



UNITED STATES COAST GUARD

Report of Investigation Into the Loss of Life During the Thunder On The Narrows Race Event Near Kent Narrows, MD on June 28, 2015



U.S. Department of
Homeland Security

United States
Coast Guard



Commandant
United States Coast Guard

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16732/ IIA# 5167475
21 February 2023

**ALLISION OF THE POWER BOAT THIS IS HEAVEN WITH SPECTATOR VESSELS
DURING THE THUNDER ON THE NARROWS RACE RESULTING IN LOSS OF LIFE
AND MULTIPLE INJURIES IN PROSPECT BAY NEAR HOG ISLAND, MD
ON JUNE 28, 2015**

ACTION BY THE COMMANDANT

The record and the report of the investigation convened for the subject casualty have been reviewed. The record and the report, including the findings of fact, analysis, conclusions, and recommendations are approved subject to the following comments. This marine casualty investigation is closed.

ACTION ON RECOMMENDATION

Recommendation 1: It is recommended that the Commandant consider the lessons learned from this investigation and provide additional guidance on the Marine Event permitting process for power boat races throughout the Coast Guard. This will help ensure consistency of the Marine Event permitting process for power boat races throughout the Coast Guard.

Action: I concur with this recommendation. In March 2016 the Coast Guard published Waterways Management (WWM) Marine Event Permitting Tactics, Techniques, and Procedures (TTP) that provides guidance on the permitting process. The Waterways Management training course is incorporating the details of this incident as a case study during the courses' the next course revision.

Recommendation 2: It is recommended that the Commandant develop a method that better ensures each COTP reviewing Marine Event permit applications for power boat races occurring in their respective COTP zones are aware of the criticality in ensuring that the section of chart and/or scale drawing of the race course required by 33 CFR 100.15(d) (9) accurately depicts the inside and outside course markers, proposed spectator fleet area(s) if applicable, buffer zone(s), and the race area from the sponsor prior to the approval of the Marine Event application.

Action: I concur with this recommendation. As mentioned in recommendation 1, the Coast Guard now has a TTP detailing the Marine Event Permitting process. This also includes the requirement for the sponsor to submit a to scale chart of the event.

Recommendation 3: The American Power Boat Association (APBA) should consider revising Rule 11 "Driver Qualifications" of the 2015 APBA Rules for Inboard Racing to require that "Unqualified

Rookies” and/or “New Drivers” obtain more experience, training, and familiarity with the hydroplane class they are attempting to qualify for prior to competing or qualifying with other qualified drivers involved in an actual competition.

Recommendation 4: It is recommended that APBA develop separate training and qualification requirements for first time fully enclosed cockpit drivers to ensure safe operation on a racecourse prior to allowing participation in competitive events. While the APBA has required capsule training, it concentrates on driver extraction and use of self-contained breathing air systems. A requirement to include a driver’s test for new fully enclosed cockpit drivers would aid in providing driver familiarity and proficiency level prior to competing or qualifying in an actual competition.

Recommendation 5: The APBA should develop a means to determine that two-way continuous communication required by certain hydroplane classes in the 2015 APBA Rules for Inboard Racing is equipped, operational and being utilized prior to the commencement of any competitive race, or “milling period” by qualified drivers, and qualified and unqualified rookies. The proposed method of ensuring two-way continuous communication is maintained should be submitted to Commandant for review and comment.

Recommendation 6: It is recommended that the APBA require that all qualified drivers and qualified and unqualified rookie Inboard hydroplane drivers that require two-way continuous communications have a “spotter” assigned to observe and relay their location on the racecourse to them along with the location of the other competing drivers during competitive events to include the five minute “milling” period.

Recommendation 8: It is recommended that the APBA revise the APBA Regatta Insurance application part VI “Underwriting Information”, line A-4, that asks: “Are spectators permitted access to the water for wading or swimming?” to include rafting or otherwise entering the water.

Recommendation 9: It is recommended that the APBA develop recurring familiarization training for Referees in the Inboard category of power boat racing to ensure that all Referees maintain adequate knowledge of the APBA Inboard Rules, General Safety Rules, and specific class rules and are additionally aware of recent changes or updates to these rules.

Recommendation 10: It is recommended that the APBA consider requiring that sponsors holding APBA sanctioned power boat races use distinguishing marking devices to delineate between the outside course markers and any spectator fleet areas if established. This will enable the sponsor and the USCG PATCOM and/or patrol to more easily identify any race event layout requirements and additionally verify that it’s in compliance with the chart and/or scale drawing of the course layout provided with the Marine Event application and the approved Marine Event Permit (CG-4424).

Action on Recommendations 3-6 & 8-10: I concur with the intent of recommendations 3-6 and 8-10. The Coast Guard will share the Report of Investigation and Safety Recommendations with APBA for their consideration.

Recommendation 7: It is recommended that sponsors of power boat racing events occurring within the COTP Baltimore zone conduct a survey of their respective course location to ensure that the location of the outside course markers and recommended minimum safe spectator distance is maintained throughout the proposed spectator fleet locations. The results of the surveys should be submitted to the APBA and USCG Sector Maryland-NCR prior to their next planned power boat racing event.

Action: I concur with the intent of this recommendation. The Coast Guard will share the Report of Investigation and Safety Recommendations with Captain of the Port for Sector Maryland National Capital Region, formally Sector Baltimore.

Recommendation 11: It is recommended that Sector Maryland-NCR require that the sponsor submit a copy of the completed APBA Regatta Insurance Application and APBA approval of the application for all future APBA sanctioned power boat races occurring within the COTP Maryland-NCR zone with the Marine Event application to ensure that event is sanctioned by the APBA and that safe spectator fleet distances are established.

Action: I concur with the intent of this recommendation. The Coast Guard will share the Report of Investigation and Safety Recommendations with Captain of the Port for Sector Maryland National Capital Region for their consideration.

Recommendation 14: It is recommended that the Commandant ensure that each COTP reviewing Marine Event permit applications for power boat races occurring within their respective COTP zone that if the sponsors of power boat races indicate that the spectators will be swimming, rafting, or otherwise entering the water, the COTP request that the sponsor submit a safety plan that addresses how the sponsor intends on managing spectators swimming, rafting, or otherwise entering the water particularly, when hydroplane boats are on the race course or operating during the event.

Action: I concur with this recommendation. As mentioned in recommendation 1, the Coast Guard now has a TTP detailing the Marine Event Permitting process. This includes requiring the sponsor to address safety concerns prior to the Coast Guard issuing a permit. If a sponsor's initial, or subsequent, Marine Event permit application does not adequately address safety concerns, the Coast Guard will notify the event sponsor his/her planned actions are insufficient. If the sponsor fails to address safety concerns, the Coast Guard may issue a disapproval letter.

Recommendation 15: It is recommended that the Commandant develop a method that better ensures that COTP's throughout the Coast Guard and their respective designated PATCOM and/or PATCOM's representative verify with the power boat race event sponsor the overall course layout paying particular attention to the location of the outside course markers, spectator areas, and safe spectator fleet distances and compare the course layout with the chart and scale drawing of the course layout provided with the Marine Event application and the approved Marine Event Permit (CG-4424)

Action: I do not concur with the recommendation. The primary responsibility to protect participants and spectators from the hazards of an event rests solely on the event sponsor. The primary responsibility of the PATCOM is to control watercraft not associated with the event. It should be noted, issuance of a Coast Guard permit for marine event is only an approval that the event may be held; an approval is not an endorsement of the event, nor does it guarantee the event will be accident-free. By issuing a permit for marine event, the Coast Guard does not assume responsibility for the safety of the event.



Captain, U.S. Coast Guard
Director, Office of Inspections and Compliance

FIRST ENDORSEMENT on CG SECTOR MD-NCR memo 16732 of 30 Aug 2016

From: [REDACTED]
CGD Five (dp)

To: COMDT (CG-INV)

Subj: THUNDER ON THE NARROWS ALLISION WITH MULTIPLE INJURIES AND LOSS OF LIFE ON JUNE 28, 2015.

1. I have reviewed the Investigating Officer's report and Sector Maryland-National Capital Region's forwarding memo. I forward and offer the following comments for your review and consideration.

2. Comments on the Report: This accident involved a power boat race where a participating race boat veered outside the racecourse and allided with a spectator boat and rafts anchored nearby. The allision resulted in the tragic death of a seven year-old girl and serious injuries to three adults. Broadly speaking, a combination of factors contributed to the accident. The direct causal factors include actions of an inexperienced race boat driver, exacerbated by the event sponsor's failure to follow their own qualification rules and place or manage spectator areas in accordance with the event's insurance requirements and marine event permit conditions.

3. Comments on Findings of Fact: As it relates to fact #40, the regulation was first published on May 8, 2009, not 2008; and has been updated (superseded) five times since 2009. The regulation that was effective at the time of the accident was published in the Federal Register on April 16, 2015 as a Final Rule with an effective date of May 18, 2015.¹

4. Comments on Conclusions:

a. As it relates to conclusion #1.b.6, it should be noted the Thunder on the Narrows exemplary 25 year safety record may have allowed complacency to affect the event's permitting. During the permitting safety review stage, the Sector determined the race posed an extraordinarily high degree of risk, yet did not require the sponsor to submit a safety plan or sufficient detail concerning the establishment, location and marking of designated spectator areas. The information accepted by the Sector included only a rough hand drawn sketch on a photocopied nautical chart. The Sector never required geographical coordinates of the race course, approximate location of inside and outside course markers, or minimum safe distances for spectator vessels. This insufficient level of detail effectively made both pre-event verification and on-scene enforcement of risk mitigating measures (e.g., the adequacy of the existing special local regulation and the location of designated spectator and buffer zones) difficult.

b. As it relates to conclusion #1.c.1, it should be noted the post-casualty inspection of the damaged GNH-12 showed moisture, rot and mold on structural members and the hull, including signs of delamination and rusted fasteners. This evidence along with testimony

¹ USCG-2014-1011; Special Local Regulations and Safety Zones – Recurring Marine Events and Fireworks Displays within the Fifth Coast Guard District, Final Rule, 16 Apr 2015

provided by both the boat's primary driver and the driver involved in the collision indicate its weight and structural condition may have negatively impacted the hydroplane's performance characteristics, making it more difficult to remain on plane and more susceptible to sea spray, thus obstructing the driver's visibility. The degree this contributed to the cause of the casualty is unknown.

c. As it relates to conclusions #1.d.3 and .5 and the associated analysis, I agree minimum safe spectator distances (i.e., buffer zones) were not maintained, and swimming, wading or rafting of spectators should have been prohibited. I disagree however, with the assertion that the Coast Guard's authority and responsibility rested primarily with controlling the activities within the regulated area as established, and absent the event sponsor bringing a safety concern to the Patrol Commander, the Patrol Commander's responsibilities were limited. The ability to recognize and mitigate risk is a critical component of exercising effective control over marine events. As such, the Coast Guard has broad discretion to permit or deny a marine event and to determine the preconditions necessary to ensure safety of life. Generally, this is done through a collaborative process and the negotiation of acceptable safety measures with the event sponsor, which is in turn documented within the event's safety plan and/or permit conditions. While the primary responsibility for the event's safety is the sponsors, nothing limits the Coast Guard's authority and responsibility to ensure the sponsor sufficiently recognizes and manages the event's risks during the event's planning and execution stages. Likewise, nothing limits the Coast Guard's authority and responsibility to postpone, temporarily cease, or terminate an event in response to a dangerous condition, once identified, if necessary to ensure public safety.

d. As it relates to conclusions #2 and #3.e, it should be noted that in response to the event's extraordinary high degree of risk, the Sector designated the Station Annapolis Officer-in-Charge the event's Patrol Commander with specific assigned duties.² None of these duties were executed. At the time of the accident, there was no Coast Guard or Auxiliary member on-scene. The absence of an on-scene Patrol Commander with law enforcement authority, or his representative, made it difficult to effectively monitor event safety and sponsor performance and impossible to enforce permitted conditions.

5. Comments on Recommendations:

a. Recommendations #8.a-d. I concur with the intent of these recommendations; however, I believe COMDTINST M16751.3, CGTTP 3-71.1 and CGTTP 3-71.15 provide adequate guidance and direction for effective oversight of power boat races. I note however, the Coast Guard has not prescribed Patrol Commander Personnel Qualification Standards (PQS) in support of the Ports and Waterways Safety mission, as was done for the Ports, Waterways and Coastal Security mission.³ I recommend Commandant consider developing a Patrol Commander PQS specific to the Ports and Waterways Safety mission due to the complex nature and wide variety of risks associated with marine events, and the need to affirmatively exercise the Coast Guard's authority and responsibility to postpone, temporarily cease, or terminate an event as necessary to ensure public safety. These duties are not covered in other types of qualifications held by a Coast Guard Officer-in-Charge, coxswain, and/or underway Officer of the Deck.

² CG Sector Baltimore memo 16751 of 15 May 2015

³ COMDTINST M16240.6

b. Recommendation #8.g. I concur with the intent of this recommendation; however, while an event sponsor may receive a formal sanctioning designation from a national or regional sanctioning body that includes or requires insurance, the Coast Guard may not require it. If during the safety review, the Coast Guard has concerns the event sponsor will be unable to ensure public safety, then the permit should be denied unless the sponsor provides additional information that demonstrates the sponsor has a safety plan that is sufficient. Compliance with this safety plan should be a condition of the permit and enforced during the event.

6. Actions by the District:

a. Each year, Fifth District Sectors enforce approximately 90 safety zones and 45 special local regulations related to marine events including about 16 high-speed boat races. Following this accident, I directed Sector Prevention Chiefs to collaborate with power boat race sponsors and review the sufficiency of existing regulated areas and ensure race areas, spectator areas and buffer zones were adequately designated to minimize potential conflicts between spectators and race boats.⁴ The results of these reviews were included in the 2016 annual update to 33 CFR Parts 100.501 and 165.506.⁵ During this regulatory update, the Fifth District withdrew the special local regulation for the Thunder on the Narrows at the request of the event sponsor, Kent Narrows Racing Association. There was no race held in 2016.

b. Based on evidence that Station Annapolis personnel failed to properly plan and execute their assigned Patrol Commander duties, the Fifth District has initiated an investigation to more fully document the facts related thereto. This will facilitate a more in-depth consideration of what disciplinary actions, if any, are appropriate in this matter.

c. The Fifth District staff shared the preliminary results of the aforementioned reviews and this investigation with the Coast Guard Force Readiness Command, Tactics, Techniques and Procedures Division (FC-P) as part of a TTP working group. The preliminary results of these reviews and investigation were considered during the development and Service-wide release of CGTTP 3-71.15.

d. The District Response Chief and I jointly provided amplifying direction to Sector Commanders concerning the delegation and exercise of effective control over marine events during the 2016 marine event season.⁶ The preliminary results of the aforementioned reviews and investigation were considered during the development and release of this direction. Further, these results were shared and effective marine event permitting and oversight were discussed during a Leadership event attended by all Fifth District Sector Commanders, Commanding Officers and Officers-in-Charge in December 2016.

e. During the 2017 marine event season, I have directed internal audits be conducted of the marine event programs at each of the District's four Sectors as per COMDTINST 5200.4.

⁴ CGD Five (dp) memo 16751 of 14 Oct 2015

⁵ USCG-2015-0854; Special Local Regulations and Safety Zones – Recurring Marine Events and Fireworks Displays within the Fifth Coast Guard District, Final Rule, 14 Sep 2016

⁶ CCGDFIVE Portsmouth VA 261557 May 16/Coast Guard Oversight of Marine Events – permitting, risk-mitigation, planning, and PATCOM execution

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16732
31 Jan 2017

Review of these audits will inform me as I consider the need to develop a District procedure that supplements the policy guidance of COMDTINST M16751.3.

#

Copy: CG LANTAREA (LANT-54)
CG Sector Maryland-NCR



16732
30 Aug 2016

MEMORANDUM

From: [REDACTED], CWO
CG Sector Maryland-NCR

To: [REDACTED]
CG Sector Maryland-NCR

Thru: [REDACTED] [REDACTED] [REDACTED]
CG Sector Maryland-N

Subj: THUNDER ON THE NARROWS ALLISION WITH MULTIPLE INJURIES AND
LOSS OF LIFE ON JUNE 28, 2015

Ref: (a) COMDTINST 16000.10A, USCG Marine Safety Manual, Volume V
(b) Title 46 Code of Federal Regulations, Part 4
(c) Interagency Agreement between USCG Sector Baltimore and the State of Maryland,
Natural Resource Police.

1. In accordance with reference (a), an informal investigation was conducted into the allision of the Grand National Class Hydroplane (GNH-12) "THIS IS HEAVEN" with recreational vessels during the June 28, 2015 "Thunder on the Narrows" boat race. The allision caused property damage, multiple injuries, and a loss of life. In accordance with reference (c), the United States Coast Guard (USCG) is the lead investigatory agency for all recreational boating accidents occurring during USCG permitted marine events. The "Thunder on the Narrows" regatta was a USCG permitted event. USCG Sector Baltimore¹ led the investigation with assistance from the Maryland Natural Resource Police (MNRP).

This memorandum is completed in accordance with reference (a) and serves as the Report of Investigation detailing the causal factors that led to the casualty, as well as, proposed safety recommendations to prevent similar accidents. All times in this Report of Investigation are approximate and referenced in local time. All evidence, correspondence, and testimony gathered during the investigation and used to create this report are included in the Coast Guard's electronic database (MISLE) incident investigation activity 5167475.

2. Executive Summary

On the afternoon of June 28, 2015, the Grand National Class Hydroplane (GNH) "THIS IS HEAVEN – GNH-12" was participating in a hydroplane boat race with three other GNH participants. The "Thunder on the Narrows" power boat race was sanctioned by the American Power Boat Association (APBA) held at Prospect Bay near Kent Island, MD. The annual power boat race was permitted by the USCG and sponsored by the Kent Narrows Racing Association

¹ On 22MAR16, USCG Sector Baltimore was renamed to USCG Sector Maryland-National Capital Region (NCR). For the purpose of the investigation report, Sector Maryland-NCR is referred to as Sector Baltimore.

(KNRA). The event was the Eastern Division Championship and featured multiple classes of power boats that raced on a 1 ¼ mile oval shaped course with two turns and a front and a back stretch. It was the first time that the Grand National Class Hydroplane was participating at the “Thunder on the Narrows” since 2005.

The operator of GNH-12, Mr. [REDACTED] was attempting to qualify as a Grand National Hydroplane driver while the other three racers, who were previously qualified and eligible for placement into the race. Mr. [REDACTED] had previous experience in the Vintage and Historic category of power boats which was not considered competitive power boat racing. This was his first time participating in a competitive Grand National Hydroplane power boat race.

While rounding turn one during the 5 minute “milling” period prior to the official start of heat 1, GNH-12 slowed down and veered to the right towards the outside of the race course. This movement allowed three qualified drivers to pass on his inside to obtain inside position for the official start of the race.

As GNH-12 slowed down, [REDACTED] vision was obstructed when water began spraying over the port sponson onto the windshield of the canopy. Unable to locate the hydroplanes passing on his inside, [REDACTED] maintained a starboard course to stay clear of the other racers. With his vision obstructed, [REDACTED] headed toward a fleet of 10 recreational spectator vessels that were moored side-by-side or anchored at the beginning of turn two.

[REDACTED] power boat struck three spectators who were on rafts and allided with recreational vessel’s stern (MD2223D). Directly after the impact, [REDACTED] came to an abrupt stop and shut down the GNH-12’s engine. The impact caused injury to three spectators in the water and flying debris from the GNH-12 injured another spectator who was located on the dive platform of another recreational boat the “SEA MONKEY” (MD4764BS). Additionally, the impact caused significant damage to the MD2223D and two other recreational vessels moored alongside the impacted vessel.

Shortly thereafter, the event organizers dispatched safety boats to the incident location and transported the injured victims back to shore. Two victims that sustained serious injuries were transported via helicopter to the University of Maryland Hospital in Baltimore, MD. The third victim was transported to Anne Arundel County Hospital by ambulance and was released later that night sustaining only minor injuries. The fourth victim was transported by ambulance to Queen Anne’s Emergency Center where she was pronounced dead.

The medical examiner’s report revealed the decedent’s cause of death was due to multiple contact injuries.

