			0 Lic. Engr.																									
<p>1 WIPER</p> <p>In addition, this vessel may carry 370 passengers, 26 other persons in crew, 0 persons in addition to crew, and no others. Total persons allowed: 413</p>																												
<p>Route Permitted and Conditions of Operation:</p> <p>---Lakes, Bays, and Sounds---</p> <p>THE SHELTERED WATERS OF THE WEST COAST OF NORTH AMERICA AS DEFINED IN 46 CFR 42.03-35.</p> <p>AN HOURLY PATROL OF THE VEHICLE DECK SHALL BE MAINTAINED IN ADDITION TO THAT REQUIRED BY 46 CFR 78.30-10.</p> <p>THE VESSEL MAY TRANSPORT THOSE HAZARDOUS MATERIALS SPECIFIED IN DEPARTMENT OF TRANSPORTATION EXEMPTION LETTERS DOT-E 7465, DOT-E 7928 AND DOT-E 11232. THESE EXEMPTION LETTERS MUST REMAIN VALID AND COPIES SHALL BE CARRIED ABOARD THE VESSEL.</p> <p>THE MASTER SHALL ENSURE THAT FOUR (4) PERSONS ON BOARD THE VESSEL ARE ASSIGNED AND</p> <p>***SEE NEXT PAGE FOR ADDITIONAL CERTIFICATE INFORMATION***</p>																												
<p>With this Inspection for Certification having been completed at Ketchikan, AK, the Officer in Charge, Marine Inspection, Southeast Alaska certified the vessel, in all respects, is in conformity with the applicable vessel inspection laws and the rules and regulations prescribed thereunder.</p>																												
<table border="1"> <thead> <tr> <th colspan="4">Annual/Periodic/Quarterly Reinspections</th> </tr> <tr> <th>Date</th> <th>Zone</th> <th>A/P/Q</th> <th>Signature</th> </tr> </thead> <tbody> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table>		Annual/Periodic/Quarterly Reinspections				Date	Zone	A/P/Q	Signature	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<p>This certificate issued by: </p> <p style="text-align: center;">J. A. BOYER, LCDR, USCG By direction</p> <p>Officer in Charge, Marine Inspection</p> <p style="text-align: center;">Southeast Alaska</p> <p>Inspection Zone</p>		
Annual/Periodic/Quarterly Reinspections																												
Date	Zone	A/P/Q	Signature																									
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-	-	-	-																									

Dept. of Home Sec., USCG, CG-611 (Rev. 4-2000)(v2)

OMB No. 2115-0517





Department of Homeland Security
United States Coast Guard

Certificate of Inspection

Certification Date:
27Jun2014

TAKU

	Number	Persons		Required
Total Equipment for		413	Life Preservers(Adult)	434
Lifeboats (Total)	2	124	Life Preservers(Child)	42
Lifeboats (Port)*	1	62	Ring Buoys (Total)	12
Lifeboats (Starbd)*	1	62	With Lights*	6
Motor Lifeboats*	2	124	With Line Attached*	2
Lifeboats W/Radio*	0	0	Other*	4
Rescue Boats/Platforms	1	7	Immersion Suits	6
Inflatable Rafts	4	400	Portable Lifeboat Radios	2
Life Floats/Buoyant App	0	0	Equipped with EPIRB?	Yes
Inflatable Bouyant App(IBA)	0	0	(* included in totals)	

---Fire Fighting Equipment---

Number of Fireman Outfits/ 8

Number of Fire Pumps/ 3

Hose information

Qty	Diameter	Length
2	2.5	75
17	1.5	75
18	2.5	50
29	1.5	50

Fixed Extinguishing Systems


Capacity	Agent	Space Protected
2625	Carbon Dioxide	ENGINE ROOM
1125	Carbon Dioxide	AUX. ENGINE ROOM
150	Carbon Dioxide	EMERGENCY DIESEL ROOM
150	Carbon Dioxide	PAINT LOCKER CAR DECK
75	Carbon Dioxide	FREEZER CAR DECK
75	Carbon Dioxide	GALLEY CHIL/FREEZER
150	Carbon Dioxide	AUX. HOSE REEL
50	Carbon Dioxide	CHILL RM CAR DECK
4	Other	GALLEY
	Water Spray	VEHICLE DECK
	Water Spray	ACCOMMODATIONS
	Water Mist	ENGINE ROOM

Fire Extinguishers - Hand portable and semi-portable

Qty	Class Type
16	A-II
17	B-II
1	B-V
2	C-II

END





Department of Homeland Security
United States Coast Guard

Certificate of Inspection

TAKU
Certification Date:
27Jun2014

QUALIFIED TO OPERATE EACH INSTALLED FAST RESCUE BOAT. THE MASTER SHALL ENSURE THAT THE FAST RESCUE BOAT IS OPERATED WITH AT LEAST TWO (2) PERSONS QUALIFIED IN ITS OPERATION.

