



May 6, 2011

In the matter of the petition of *

AQUANAMI, LLC *

CGB 11-004

for an exemption from Subparts B, C, F, J *
and Section 183.610(a)(2) of Subpart K of *
Part 183 of Title 33, Code of Federal *
Regulations *

GRANT OF EXEMPTION

By letter dated April 27, 2011 and a subsequent May 4, 2011, email, Mr. Michael Rui of Aquanami, LLC, 734 Winery Way, Wilmington, North Carolina, petitioned the Coast Guard for an exemption from Subparts B, C, F, J, and Section 183.610(a)(2) of Subpart K of Part 183 of Title 33, Code of Federal Regulations for the Jetsurf, Jetkayak and Jetkayak GT and an exemption from Subpart J, and Section 183.610(a)(2) of Subpart K of Part 183 for the Jetnami and Jetnami GT model boats manufactured by the petitioner.

The Jetsurf is 100 inches in length, has a 27.5-inch beam, is powered by a four-cycle inboard water jet, has a dry weight of 110 pounds, is designed to carry only the operator and contains 3.9 cubic feet of foam flotation material. The Jetsurf resembles a motorized surfboard and the operator stands on the watercraft and maneuvers it by weight shifts and the use of a hand-held throttle with a start and stop button.

The Jetkayak is 104 inches in length, has a 28.5-inch beam, is powered by a four-cycle inboard water jet, has a dry weight of 128 pounds, and contains 4.2 cubic feet of foam flotation material. The Jetkayak GT is 115 inches in length, has a 29-inch beam, is powered by a four-cycle inboard water jet, has a dry weight of 143 pounds, and contains 4.2 cubic feet of foam flotation material. The Jetkayak and Jetkayak GT, which resemble motorized paddleboards, are designed to carry only the operator who sits on the watercraft and maneuvers it by means of a joystick.

The Jetnami is 121 inches in length, has a 27.5-inch beam, is powered by a four-cycle inboard water jet, has a dry weight of 117 pounds and contains 1.8 cubic feet of foam flotation material. The Jetnami GT is 134 inches in length, has a 29-inch beam, is powered by a four-cycle inboard water jet, has a dry weight of 130 pounds and contains 1.8 cubic feet of foam flotation material. The Jetnami and Jetnami GT, which are motorized kayaks, are designed to carry only the operator who sits in the watercraft and maneuvers it by means of a control handle.

The requirement for the Display of Capacity Information in Subpart B of Part 183 requires the manufacturer of a monohull boat less than 20 feet in length to display on a label affixed to the boat the maximum weight capacity and maximum persons capacity determined in the Safe Loading Standard. The Safe Loading Standard in Subpart C of Part 183 requires the

manufacturer to calculate the maximum weight capacity and maximum persons capacity of a boat in accordance with the procedures and formulae provided in the regulations.

The Flotation Standard in Subpart F of Part 183 requires the manufacturer of an inboard powered monohull boat less than 20 feet in length to calculate and provide the quantity of flotation material necessary to support the submerged weight of the boat and two-fifteenths of the dry weight of the persons capacity. Two of the weights the manufacturer must use in determining the quantity of flotation material needed, are the maximum persons capacity and maximum weight capacity found in the Safe Loading Standard.

In the Safe Loading Standard, calculation of the persons capacity according to the regulations requires adding weights along the outboard extremity of the passenger carrying area, at the height of the seat nearest the center of that area, until the boat assumes maximum list without water coming into the boat. Calculation of the maximum weight capacity in accordance with the regulation involves immersing the boat in calm water up to the point where water would flow into the hull of the boat. Since neither the Jetsurf, Jetkayak nor Jetkayak GT model boats has an open load carrying area into which water will flow as envisioned by the Safe Loading Standard, it is impossible to test the boats for maximum persons capacity and maximum weight capacity. For this reason, the petition requests an exemption from the Safe Loading Standard and from the Flotation Standard, which utilizes weight capacities found under the Safe Loading Standard. In addition, the petition requests an exemption from the requirement for the Display of Capacity Information, since it follows that if the information cannot be determined, then it cannot be displayed.