3. Vessel Data

Name:	THIS IS HEAVEN
Official Number:	GNH-12

Flag:	US
Vessel Type:	Grand National Class Hydroplane
Year Built:	1986
Hull Material:	Wood
Built By:	[REDACTED]
Weight:	Approximately 2700 lbs
Registered Length:	22'
Breadth:	Approximately 11'
Propulsion:	Fixed Pitch Propeller
Owner:	[REDACTED]



Figure 1: Photo of the GNH-12 “THIS IS HEAVEN” prior to incident (unknown location/date).

4. Personnel Data

Deceased	Age	Next of Kin
Julianne Rosela	7	[REDACTED]

Injured	Age	Injury
[REDACTED]	[REDACTED]	Head trauma, multiple spinal fractures, broken collarbone
[REDACTED]	[REDACTED]	Broken collarbone, multiple rib fractures
[REDACTED]	[REDACTED]	Lacerations

Operator	Age	Length of time onboard	Experience in boat racing
[REDACTED]	[REDACTED]	First time as driver	30+ years

Additional Racers in Heat	Age	Vessel ID	Vessel Name
[REDACTED]	[REDACTED]	GNH-68	ALMOST HEAVEN
[REDACTED]	[REDACTED]	GNH-11	DADDY OH II
[REDACTED]	[REDACTED]	GNH-33	BLUE MULE

Additional Parties	Role
[REDACTED]	Vessel Owner of GNH-12
[REDACTED]	Primary driver and part owner of GNH-12
American Power Boat Association (APBA)	Sanctioning entity for “Thunder on the Narrows” race
Kent Narrows Racing Association (KNRA)	Sponsoring organization for “Thunder on the Narrows” race
United States Coast Guard Sector Baltimore	Permitting Organization for “Thunder on the Narrows” race.

5. **Findings of Fact**

American Power Boat Association (APBA):

1. The APBA was created in 1903 as an association for powerboat racing. It is the United States sanctioning authority for the Union International Motonautique (UIM). UIM is a world

governing body for powerboat racing. The APBA sanctions races in a number of different categories including the Unlimited Hydroplanes, Inboard/Outboard Performance Craft, Stock Outboard, Modified Outboard, Pro Outboard, Outboard Drag, Offshore and Special Events classes.

2. The APBA promotes powerboat racing and the use of powered water craft. Their responsibilities consist of improving design and construction, formulating rules, and governing speed trials for endurance and competition within the power boat community.
3. The APBA is the U.S. governing body for power boat racing. At the time of the incident, there were no federal or state regulations that monitored the construction, design, safety and firefighting equipment or inspection of power boats used for racing.
4. The APBA sanctions over 150 races on average per year throughout the United States. In order for a member to earn points towards a championship, the race must be sanctioned by the APBA. In order for sponsors of races to be sanctioned by the APBA they must apply to the APBA for a sanctioning of a new race. This includes completing the APBA Regatta Insurance Application and submitting the completed application to the APBA for sanctioning approval.
5. The APBA Regatta Insurance application was a requirement for the APBA sanctioning of a power boat race. The insurance application required that the event sponsors complete the application and submit it to APBA prior to approval of the race sanction. The Insurance application required that sponsors submit an event course diagram, photos of the race site, and established minimum safe spectator distances.
5. The APBA is comprised of over 1000 voluntary members and included an executive board of directors elected by members of the Association. The boards of directors acted as the governing body for the Association and are voluntary positions.
6. Participation in APBA sanctioned races or testing sessions required a financial commitment by the participating owners and drivers. Owners and drivers of hydroplanes were required to pay out-of- pocket expenses for lodging, transportation, and logistics costs for event attendance. As a hobbyist sport, owners often invested a large amount of personal wealth into the maintenance and upkeep of their respective hydroplanes.
7. The APBA is comprised of 14 regions throughout the United States. Each region contains a regional organization and is responsible for its own regional Bylaws. The “Thunder on the Narrows” race took place in Region 4.
8. The APBA has eight racing categories which include:
 1. Inboard
 2. Inboard Endurance
 3. Modified Outboard
 4. Outboard Performance Craft
 5. Professional Racing Outboard

- 6. R/C Model
- 7. Stock Outboard
- 8. Unlimited

9. Each racing category, with the exception of the Unlimited, is represented by a Racing Commission. Each Racing Commission within the APBA is responsible for developing and maintaining rules for each class in their respective category.

10. The APBA developed “General Safety Rules” that applied to all categories of racing with the exception of the Unlimited, Offshore category, and Special Events. At the time of the investigation, the most recent copy of the “General Safety Rules” was published on February 17, 2015, and became effective on March 19, 2015.

11. The GNH-12 was considered a Grand National class hydroplane in the Inboard racing category. The following is a list of classes of vessels within the Inboard racing category:

1 Litre	Grand National Hydroplanes
1.5 Litre Stock	Grand Prix Hydroplanes
2.5 Litre Modified	Jersey Speed Skiff
2.5 Litre Stock	K Racing Runabout
5 Litre	National Modified Hydroplane
Cracker box	Pro Stock
Sportsman Entry (SE)	Super Stock

12. The APBA adopted general rules for the Inboard racing category related to orderly conduct and minimum requirements for general Inboard Racing. At the time of the investigation, the most recent version was dated June 10, 2015. Most classes within the Inboard category have a specific set of rules for construction, design, racing parameters, and specific training requirements for certain categories.

13. All boats within the Inboard racing category are required to be certified by a Safety Inspector and must complete an annual safety inspection using an “Equipment Inspection Checklist” supplied by APBA. The inspector verifies compliance with all safety rules applicable to that boat at the first race of the season.

14. The annual safety inspection typically consisted of a cursory exam covering major steering components, struts, fuel lines, motor and battery mounts, sling lift points, firefighting equipment, reinforced cockpit components, and driver’s escape hatch. Operational testing of the engine and a hull examination was not required.

15. Inspectors are appointed for each Inboard racing event from a list of APBA Inboard approved inspectors. In order for inspectors to be approved, they were required to complete an annual written open book Inspector’s examination and submit it to the Inboard Racing Commission for approval. Inspectors are voluntary positions comprised of current and past owners, operators, and crew.

16. The APBA has an additional category of power boats entitled Vintage and Historic. The Vintage and Historic category was comprised of all former racing boats approved for racing prior to 1992. The Vintage and Historic class of power boats adopted its own bylaws and was not inclusive in the Inboard racing category.

17. The APBA 2015 Vintage and Historic bylaws stressed that none of the Vintage and Historic power boat events were competitive in nature and were strictly for exhibition.

18. The APBA 2015 Vintage and Historic bylaws stated that capsule, cage or reinforced cockpit inboard hydroplanes were not permitted to participate in Vintage and Historic events.

19. The Grand National class requirements stated that it was mandatory for all Grand National hydroplanes competing have two-way radio communications. There was no requirement for two-way radio communication in the Vintage and Historic category.

Driver Qualifications:

20. At the time of the incident, there were no federal or state regulations that required a license to operate power boats for racing. In lieu of federal or state regulations, the APBA Inboard Racing commission adopted rules for driver qualifications. The APBA issued licenses to personnel who have qualified to race in their respective racing classes

21. Drivers who intend on competing in inboard racing must have completed a Federal Aviation Administration (FAA) Class I, II or III, or a Department of Transportation (DOT) physical and present the signed medical certificate to APBA headquarters. Medical certificates remained current from the certificate date and expired on 12:00am of the second anniversary of the physical.

22. New drivers were designated as an “Unqualified Rookie” until completion of the qualification process. After completion, new drivers were designated as a “Qualified Rookie” for the remainder of the first season.

23. New drivers were given a written open book examination, followed by an oral review of the examination with a referee or the Inboard Commissioner, to demonstrate their knowledge of course safety and racing rules before being approved to enter the race course. At each race during their rookie season, all new drivers and rookies were required to present themselves to the referee, and were required to be introduced at each driver’s meeting as a rookie driver.

24. Unqualified Rookie drivers were required to run four heats starting at the rear of the qualified drivers and advance only to a position predetermined by the referee. After successfully completing the first four heat requirement, an unqualified rookie driver was required to run four additional heats, advancing only to a position predetermined by the referee. The unqualified rookie driver may only start in the farthest outside position during these heats. To become fully qualified to race, the new driver was required to get signatures from four qualified drivers from their class and at least one referee they have raced under

25. Unqualified rookies could run qualifying heats during the World Championships, APBA Summer Nationals, APBA Divisional Championships or APBA North American Championships, following referee instructions, to obtain the necessary heats to become a qualified driver, but were not eligible to advance to the finals.

26. Rookie drivers in reinforced cockpits, whose helmets were not readily visible, were required to put the rookie “X” on the cockpit or canopy as near the driver’s head as possible, without obstructing their vision. The “X” could be taped or painted on and had to of been at least 12” long and 1” wide on both sides of the hull in a color strongly contrasting the color behind it. .

27. New Grand National Hydroplane driver applicants were required to obtain four written signatures of approval from qualified drivers in the GNH class. The applicant was required to present the driver’s signatures of approval to apply, a brief summary of previous experience, a copy of his current physical, and his APBA membership number to the referee for the weekend. Upon approval from the referee, the applicant could then participate in a minimum of three heats, starting behind the qualified drivers. After completing three heats, the referee discussed with four other qualified GNH drivers present before approving the applicant as a qualified driver.

28. Vintage and Historic bylaws allowed for new participants to take a few laps alone on the course to gain experience before entering exhibition heats.

Inboard Hydroplanes

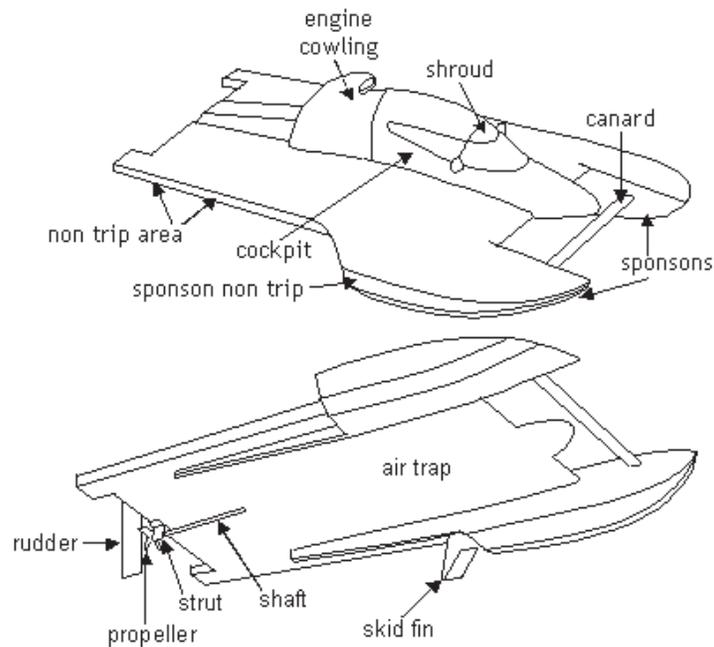


Figure 2: Anatomy of a typical hydroplane arrangement

29. A hydroplane utilizes a three point suspension system which contributes to the hydroplane’s ability to “plane”. The two forward surfaces (sponsons) are lower than the main hull and are outboard on either side. The third point is the propeller at the aft end of the boat.

30. When at full speed, hydroplane boats create a cushion of air beneath the hull, which lifts the boat out of the water, and was described as “hydroplaning,” generally, only the front sponsons, the skid fin, propeller and rudder are in contact with the water when the boat is hydroplaning.

31. The canard is used to adjust how high the nose flies over the water. The canard could be set to a fixed maximum position and drivers could control the canard utilizing a foot pedal to help direct the amount of air flow underneath the vessel.

32. The cockpit incorporates a safety canopy and was where the driver sits to operate the boat. It contains instruments, a single seat with 5 point harness and an optional air supply for the driver. The canopy is designed to enclose the cockpit and keep water out of the cockpit and the operator’s field of vision. The GNH-12 had a fully enclosed cockpit.

33. The skid fin aids the operator in controlling the turns. Since the entire vessel—with the exception of generally the sponsons, skid fin, rudder and propeller, is out of the water when hydroplaning; there is less hull resistance to aid in turning. The skid fin assists turn control at higher speeds

Vessel Construction

34. The GNH 12 was a Grand National Class Hydroplane constructed primarily of lightweight wood with a layer of fiber reinforced plastic on the deck. There were also areas of lightweight riveted aluminum on the bottom of the sponsons and a portion of the stern in the vicinity of the strut and propeller. The vessel was 22' long, approximately 11' wide and weighs approximately 2700 lbs.



Figure 3.2- Images of starboard quarter of the GNH-12 taken night of casualty on June 28th 2015



Figure 3.2- Image of the GNH-12's bottom and riveted aluminum areas taken on June 29th, 2015

35. The GNH-12 was equipped with a 468 cubic inches Big Block Chevy racing engine with single four barrel carburetion. The engine is approximately 800 horsepower and was capable of reaching speeds in excess of 150 mph. The lubrication oil system consisted of a dry sump system where pressurized oil is delivered to the engine through a reservoir and returned to the reservoir through the sump pan.

36. The GNH-12 did not contain a transmission system or reduction gear. It was equipped with a direct drive and was not capable of astern propulsion.



Figure 4 - Image of the GNH-12's engine. Image taken on June 29th, 2015

37. The cockpit of the GNH-12 was a fully enclosed type cockpit. It housed the vessel's steering control, ignition controls, water temperature, oil pressure, and RPM gauges. An inoperable speedometer was also mounted. The operator could energize the fixed fire fighting system in the engine compartment. The GNH-12 was not equipped with a radio, but had the means to connect a portable radio. Additionally, there were two foot pedals; one for acceleration and the other was to control the pitch of the canard.



Figure 4.1- Image of the GNH-12's cockpit and controls taken on June 28th, 2015



Figure 4.2- Image of the GNH-12's canard control (left) and accelerator (right)

Marine Event Permitting Process

38. 33 United States Code (USC) 1223 and 33 Code of Federal Regulations (CFR), Part 100 authorizes the USCG to regulate and control regattas and marine parades (marine events) on federal navigable waterways through the issuance of a marine permit. 33 CFR 100.15 states:

An individual or organization planning to hold a regatta or marine parade which, by its nature, circumstances or location, will introduce extra or unusual hazards to the safety of life on the navigable waters of the United States shall submit an application to the Coast Guard District Commander having cognizance of the area where it is intended to hold such a regatta or marine parade.

39. The Coast Guard District Commander for Sector Baltimore's Captain of the Port Zone was the Fifth Coast Guard District.

40. On May 08, 2008, 33 CFR 100.501 *Special Local Regulations; Marine Events in the Fifth Coast Guard District* was revised and a final rule was published that established a table that contained all of recurring annual marine events throughout the Fifth Coast Guard District. The regulation was revised to include all annual recurring marine events in the Fifth Coast Guard District and to reduce the administrative burden of issuing individual, annual special local regulations on the Coast Guard. Special local regulations were defined in 33 CFR 100.35:

The Commander of a Coast Guard District or Captain of the Port (COTP) as authorized by 33 CFR 1.05-1(I), after approving plans for the holding of a regatta or marine parade within his or her district or zone, is authorized to promulgate such special local regulations as he or she deems necessary to insure safety of life on the navigable waters immediately prior to, during, and immediately after the approved regatta or marine parade. Such regulations may include a restriction on, or control of, the movement of vessels through a specified area immediately prior to, during, and immediately after the regatta or marine parade

41. On March 20, 2013, COMDTINST M16751.3 “Permitting of Regattas & Marine Parades” was published. This manual provided significant clarification to longstanding Coast Guard permitting policy. It reinforced the limits of Coast Guard permitting authority and ensured that permits are issued for only the specific portions of larger events over which the Coast Guard has authority. It provided operational guidance for all unit commanders to follow on the marine event permit process. It required a six stage review process for marine events with the following stages of review:

- a. Outreach and Application Stage,
- b. Administrative Review Stage,
- c. Safety Review Stage,
- d. Environmental Review Stage,
- e. Permit Issuance Stage, and
- f. Monitoring Stage.

42. On April 10, 2013, the Fifth Coast Guard District issued a memorandum to all Fifth District Captains of the Port that delegated authority to approve, disapprove and take other action as deemed appropriate on regatta and marine parade permit requests submitted for marine events occurring within their respective Captain of the Port Zone.

43. An annual review was conducted by each COTP within the Fifth Coast Guard District of all recurring marine events that occurred within their respective COTP zone. The annual review ensured that any required changes for each recurring marine event were submitted to the Fifth Coast Guard District for inclusion in the 33 CFR 100.501 table. The changes may include dates of event occurrence, location and changes to the regulated area. During the 2014 annual review, there were no changes submitted by Sector Baltimore to the Fifth Coast Guard District for the Thunder on the Narrows event.

44. The “Thunder on the Narrows” regatta was considered an annual recurring marine event that took place in Sector Baltimore’s Captain of the Port Zone with a published special local regulation located in Table to of 33 CFR 100.501 (b.)11. The “Thunder on the Narrows” was a hydroplane power boat race regatta that was held in Prospect Bay in the vicinity of Kent Island, MD. The marine event has taken place annually since 1990 (25 years) without any serious

injuries, fatalities, or marine casualties. The event was sponsored by the Kent Narrows Racing Association and sanctioned by the APBA.

45. The Kent Narrows Racing Association (KNRA) was formed in 1990 to promote the sport of power boat racing within the community. It was comprised of volunteers who hold annual racing events in the Kent Narrows region of MD.

46. The regulated area coordinates for the Thunder on the Narrows regatta was published in 33 CFR 100.501 and stated: For all waters of the Prospect Bay, enclosed by the following points LAT 38-57.52 N LONG 076-14-48 W, to LAT 38-58-02 N LONG 076-15-05 W, to LAT 38-57-38 N LONG 076-15-29 W, to LAT 38-57-28 N LONG 076-15-23 W, to LAT 38-57-52 N LONG 076-14-48 W. In accordance with 33 CFR 100.501 (c) (3) and (c) (4), *only the event sponsor designated participants and official patrol vessels are allowed to enter the regulated area. Spectators are only allowed to inside the regulated area if they remain within the designated spectator area* .The regulated area coordinates dated back to July 30, 1998 where a temporary special local regulation was published in 33 CFR 100.35.