---Sea Valves/Chests---

Next Exam	Last Exam
18MAY2016	18MAY2011

---Hull Exams---

Exam Type	Next Exam	Last Exam	Prior Exam
Drydock	27Jun2015	27Jun2014	24May2013
Internal Structure	27Jun2015	27Jun2014	24May2013

---Stability---

Letter	Approval Date / 13May2011	Office/ CG MSC
Book	Approval Date / 01Nov2000	Office/ MSC

---Inspection Status---

Fuel Tanks

TankID	Internal Examinations		
	Previous	Last	Next
# 5A DB PORT	28Sep2006	18May2011	18May2016
# 5A DB STBD	28Sep2006	18May2011	18May2016
# 5B DB PORT	28Sep2006	18May2011	18May2016
# 5B DB STBD	28Sep2006	18May2011	18May2016

Boilers/Steam Piping

Maximum Steam Pressure Allowed/150

Boiler/Piping ID	Hydro/Previous	Hydro/Last	Hydro/Next	Mounts Opened	Mounts Removed
13674	09Mar2010	27Jun2014	09Mar2015	27Jun2014	12Jul2007

Boiler/Piping ID	Fireside			Waterside		
	Previous	Last	Next	Previous	Last	Next
13674	18May2011	27Jun2014	18May2015	18May2011	27Jun2014	18May2016

Pressure Vessels

Type	Location	Previous	Last	Next
Air Receiver	Aux Engine Room	23Feb2009	27Jun2014	27Jun2019
Air Receiver	Aux Engine Room	23Feb2009	27Jun2014	27Jun2019
Air Receiver	Aux Engine Room	23Feb2009	27Jun2014	27Jun2019
Other	Shaft Alley	18May2011	27Jun2014	27Jun2019

Lifesaving


Number of Davits/4

Lifeboat/Raft ID	Full Wgt Test	Light Wgt Test	Falls Rnwd	Falls End/End
1	27Jun2014	27Jun2014	27Jun2014	-
2	27Jun2014	27Jun2014	27Jun2014	-
Rescue Boat	27Jun2014	27Jun2014	27Jun2014	-
MOR Platform	18May2011	18May2011	18May2011	-

---Lifesaving Equipment---



Appendix B: List of SOLAS Certificates



**USCG Maritime Information Exchange
Port State Information Exchange**

SEARCH PSIX FEATURED LINKS WEB ACCESSIBILITY POLICY FOIA REQUESTS CONTACT US

[Skip Navigation](#)

Results for Vessel: *TAKU*

<p>Vessel Information:</p> <p>Vessel Name: TAKU Primary Vessel Number: 290756 (Official Number (U.S.)) Hull Identification Number: N/A Manufacturer Hull Number: N/A IMO Number: 5351052 Vessel Flag: UNITED STATES Vessel Call Sign: W19491</p>	<p>Vessel Particulars:</p> <p>Service: Passenger (Inspected) Length: 316.90 ft Breadth: 73.50 ft Depth: 23.50 ft Build Year: 1963 Alternate VINs: N/A</p>
---	---

<p>Service Information:</p> <p>Service Status: Laid Up Out Of Service Date: 7/20/2015 Last Removed From Service By: N/A</p>	<p>Tonnage Information:</p> <p>Cargo Authority: N/A Tonnage: • 2496 - Convention (Subpart B), Net Ton • 1494 - Regulatory (Subpart C or D), Net Ton • 7302 - Convention (Subpart B), Gross Ton • 2625 - Regulatory (Subpart C or D), Gross Ton • 260 - Dead Weight, Ton</p>
--	--