The Coast Guard has carefully considered all information presented in the petition. The formulation and wording of the Coast Guard Safe Loading Standard, as well as the validity of the capacities determined in the standard are predicated on the conventional type hull in which persons and portable gear are carried within a finite volume or area of the hull. In view of the configuration of the Jetsurf, Jetkayak and Jetkayak GT model boats, the Coast Guard considers that the calculations and tests prescribed in the Safe Loading Standard cannot reasonably be made to apply to these boats. In addition, the Coast Guard recognizes that if the maximum persons capacity and maximum weight capacity cannot be reasonably and practically determined in the Safe Loading Standard, then the Flotation Standard cannot reasonably apply either. Also, a U.S. Coast Guard Maximum Capacities label cannot reasonably be required.

The basic intent of the Safe Loading Standard is to avoid the situation in which the careless or inexperienced boat operator crowds too many people or too much portable gear into a boat, reducing its stability and freeboard and making it more susceptible to capsizing and swamping. The Coast Guard's experience has been that such overloading occurs because of the simple fact that a small boat hull can physically accommodate a much greater load than the boat can safely carry. After careful examination of the Jetsurf, Jetkayak and Jetkayak GT designs, the Coast Guard considers that the configuration of the hulls would make it very difficult to either inadvertently or deliberately overload any of the petitioner's boats.

With regard to flotation, the petitioner states that the Jetsurf contains 3.9 cubic feet of foam flotation material and the Jetkayak and Jetkayak GT contain 4.2 cubic feet of foam flotation

material. During in-the-water tests, each model when equipped with all permanent appurtenances, including a full fuel tank, was filled with water in its engine compartment and loaded with 160 pounds of weight on the deck. All three models remained afloat with the 160 pounds of weight above the surface of the water. Therefore, the Coast Guard considers that the Jetsurf, Jetkayak and Jetkayak GT model boats contain sufficient flotation to meet the intent of the Flotation Standard.

With regard to the petition for an exemption from the Fuel System Standard in Subpart J of Part 183, the petitioner states that §183.560(d) requires that hose clamps not depend solely on the spring tension of the clamp for compressive force. The petitioner states that while a spring-type clamp has been selected for use on the fill, return hose and vent hose of the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT model boats, the petitioner is confident the clamp is adequate because: (1) it provides consistent and stable clamping force and the security of the clamp is not dependent on the expertise or mechanical skills of the persons maintaining watercraft; (2) it provides adequate and reliable clamping force and prevents leakage even if the hose deteriorates; (3) its design ensures good sealing, eliminates leaks and does not require checking or re-checking or re-tightening; (4) the clamps are made from spring steel material and have been surface treated for corrosion prevention; and (5) the selected clamp has been used and proved out to be successful on motor vehicles, motorcycles and outboard engines.

The petitioner states that §183.564(b)(3) requires the use of two adjacent metallic hose clamps that do not depend solely on the spring tension of the clamps for compressive force. According to the petitioner, the fuel tank in the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT model boats are mounted in a fiberglass composite pocket and protective rubber layer. Movement and vibration is minimized, the fuel hose is short and the fuel tank fitting has a molded shape. The petitioner is confident that the hose will remain fastened at all times with a single clamp at each end, and that using two clamps in this application would not provide additional security.

The petitioner states that §183.568(c) requires the use of one or two manual shutoff valves installed as follows: (1) directly at the fuel tank connection arranged to be readily accessible for operation from outside of the compartment; and (2) if the length of the fuel line from the tank outlet to the engine inlet is greater than 12 feet, a manual shutoff valve shall be installed at the fuel inlet connection to the engine. The petitioner states that Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT watercraft cannot comply with the requirements of §183.568(c), because their engine compartments are very small and compact. The watercraft designs are thin and it is therefore impractical to install a shutoff valve directly at the fuel tank connection arranged to be readily accessible from outside of the compartment.