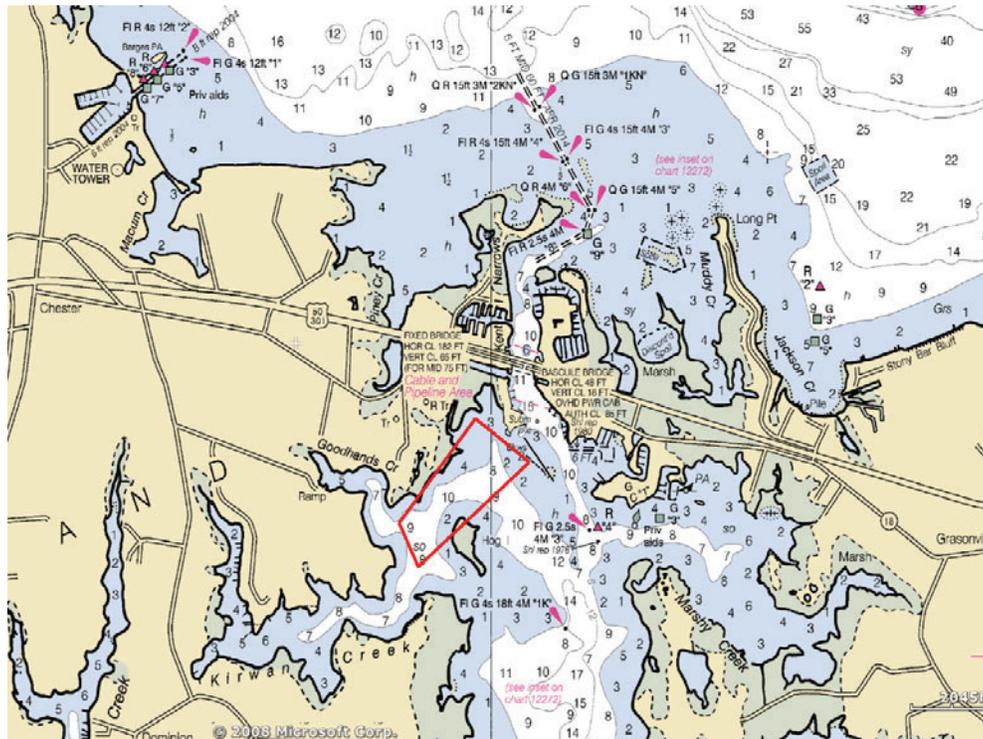


Figure 5.1- Navigational chart overview of the coordinates of the regulated area published in 33 CFR 100.501

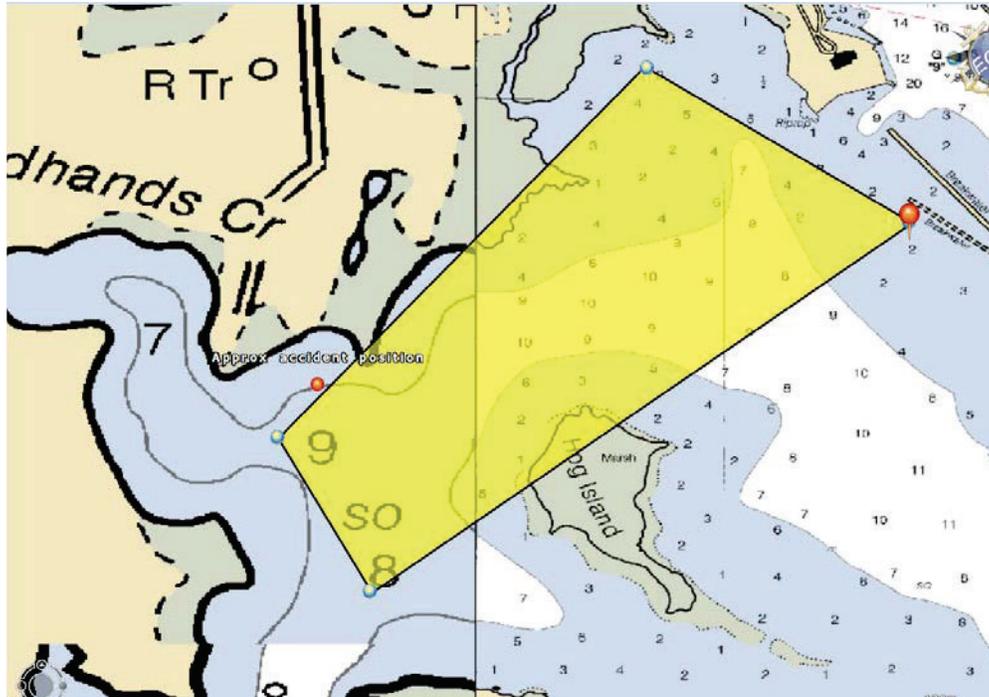


Figure 5.2- Plotted coordinates of regulated area published in 33 CFR 100. 501

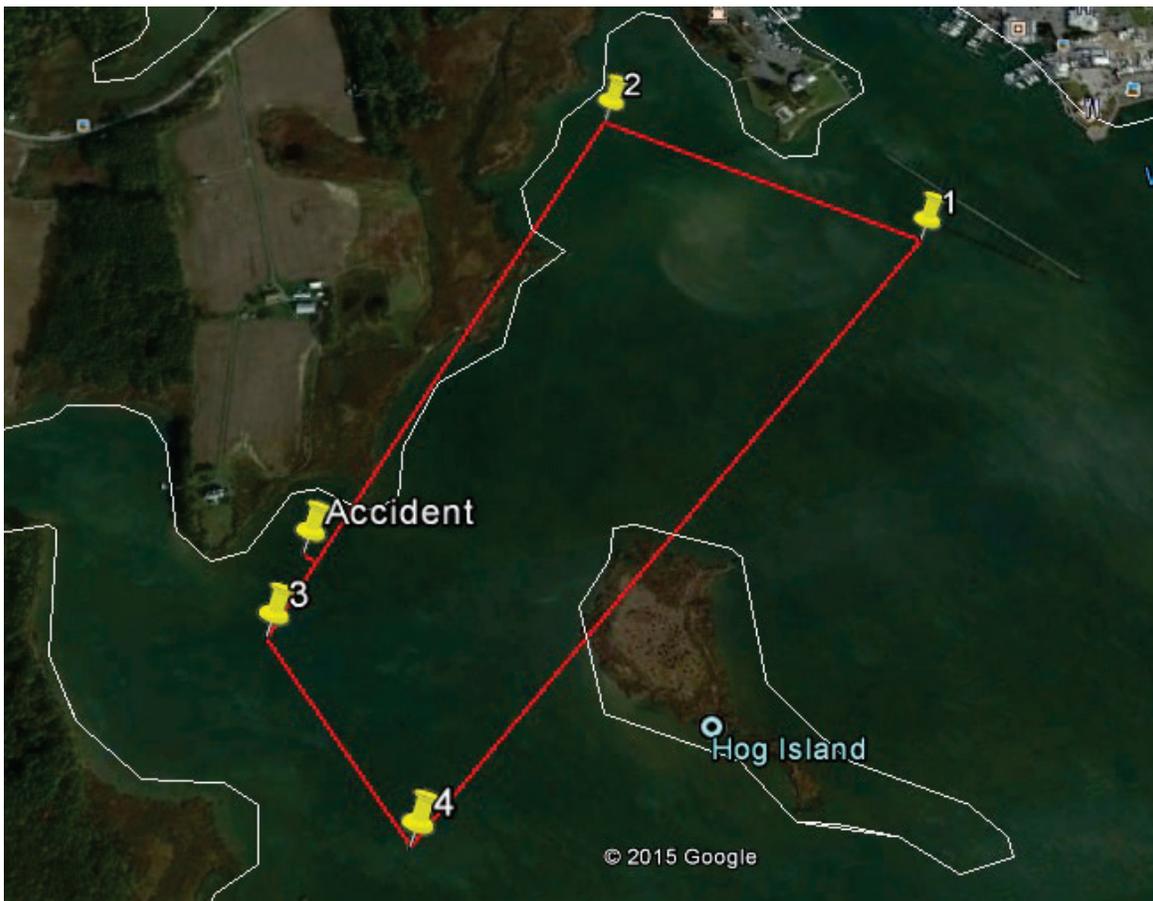


Figure 5.3 – Plotted coordinates of regulated area satellite overview

47. 33 CFR 100.15 required that an individual or organization planning to hold a regatta or marine parade must submit an application to the District Commander having cognizance of where the marine event will be held no less than 135 days before the start of the event. Under certain circumstances, a sponsor may submit an application no less than 60 days before the start of the event. The application shall include: *...a section of chart or scale drawing showing the boundaries of the event, various water courses or areas to be utilized by participants, officials and spectator craft.*

48. On February 06, 2015, KNRA submitted an application for a marine event to USCG Sector Baltimore Waterways branch via Sector Baltimore's Homeport website. The marine event application (CG- 4424) was for the "Thunder on the Narrows" event taking place on Prospect Bay, Kent Island, MD on June 27-28, 2015. The application indicated the event posed an extra or unusual hazard by having high speed boats racing in excess of 140 mph. The application also requested the assistance of the USCG and local USCG Auxiliary with a specific request for one USCG asset, and two to three Auxiliary assets.

49. The application package submitted by the KNRA consisted of the marine event application, a diagram of the proposed race course and spectator areas hand drawn on an image of a section of a navigational chart (chartlet). The hand drawn image did not contain any specific geographical coordinates of the race course, approximate location of inside and outside course markers and minimum safe spectator distances for spectator vessels. The application did not contain a safety plan, a copy of the approved APBA Insurance application which ensured that the event was sanctioned by the APBA, or a diagram of the race course which contained minimum safe spectator fleet distances.

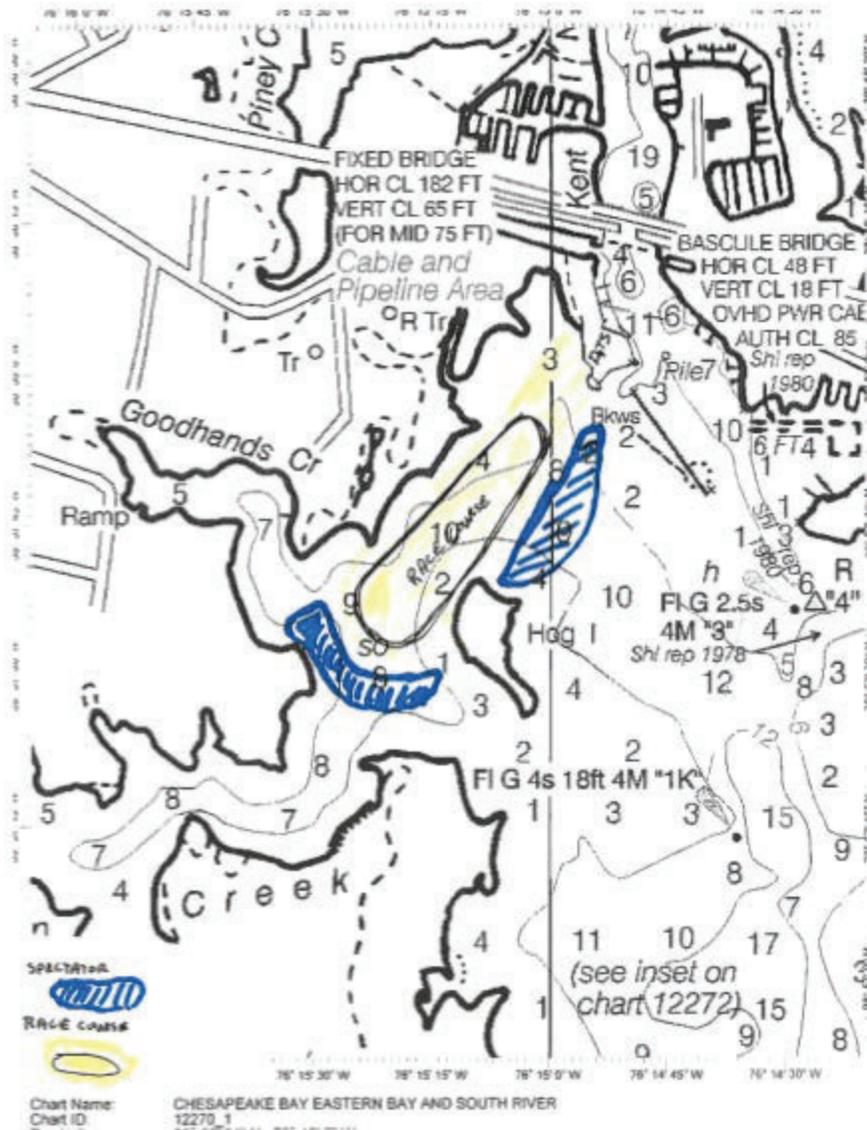


Figure 6.1 – Image of the chart diagram of the Thunder on the Narrows course with spectator areas submitted with the application by Kent Narrows Racing Association.

DEPARTMENT OF HOMELAND SECURITY APPLICATION FOR MARINE EVENT			
		OMB Number: 1625-0008 Expires: 06/30/2014	
Date Submitted: 02/06/2015 Tracking No:106708			
FORM INSTRUCTIONS			
1. Please complete either this online form or a paper CG-4423. 2. This application must reach the appropriate Captain of the Port (selected via dropdown box) at least 135 days prior to the event. 3. Attach a section of a chart or scale drawing showing boundaries and/or courses and markers contemplated. 4. Submit a copy of your entry requirements, and any special rules pertaining to equipment, rigs or procedures.			
1. Name of Event	Thunder on the Narrows (A.P.B.A. Inboard Eastern Divisionals)	2. Date of Event	06/27/2015 - 06/28/2015
3. Location of Event	Hogg Bay	4. Time From: 11:00 AM To: 6:00 PM	
5. Name and Address of Sponsoring Organization (Include Zip Code)		6. No. of Participants	7. Sizes of Boats
Kent Narrows Racing Association P.O. Box 350 Chester, MD 21659		75	12' to 20'
8. Types of Boats			9. No. of Spectator Craft
Inboard Hydroplanes and Jersey Speed Skiffs, Outboard Hydroplanes			200
10. Description of Events			
Oval race sanctioned by the American Power Boat Association (A.P.B.A.). It is the Eastern Divisional Championship for all classes participating.			
11. Will This Event Interfere or Impede the Natural Flow of Traffic? YES			
11a. If YES briefly explain:			
Part of the waterway will have reduced speed to stop wakes.			
CG-4423 (3/2011)			

Figure 6.2 – Image of page one of the Marine Event Permit Application (CG4423) submitted by Kent Narrows Racing Association to USCG Sector Baltimore

12. What Extra or Unusual Hazard (to participants or non-participants) Will Be Introduced Into the Regatta Area? High speed racing up to 140 mph.		
13. Have any Objections Been Received from Other Interested Parties? NO		
13a. If YES briefly explain:		
14. Vessels Provided by Sponsoring Organization for Safety Purposes (number, description and length)		
Number	Description	Length
2	Rescue Boat	20'
1	Scoring Boat / Barge	30'
2	Jet Skis	16'
2	Sweep Boats	20'
15. Does the Sponsoring Organization Deem their Patrol Adequate for Safety Purposes? NO		
15a. If NO briefly explain: Due to high number of transit boats and high speeds the Coast Guard is required.		
16. Is a Coast Guard or Coast Guard Auxiliary Patrol Requested for Control of Spectator and/or Commercial Traffic? YES		
6a. If YES how many vessels do you recommend and why?: 1- Coast Guard, 2-3 Auxiliary		
17. Person In Charge	██████████	18. Where Will 'Person In Charge' be During Event? On Site
19. How Can 'Person In Charge' be Contacted During the Event?	Cell Phone #	██████████

CG-4423 (3/2011)

Figure 6.3 – Image of page two of the Marine Event Permit Application (CG4423) submitted by Kent Narrows Racing Association to USCG Sector Baltimore

50. On February 06, 2015, the application was received by the Sector Baltimore Waterways Management Branch Marine Events Coordinator, Mr. ██████████. Mr. ██████████ has been responsible for the review of marine event permit applications for Sector Baltimore since August 1997, first as a USCG Active Duty member, and then as part of the civilian work force. Mr. ██████████ initiated the six stage review of the Thunder on the Narrows marine event in accordance with COMDTINST M16751.3 “Permitting of Regattas & Marine Parades”.

51. The Thunder on the Narrows marine event was classified in accordance with Sector Baltimore Instruction 3120.6 Appendix D-4 as an Action Category “A” event. A marine event assigned as an action category “A” was an event in which a regulated area must be enforced. The Action Event categories range from Category A to Category D with the Category A event

requiring the most support. Category A required a USCG Patrol Commander (PATCOM) with a dedicated non-search and rescue (SAR) USCG asset.

52. In the event the dedicated asset was not capable of performing its assigned mission, a PATCOM Contingency Plan was required and ensured that another resource was available to patrol the event. The PATCOM contingency plan was not required to be reviewed and confirmed in place by Sector Baltimore Waterways Department. There was not a PATCOM contingency plan for the Thunder on the Narrows event.

53. On February 10, 2015, a request was made by Sector Baltimore Waterways Management to USCG Station Annapolis to provide a dedicated asset to patrol and enforce the regulated area at the Thunder on the Narrows event. The application for the Marine Event submitted by KNRA was attached to the email.

54. On February 11, 2015, USCG Station Annapolis responded to Sector Baltimore Waterways Management that they would be able to provide one USCG asset and were awaiting input from USCG Auxiliary for additional assets to patrol the event.

55. On February 27, 2015, an e-mail with a spreadsheet of upcoming marine events for 2015 within the COTP Baltimore zone was submitted to the State of Maryland Boating Law Administrator (BLA) Representatives, Mr. [REDACTED] Maryland Department of Natural Resources, and Captain [REDACTED] Adjutant to the Superintendent, Maryland Natural Resources Police. Additionally, copied on the e-mail were the USCG Officer's-In-Charge of CG Stations within Sector Baltimore's AOR and various key CG personnel required to be notified of marine events within the COTP Baltimore Zone. The application for the Marine Event Application for the Thunder on the Narrows event was not submitted to the MD BLA. There was no specific comment, concern or issue regarding the Thunder on the Narrows marine event brought to the attention of Sector Baltimore by MD BLA or anyone addressed on the e-mail.

56. Sector Baltimore and Station Annapolis did not provide the 2012-2014 Patrol Commander feedback forms and/or Incident Action Report (IAR) for previous Thunder on the Narrows Marine Events as required by COMDTINST 16751.3 "Permitting of Regattas and Marine Events" Chapter 9 which stated:

For each event designated, the assigned PATCOM shall complete an After-Action Report (AAR) and provide it to the Captain of the Port no later than one week following the conclusion of the event.

57. On May 15, 2015, The marine event permit application submitted by KNRA for the "Thunder on the Narrows" power boat race was approved for the June 27th-28th dates and Marine Event Permit 035-15 signed by [REDACTED] Commander USCG, Chief Waterways Management Division was issued to the Kent Narrows Racing Association. The permit indicated that there would be a special local regulation issued, a local notice to mariners, a Regatta Patrol assigned and that the sponsoring organization is ultimately responsible for the safe conduct of the event. The permit also indicated: *If markers or buoys are used they must be established and maintained on the positions shown on the chartlet attached to the notice.* There were no markers

or buoys indicated on the chartlet submitted with the marine event application by the Kent Narrows Racing Association.

U.S. DEPARTMENT OF HOMELAND SECURITY U.S. COAST GUARD CG-4424 (FORM 33-99)		PERMIT FOR MARINE EVENT 035-15		DATE APPROVED MAY 15 2015
NAME OF EVENT THUNDER ON THE NARROWS		LOCATION PROSPECT BAY, MD		DATE OF EVENT 27-28 JUNE 2015
SPONSORING ORGANIZATION KENT NARROWS RACING ASSOC. CHESTER, MD		NAME OF REPRESENTATIVE [REDACTED]		TITLE C.G. LIAISON
<p>Your application for the following event is approved. Special services to be rendered by the Coast Guard are listed. You are reminded that your organization is primarily responsible for safety in the regatta area and that this permit does not relieve you of such responsibility. Participants shall be adequately briefed and their boats equipped as required by law. A permit may also be required by a state, county or municipal agency. This authorization grants no exemption from state or local ordinances. In the event of any change in the information furnished in your application you will notify this office.</p> <p> <input type="checkbox"/> There will not be a Special Local Regulation issued. No restriction is placed on the use of any navigable waters by other parties. Your event shall not obstruct any channel or normal shipping lane, or interfere with any aid to navigation. The Committeeman in Charge shall control participants to prevent conditions hazardous to other craft in the area. </p> <p> <input checked="" type="checkbox"/> There will be a Special Local Regulation issued establishing a restricted area and other controls. You will be provided a copy for guidance. The Committeeman in Charge shall control participants to prevent conditions hazardous to other craft in the area. </p> <p> <input checked="" type="checkbox"/> There will be a Local Notice to Mariners issued to inform maritime interests and solicit their cooperation. </p> <p> <input type="checkbox"/> There will not be a Regatta Patrol assigned by the Coast Guard. </p> <p> <input checked="" type="checkbox"/> There will be a Regatta Patrol assigned by the Coast Guard. The attached instruction for Patrol Commanders outlines their responsibility and authority. You should work out specific details with the Patrol Commander. </p> <p> <input type="checkbox"/> Additional safety equipment is stipulated below. </p>				
<p>1. This permit applies only to the marine event described herein, and is only valid for the dates and the area specified on the Application for Marine Event submitted 02/06/2015. Failure to comply with the provisions of this permit will render this permit invalid, and will result in the termination of the event.</p> <p>2. As the sponsoring organization, you are responsible for the safe conduct of the event. By approving this event, the Coast Guard does not assume responsibility for the safety of the participants. Event participants shall be briefed and their boats equipped as required by law. This includes instructions to and qualifications of the participants; safety equipment inspections; rescue and first aid facilities; and, control of obstructions or menaces to navigation as applicable to the event.</p> <p>3. As the sponsor, you must remain cognizant of the weather forecast and conditions, and terminate the event if the impending weather would make its completion hazardous, and make timely notification to the U.S. Coast Guard Sector Baltimore Command Center at (410) 576-2693, in order to cancel or update the Safety Broadcast Notice to Mariners, issued to notify waterway users that a temporary regulated area is established in the Prospect Bay during the event.</p> <p>4. There will be a Regatta Patrol assigned by the Coast Guard. The Officer-in-Charge, U.S. Coast Guard Station Annapolis has been assigned as the Coast Guard Patrol Commander to oversee the event. Contact the Patrol Commander prior to the event, at (410) 267-8108, to discuss details of the event and address any questions or concerns regarding the event.</p> <p>5. This permit grants no exemptions from state or local ordinances. As the event sponsor, you must coordinate the event with state and local highway departments regarding possible impacts of access and encroachment on local roads, and increased vehicle emissions.</p> <p>6. No marine event may be conducted in such a manner that a participating vessel violates any Federal, State or local law or regulation that applies during the time and at the location of the event. A permit for the event may be required by a state, county or municipal agency.</p> <p>(continued on reverse side)</p>				

PREVIOUS EDITION MAY BE USED

Figure 7.1 – Image of page one of the approved Marine Event Permit (CG4424) 035-15 issued by USCG Sector Baltimore to the Kent Narrows Racing Association for the Thunder on the Narrows power boat race.