Vessel Documents and Certifications

Document	Agency	Date Issued	Expiration Date
CERTIFICATE OF DOCUMENTATION	USCG	October 23,2015	November 30,2016
Stability Letter	N/A	January 9,2015	
Certificate of Inspection	N/A	June 27,2014	June 27,2015
Certificate of Inspection - Amended	N/A	June 27,2014	June 27,2015
SOLAS Passenger Ship Safety Cert, Record of Equip.	N/A	June 27,2014	June 27,2015
SOLAS Passenger Ship Safety Certificate	N/A	June 27,2014	June 27,2015
SOLAS Passenger Ship Safety Cert, Record of Equip.	N/A	November 5,2013	June 7,2014
SOLAS Passenger Ship Safety Certificate	N/A	November 5,2013	June 7,2014
Certificate of Inspection	N/A	June 7,2013	June 7,2014
ISM - Document Of Compliance	N/A	April 24,2013	May 6,2018
Classification Document	ABS	October 22,2012	January 9,2018
Certificate of Inspection	N/A	June 1,2012	June 1,2013
Certificate of Inspection - Amended	N/A	June 1,2012	June 1,2013
SOLAS Passenger Ship Safety Cert, Record of Equip.	N/A	May 31,2012	May 31,2013
SOLAS Passenger Ship Safety Certificate	USCG	May 13,2012	May 13,2013
ISM - Safety Management Certificate	ABS	August 9,2011	August 9,2016
ISM - Safety Management Certificate	N/A	August 9,2011	August 9,2016
Certificate of Inspection	N/A	May 18,2011	May 18,2012
Certificate of Inspection - Amended	N/A	May 18,2011	May 18,2012
International Oil Pollution Prevention Certificate	N/A	May 18,2011	
International Oil Pollution Prevention Certificate	N/A	May 18,2011	May 18,2016
SOLAS Passenger Ship Safety Cert, Record of Equip.	USCG	May 18,2011	May 18,2012
SOLAS Passenger Ship Safety Certificate	N/A	May 18,2011	May 18,2012
Certificate of Inspection	N/A	March 29,2010	March 29,2011
SOLAS Exemption Certificate	N/A	March 26,2010	March 26,2011
Certificate of Inspection	N/A	February 27,2009	February 27,2010
SOLAS Exemption Certificate	N/A	February 27,2009	February 27,2010
SOLAS Passenger Ship Safety Cert, Record of Equip.	N/A	February 27,2009	February 27,2010
SOLAS Passenger Ship Safety Certificate	N/A	February 27,2009	February 27,2010
ISM - Document Of Compliance	ABS	May 23,2008	May 6,2013
Certificate of Inspection	N/A	March 3,2008	March 3,2009
Certificate of Inspection - Amended	N/A	March 3,2008	March 3,2009
SOLAS Passenger Ship Safety Cert, Record of Equip.	N/A	March 3,2008	March 3,2009
SOLAS Passenger Ship Safety Certificate	N/A	March 3,2008	March 3,2009
Certificate of Inspection	N/A	July 12,2007	July 12,2008
Certificate of Inspection	N/A	September 30,2006	September 30,2007
SOLAS Exemption Certificate	N/A	September 30,2006	September 30,2007
SOLAS Passenger Ship Safety Certificate	N/A	September 30,2006	September 30,2007



ISM - Safety Management Certificate	ABS	February 17,2006	February 16,2011
Certificate of Inspection	N/A	September 30,2005	September 30,2006
SOLAS Exemption Certificate	USCG	September 28,2005	September 28,2006
SOLAS Passenger Ship Safety Certificate	USCG	September 28,2005	September 28,2006
Certificate of Inspection	N/A	January 12,2005	January 12,2006
SOLAS Exemption Certificate	USCG	December 10,2004	December 10,2005
SOLAS Passenger Ship Safety Certificate	USCG	December 10,2004	December 10,2005
Certificate of Inspection	N/A	October 28,2003	October 28,2004
Certificate of Inspection - Amended	N/A	October 28,2003	October 28,2004
International Oil Pollution Prevention Certificate	N/A	October 28,2003	October 28,2008
SOLAS Passenger Ship Safety Certificate	N/A	October 28,2003	October 28,2004
ISM - Safety Management Certificate	ABS	June 11,2003	April 22,2008
ISM - Document Of Compliance	N/A	May 13,2003	May 13,2008
ISM - Safety Management Certificate	N/A	April 22,2003	September 21,2003
Certificate of Inspection	N/A	November 6,2002	November 6,2003
Certificate of Inspection - Amended	N/A	November 6,2002	November 6,2003
Certificate of Inspection	N/A	October 12,2001	October 12,2002
Stability Book	N/A	November 1,2000	
Stability Letter	N/A	November 1,2000	
Certificate of Inspection	N/A	October 31,2000	October 31,2001
Certificate of Inspection - Amended	N/A	October 31,2000	October 31,2001
SOLAS Passenger Ship Safety Certificate	N/A	October 31,2000	October 31,2001
International Oil Pollution Prevention Certificate	N/A	February 17,2000	February 17,2004
Tonnage Certificate, International	ABS	October 7,1994	