The petitioner states that the fuel tank installed in the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT models meets the requirement in §183.580 - static pressure test, meets the requirement in §183.514 - fuel tank labels, and meets the requirement in §183.590 - fire test. The fuel hoses used in all four models also meet the requirements in §183.558 and the fuel pump installation in all five models meets the requirements in §183.566.

The fuel system in the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT watercraft has fuel fill line, return line and vent line. The fuel fill line connects the fuel tank to the fuel pump,

and is installed above the top of the fuel tank. The fuel pump is mounted next to the carburetor. The fuel return line connects the carburetor to the fuel tank. There is no fuel leakage into the engine compartment from the carburetor when the watercraft are oriented in any position. The vent line is routed to outside of the watercraft. Fuel lines are one-quarter inch inside diameter and the fuel tank volumes are 2.5 gallons, both of which are small compared to a conventional inboard boat. An intake air box with backfire flame control is connected to the carburetor. The whole fuel system is sealed to prevent fuel or vapor leakage into the engine compartments when the boats are oriented in any position. The total length of supply fuel line in each model is less than one foot. There is never more than a minute amount of fuel in the fuel pump and carburetor at any time. The petitioner also states that other features which minimize the potential for a fire are explosion are a sealed electrical system with a spark-proof design and net engine compartment volume for the Jetsurf is 0.9 cubic feet and 1.1 cubic feet for the Jetkayak, Jetkayak GT, Jetnami and Jetnami GT. The small engine compartment spaces minimize the oxygen available to support combustion.

The petitioner states that all of the design features described above assure that the Aquanami, LLC model boats achieve a level of safety, which meets the intent of Subpart J of Part 183, and granting an exemption from the Fuel System Standard to the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT watercrafts will not adversely affect boating safety.

The requirements of Subparts I and J were intended to reduce the incidence of boat fires and explosions, which cause property damage, injuries and fatalities. The elements of those regulations were based upon voluntary standards of the National Fire Protection Association, the American Boat and Yacht Council, the Society of Automotive Engineers, Underwriters Laboratories and Coast Guard sponsored research. All of those voluntary standards and the Coast Guard research considered only conventional inboard and sterndrive boats which were typically larger than 16 feet in length and which typically have conventional hull construction in which the operator and passengers ride within the confines of the hull adjacent to or directly above the engine spaces. The internal volumes of the engine rooms of the inboard boats on which the Fuel System Standard was based were considerably larger than the engine compartments on the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT models, which are even smaller than those on the typical Personal Watercraft.

The Coast Guard considers that the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT models achieve a level of safety which meets the intent of Subpart J of Part 183, because there is no leakage from their fuel systems when they are oriented in any position, the electrical system is sealed with a spark-proof design protecting the boats from ignition sources, and because the small volume of the engine compartments minimizes the oxygen available to support combustion.

The petition also requests an exemption from the powered ventilation requirements in §183.610(a)(2) of the Ventilation Standard in Subpart K of Part 183. The petitioner states that the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT have a natural ventilation system consisting of a supply opening with an internal cross-sectional area of 3.2 square inches located near the front of the engine compartment, and an exhaust duct originating in the lower third of the engine compartment near the rear end with an internal cross-sectional area of 3.2 square

inches. The petitioner states that the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT have the following unique features: (1) the fuel system is sealed to prevent fuel or vapor leakage into the engine compartment when the boats are oriented in any position; (2) the total length of fuel line is less than a foot and there is never more than a minute amount of fuel in the fuel pump and carburetor at any time; (3) the net volume of each of the engine compartments is very small, which minimizes the oxygen available to support combustion; and (4) the electrical systems are sealed to prevent an electrical spark. Therefore, granting the requested exemption from §183.610(a)(2) of the Ventilation Standard in Subpart K of Part 183 will not adversely affect boating safety.