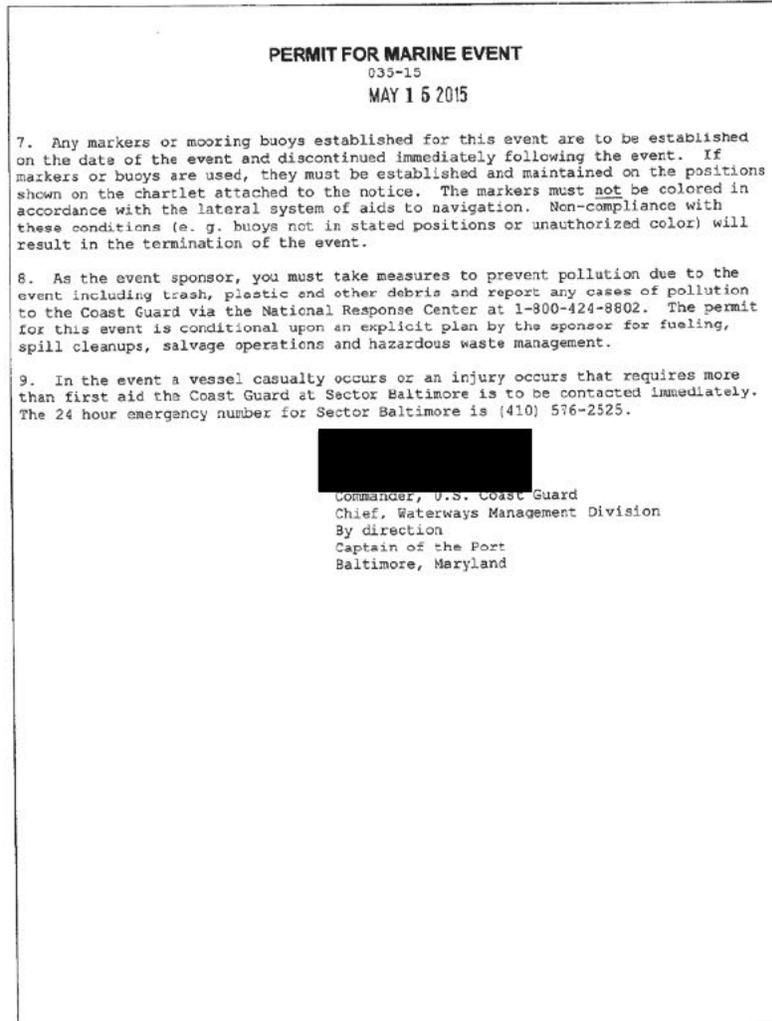


Figure 7.2 – Image of page two of the approved Marine Event Permit (CG4424) 035-15 issued by USCG Sector Baltimore to the Kent Narrows Racing Association for the Thunder on the Narrows power boat race.

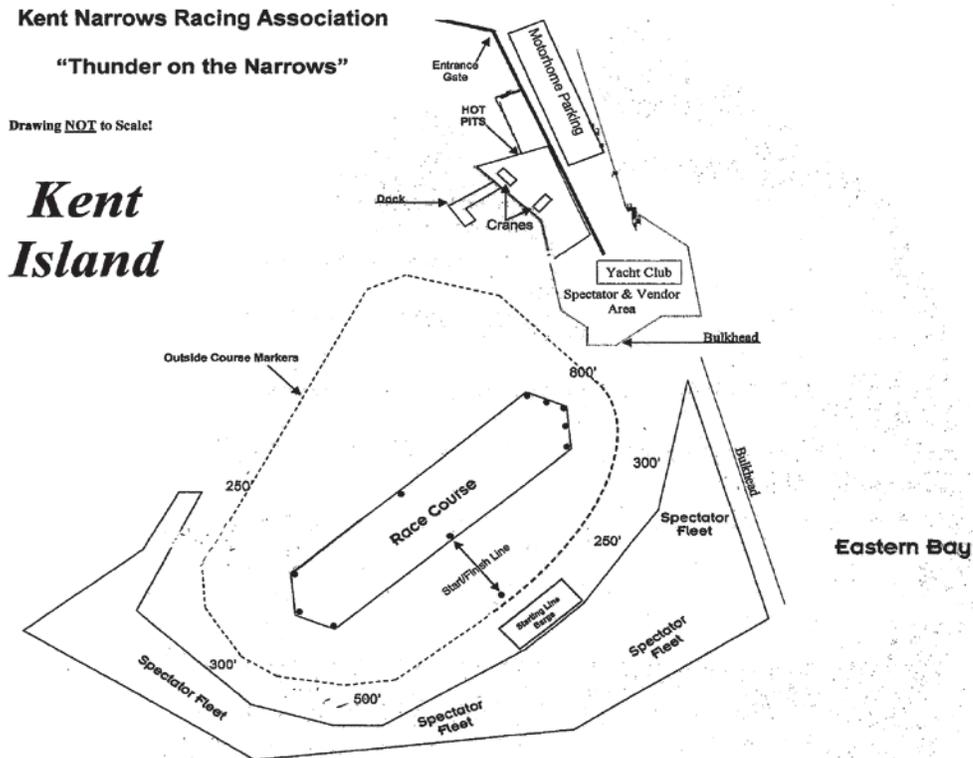


Figure 8- Diagram of race course layout that was not received in the Marine Event Application

Patrol Commander (PATCOM)

58. 33 CFR 100.40 establishes the patrol of any regatta or marine parade, it states:

The Commander of a Coast Guard District in which a regatta or marine parade is to be held may detail, if he or she deems the needs of safety require, one or more Coast Guard vessels to patrol the course of the regatta or marine parade for the purpose of enforcing not only the special local regulations but also for assistance work and the enforcement of laws generally

59. 33 CFR 100.501 *Special Local regulations; Marine Events in the Fifth Coast Guard District, defines the Coast Guard Patrol Commander as "...a commissioned, warrant, or petty officer of the Coast Guard who has been designated by the respective Coast Guard Sector-Captain of the Port to enforce these regulations."* It additionally states that a Patrol Commander

may be assigned to oversee the patrol and that the Patrol Commander may forbid and control the movement of all vessels in the regulated area(s).

60. *Official Patrol* is defined in 33 CFR 100.501 as “...any vessel assigned or approved by their respective Captain of the Port with a commissioned, warrant, or petty officer onboard displaying a Coast Guard ensign.” Additionally, it states that when spectator vessels are hailed or signaled by an official patrol vessel, spectator vessels must comply with the official patrol directions.

61. USCG Sector Baltimore and the USCG Fifth Coast Guard District did not have a specific Personal Qualification Standard (PQS) for designation as a Patrol Commander (PATCOM) for marine events. PATCOM’s are designated in accordance with guidance provided in COMDTINST M16751.3, “Permitting of Regattas and Marine Parades” and the regulations stated in 33 CFR 100.501.

62. On May 15, 2015, USCG Sector Baltimore issued a memorandum designating the Officer-in-Charge of USCG Station Annapolis as the Regatta Patrol Commander to oversee the Thunder on the Narrows event. It stated that this was an Action Category “A” event and that a dedicated response boat must be provided by Station Annapolis to patrol the event and enforce the regulated area. Additionally, the memo stated Station Annapolis must contact the sponsoring organization prior to the event to coordinate any required meetings, conference or other communications. Station Annapolis did not contact Kent Narrows Racing Association prior to the event or arrange any pre event meeting or conference.

63. BM1 [REDACTED] was the Operations Petty Officer for USCG Station Annapolis. He held that position for approximately three years. He was responsible for coordinating Marine Events for Station Annapolis with Sector Baltimore Waterways Department and the sponsoring organization. He was responsible for coordinating the staffing of Station personnel/assets and the coordination of USCG Auxiliary personnel for staffing of Marine Events. He had been enlisted in the USCG for 17 years.

64. In May 2015, USCG Station Annapolis coordinated with USCG Auxiliarist [REDACTED] Flotilla 23-01, for the arrangement of three Auxiliarists on Personal Water Craft (PWC) and one USCG Auxiliarist onboard a patrol vessel to provide additional support for the enforcement of the regulated area for the Thunder on the Narrows event. [REDACTED] was responsible for the coordination of all requests for Auxiliary assets or personnel for Marine Events by Sector Baltimore and/or Station Annapolis within their respective area of operation. [REDACTED] was provided with a copy of the Marine Event application and chartlet submitted by KNRA.

65. On May 27, 2015, [REDACTED] submitted an e-mail to the KNRA with the approved Marine Event Permit attached for the Thunder on the Narrows event. BM1 [REDACTED] Operations Petty Officer, USCG Station Annapolis was copied in the e-mail.

66. On May 29, 2015, a Change of Command was conducted at USCG Station Annapolis. Senior Chief [REDACTED] [REDACTED] relieved Senior Chief [REDACTED] [REDACTED] as Officer-in-Charge of USCG Station Annapolis. Senior Chief [REDACTED] was overall responsible for the day-to-day operations of USCG Station Annapolis including oversight of Marine Events that USCG Station

Annapolis was designated as PATCOM. He had newly reported to the unit earlier that month and had been enlisted in the USCG for 18 years.

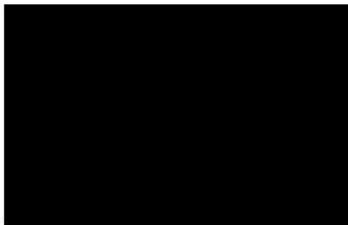
67. On June 5, 2015, USCG Station Annapolis approved the orders to utilize three Auxiliarists on PWC, and one Auxiliarist on a patrol vessel to assist in the patrol of the Thunder on the Narrows event. Due to the length of the event, a verbal time extension waiver was approved by Station Annapolis for the Auxiliary patrolling the event to exceed the allotted crew fatigue time.

68. On June 15, 2015, an e-mail was submitted from BM1 [REDACTED] Operations Petty Officer, Station Annapolis, to Mr. [REDACTED] which stated that for the Thunder on the Narrows event that there will be USCG Sector Baltimore Boarding Teams onboard MNRP vessels for both days of the race. Copied on the e-mail was Senior Chief [REDACTED]. The USCG Sector Baltimore Boarding Officers were not addressed in the e-mail.

Sequence of Events

69. [REDACTED] was a 64-year old male and had been involved in power boat racing with APBA for approximately thirty years. For the past ten years he had been involved as an owner and operator for Vintage class boats in the Vintage and Historic Category. Prior to participation in the Vintage and Historic category, Mr. [REDACTED] operated 5 liter and 2.5 liter Stock class boats in the Inboard Racing category. He never participated in a Grand National class hydroplane boat race as an owner or operator prior to the Thunder on the Narrows. The Vintage class boats he operated prior to this event were not equipped with an enclosed reinforced cockpit.

70. [REDACTED] was a [REDACTED] and was prescribed the following medications to control his [REDACTED]:



71. [REDACTED] successfully passed his D.O.T Physical and was issued a D.O.T Medical Examiner's Certificate by Dr. [REDACTED] from Back to Health located in [REDACTED] MN, on April 23, 2015.

72. [REDACTED] was a 40-year old man and part owner of the GNH-12. He owned the vessel for approximately three years. [REDACTED] has been involved with boat racing as an owner and crew chief with APBA for approximately twenty-five years. He also owned the GNH-68 which is another Grand National class hydroplane boat.

73. [REDACTED] formed an ownership partnership of the GNH-12 with driver [REDACTED] and his father [REDACTED]. [REDACTED] was the primary operator of the GNH-12 and [REDACTED] was primarily responsible for the maintenance and the upkeep up the vessel.

74. The GNH-12 was unable to compete in the 2014 Grand National class power boat race season due to low oil pressure issues with the vessel's dry sump lube oil system. The operator, [REDACTED] would monitor the oil pressure gauge and when the oil pressure gauge indicated 35 psi, [REDACTED] would return to the pits, or shut the vessel down and wait to be towed back to the pits.

75. During previous attempts to race in 2014, driver, [REDACTED] experienced heavy wash over the sponsons of the GNH-12 when the boat would come off plane. The wash sprayed over the windshield of the canopy obscured [REDACTED] vision. When the wash occurred, [REDACTED] vision was limited to only viewing out of the right side of the windshield.

76. In January 2015, [REDACTED] purchased his first Grand National Hydroplane racing boat named "SEVENTH EDITION". [REDACTED] intended on racing and competing with the "SEVENTH EDITION" in APBA sanctioned inboard racing events. [REDACTED] planned to qualify as a Grand National driver during the "Thunder on the Narrows" boat race with the "SEVENTH EDITION". The "SEVENTH EDITION" is not equipped with an enclosed reinforced cockpit.

77. On April 1, 2015, [REDACTED] Vice President with the KNRA and Racing Director for the Thunder on the Narrows event, met with members of the KNRA and completed the APBA Regatta Insurance application. On the application, under "Underwriting Information" part VI, line A-4 states: "Are spectators permitted access to the water for wading or swimming?" The answer "No" is marked by an "X" in the checkbox next to the question. Mr. [REDACTED] signed and dated the completed application.

78. During the month of April 2015, [REDACTED] replaced oil lines to the lube oil dry sump system on GNH-12 to remedy the low oil pressure issues the boat was experiencing.

79. On April 26, 2015, [REDACTED] and [REDACTED] conducted test runs with GNH-12 during the APBA Driver School and Test & Tune for Region 6 at Eastwood Lake in Dayton, OH. The GNH-12 completed the test runs without low oil pressure issues.

80. On June 26, 2015, [REDACTED] arrived at Kent Island, MD, and conducted an operational test of "THE SEVENTH EDITION" at Dominion Marina located in Chester, MD. During the operational test, "THE SEVENTH EDITION" experienced what was described as "rollers" on the waterway and sustained severe damage to the hull bottom and stern rendering the vessel incapable of racing at the "Thunder on the Narrows" event. "Rollers" were considered a wake or wave action that was caused by vessels transiting in the general vicinity of where power boats were operating or racing.

81. On June 27, 2015, a safety inspection of the GNH-12 was conducted by APBA approved safety inspector, [REDACTED] utilizing the APBA Inboard Safety Inspection Checklist. [REDACTED] was assisting the APBA Chief Inspector [REDACTED]. There were no deficiencies noted or safety concerns identified. A safety inspection decal was placed on GNH-12's stern

which indicated the vessel successfully passed the examination. The inspection report was submitted to the Inboard Racing Commission for approval.



Figure 6 – Safety Inspection decal issued to the GNH-12 on June 27, 2015

82. On June 27, 2015, [REDACTED] became aware of [REDACTED] hydroplane being damaged so severely that it was unable to compete in the scheduled Grand National Class race during the “Thunder on the Narrows”. [REDACTED] asked [REDACTED] if he wanted to operate the GNH-12 in order to qualify as a Grand National class driver. [REDACTED] brought the GNH-12 and GNH-68 to the event. The GNH-12 was not being used due to the boat’s regular operator, [REDACTED] getting married that same weekend of June 27 through June 28, 2015. [REDACTED] accepted the offer to operate the GNH-12.

83. On June 27, 2015, a driver’s meeting was conducted with all participating drivers and the APBA referees and racing committee. The meeting reviewed the event rules and regulations, racing course particulars, safety concerns, and any additional instruction that the referees needed to provide. KNRA advised all participants of a “Residential Roller” that may affect the front stretch of the course. The “Residential Roller” is a wake that is put out by vessel traffic transiting the local area outside of the race course and USCG regulated area. The wake could cause damage to participating boats or potentially cause an accident during the race.

84. On June 27, 2015, [REDACTED] announced to the Chief Referee, [REDACTED] he would participate in the event as an Unqualified Rookie in the Grand National Hydroplane class as the operator of GNH-12 “THIS IS HEAVEN”. [REDACTED] did not present [REDACTED] with four written signatures of approval from qualified GNH drivers, a summary of previous APBA experience, or a copy of his current D.O.T. physical as required by Grand National Class

regulations contained in the Inboard Racing Rules, nor did [REDACTED] request to view the required information. [REDACTED] [REDACTED] allowed [REDACTED] [REDACTED] to participate as an Unqualified Rookie during the Grand National hydroplane race.

85. On June 27, 2015, the race was postponed by the referee and the racing committee until June 28, 2015, because of severe thunderstorms in the area.

86. On June 28, 2015, at 0800, the KNRA, with the assistance of members from APBA set up the race course which consisted of red inside course marker buoys and gold outside course marker buoys. The distance between the inside course markers and gold outside course markers determine the overall width of the race course. The gold outside course markers were also used to determine the proximity in which the spectator vessels were allowed to approach the race course. The red inside course marker buoys were placed utilizing GPS coordinates. The red inside course markers determined the inner most portion of the course and the entrance and exit of the turns. The gold outside course markers were placed by event personnel based upon visual distance estimates and the approximate location of the course markers from the previous year's events. They were not placed in accordance with the coordinates for the regulated area or utilizing any GPS coordinates.

87. On June 28, 2015, at 0800, the USCG Auxiliary boat "DELTA 4" with USCG Auxiliarists, [REDACTED] and [REDACTED] as crew onboard and three USCG auxiliary, [REDACTED] [REDACTED] and [REDACTED] on Personal Water Craft (PWC) arrived at the "Thunder on the Narrows" event and notified USCG Station Annapolis that they were on scene. All of the Auxiliarists had over six years experience in the USCG Auxiliary and participated in the patrol of the Thunder on the Narrows event for over five years.

88. The three Auxiliarists on PWC were assigned by KNRA to patrol the spectator fleet lined around the race course throughout the day to ensure spectators remained outside of the gold outside course markers. A pre-event or safety meeting was not conducted between the USCG Auxiliarists, Station Annapolis, and KNRA. The USCG Auxiliarists were not advised by KNRA Race Committee to report any spectators within the minimum safe spectator fleet distance of 250' that was required by the APBA Regatta Insurance application from the outside course markers to the KNRA Race Coordinator.

89. On June 28, 2015 at 0830, The USCG Auxiliarist began to patrol the spectator area. The three personnel on PWC patrolled the spectator areas. [REDACTED] [REDACTED] patrolled the east and southeast spectator areas; [REDACTED] and [REDACTED] patrolled the west and southwest spectator areas. The northern portion of the course was not patrolled due to the lack of spectators in the area because of low water and marsh conditions. [REDACTED] [REDACTED] was responsible for providing spectator patrol when one of the Auxiliarists on the PWC needed a break and also maintained the overall communication with USCG Station Annapolis and the KNRA race coordinator.

90. On June 28, 2015 at 0845, [REDACTED] [REDACTED] was advised by a KNRA race organizer boat to just keep the spectators behind the gold outside course markers and was not provided an exact distance by KNRA regarding how far from the outside course markers to keep the spectator fleet behind.

91. On June 28, 2015 at 1000, two USCG Boarding Officers, Maritime Enforcement (ME1) First Class [REDACTED] and Machinist Technician First Class (MK1) [REDACTED] from the USCG Sector Baltimore Vessel Boarding Security Team arrived at the “Thunder on the Narrows” event to work with Maryland Natural Resource Police (MNRP) in conjunction with “Operation Drywater” which was being held from June 26th - June 28th 2015. “Operation Drywater” was a national boating “under the influence” enforcement campaign with the goal of removing under the influence boaters from the water and to raise awareness of the dangers of boating while intoxicated. The duties of the USCG Boarding Officers were to conduct CG-4100 safety examinations at the “Thunder on the Narrows event and to determine if operators of recreational vessels observing the event were intoxicated. They were not designated as Official Patrol Commanders by USCG Sector Baltimore or requested by USCG Station Annapolis act as the Official Patrol for the event.

92. On June 28, 2015 at 1000, the “Thunder on the Narrows” event commenced with a compressed schedule because of the June 27, 2015 cancellation. It was the first time since 2005 that the Grand National Class Hydroplane boat was racing at the “Thunder on the Narrows” event.



Figure 9 – String of moored and anchored spectators on back stretch that the “SEA MONKEY” was tied off to. Image taken on June 28, 2015 shortly after casualty occurred.