Summary of Coast Guard Contacts

[Click Here](#) To View Contact Data From: To: (MMDD/YYYY)



Appendix C: ABS Certificate of Class

Certificate No.: 6304349-2216920-001



AMERICAN BUREAU OF SHIPPING

CHARTERED
1862

NUMBER
6304349

CERTIFICATE OF CLASSIFICATION

TAKU

Description PASSENGER AND VEHICLE FERRY

Dimensions, Length 95.7072 m *Breadth* 22.4028 m *Depth* 7.1628 m

Tonnage, Gross 7302 *Net* 2496

Owner STATE OF ALASKA D.O.T. & PUBLIC FACILITIES

Shipbuilder PUGET SOUND BRIDGE & DRYDOCK CO.

Engine Builder MAK MOTOREN GMBH

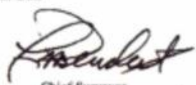
Date of Build 01 March 1963 *Hull Number* 112

This is to Certify that the above has been surveyed in accordance with the Rules of this Bureau and entered in the Record with the Class

***A1, Ferry Service, ©, *AMS**

22 October 2012

Issue Date



Chief Surveyor



09 January 2018

Expiration Date



Assistant Secretary

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of American Bureau of Shipping and is issued solely for the use of the Bureau, its committees, its clients or other authorized entities. The classification certificate is a representation only that the vessel, structure, item of material, equipment or machinery or any other item covered by this certificate has met one or more of the Rules of American Bureau of Shipping. The certificate is governed by the terms and conditions on the reverse side hereof, and governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof.

PAGE 1 OF 4



Appendix D: Typical Paint Schedule

0.13.3 Paint Schedule

Exterior

A. Keel to Waterline, Including Hull, Rudder, Sea Chests, and Bow Thruster Tunnel:

- 670 Apply 1 full coat Intershield ENA 300V (Bronze) @ 6.0 MDFT
- Apply 1 full coat Intershield ENA 301V (Aluminum) @ 6.0 MDFT
- Apply 1 full coat Intergard FA Series @ 4.0 MDFT
- Apply 1 full coat Interspeed BRA 642 Black AF @ 5.0 MDFT
- Apply 1 full coat Interspeed BRA 640 Red AF @ 5.0 MDFT

675

A1 Keel to Waterline (ALTERNATE):

- Apply 1 full coat Intershield ENA 300V bronze @ 6.0 MDFT
- Apply 1 full coat Intershield ENA 301V aluminum @ 6.0 MDFT
- Apply 1 full coat Intergard FA Series @ 4.0 MDFT
- 680 Apply 1 full coat BEA468 Tin/Rosin Free Self polishing copolymer @ 5.0 MDFT
- Apply 1 full coat BEA469 (Red) Tin/Rosin Free Self polishing copolymer @ 5.0 MDFT*