The present ventilation regulations in Subpart K of Part 183 were intended to apply to conventional types of boats powered by inboard or sterndrive engines or equipped with gasoline generators. These engines may emit gasoline fuel vapors. The ventilation regulations are intended to remove such vapors; however, the fuel systems on the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT models are not designed in the same way as the fuel system on a conventional inboard or sterndrive boat. The fuel systems on the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT are sealed to prevent leakage. As a result, the Jetsurf, Jetkayak, Jetkayak GT, Jetnami and Jetnami GT, achieve an acceptable level of safety, and compliance with §183.610(a)(2) is unnecessary.

In consideration of the foregoing, I find that to grant this exemption would not adversely affect boating safety. Therefore, pursuant to the authority contained in 46 U.S.C. 4305 and Department of Homeland Security Delegation No. 170.1(92), which authority has been delegated to me by the Commandant, an exemption from the requirements of Subparts B, C, F, J and Section 183.610(a)(2) of Subpart K of Part 183 of Title 33, Code of Federal Regulations is hereby granted to Aquanami, LLC, subject to the following provisions:

(1) The exemption from Subparts B, C, F, J, and Section 183.610(a)(2) of Subpart K applies only to the following boats manufactured by Aquanami, LLC:

<u>Jetsurf</u>	<u>Jetkayak</u>	<u>Jetkayak GT</u>
Length: 100"	Length: 104"	Length: 115"
Beam: 27.5"	Beam: 28.5"	Beam: 29"
Persons Capacity: 1	Persons Capacity: 1	Persons Capacity: 1
Dry Weight: 110 lbs.	Dry Weight: 128 lbs.	Dry Weight: 143 lbs.
CuFt Flotation: 3.9	CuFt Flotation: 4.2	CuFt Flotation: 4.2

(2) The exemption from Subpart J and Section 183.610(a)(2) of Subpart K applies only to the following boats manufactured by Aquanami, LLC:

<u>Jetnami</u>	<u>Jetnami GT</u>
Length: 121"	Length: 107"
Beam: 27.5"	Beam: 38.25"

(2) Each Jetsurf, Jetkayak and Jetkayak GT boat, in lieu of a certification label, shall have permanently affixed to it, in a location clearly visible to the operator when boarding the boat or getting the boat underway, a label which contains the following information:

(a) The name, Aquanami LLC, and the city and State where the company is located; and

(b) The words:

“THIS BOAT IS NOT REQUIRED TO COMPLY WITH THE FOLLOWING U.S. COAST GUARD SAFETY STANDARDS IN EFFECT ON (insert date of certification or the words ‘THE DATE OF CERTIFICATION’):

- * Display of Capacity Information
- * Safe Loading
- * Flotation
- * Fuel System
- * Powered Ventilation

AS AUTHORIZED BY U.S. COAST GUARD GRANT OF EXEMPTION (CGB 11-004).”

(2) Each Jetnami and Jetnami GT boat, in lieu of a certification label, shall have permanently affixed to it, in a location clearly visible to the operator when boarding the boat or getting the boat underway, a label which contains the following information:

(a) The name, Aquanami LLC, and the city and State where the company is located; and

(b) The words:

“THIS BOAT IS NOT REQUIRED TO COMPLY WITH THE FOLLOWING U.S. COAST GUARD SAFETY STANDARDS IN EFFECT ON (insert date of certification or the words ‘THE DATE OF CERTIFICATION’):

- * Fuel System
- * Powered Ventilation

AS AUTHORIZED BY U.S. COAST GUARD GRANT OF EXEMPTION (CGB 11-004).”

(3) The labels required as a provision of this exemption must meet the requirements of §§181.17 and 181.19 Title 33, Code of Federal Regulations.

(4) This exemption is effective on its date of issuance and terminates on three years from the date of issuance below, unless sooner superseded, rescinded or otherwise terminated.

DONALD J. KERLIN
U.S. Coast Guard
Acting Chief, Boating Safety Division
By direction of the Commandant

Issued in Washington, D.C. on: May 6, 2011

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Office or Division	CG-0944	CG-54223	CG-5422						
Responsible Initials									
Intra-Office Initials									
Date Out									