93. On June 28, 2015 at 1400, USCG Station Annapolis’ Response Boat Small (RBS) CG 29108 departed Station Annapolis en route to the Thunder on the Narrows event with one coxswain and three crewmen onboard to participate in Operation Drywater. They were not aware that they were the Official Event Patrol for the Thunder on the Narrows. They did not possess a copy of

the marine event permit, schedule of events, race course diagram, or the chartlet that was submitted with the application.

94. On June 28, 2015 at 1500, the decedent and [REDACTED] were in an orange inflatable raft that was tied to the stern of the recreational boat "SEA MONKEY" (MD 4764BS) owned by [REDACTED]. The "SEA MONKEY" was tied off along the starboard side of the recreational boat MD 2223D owned by [REDACTED]. The vessels were moored to a string of approximately 10 recreational boats that were moored alongside or anchored in the spectator zone located at the end of the back stretch and entrance to turn two of the race course.

95. On June 28, 2015 at 1530, USCG Station Annapolis CG29108 arrived in the vicinity of the Thunder on the Narrows event at position: 38°.57' 4"N, 076°.15".3"W to participate in Operation Drywater event. They did not contact Kent Narrows Racing Association Race Coordinator or the USCG Auxiliary to inform them that they were on-scene for the enforcement of the regulated area.

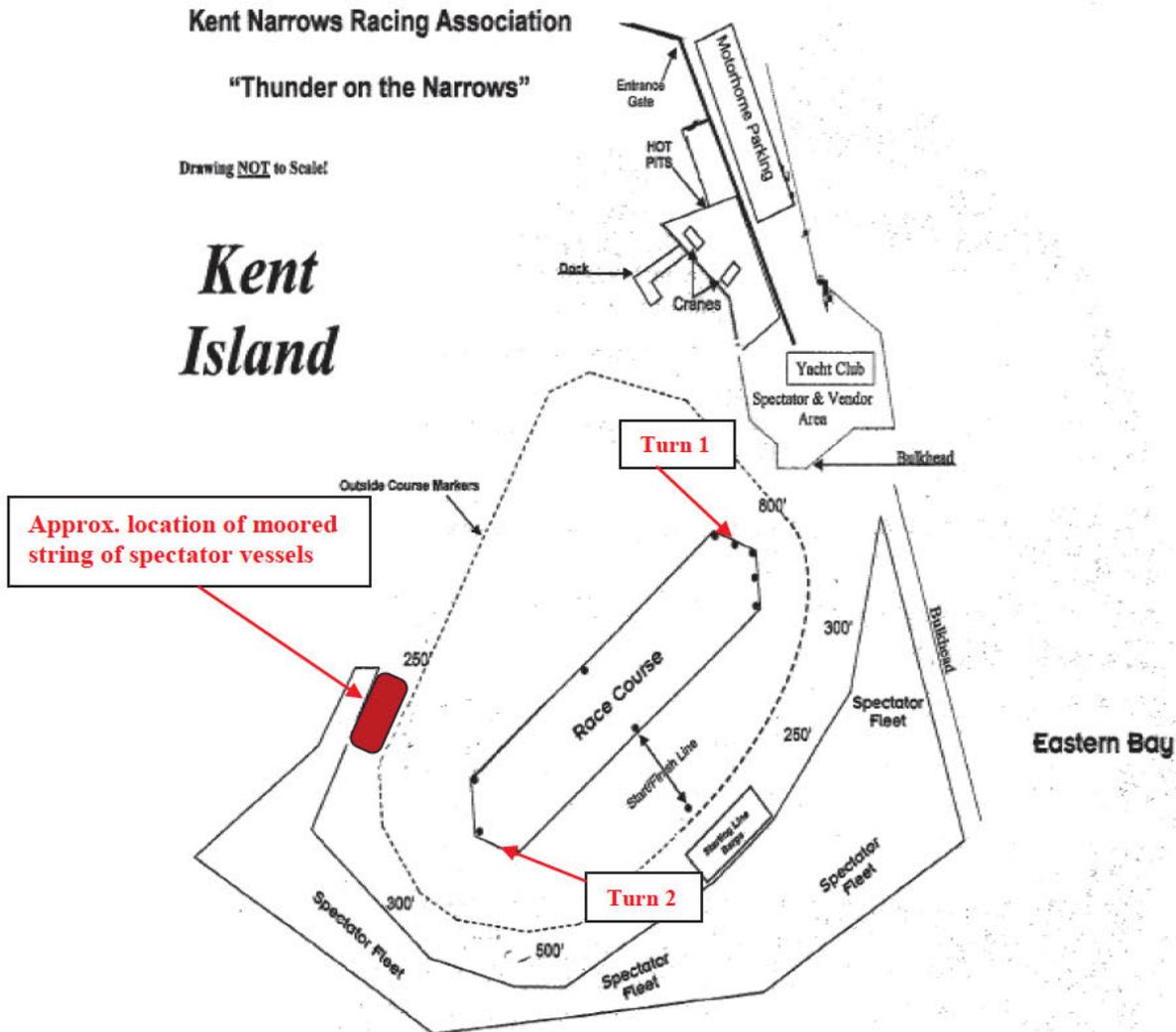
96. On June 28, 2015 at 1530, USCG Auxiliarist, [REDACTED] notified Kent Narrows Racing Association President, [REDACTED] that all four Auxiliarists were about to exceed their USCG Crew Mandated Fatigue Time and were required to depart. [REDACTED] requested that the USCG Auxiliarists stay in order to continue the race.

97. On June 28, 2015 at 1600, Aux [REDACTED] reported to Station Annapolis that all of the Auxiliary personnel had ceased patrol operations for the day and returned to port.

98. On June 28, 2015, at 1615, the USCG Boarding Officers assisted MNRP with an arrest warrant for a recreational boater in the vicinity of Goodhands Creek, a nearby tributary of Prospect Bay. Station Annapolis CG29108 was observed transiting in the vicinity of the area and offered assistance to the CG BO's and MNRP. CG29108's assistance was not needed and MNRP and the CG BO's proceeded to shore with MNRP to drop the arrested recreational boater off with local authorities.

99. On June 28, 2015, at 1630, the air temperature was 77 F. Wind speeds were approximately 11.5 knots, gusting to 16 knots, out of the west. Visibility was approximately 10 nautical miles and sea conditions were approximately 1'.

100. On June 28, 2015, at 1635, [REDACTED] entered the GNH-12. [REDACTED] did not advise [REDACTED] that his driver's helmet two-way radio was not compatible with the wired radio connection installed on the GNH-12. [REDACTED] did not advise [REDACTED] of the GNH-12's past low oil pressure issues. [REDACTED] failed to advise [REDACTED] of the GNH-12's propensity to spray water over the left sponson and obscure the driver's vision when the boat is not on a plane.



101. On June 28, 2015, at 1640, [REDACTED] [REDACTED] took the course for the five minute "milling" period with three other drivers in the heat. [REDACTED] was operating the [REDACTED] owned GNH-68, [REDACTED] was operating the GNH-11, and [REDACTED] was operating the GNH-33. Prior to the official start of the Grand National heat, a "milling" period was conducted and allowed the drivers to get use to the boat and jockey for inside position prior to the end of the five minute period and start of the official heat. This was [REDACTED] first time racing a Grand National Hydroplane with a fully enclosed cockpit and canard. This was his first time racing the "Thunder on the Narrows" course on Prospect Bay.



Figure 11.1- GNH-12 heading out of the pits to start “milling” time. Image taken from video footage of the incident.

102. On June 28, 2015, at 1641, [REDACTED] [REDACTED] completed his first lap of the 5 minute “milling” period without incident.



Figure 11.2- GNH-12 rounding turn one. Image taken from video footage of the incident.

103. On June 28, 2015, at 1643, [REDACTED] [REDACTED] completed his second lap and emerged from the first turn when the GNH-12 began to slow down and come off plane. The five minute “milling period” was nearly completed and the “1 minute gun” was about to start, which was the official countdown to the start to the heat. While using a clock start, drivers attempt to time the final minute of the milling period in order to cross the start-finish line at exactly 0:00 to commence the official start of the race. Crossing the start-finish prior to the official start of the heat will result in a penalty. The GNH-12 was out ahead of the three other participants.



Figure 11.3 - GNH-12 slowing down and coming off plane in anticipation of the official start of the race. Image taken from video footage of the incident.

104. On June 28, 2015, at 1644, the GNH-12 began to spray water over the vessel's port sponson onto the windshield of the cockpit's canopy. The water spray obscured the driver's vision. [REDACTED] [REDACTED] observed the other participants approaching his stern through the vessel's side mirror. Their vessels were jockeying for position in anticipation of the official start of the heat. As an Unqualified Rookie, [REDACTED] attempted to stay clear of the qualified race participants veering right and headed in the direction of the string of spectator vessels.



Figure 11.4 - GNH-12 veering right to avoid impeding the qualified drivers and in the direction of spectator vessels. Image taken from video footage of the incident

105. On June 28, 2015, at 1649, [REDACTED] [REDACTED] ran into the string of spectators just outside the start of turn two on the vessel's starboard side. The GNH-12 struck the decedent and Mrs. [REDACTED] who were observing the race in a large inflatable raft tied off the stern of the "SEA MONKEY." The GNH-12 additionally struck Mr. [REDACTED] who was in another smaller inflatable raft in the vicinity of the decedent and Mrs. [REDACTED]



Figure 11.5 - GNH-12 seconds before the allision with the MD2223D. Image taken from video footage of the incident

106. The GNH-12 continued in the water and allided with the stern of the MD2223D. The tip of the starboard sponson lodged into the outboard of the MD2223D causing an approximate 5 ½' x 2' opening in the starboard sponson. The impact caused "the MD2223D in turn to allide with other spectator vessels on either side of his vessel. Debris from the damaged sponson struck Mrs. [REDACTED] who was on the dive platform of the "SEA MONKEY" with the decedent's mother, [REDACTED].

Kent Narrows Racing Association

"Thunder on the Narrows"

Drawing NOT to Scale!

**Kent
Island**

Approximate track line of GNH-12

Incident location

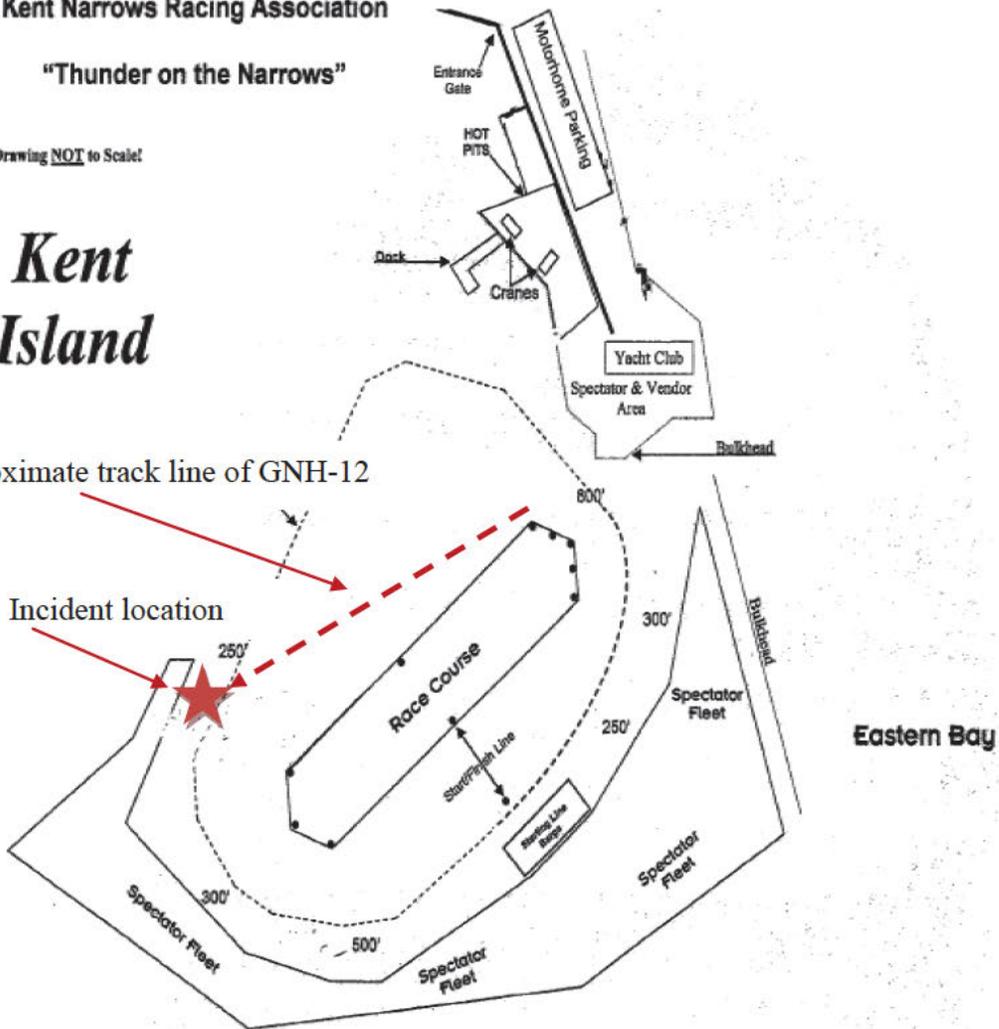


Figure 12 – Image of the approximate track line of the GNH-12 and incident location



Figure 13.1 - Image of the extent of damage to starboard sponson of the GNH-12 taken the night of casualty.



Figure 13.2 – Image of the outboard motor of the MD2223D with the tip of the GNH-12 starboard sponson lodged in the damaged outboard.

107. On June 28, 2015, at 1649, [REDACTED] [REDACTED] came to a complete stop with the GNH-12 and turned off the vessel's engine. Passengers onboard the spectator vessels assisted the decedent and Mrs. [REDACTED] who were both unconscious in the water

108. On June 28, 2015, at 1650, a flare is fired by [REDACTED] [REDACTED] one of the turn judges for the event at turn two and a red flag is waived indicating that the race is stopped. Rescue personnel and local EMS deployed from the racing pit and proceeded to recover the injured victims and transport them to shore from the spectator vessel location.

109. On June 28, 2015, at 1651, USCG Station Annapolis CG29108 completed a CG-4100 safety boarding on a recreational vessel at position 38°54'4"N, 076°14'0"W. CG29108 was diverted by USCG Sector Baltimore for the Search and Rescue (SAR) of a capsized recreational vessel with one person missing in the Chesapeake Bay at position 39°00'7" N, 076°20'1"W. The SAR case was unrelated to the Thunder on the Narrows race incident.

110. On June 28, 2015, at 1659, MK1 [REDACTED] conducted a BUI case with MNRP when MK1 [REDACTED] was dropped off on [REDACTED] MNRP Boat as a result of the MNRP boat [REDACTED] was previously on being diverted to assist USCG Station Annapolis with the SAR case in the Chesapeake Bay.

111. On June 28, 2015, at 1700, Mr. [REDACTED] and Mrs. [REDACTED] were transported to University of Maryland Hospital located in Baltimore, MD. It was determined Mrs. [REDACTED] suffered head trauma, broken vertebrae and a broken left collar bone. Mr. [REDACTED] suffered a broken collar bone, multiple broken ribs and lacerations to the eye. Mrs. [REDACTED] was transported via ambulance to Anne Arundel County hospital where she was treated for lacerations to her leg.

112. On June 28, 2015, at 1705, MK1 [REDACTED] and MNRP received notification that an incident occurred at the Thunder on the Narrows event from a patron at a local waterfront bar in the vicinity of the Thunder on the Narrows event. MNRP and the USCG Boarding Officers proceeded to the incident location.

113. On June 28, 2015, at 1710, the decedent was transported via ambulance to Queen Anne's Medical Center located in [REDACTED] MD where she was pronounced dead as a result of multiple injuries sustained during the incident. The body of the decedent was transported to the Office of Chief Medical Examiner (OCME) located in Baltimore, MD for autopsy.

114 On June 30, 2015, at 0900, an autopsy was conducted on the decedent by Assistant Medical Examiner for the MD OCME, Dr. [REDACTED] [REDACTED]. The autopsy determined that the cause of the death was due to multiple injuries.

Post Casualty Drug and Alcohol Testing

115. On June 28, 2015, at 1930, Mr. [REDACTED] [REDACTED] submitted to post casualty Serious Marine Incident breath alcohol test as required by 46 CFR 4.06-3. The test was administered on-scene and conducted by USCG Sector Baltimore Boarding Officers utilizing an Alco Sensor FST, Serial Number 099149. Mr. [REDACTED] tested negative for alcohol.

116. On June 29, 2015, at 1043, Mr. [REDACTED] [REDACTED] submitted to post Serious Marine Incident chemical testing as required by 46 CFR 4.06-3. The chemical testing sample was taken by Health Enhancement Center located in Easton, MD and reviewed by Dr. [REDACTED] [REDACTED] Medical Review Officer. Mr. [REDACTED] tested negative.

6. Analysis

Driver Experience

1. The investigation revealed that Mr. [REDACTED] [REDACTED] was considered an “Unqualified Rookie” for the Grand National Hydroplane class of inboard hydroplane racing as defined in the APBA 2015 Inboard Racing Rules. While Mr. [REDACTED] had approximately thirty years of experience total with the APBA and boat racing, he did not have any experience operating the Grand National Class Hydroplane. The past ten years of his boat racing experience was spent as an owner and operator of a Vintage class hydroplane boat. As previously mentioned, within the Vintage and Historic Bylaws it specifically states: “It must be stressed that NONE of these events are competitive in nature, but rather exhibitions of vintage boats.” The June 28, 2015 “Thunder on the Narrows” Grand National Class Hydroplane boat race was the first competitive race Mr. [REDACTED] had taken part in over ten years.

2. The “Thunder on the Narrows” Grand National Class race on June 28, 2015 was the first time [REDACTED] [REDACTED] operated the GNH-12. The investigation revealed [REDACTED] and the GNH-12 owner, [REDACTED] were friends and had known each other through the APBA and boat racing for several years. [REDACTED] intended on qualifying with his own Grand National Class boat he recently purchased, but was unable to due to the extensive damage it sustained on June 26, 2015. [REDACTED] stated that the damage to the hull and stern was caused by “rollers” in the vicinity of the location that he was operating the hydroplane. When [REDACTED] became aware of [REDACTED] damaged Grand National Hydroplane boat, he offered the use of GNH-12. The testimony provided by Mr. [REDACTED] indicated he was familiar with GNH-12 through his friendship and contact with Mr. [REDACTED] however he never previously operated the GNH-12.

3. Additional testimony provided by the other qualified Grand National operators that were racing the same heat as Mr. [REDACTED] indicated it was not uncommon to operate a hydroplane for the first time and race on the same day as long as the driver is qualified. They indicated good drivers are sought out by hydroplane owners to operate their specific boat. Oftentimes it may be the first time the driver operates the boat.

4. The “Thunder on the Narrows” Grand National Class race on June 28, 2015 was the first time [REDACTED] [REDACTED] ever attempted to race in a fully enclosed cockpit hydroplane boat. It was the first time he operated a hydroplane equipped with a canard and it was the first time he operated on the “Thunder on the Narrows” course. [REDACTED] vintage hydroplane and the Grand National Hydroplane he purchased in January 2015 were not equipped with fully enclosed cockpits. [REDACTED] only experience with fully enclosed cockpits was during the APBA required capsule training. The capsule training familiarizes the driver with the hydroplane’s equipped air system and extraction procedures.

5. Without any experience in fully enclosed cockpits, [REDACTED] was not acquainted with water spraying on the windshield of the capsule. The Vintage and Historic Category of racing does not allow for capsule, cage, or reinforced cockpit hydroplanes. [REDACTED] was not afforded an opportunity within the Vintage and Hydroplane class to experience fully enclosed capsules even at an exhibition level.

Driver's Licensing and Qualification

6. At the time of the incident, there were no federal or state regulations that required the licensing of personnel operating power boats used for the purpose of racing. Power boats are used for racing purposes and are not considered recreational or commercial vessels. They are not required to be registered or documented with the USCG or respective State agency since they are exempt from the numbering requirement listed in 33 CFR 173.13. The APBA requires that each power boat owner register their boat with the APBA. The power boat is subsequently issued an identification number by the APBA. Holding a Merchant Mariner's Credential (MMC) is required by federal law for mariners operating certain size and types of commercial vessels and issued by the USCG. Since power boat racing is not considered a commercial operation, operators are not required to hold a valid MMC. In lieu of licensing regulations, the APBA adopted its own requirements for driver licensing and qualification.