B. Boot Topping:



TECHNICAL SPECIFICATIONS

SECTION 0 - GENERAL REQUIREMENTS &
GENERAL TECHNICAL SPECIFICATION

- 685 Apply 1 full coat Intershield ENA 300V (Bronze) @ 6.0 MDFT
 Apply 1 full coat Intershield ENA 301V (Aluminum) @ 6.0 MDFT
 Apply 1 full coat Interthane 990 Series Black @ 2.0 MDFT
 Apply 1 full coat Interthane 990 Series Black @ 2.0 MDFT
- C. Above Top of Boot Topping, Except Decks and as Noted Below, Including but not Limited to Bulwarks, Superstructure, and Exterior Machinery:
- 690 Apply 1 full coat Interzinc 52 @ 3.0 MDFT
 Apply 1 full coat Intertuf KHA @ 6.0 MDFT
 Apply 1 stripe coat Intertuf KHA @ 3.0 MDFT, where required.
 Apply 1 full coat Intertuf KHA @ 6.0 MDFT
 Apply 1 full coat Interthane 990 Series @ 2.0 MDFT
 695 Apply 1 full coat Interthane 990 Series @ 2.0 MDFT *
- *Final coat colors shall be as follows:
 Hull: PHE992 Ocean Blue
 Superstructure: PHB000 White
 Stripe: PHB134 Yellow
 700 Hull Markings: PHB000 White
- D. Railings, Galvanized and Aluminum Surfaces:
- Apply 1 full coat Interprime VTA Series etch primer @ 1.0 MDFT
 Apply 1 full coat Intertuf KHA Series @ 5.0 MDFT
 Apply 1 full coat Interthane 990 Series Gloss @ 2.0 MDFT
 705 Apply 1 full coat Interthane 990-PHB000 (White) Gloss @ 2.0 MDFT
- E. Weather Decks:
- Apply 1 full coat Interzinc 52 @ 3 MDFT
 Apply 1 full coat Intershield ENA 300V Series (Bronze) @ 6.0 MDFT
 Broadcast Interzone non-skid 7754D over ENA while wet
 710 Apply 1 full coat Intershield ENA 301V Series (Aluminum) @ 6.0 MDFT
 Apply 1 full coat Interthane 990-K724 (Storm Grey) Gloss @ 2.0 MDFT
- E1. Weather Decks (ALTERNATE)
- Apply 1 full coat Interguard 264 (FLP274) @ 2-3 MDFT
 Apply 1 full coat Intershield PRA250 @ 125 MDFT
 715 Broadcast Interzone non-skid 7754D over PRA while wet
 Apply 1 full coat Interthane 990-K724 (Storm Grey) Gloss @ 2.0 MDFT
- F. Parking Area (Car Deck):

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- Apply 1 full coat Interzinc 52 @ 3.0 MDFT
Walkways and Lines Only
- 720 Apply 1 full coat Intershield ENA 300V Series (Bronze) @ 6.0 MDFT
 Broadcast Interzone non-skid 7754D over ENA while wet. Remove excess
 Apply 1 full coat Intershield ENA 301V Series (Aluminum) @ 6.0 MDFT
 Apply 1 full coat Interthane 990-B134 (Safety Yellow) Gloss @ 2.0 MDFT
 Apply 1 full coat Interthane 990-B134 (Safety Yellow) Gloss @ 2.0 MDFT
- 725 G. Top of Stacks and Any Other Exposed High Temperature Areas:
 Apply 2 full coats HTA097 High-Heat Aluminum Coating @ 2.0 MDFT each
- H. Anchor and Anchor Chain:
- Apply 1 full coat Intertuf KHA Series @ 6.0 MDFT
 Apply 1 full coat Intertuf KHA Series (Black) @ 6.0 MDFT
- 730 Apply 1 full coat Interthane 990 on links as follows:
1. The detachable link between shots, excluding the connecting link to the anchor, shall be painted as follows:
 - a. 15 fathom, first-second shot detachable link, red.
 - b. 30 fathom, second-third shot detachable link, white.
 - 735 c. 45 fathom, third-fourth shot detachable link, blue.
 - d. 60 fathom, fourth-fifth shot detachable link, red.
 - e. 75 fathom, fifth-sixth shot detachable link, white.
 2. Additionally, the first link on each side of the 15-fathom detachable link shall be painted white. The first link at each side of the detachable link shall also be marked by one turn of wire around the stud. The first two links on each side of the 30-fathom detachable link shall be painted white. The second link at each side of the 30-fathom detachable link shall also be marked by two turns of wire around the stud. This pattern of marking detachable links shall be continued for the 45-, 60-, and 75-fathom connections.
 - 740
 - 745 3. All of the links in the next-to-last inboard shot shall be painted yellow.
 4. All of the links in the last inboard shot shall be painted red.
- Interior
- A. Rudder (interior) and Inaccessible Voids:
 Float coat with State-Approved and regulatory body accepted coating.
- 750 B. Bulkheads (Side Shell Where Applicable in Hull Locations) and Overheads of Machinery and Work Spaces, Except Wheelhouse, Above Grating or Floor Plate Level Where Applicable and Not Covered by Insulation or Linings:
- Apply 1 full coat Intertuf KHA @ 5.0 MDFT
 Apply 1 full coat Intertuf KHA @ 5.0 MDFT
 755 Apply 1 full coat Interthane 900-PHB000 (White) @ 2.0 MDFT