7. Grand National Class hydroplanes fell within the Inboard category of power boat racing and must abide by the qualification and licensing requirements within that specific category. Each class may have its own specific qualification requirements and unqualified drivers must abide by the more stringent requirements. As an Unqualified Rookie, [REDACTED] was abiding by the general Inboard qualification in which new drivers run four heats starting at the rear of the pack and advancing only to a position predetermined by the referee. After successfully completing the first four heat requirement, a new driver shall run four additional heats advancing only to a position predetermined by the referee.

8. The investigation could not determine whether the Grand National qualification requirements previously listed in the "Driver's Qualification" section were in addition to the general qualification rules, or a separate qualification class rule. [REDACTED] did announce to the Chief Referee at the event that he was an unqualified rookie driver and the GNH-12 was marked with an "X" as required by the Inboard rules; however, he did not present the referee with four GNH signatures of approval and his D.O.T. medical examiners certificate as required by class rules. Additionally, the Chief Referee did not request them from Mr. [REDACTED]. During subsequent interviews with [REDACTED] stated that he presented his D.O.T. medical certificate at the event registration; however, it could not be verified with KNRA and the APBA that [REDACTED] did in fact present his medical certificate at registration. It should be noted that when attempting to obtain the required D.O.T. certificate from APBA for Mr. [REDACTED] the APBA headquarters did not have the certificate on file and had to obtain it from Mr. [REDACTED] personally.



Figure 14 - Image of cockpit with GNH-12 with "Unqualified Rookie" "X" marked on the side. Image taken night of the casualty.

9. The Inboard qualification rules were based on the Unqualified Rookie driver racing in heats with other qualified drivers who are in competition. The Unqualified Rookie was required to stay behind and to the outside of qualified drivers. In most cases, being on the outside most portion of the race course placed the Unqualified Rookie driver closest to the boating spectators. In this particular race, the official heat had not started and the participants were in the five minute "milling" period. However, as [REDACTED] was rounding turn one and under the one minute official start of the race, the GNH-12 was out in front of the three other qualified drivers. As the Unqualified Rookie, [REDACTED] had to stay to the outside and behind the pack as required by the qualification requirements.

10. The investigation revealed that [REDACTED] [REDACTED] observed the qualified drivers approaching through his side mirror and was attempting to abide by the qualification requirements by moving towards the outermost portion of the course while slowing down to allow the qualified participants to pass him as to not impede their starting position. This course adjustment put the GNH-12 in a direction heading towards the spectator vessels along the entrance to turn two. The slowing of speed took the GNH-12 off plane and the boat began spraying water over the port sponson onto the windshield of the cockpit, obscuring [REDACTED] vision. In previous testimony, [REDACTED] explained that at the point when the water began to obscure his vision, he maintained his course and speed and did not make any specific adjustments or attempt to alter course.

11. A review of the APBA Vintage & Historic category bylaws revealed that the Referee for that category of racing should allow new participants to take a few laps alone on the course to gain experience before they enter exhibition heats. This was not the case for Inboard racing and more specifically, Grand National class hydroplanes racing. The qualification process for unqualified rookies took place during live heats with spectators observing. Testimony revealed unqualified rookies and qualified drivers are not afforded an opportunity to make test runs of the course or boat unless it is an officially sanctioned testing session. Due to the hydroplane boats high speed, drivers cannot test and get familiar with the hydroplanes at high speed on US waters without it being a sanctioned event. The amount of test runs a driver and owner can go to also highly depends on their financial situation. The majority of the expenses come out of pocket since this is a hobbyist sport with limited sponsorship. Additionally, the weather and subsequent cancellation on June 27, 2015 did not allow for any kind of testing session prior to the June 28, 2015, race.

Cockpit Windshield Spray

12. Testimony provided by [REDACTED] [REDACTED] indicated he felt water in the cockpit followed by the cockpit canopy windshield being covered in water, which obstructed his vision. [REDACTED] thought it was unusual to have water spray on the windshield while the vessel was on a plane; however, he stated that it is not unusual to have water spray on the windshield when the vessel initially comes up on a plane. During the initial post casualty interview, [REDACTED] believed that the GNH-12 was on a plane when the water started spraying over the windshield of the cockpit; however, video evidence of the incident showed the GNH-12 slowing down and coming off of plane at the end of turn one heading into the back straightaway prior to the incident.

13. Testimony provided by the “turn two” judge and the “turn two judge” boat operator who were positioned in the center of the course, along with several eyewitness accounts from spectators, indicated that they all observed water pouring over the port (driver’s left) sponson onto the windshield of the cockpit. Some eyewitness accounts additionally observed the port sponson had dipped into the water. A post-casualty exam conducted on June 29, 2015 did not reveal any damage to the port sponson or any obvious signs of water intrusion. [REDACTED] [REDACTED] believed damage allowed water to enter and weigh down the port sponson.

14. The investigation revealed that the GNH-12’s primary driver, Mr. [REDACTED] experienced water spraying over the port sponson onto the windshield of the cockpit canopy during previous racing events similar to what [REDACTED] [REDACTED] described. In testimony provided by Mr. [REDACTED] he described the GNH-12 as heavy and can be difficult to plane. When the boat was off plane it would allow water to spill over the sponsons onto the windshield making it very difficult to see out of the left side of the boat. [REDACTED] also described water entering the cockpit of the vessel when the vessel was not on a plane or attempting to get on a plane. However, the water would dissipate once the vessel was back on a plane.

15. The other qualified drivers in the race indicated they have experienced water on the windshield of the cockpit when the boats are not on a plane; however, the water will generally bead up and trickle off once the boat comes up on plane. Testimony provided by Mr. [REDACTED] [REDACTED] driver of the GNH-33, Inboard Chairmen of the APBA, indicated that there really isn’t a

need for a windshield wiper, nor is the aerodynamic design of the cockpit conducive to having a wiper blade installed. The application of "Rain-X" (water repellent) to the cockpit windshield and the ability to get on a plane quickly will greatly aid in the water dissipating from the windshield.

16. Owner of the GNH-12, [REDACTED] did not advise [REDACTED] of previous issues with the GNH-12 spilling water over the port sponson prior to [REDACTED] qualification run. The investigation revealed that [REDACTED] believed the GNH-12 to be in satisfactory condition and was unaware of any issues with the boat. Testimony obtained from [REDACTED] indicated he believed that [REDACTED] was well aware of the cockpit windshield spray vision obstruction and previous low oil pressure issues with the GNH-12. He stated that since he and [REDACTED] were close through the APBA, that he should have been aware of the problems and didn't directly advise him of the situation.

17. While the exact cause of the water abnormally spilling over the port sponson of the GNH-12 is not known, it is more than likely the inherent design of the hydroplane, or a stability issue. The investigation revealed that hydroplanes in general do not ride well in the water when not on a plane. They are designed to operate almost entirely out of the water. When hydroplanes are not on a plane, they have a tendency to have a sluggish response and throw a large amount of water over the sponsons. Testimony from hydroplane operators revealed that they want to get the hydroplane on a plane as soon as possible to avoid this situation. With minimal oversight on the construction and design of the hydroplane's hull or no stability testing requirements by the APBA, it is difficult to determine how the hydroplane will respond in the water when not on a plane.

18. There was speculation that GNH-12 initially suffered damage as a result of the starboard sponson impacting the water prior to the allision with the "A SHORE THING". The impact could have flooded the GNH-12 and consequently weighed it down. This possibly could have caused the GNH-12 to slow and begin to abnormally spill water over the sponsons. Mr. [REDACTED] testified during initial and follow-up interviews that the water conditions at the "Thunder on the Narrows" were satisfactory and not unusual. Additionally, all three qualified drivers on the course with [REDACTED] provided testimony that they did not observe any "rollers" and water conditions were satisfactory for hydroplane racing. [REDACTED] did not recall any forceful impact of the boat with the water that could potentially damage the hull during the time prior to the incident. The speculation that there was damage before the allision is unfounded.

19. The post casualty inspection revealed the GNH-12 sustained an approximate 5 1/2' long by 2' wide opening to the starboard sponson along with various stress fractures along the starboard side of the hull. The GNH-12 starboard sponson lodged into the outboard of the "A SHORE THING". Marks from the outboard motor on the GNH-12's hull were visible from the tip of the starboard sponson to midship. This indicated that the opening in the GNH-12's hull was a combination of the velocity of the impact causing the fiberglass reinforced [REDACTED] to detach from the sponson and the outboard motor tearing a hole and fracturing structural members.

20. In the vicinity of the damage to the GNH-12, there was the presence of rot and mold on the structural members and hull. There were signs of delaminating of the plywood hull bottom.

Additionally, fasteners in the vicinity of the damaged area appeared rusted and worn. This was consistent with the age and material of the vessel and the indication of having normal water intrusion in the sponson. While it's possible that the GNH-12 sustained damage to the starboard sponson prior to the allision due to the material condition of the hull, the damage discovered during the post-casualty inspection was more consistent with impact damage as a result of the allision with the "A SHORE THING's" outboard motor and stern.

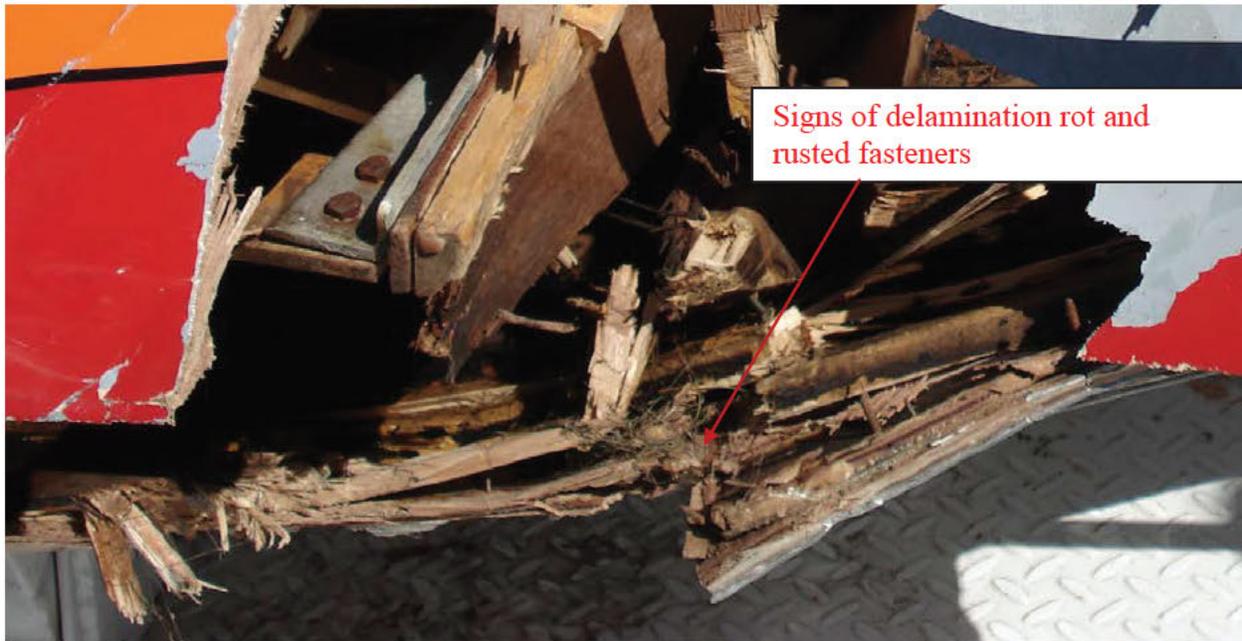


Figure 15 – Close up image of the damage to the GNH-12 indicated signs of delaminating, rot, and rusted fasteners

Unexpected Reduction in Speed

21. ██████████ stated that the GNH-12 seemed to unintentionally slow down just prior to the incident. Video evidence obtained during the investigation of the GNH-12 rounding turn one shortly before the incident visually and audibly depicts the GNH-12 intentionally slowing down and coming off plane to get behind the other qualified drivers. Distinct audio could be heard of the GNH-12's engine slowing down.

22. Testimony provided by ██████████ indicated that the GNH-12 was operating satisfactorily and without issue on race day. Mr. ██████████ did not describe that he experienced any equipment failure, issues with the engine, or steering problems. He did not state that he was experiencing any issues similar to the low oil pressure issue that the GNH-12 experienced during previous attempts to race. ██████████ indicated that the gauges were operable and that the oil pressure was approximately 75-80 psi, water temperature approximately 120 F, and the RPM was approximately 5500.

23. The post casualty inspection did not reveal any specific signs of equipment failure. When the steering system was operated during the post casualty inspection, it was noted that the rudder would turn to full port, but would not turn to full starboard. Testimony provided by the Chief

APBA Inboard inspector, [REDACTED] [REDACTED] indicated that it is not uncommon for the rudder to not go to full starboard on hydroplane boats. The course is based on making left turns. Any turns to the right or full starboard are minimal if any. The ability of the GNH-12's rudder to not turn to full starboard would not have changed the outcome of the casualty.

Failure to Reduce Speed or Alter Course

24. Throughout the course of the investigation, [REDACTED] [REDACTED] indicated that he maintained his lane, course and speed prior to the allision with the "A SHORE THING". He did not make any specific action to alter course or speed. [REDACTED] indicated that he was aware of the three other qualified drivers approaching the GNH-12 and did not want to make a course change to port to impede or run into the other qualified drivers. He maintained his outside lane. [REDACTED] described he was thinking about shutting the GNH-12 down when his vision was obscured, however, his decision making process was accelerated as a result of the rate of speed that the GNH-12 was travelling and the closing distance of the spectator boats.

Use of two-way communications

25. In the APBA Inboard Rules, the Grand National Hydroplane had a class rule (Rule 47.12) that stated: "It is mandatory that all Grand National Hydroplanes competing have two-radio communication". The investigation revealed that [REDACTED] [REDACTED] was not utilizing a two-way radio communication system during the "Thunder on the Narrows" Grand National hydroplane race as required by class rules. The GNH-12 was equipped with a means to utilize a portable radio system; however, it did not have a radio installed onboard. Mr. [REDACTED] two-way helmet radio was not compatible with the GNH-12's installed communication system.

26. In testimony provided by the GNH-12 owner, [REDACTED] he believed it was the operator's responsibility to utilize a "spotter" and maintain a two-way communication system with the "spotter," not the owner. [REDACTED] did not ensure that [REDACTED] maintained two-way communications when utilizing the GNH-12. A "spotter" was a person designated by the racing team to strictly observe and maintain communication with the operator involved in the race. The "spotter" would communicate positions of other drivers on the course to the operator that he or she is "spotting" for. There was not any requirement within the APBA Inboard rules that required the use of a "spotter". The GNH-12 team was not utilizing a spotter during Mr. [REDACTED] race.

27. [REDACTED] was unaware of the Grand National class requirement to utilize a two-way communication system. The head referee was aware of the requirement, however, he found it difficult to enforce since drivers carry their own personal radios with them. At the time of the investigation, the APBA had not developed a process for ensuring participants maintain two-way communications.

Course set up and size

28. The race course was set up the morning of June 28, 2015, by KNRA and APBA staff. The inside racing markers were placed utilizing GPS coordinates. The inside race markers were red

in color and were passed to the drivers left side. The outside markers were placed utilizing the approximate position from previous “Thunder on the Narrows” events and were not set up utilizing GPS location. The outside markers are gold in color and establish the overall course width. The outside course markers would have been passed to the driver’s right side. The investigation revealed that since there was not a chart or course diagram that indicated the location or coordinates of the outside course markers, the KNRA and APBA staff based the placement of the outside course markers on the approximate location that was used the previous year. There was no record of coordinates of the outside course markers used the previous year, so APBA and KNRA staff would attempt to recall the previous location from memory and place the outside markers based on a visual estimate of course width and distance from the red inside course markers.

29. The investigation revealed that there is little guidance or policy to determine if the course size is adequate for the class of Inboard hydroplane that is racing. The Racing Committee often determines in advance the approximate size of the course and the amount of participant vessels that can compete in a heat based on prior events and feedback. In accordance with APBA Inland Rules (Rule 6.3.5), the referee has the authority to “...work with Race Committee in modifying the race course as may be deemed necessary to assure the safety of drivers and spectators”. The head referee, Mr. [REDACTED] [REDACTED] believed the course was adequate to race approximately five total Grand National class hydroplane boats and did not observe any issue that would require the modifying of the course. Additionally, [REDACTED] had been the referee for the entire 25 years the race has been in existence.

30. The course diagram submitted with the APBA Regatta Insurance application illustrated an approximate 250’ clear zone from the outside course marker to the start of the spectator area where the incident occurred (see Figure 8). The 250’ clear zone was the shortest distance from the outside course marker to the spectator zone for the entire course. The basic minimum distance standards set by the APBA Regatta Insurance application is 120’ from the outside marker to an unprotected spectator area and that the spectator fleet area **should** be 250’ when a barrier of some sort is not being utilized; however, the description of the event course layout in the APBA insurance application stated: *The course will be controlled by using outside course buoys a minimum of 120 feet from any fixed spectator area when an acceptable barrier is in place. This **must** include docks/piers and a minimum of 250’ from any floating spectator area including boats.* There was not a barrier of any sort in place protecting the spectator fleet so distance factors had to be used. The investigation found the APBA Regatta Insurance application minimum distance requirements to be ambiguous. The difference between **should** and **must** be 250’ is significant. One description appeared to be a requirement and the other a recommendation. In either case, the event course diagram submitted to the APBA by KNRA for sanctioning approval listed the minimum spectator fleet distance as 250’ from the outside course markers.

EVENT COURSE LAYOUT

An APBA event site must meet the basic minimum standards described below to be considered for an APBA sanction. The course will be controlled by using outside course buoys a minimum of 120 feet from any fixed spectator area when an acceptable barrier is in place. This must include docks/piers and a minimum of 250 feet from any floating spectator area such as boats. Offshore races do not need to use outside course markers.

Basic Minimum Standards

An APBA event site course layout should specifically use the following:

- A. All spectator/public viewing areas must be protected by natural, pre-existing man made, or temporarily installed positive barriers at least 36 inches high (if a bank, dock, etc., measure vertically from the water; if a temporary barrier such as a D.O.T., measure vertically from the ground) and of sufficient mass to reasonably be expected to stop the fastest and heaviest class of boat involved.

If a temporary barrier is used and is not placed a minimum of 30 feet from the shoreline, spectator fencing must also be used and placed a minimum of 30 feet behind the barrier.

--OR--

- B. In lieu of the barrier, distance factors may be used depending on other physical factors of each site.
 1. Minimum distance from outside marker to unprotected spectator area is **120 feet**. The spectator fleet distance should be **250 feet**.
 2. Outside course markers must be placed a minimum of **100 feet** from any area which is not designated a spectator area, but could be used without the approval of the race committee; i.e. private dock.
 3. Offshore events are **600 feet** from race course. This dimension must also be used in inlets and any starting area.

EVENT LOCATION DIAGRAM SHEET

VERY IMPORTANT: POLICIES/CERTIFICATES/BINDERS WILL NOT be processed by the company unless a DETAILED DIAGRAM AND SUPPORTING PHOTOS accompany the application.

SHOW LOCATION AND IDENTIFY THE FOLLOWING ITEMS IN THE DIAGRAM: Spectator viewing area, spectator parking areas, staging areas, restricted areas, pit areas, competition course, barriers, fences, concessions, restrooms, fire extinguishers, ambulances, security personnel, distances between course and nearest crowd control fence and direction North. Acknowledge any staging area if outside of the designated restricted area. Staging areas cannot include any starting of motor craft or running of propellers.

PICTURES MUST BE TAKEN: Between course and any area used by spectators and/or participants, parallel to course and barrier/fence. (Note direction taken and number each photo). Photos are good for 3 years.

USE SYMBOLS: Include the following symbols in your diagram:

- S Security
- (X) Fire Extinguishers
- (A) Ambulance
- (C) Concessions
- (F) Rest Room

N North indicate the direction of NORTH on diagram

_____ Barrier

_____ Fence over 5'

_____ Fence under 5'

O→ Photograph – indicate photo number in the circle and position the arrow in the direction the photo was taken.

Figure 16 – Image of APBA Regatta Insurance application Event Course Layout description and standards.



Figure 17.1 – Image of spectator vessels observing the Thunder on the Narrows race and gold outside course marker. Image was taken from spectator drone video footage on the day of the incident.



Figure 17.2 – Image of the string of spectator vessels in the vicinity of the incident location observing the Thunder on the Narrows race and gold outside course marker. Image was taken from spectator drone video footage on the day of the incident.

31. When a USCG Sector Baltimore Investigator arrived on-scene directly following the casualty, the event organizers had cancelled the rest of the race and subsequently removed the inside and the outside course markers as a result of the incident. The event course layout and location of the outside course markers were not available for post casualty examination as a result. The USCG obtained footage from a video sharing website taken by a spectator who filmed a portion of the race that day utilizing an unmanned aircraft system (UAS); however, UAS footage of the actual incident itself was not available. The UAS footage obtained as evidence for the investigation showed the spectator fleet in relation to the location of outside course markers including the string the of spectator vessels where the incident occurred. In the footage obtained from the drone, it appeared that the spectator fleet was not at the required minimum of 250' from outside course markers as required by the APBA Regatta Insurance application's course diagram submitted to the APBA for sanctioning approval. The 250' spectator fleet distance is equivalent to approximately 86 yards. In comparison the overall length of a football field is equivalent to approximately 120 yards. The minimum spectator distance should have been approximately $\frac{3}{4}$ of a length of a football; however, the UAS footage obtained during the investigation did not appear as though the spectator fleet maintained the 250' distance requirement.

32. Due to the shallow water conditions of the majority of the spectator vessel areas, three USCG Auxiliarists were required to patrol the spectator areas via PWC, while one Auxiliarist patrolled the event via patrol vessel. Interviews with the Auxiliarists indicated that the spectator boats remained behind the gold outside course markers throughout the course of the event and they did not have any issues with spectator vessels attempting to enter or access the race course area. Testimony provided by the USCG Auxiliarists indicated that were not at all aware of the 250' minimum safe spectator fleet distance required by either the APBA insurance application and/or the course diagram submitted with the APBA insurance application. They were instructed by the race organizers to only ensure that spectator craft stay behind the outside course markers and were not advised of any distance requirement by the sponsor. The Auxiliarists maintained this distance by maneuvering their PWC between the outside course markers and the start of the spectator zone. As long as the Auxiliary on PWC had enough room to maneuver their PWC between the spectator fleet and the outside course markers, the distance was deemed adequate

enough to ensure the safety of the spectator fleet. The majority of the Auxiliarists had patrolled the event for approximately five or more years. All Auxiliary interviewed during the investigation indicated that maneuvering their PWC between the spectator fleet and the outside course markers was how they maintained safe spectator fleet distances and had never been advised of any specific distance requirement at previous events.

33. An onsite inspection of the incident location revealed the string of spectator boats in the vicinity of the incident location could not move any further away from the outside course marker. There would have been the risk of running aground because of the shallow water located directly behind them.

Marine Event Permitting – Safety Review Stage

34. USCG Sector Baltimore initiated the Marine Event Permit application review submitted by the Kent Narrows Racing Association in accordance with the guidance provided in COMDTINST M16751.3 “Permitting of Regattas and Marine Parades ” and local policy (Sector Baltimore Instruction 3120.6). In accordance with 33 CFR 100.15, since the Thunder on the Narrows event posed an unusual hazard due to the high speeds of the hydroplanes, a Marine Event Permit was required. The review predominantly consisted of reviewing the information contained in the application and a review of the chartlet which had hand drawn spectator areas and the overall race course. The chartlet spectator areas were not to scale. The investigation revealed that it was the same chartlet and generally the same application that was submitted for review since 2012 with the exception that every application indicated that it had inboard hydroplane boats with speeds in excess of 130 mph, whereas the 2015 Marine Event Application that was submitted indicated that it would have inboard hydroplane boats with speeds in excess of 140 mph.

35. The USCG District Commander and Captain of the Port can stipulate special local regulations in accordance with 33 CFR 100.35. The “Thunder on the Narrows” event had an annual published Special Local Regulation in the Fifth Coast Guard District under 33 CFR 100.501. This regulation stated under 33 CFR 100.501 (c) (4) that: *“Spectators are only allowed inside the regulated area if they remain within a designated spectator area ...”* The incident occurred outside of the regulated area; however, due to the inaccuracy of the hand drawn spectator areas indicated on the chartlet submitted with the marine event application to Sector Baltimore, it is difficult to determine if the incident occurred in a designated spectator area; however, a side by side comparison of the sketch and the incident location appeared to indicate that the incident occurred outside of spectator areas that were indicated on the chartlet submitted with the application. In testimony provided by Mr. [REDACTED] the chartlets or diagrams that are submitted with the marine event applications do not all have to be professionally engineered diagrams of the event location and that there is not a requirement for this. In the case of the chartlet submitted with the 2015 Thunder on the Narrows application, [REDACTED] described it as somewhere in between a simple sketch and a professionally engineered type of diagram. The investigation revealed that a requirement exists for the submission of a chart or scale drawing of the event area. 33 CFR 100.15 (d) (9) stated that the application shall include: *a section of chart or scale drawing showing the boundaries of the event, various water courses or areas to be utilized by participants , officials and spectator craft.”* While the chart submitted with KNRA

application met the requirement, analysis of the spectator areas drawn on the chartlet were not accurately portrayed in comparison to the incident location and the course diagram (see figure 10) submitted with the APBA insurance application.

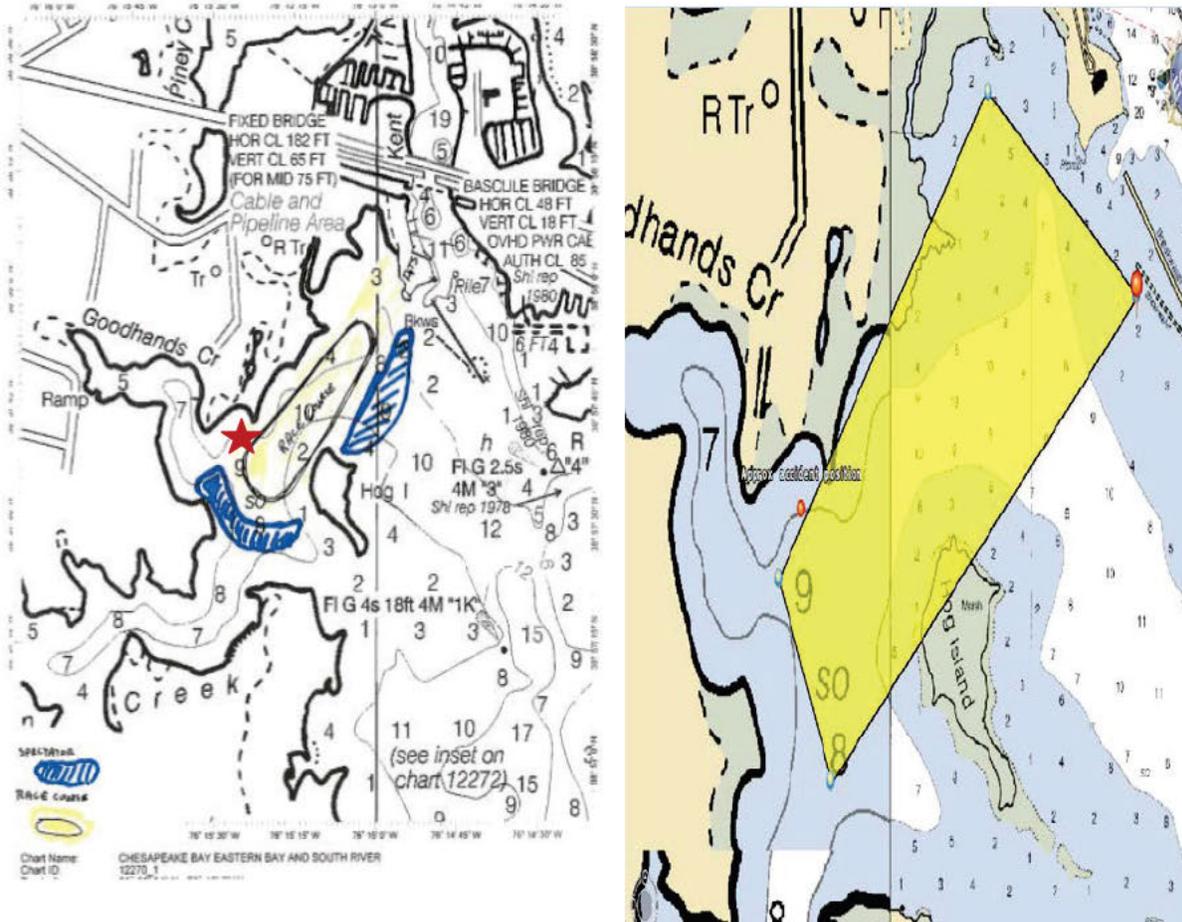


Figure 18 – Side-by-side comparison of the hand drawn spectator area submitted with the chartlet showing the incident occurred outside a spectator area and the regulated area with the incident location.

36. The Fifth Coast Guard District organized all of the recurring marine events that occurred within their district into one special local regulation, 33 CFR 100.501. The regulated areas for each specific event are listed in Table 1 with the corresponding coordinates for each regulated area. The investigation revealed that the COTP can stipulate specific special local regulations for marine events occurring within their respective COTP zone; however, the condensed special local regulation published by the Fifth Coast Guard District made it easier to manage due to the amount of recurring marine events within each respective COTP Zone and throughout the Fifth Coast Guard District. The investigation revealed that publishing individual special local regulations for marine events occurring within their respective COTP zones sometimes presented legal challenges whereas if the marine event was not submitted in a timely manner, the event may run the risk of not having an enforceable regulation and/or regulated area on the date of the event. Additionally, by condensing all of the marine events into one special local

regulation, it facilitated the amendment of each marine event by submitting one update to the regulation rather than numerous updates to various marine events occurring in each respective COTP zone.

37. COMDTINST M16751.3 “Permitting of Regattas and Marine Parades” Chapter 4, Section A entitled “Risk Based Decision Making” (pg 4-1) required that Districts and Designated Officials conduct a risk based analysis of marine event permit applications to determine if the event will introduce an unusual or extra hazard. It stated that upon receipt of a Marine Event Application, if “yes” was answered to any of the following questions, then a Marine Event Permit would be required:

- a. Will the event involve an unusually large concentration of traffic on the water or otherwise interfere with routine navigation?*
- b. Will the event include inherently hazardous competitions or are craft expected to travel at high speeds?*
- c. Is there an expectation, or does historical data exist, that predicts the presence of non-participant commercial or pleasure craft in the area that may interfere with the safe conduct of the event?*
- d. Could the event result in a hazard to navigation as defined in 33 CFR§ 64.06?*
- e. Is the waterway itself especially hazardous (e.g., speed of current, presence or proximity of rocks and shoals, etc.)*
- f. What is the safety history of similar events?*
- g. Are there any safety concerns unique to the local area that must be addressed?*
- h. Are the existing navigation rules sufficient, or should they be supplemented in the vicinity of the proposed event?*

Since the Thunder on the Narrows event had vessels that travelled at high speeds, a Marine Event Permit was required. In order to mitigate the safety concerns, District, Designated Officials, and COTP have risk mitigation tools to ensure that safety concerns are addressed. One of the risk mitigation tools is the use of a special local regulation. In accordance with COMDTINST M16751.3 “Permitting of Regattas and Marine Parades” Ch. 4-D(1) (pg 4-2), *Special local regulations may be promulgated either to address safety issues beyond the control of the sponsor, or to remedy safety concerns insufficiently addressed in the sponsor's application.* The Thunder on the Narrows event had a special local regulation that established a regulated area. In accordance with 33 CFR 100.35, a special local regulation...*may include a restriction on, or control of, the movement of vessels through a specified area, prior to, during and immediately after the regatta, or marine parade.* The intent of the special local regulation is to have an enforceable regulation to ensure that transient craft and spectators remain out of the regulated area. A review of the history of the regulated area for the Thunder on the Narrows published in 33 CFR 100.501 revealed that it was the same regulated area dating as far back as 1998. The investigation could not identify exactly how the regulated area was originally determined for the event.

38. The investigation revealed that there is little guidance or policy on safe spectator distances for power boat races to help aid the COTP in the determination of a regulated area for a special local regulation for power boat races. The only clear delineation of safe spectator distances found during the investigation were the distances listed in the APBA Regatta Insurance application which was not included in the Marine Event application submitted by KNRA to Sector Baltimore. The APBA Inboard and General Safety Rules did not specify safe spectator fleet distances. The APBA Inboard Rules (Rule 13.1) specified that: "*Courses shall be laid in reasonably protected water as free from turns as practicable. The finish line shall be at the starting line. Each lap of the course shall be not less than one statute mile and not more than 1-2/3 miles and shall be subject to the approval of the Inboard Racing Commission thirty (30) days in advance.*" COMDTINST M16751.3 "Permitting of Regattas and Marine Parades", which was a Coast Guard wide policy for the permitting of Marine Events, cited an example of determining a regulated area for power boat races; however, it was only an example to aid COTP's or Districts and not a requirement. COMDTINST M16751.3, Ch. 4-D(1) (pg. 4-2) entitled "Special Local Regulations" stated the following example:

EXAMPLE: *To promote safety of life on the navigable waters of the United States immediately before, during and after the power boat race, the District Commander issues special local regulations establishing three areas: (1) a "spectator area" restricting vessels to operate at No Wake Speed; (2) a "buffer zone" excluding all vessels; and (3) a "race area" limiting access to all vessels except those participating in or conducting the race.*

On May 6, 2013, COTP San Juan, Puerto Rico established a regulated area that incorporated the above example as a regulated area for a power boat race as a special local regulation listed in 33 CFR 100.35T07-0297. The Federal Register stated:

The special local regulation will establish the following three areas: a high speed boat race area, where all persons and vessels, except those persons and vessels participating in the high-speed boat races, are prohibited from entering, transiting through, anchoring in, or remaining within; a buffer zone around the race area, where all persons and vessels, except those persons and vessels enforcing the buffer zone or authorized participants transiting to their authorized the race area, are prohibited from entering, transiting through, anchoring in, or remaining within; and a spectator area, where all vessels are prohibited from anchoring and from traveling in excess of wake speed, unless authorized by the Captain of the Port San Juan or a designated representative.

The investigation revealed that this was the only special local regulation found in 33 CFR 100, that mirrored the three areas identified in the example provided in COMDTINST M16751.3 "Permitting of Regattas and Marine Parades" to aid in the determination of a regulated area for power boat races. The majority of the special local regulations in 33 CFR 100 varied greatly with the enforcement and determination of the size of the regulated area. While some special local regulations identified and/or clarified spectator areas, other than the special local regulation listed in 33 CFR 100.35T07-0297, a special local regulation could not be found that mirrored the example provided in COMDTINST M16751.3 "Permitting of Regattas and Marine Parades". At the time of the investigation, there was latitude provided to the COTP and Districts in the determination of the regulated area for planning purposes rather than the one size fits concept

because power boat races differ due to the various locations, geography, amount of participants, anticipated spectator craft...etc. Unlike COTP San Juan, COTP Baltimore and the Fifth Coast Guard District's regulated area for power boat races and the regulated area for the Thunder on the Narrows event did not incorporate a spectator area, a buffer zone, and a race area into the regulated area; however, there was not a requirement at the time to do so.

39. Another risk mitigation tool available to COTP is to utilize Marine Event Permit Conditions. In accordance with COMDTINST M16751.3 "Permitting of Regattas and Marine Parades", *The District Commander, Captain of the Port, or Designated Officer may include conditions on the permit requiring specific action from the event sponsor*; however: COMDTINST M16751.3 Ch 4-D(4)(a) (pg 4-3) stated:

The Coast Guard should avoid prescriptive conditions designed to force actions of the event sponsor to improve the safety of the event for participants. If the District Commander or COTP have concerns that the event sponsor will be unable to ensure the safety of the participants, then the application should be denied unless the event sponsor provides additional information, in writing, that demonstrates to the satisfaction of the Coast Guard that the sponsor has a safety plan in place that will mitigate these concerns.

A review of the approved Marine Event Permits for the Thunder on the Narrows events dating back to 2012 revealed that the language and conditions on the permit were similar on every permit up to the 2015 event. The investigation revealed that the permit language is often generic and commonly used language since the intent is to not have prescriptive conditions, but rather have sponsors address safety related concerns through the use of a safety plan, or negotiated before the issuance of the Marine Event Permit. Additionally, placing too prescriptive of conditions on the Marine Event Permit may place an undue burden on the sponsor and/or the Coast Guard who is responsible for enforcing the Marine Event Permit. The investigation revealed that the USCG Sector Baltimore would generally refrain from putting prescriptive conditions on the permit such as no swimming or rafting while power boats are on the water, but may choose to negotiate it with the sponsor through the use of a safety plan, or denial of the application. Sector Baltimore did not require a safety plan from KNRA or negotiate whether or not swimming or rafting would be allowed while power boats were on the race course.

40. In accordance COMDTINST M16751.3 "Permitting of Regattas and Marine Parades" Ch 4, E entitled "Sponsor Safety Measures (pg 4-4)":

The sponsor is ultimately responsible for the safe conduct of the event. In order to demonstrate the safety of the event, the sponsor must provide details of any safety measures being employed for the event. Event sponsors can demonstrate a commitment to safety by implementing appropriate measures or combinations of measures, such as:

EXAMPLE: *A detailed safety plan.*

EXAMPLE: *Designation of sufficient numbers of vessels and/or observers whose sole task is to ensure the safety of the event.*

***EXAMPLE:** Compliance with nationally-accepted standards, such as the National Fire Protection Association (NFPA), International Sailing Federation (ISAF), USA Triathlon (USAT), American Power Boat Association (APBA), or others.*

***EXAMPLE:** Approved permits from other Federal, State, and local authorities, as applicable.*

***EXAMPLE:** A demonstrated acceptable safety record by the event sponsor for past events similar to the one proposed in the permit application*

NOTE:** The list above is not all inclusive. It demonstrates some commonly used mechanisms for demonstrating sponsor efforts to ensure safety for an event. **These examples should not be viewed as requirements of this Manual.

The investigation revealed that the Thunder on the Narrows event had an exemplary safety record without any notable incidents or casualties within 25 years of its operation. Additionally, the event had been sanctioned by the APBA at previous Thunder on the Narrows events, and was sanctioned for the 2015 event; however, part of the sanctioning process for a power boat event required that the sponsoring organization submit an insurance application to the APBA. The insurance application required a detailed course diagram and specified minimum spectator distances. The minimum spectator distance was a minimum of 250' from the outside course markers. The insurance application and/or approval of the insurance application by the APBA which officially sanctioned the event was not required by USCG Sector Baltimore for the 2015 event or previous events as part of the review process for the Marine Event application. Additionally, the insurance application submitted to the APBA by KNRA contained a more sophisticated course diagram than the chartlet submitted with the Marine Event Permit Application to USCG Sector Baltimore for review².

² An overlay of the regulated area (figure 10) and the course diagram (figure 5.2) was not included in this report since the course diagram was not drawn to scale. The overlay would not have accurately portrayed the course diagram in relation to the regulated area.