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- C. Bilges (Below Lowest Grating or Floor Plate Level):
 Apply 1 full coat Intertuf KHA Series @ 6.0 MDFT
 Apply 1 full coat Intertuf KHA Series(Bilge Red) @ 6.0 MDFT
 Apply 1 full coat Interthane 900-PHL274 (Bilge Red) @ 6.0 MDFT
- 760 D. Exposed Bulkheads and Overheads of Passenger Spaces and Wheelhouse:
 Apply 1 full coat Intertuf KHA @ 5.0 MDFT
 Apply 1 full coat Intertuf KHA @ 5.0 MDFT
 Apply 1 full coat Interthane 900 Series @ 2.0 MDFT (to match existing or as specified)
- 765 E. Behind Insulation on Bulkheads and Overheads
 Apply 1 stripe coat Intertuf KHA @ 3.0 MDFT
 Apply 1 full coat Intertuf KHA @ 6.0 MDFT
- F. Exposed Insulation (Except Acoustic):
 Apply 1 full coat Intertuf KHA Series @ 2.0 MDFT
 Apply 1 full coat Interthane 900-PHB000 (White) @ 2.0 MDFT
- 770 G. Interior Galvanized and Aluminum Surfaces (Exposed Side):
 Apply 1 full coat Interprime VTA Series etch primer at 1.0 MDFT
 Apply 1 full coat Intertuf KHA Series @ 5.0 MDFT
 Apply 1 full coat Interthane 990 Finish @ 2 MDFT
- 775 H. Interior Stainless Steel Surfaces (Exposed Side):
 No coating applied.
- I. Exposed Decks (Not Covered with Deck Covering):
 Apply 1 full coat Intertuf KHA Series @ 6.0 MDFT
 Apply 1 full coat Interthane 990-K724 (Storm Grey) Gloss @ 2.0 MDFT*
- 780 * Apply with #36 garnet grit over for non-skid
- J. Decks Covered with Deck Covering:
 Apply 1 full coat Intertuf KHA Series @ 6.0 MDFT
- K. Uptakes:
 Apply 1 full coat Intertuf KHA Series @ 5.0 MDFT
 Apply 1 stripe coat Intertuf KHA @ 5.0 MDFT
 Apply 1 full coat Intertuf KHA Series @ 5.0 MDFT
 Apply 1 full coat Interthane 990 Series @ 2.0 MDFT
 Apply 1 full coat Interthane 900-PHB000 (White) @ 2.0 MDFT
- 785
- L. VOIDS and Chain Locker:
 Apply 1 full coat Intershield 300V ENA 300 (Bronze) @ 5.0 MDFT
 Apply 1 stripe coat Intershield 300V ENA 301 (Aluminum) @ 3.0 MDFT
 Apply 1 full coat Intershield 300V EMA 301 (Aluminum) @ 5.0 MDFT
- 790

TECHNICAL SPECIFICATIONS

SECTION 0 - GENERAL REQUIREMENTS &
GENERAL TECHNICAL SPECIFICATIONM. Ballast Tanks:

- 795 Apply 1 full coat Intershield 300V ENA 300 (Bronze) @ 6.0 MDFT
Apply 1 stripe coat Intershield 300V ENA 301 (Aluminum) @ 3.0 MDFT
Apply 1 stripe coat Intershield 300V ENA 300 (Bronze) @ 3.0 MDFT
Apply 1 full coat Intershield 300V ENA 301 (Aluminum) @ 6.0 MDFT

N. Interior of Lubricating Oil and Fuel Oil Tanks:

- 800 The interior of these tanks shall not be painted, but rather shall be sprayed with oil
after surface preparation.

O. Potable Water Tank:

- 805 Apply 1 full coat of Interline 100% solids 925 (White) @ 16.0 MDFT*
* The potable water tank shall be continually mechanically ventilated and
dehumidified for at least seven (7) days immediately following coating
application.

P. Sewage Holding Tank:

- Apply 1 full coat of 100% solids Interline 925 (White) at 16.0 MDFT*
* The sewage holding tank shall be continually mechanically ventilated and
dehumidified for at least four (4) days immediately following coating application.