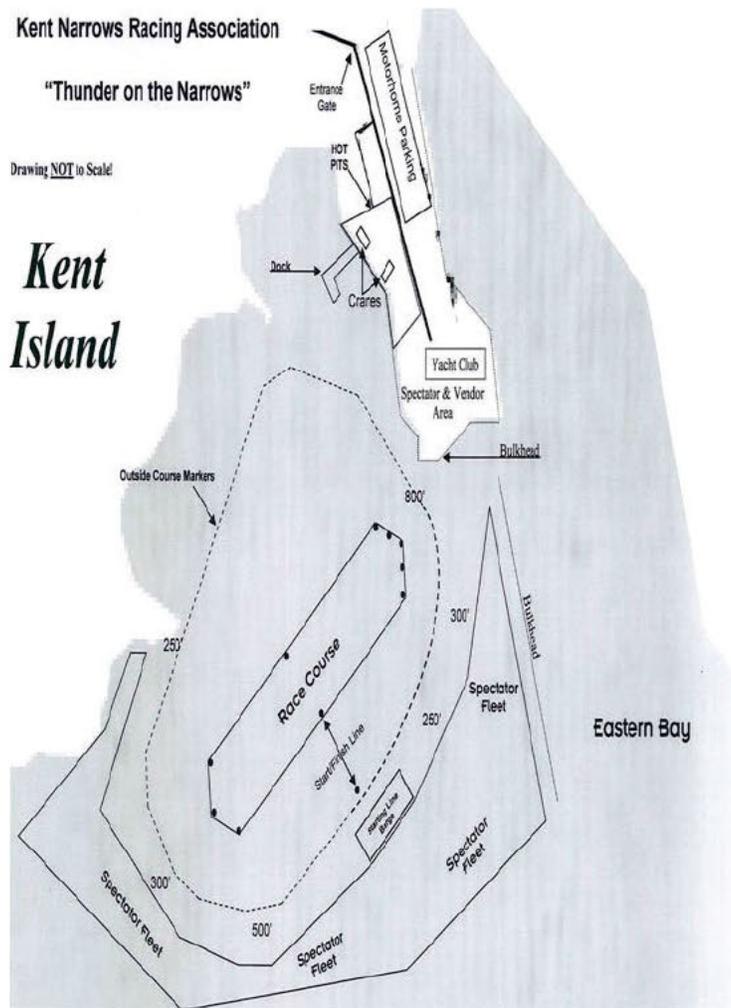


Figure 19- Diagram of race course layout that was submitted with insurance application to the APBA, but not submitted with the Marine Event application

Testimony provided by Mr. [REDACTED] indicated that it was not required that KNRA submit a detailed safety plan in conjunction with the Marine Event Permit application for the 2015 Thunder on the Narrows Event. Mr. [REDACTED] indicated that the proven safety track record, sanctioning of the event in the past by the APBA, the special local regulation and regulated area listed in 33 CFR 100.501, and the requirement to have an Official Patrol on scene satisfactorily mitigated the risk, which resulted in the approval of the Marine Event Permit for the Thunder on the Narrows power boat race without requiring additional information. Mr. [REDACTED] indicated that he had never required the insurance application and was unaware of the existence of the race course diagram that specified minimum spectator distances which was submitted with the insurance application to the APBA. Mr. [REDACTED] indicated that had he been in possession of the course diagram, it may have changed the review process and potentially affected the size of the regulated area that was currently already in place and in the regulations.

41. A spreadsheet of upcoming marine events for 2015 within the COTP Baltimore zone was submitted to the State of Maryland Boating Law Administrator (BLA) Representatives, Mr.

██████████ Maryland Department of Natural Resources, and Captain ██████████ ██████████ Adjutant to the Superintendent, Maryland Natural Resources Police by USCG Sector Baltimore. Testimony provided by ██████████ indicated that the Maryland BLA requested to not receive the applications submitted for review for all marine events, but requested that Sector Baltimore submit a spreadsheet of all the marine events occurring within the state of Maryland within the Baltimore COTP zone. An e-mail is submitted by ██████████ bi-weekly to the Maryland BLA updating all of the marine events occurring throughout the year. The spreadsheet was obtained during the investigation and it did not duplicate the information included in the application. It contained the dates, times, location, patrol commander assigned, action category and status; however, it did not contain the amount of information included in the application including the chartlet or course layout. The e-mail with the spreadsheet is submitted to the Maryland BLA, industry partners and CG personnel for review and comment. Mr. ██████████ indicated that there was no comment or feedback for the Thunder on the Narrows event and that there is generally not a lot of feedback for recurring marine events such as the Thunder on the Narrows power boat race.

42. Condition 7 on the Marine Event Permit #35-15, approved by USCG Sector Baltimore, for the Thunder on the Narrows event stated:

Any markers or mooring buoys established for this event are to be established on the date of the event and discontinued immediately following the event. If markers or buoys are used, they must be established and maintained on the positions shown on the chartlet attached to the notice. The markers must not be colored in accordance with the lateral systems of aids to navigation. Non-compliance with these conditions (e.g. buoys not in stated positions or unauthorized color) will result in the termination of the event.

The chartlet submitted by KNRA with the Marine Event application to USCG Sector Baltimore did not contain the location or approximate positions of both the inside course markers and the outside course markers. The spectator areas were hand drawn in blue and were not drawn to scale. In accordance with the 2015 APBA General Safety Rules for Inboard Hydroplane Racing Rule 5:

5. It is mandatory that all race courses have outside course marker/buoys and it is recommended that these are to be different than the markers used to mark the course. The Offshore category and marathon racing are exempt.

The APBA insurance application required for sanctioning of the event required that a course diagram be provided with the location of outside turn markers and distance to spectator fleet. The course diagram submitted to the APBA did not include the location of outside course markers or outside turn markers; however, it did include spectator fleet distances. Again, this course diagram was not submitted to USCG Sector Baltimore in part of the review of the Marine Event Application. USCG Sector Baltimore approved the Marine Event application and issued Marine Event Permit #35-15; however, it did not possess a chartlet or diagram that identified the location of the outside or inside course markers that was required by condition 7 of the permit. While it was a condition on the permit, the chartlet submitted with the application met the requirement of the Marine Event application (CG 4423), 33 CFR 100.15(d) (9) which stated that the sponsor must submit with the application:

A section of chart or scale drawing showing the boundaries of the event, various water courses or areas to be utilized by participants, officials, and spectator craft

The chartlet submitted by KNRA met the intent of the regulation; however, since the placement of markers was a condition on the permit, it did not meet the conditions because the markers were not identified on the chartlet. This condition also indicated that non-compliance with the placement of buoys as indicated on the chartlet would have required the termination of the event. This would have been difficult to enforce since the chartlet did not contain the position of the outside or inside course markers, but rather a hand drawn approximate location of the spectator vessel boundaries.

Monitoring of the Thunder on the Narrows

43. USCG Sector Baltimore's policy assigned an Action Category which determined whether or not a patrol was required for the event. The policy indicated that if a regulated area was required to be enforced then an Action Category A was assigned and a dedicated non-SAR USCG asset was required to be on scene during the event. This policy was also consistent with 33 CFR 100.501 which stated that an Official Patrol was *any vessel assigned or approved by their respective Captain of the Port with a commissioned, warrant, or petty officer onboard displaying a Coast Guard ensign.* Only an Official Patrol has the authority to control all movement of vessels in the regulated area or the special local regulation. Additionally, in accordance with 33 CFR 100.45

Any private vessel so utilized shall have onboard an officer or petty officer of the Coast Guard who shall be in charge of the vessel during the detail and responsible for the law enforcement activities or assistance work performed by the vessel during such detail. Any private vessel so utilized will display the Coast Guard Ensign while engaged in this duty.

Additionally, COMDTINST M16751.3 Ch 7 A (pg 7-1) stated that:

All vessels engaged in regatta patrol shall display proper identifying markings and flags. District Commanders or Designated Officers are responsible for ensuring the proper coordination of regatta patrol assets. Such coordination, however, may not always require the presence of on-scene Coast Guard Vessels.

Testimony obtained by Mr. [REDACTED] indicated that having a USCG petty officer or commissioned officer onboard a private, state, or USCG Auxiliary vessel would fulfill the Action Category A requirement of having a dedicated USCG station asset on scene during the event. The investigation revealed that both USCG Station Annapolis and USCG Sector Baltimore were under the presumption that having USCG Boarding Officers onboard MNRP vessels fulfilled Sector Baltimore's Action Category A and 33 CFR 100.501 requirements; however, the USCG Boarding Officers were not aware that they were fulfilling the role of Official Patrol for the Thunder on the Narrows event. The investigation revealed that the USCG Boarding Officers were in the vicinity of the Thunder on the Narrows race with MNRP, but were not actively

patrolling as the Official Patrol. Additionally, it was determined that the combination of the four Auxiliarists assets, two CG Boarding Officers on MNRP vessels, and a CG Station asset that arrived later on-scene provided the most USCG presence for the Thunder in the Narrows event since 2009.

44. In accordance COMDTINST M16751.3 “Permitting of Regattas and Marine Parades” Ch 7 A, (pg 7-1): *The District Commander, Captain of the Port or other Designated Officer may assign a Coast Guard regatta patrol to monitor the marine event. A patrol should be assigned if special local regulations are issued.* Since the Thunder on the Narrows event had a Special Local Regulation with a regulated area, USCG Station Annapolis was assigned as the Patrol Commander (PATCOM) for the Thunder on the Narrows event. On May 15, 2015, a Memorandum was issued by USCG Sector Baltimore Waterways Department Branch Chief, CDR S. A. [REDACTED] designating Station Annapolis as Patrol Commander.

The Memorandum designating Station Annapolis as the Patrol Commander required that OINC Station Annapolis:

1. *Contact other agencies to determine whether any support can be expected during the event.*
2. *Contact the sponsoring organization prior to their event to coordinate any required meetings, conferences or other communications to:*
 - a. *Verify that the sponsor understands the conditions, local regulations or stipulations that apply.*
 - b. *Determine whether an acceptable procedure has been established to account for and identify each participant at the start and finish of the event.*
 - c. *Agree on emergency signals, and identify medical and emergency transportation resources.*
 - d. *Emphasize the Coast Guard's authority to postpone, delay or cancel the event if dangerous conditions develop, the permit conditions are not followed, or if the sponsor cannot adequately control participants and spectators.*
 - e. *Remind each sponsor of his or her ultimate responsibility for the conduct of the event.*

The investigation revealed that Station Annapolis did not contact KNRA to coordinate any pre-event meeting regarding the safe conduct of the event, and that KNRA did not contact Station Annapolis prior to the event. Station Annapolis did coordinate with the arrangement of the USCG Auxiliary to attend the event and provide support. Additionally, Station Annapolis coordinated with MNRP and USCG Boarding Officers regarding the “Operation Drywater” law enforcement mission; however, there was not any evidence provided during the investigation that indicated any pre-event meeting or coordination between the sponsor, USCG Station Annapolis, USCG Auxiliary, USCG Boarding Officers and MNRP regarding their specific roles and responsibilities for the Thunder on the Narrows power boat race.

45. There were questions during the investigation as to whether it was Sector Baltimore’s responsibility or the PATCOM’s responsibility to coordinate with the sponsoring organization to conduct a pre-event meeting. In accordance with COMDTINST M16751.3 “Permitting of Regattas and Marine Parades” Ch. 7 E (1) (pg 7-1), *The PATCOM should communicate with the event sponsor prior to and, if needed, during the event.* The PATCOM designation memo designated Station Annapolis as the PATCOM and stated that it is the PATCOM’s responsibility to coordinate with the sponsoring organization. Additionally, Sector Baltimore Instruction 3120.6 App. D stated that part of the responsibilities of a PATCOM was to ...*communicate with*

the event sponsor prior to and, if needed, during the event; however, in Sector Baltimore's PATCOM After-Action Report, a line item in the form asks whether or not the sponsor contacted the PATCOM prior to the event. In testimony provided by BMI [REDACTED] and Senior Chief [REDACTED] the Thunder on the Narrows event would not be considered a large scale or complex marine event to warrant a pre-event meeting with the sponsor. In their opinion, larger scale events such as the "Bay Swim" event, a marine event in which there are over 500 swimmers racing a 4.4 mile course across the Chesapeake Bay, involved significant coordination between State, Local and Federal agencies in order to enforce the regulated area and would require multiple meetings to ensure the safe operation of the event. The Thunder on the Narrows power boat race was deemed not as complex of a marine event therefore a pre-event meeting was not conducted. Testimony provided by Mr. [REDACTED] indicated that it had been several years since Sector Baltimore held a pre-event meeting with KNRA regarding the safe operation of the Thunder on the Narrows race. Sector Baltimore typically did not get involved with pre-event meetings unless it was a large scale or complex marine event where significant planning and coordination of the event was involved. Generally, it was the PATCOM's responsibility to coordinate with the sponsor to arrange for a pre-event meeting.

46. The investigation revealed that a USCG Station Annapolis Response Boat did not arrive at the Thunder on the Narrows event until approximately 1530 that day. The PATCOM designation letter issued by Sector Baltimore which designated USCG Station Annapolis as PATCOM stated that they must provide one dedicated response boat to patrol and enforce the regulated area. The e-mail sent from BMI [REDACTED] to Mr. [REDACTED] indicated that one station boat would be at the event to enforce the regulated area; however, a follow up e-mail from BMI [REDACTED] to [REDACTED] on June 15, 2015 indicated that USCG Sector Baltimore would have two USCG Boarding Officers onboard MNRP vessels during the Thunder on the Narrows event. Additionally, Station Annapolis coordinated with the USCG Auxiliary to ensure assets were on-scene to monitor during the event. Testimony obtained from the Boarding Officers who were on-scene during the Thunder on the Narrows event indicated that they were not aware that they were fulfilling the role of Official Patrol and enforcement of the regulated area. They were strictly there in an enforcement capacity for "Operation Drywater". Testimony obtained from BMI [REDACTED] and Senior Chief [REDACTED] indicated that there was confusion as to whether or not the USCG Boarding Officers being in the vicinity of the event were fulfilling the role of enforcement of the regulated area. The investigation could not find any evidence that indicated that USCG Boarding Officers were made aware by USCG Station Annapolis or USCG Sector Baltimore that they were responsible for enforcement of the regulated area.

47. The investigation revealed that the designation of a PATCOM did not necessarily mean that the PATCOM was required to be physically on-scene during the event. USCG Sector Baltimore frequently designated USCG Stations in the vicinity of the marine event area as the PATCOM. The designated PATCOM was required to oversee the event; however, the PATCOM's presence was not always required. The PATCOM would often oversee the event by maintaining communications with the on-scene patrol. If an Official Patrol was required by law, policy or regulation, the OINC of the USCG Station designated as the PATCOM would often delegate to his/her staff to fulfill the role of Official Patrol. During the Thunder on the Narrows event, USCG Station Annapolis maintained radio communications with the USCG Auxiliary on scene patrolling the spectator areas of the race. Evidence obtained during the investigation indicated

that USCG Station Annapolis was in constant radio communication with the USCG Auxiliary patrol team.

48. Investigators determined that there was not a local standard Performance Qualification Standard for designation as a PATCOM. The investigation did not reveal a CG requirement that required a PATCOM to be designated, the PATCOM must complete a specific marine event qualification standard. COMDTINST M16751.3 "Permitting of Marine Events and Regattas" Ch. 7 B (pg 7-1), stated ...*PATCOM is a commissioned, warrant, or petty officer of the Coast Guard designated by the respective Coast Guard Sector Captain of the Port. In order for a PATCOM to be designated at USCG Sector Baltimore, a designation letter by the Captain of the Port was the only requirement. The investigation revealed that a USCG qualification standard existed for PATCOM for High Value Unit (HVU) Maritime Security Zone enforcement; however, that was exclusive to security zone enforcement and did not address functions of a PATCOM during marine events. The perception is that the qualification process for Officer of the Day (OOD) and Coxswain (Boat Operator) is satisfactory for performance of PATCOM duties for marine events.*

49. When asked to provide previous Thunder on the Narrows After-Action Reports, USCG Station Annapolis and USCG Sector Baltimore could only produce the After-Action Report for the 2015 Thunder on the Narrows event. In accordance with COMDTINST M16751.3, *For each event designated, the assigned PATCOM shall complete an After-Action Report (AAR) and provide it to the Captain of the Port no later than one week following the conclusion of the event.* The investigation determined that the after-action reports forms provide an outlet for PATCOMS to communicate the overall performance of the event and to determine whether the sponsor's actions were satisfactory. USCG Sector Baltimore utilized a local after-action report to improve the Coast Guard's overall performance during marine events. In testimony provided by Mr. [REDACTED] the after-action reports were critical in determining changes for upcoming marine events for the following year's annual review of recurring marine events. Mr. [REDACTED] indicated that there was often difficulty in obtaining PATCOM after-action reports from the assigned PATCOM. Testimony provided by the USCG Auxiliary, who had patrolled the event for several years, indicated that the event had generally been run safely and that there would not have been significant information to report on the after-action report.

50. In accordance with Sector Baltimore Instruction 3120.6 Appendix D-4 an Action Category A event required that the PATCOM have a contingency plan in place in the event that the required asset could not be on scene or was otherwise occupied. The investigation discovered that USCG Station Annapolis did not have a PATCOM contingency plan in place. Mr. [REDACTED] indicated that it is the PATCOM's responsibility to ensure that a contingency plan is in place.

51. The investigation revealed that the USCG Boarding Officers and USCG Station Annapolis did not have a copy of the Marine Event Permit, chartlet, or course layout when they were in the vicinity of the race. Additionally, the USCG Auxiliary on-scene utilizing PWC's did not have a copy of the Marine Event Permit, chartlet or course layout. Auxiliarist [REDACTED] could not recall if he had a copy of the permit or chartlet or the APBA Regatta insurance application. Throughout the course of the investigation, all CG personnel interviewed who were involved in the

permitting or PATCOM process did not recall seeing the course layout submitted by KNRA with the APBA insurance application which specified minimum spectator distances.

52. The investigation discovered that the USCG Auxiliary departed approximately forty five minutes prior to the incident occurrence. The Auxiliary arrived on-scene at approximately 0730 and launched their vessels. The Auxiliary patrolled the event from approximately 0830 until approximately 1600. In accordance with COMDTINST M16798.3E "USCG Auxiliary Operations Manual", in seas of less than 4 feet, personnel onboard Aux/non standard vessels must not operate beyond 8 hours. Personnel on PWC must no operate beyond 6 hours. Additionally, trailering counts as 50% of underway time and crew underway time commenced when the crew member reported to the designated place to prepare for the mission. The investigation revealed that the USCG Auxiliary had a verbal crew fatigue waiver in place in order to exceed the required 8 hour time frame; however, the "USCG Auxiliary Operations Manual" stated: *PWCs may not be operated in seas greater than 3 feet. PWC patrols may operate for a maximum of 6 hours during any 24-hour period.* The Auxiliary informed the sponsor and Station Annapolis of their approaching of crew fatigue limits and departed the Thunder on the Narrows event. Both Station Annapolis and KNRA were advised by the USCG Auxiliary of their departure. Testimony obtained from Auxiliarist [REDACTED] indicated that the sponsor requested that the USCG Auxiliary stay or the sponsor would have to stop the event. The event continued even after the USCG Auxiliary departed the event. The USCG Auxiliary were not designated as the Official Patrol asset and was on-scene solely to provide assistance to USCG Station Annapolis and the sponsor. In accordance with COMDTINST M16751.3 Ch 7 G (pg 7-2):

It may be necessary to postpone or cancel the marine event if state or local water patrol officers fail to report for duty, or, if in the judgment of PATCOM, their departure before completion of the event will jeopardize safe conduct and control of the remainder of the marine event. The event sponsor is responsible for having sufficient resources in place to provide for the safety of the event participants. If the aggregate resources are insufficient to provide for the overall safety of the event, to the participants, spectators, and the public, the PATCOM should postpone further activities immediately.

Both the PATCOM and the sponsor continued the race after the USCG Auxiliary had departed. The PATCOM was under the assumption that the USCG Sector Baltimore Boarding Officers were serving as the Official Patrol with the MNRP vessels and allowed the event to continue without the USCG Auxiliary presence. At the time of the Auxiliary departure, there were no indications that the safe conduct and control of the event was in jeopardy and the shutdown of the event by the PATCOM was never in question due to a lack of aggregate resources.

53. At the approximate time of the incident, USCG Station Annapolis CG29108 was conducting a safety boarding onboard a recreational vessel in the general vicinity of Thunder on the Narrows event. Shortly after the completion of the safety boarding, USCG Station Annapolis CG 29108 was diverted by USCG Sector Baltimore Command Center to assist MNRP for a Search and Rescue (SAR) case concerning a capsized vessel in the Chesapeake Bay approximately 1 nautical mile north of the Bay Bridge. The CG29108 departed the Thunder on the Narrows and proceeded to the SAR case. In testimony obtained from BM1 [REDACTED] he considered the CG29108

a force multiplier and not the Official Patrol for the event. BM1 [REDACTED] believed that the USCG Boarding Officers were serving as the Official Patrol. The USCG Boarding Officers were not in communication with KNRA during the event duration and where not aware that they were required to enforce the regulated area. MK1 [REDACTED] was notified by a patron at a local waterfront bar, where they were conducting the BUI arrest, of the race incident.

Swimming and/or Rafting while power boats are on the water

54. 33 CFR 100.501 did not specifically prohibit swimming or rafting outside of the regulated area or while in a designated spectator zone. The incident occurred outside of the regulated area; however, evidence and testimony obtained indicated that the incident occurred within the 250' clear or buffer zone that was required on the APBA insurance application submitted by KNRA to APBA for approval. The Coast Guard was not responsible to control spectator craft and swimming or rafting by spectators **outside** of the regulated area. From a regulatory standpoint, in accordance with 33 CFR 100.35, a special local regulation. . .*may include a restriction on, or control of, the movement of vessels through a specified area, prior to, during and immediately after the regatta, or marine parade.* Additionally, the Fifth Coast Guard's special local regulation 33 CFR 100.501 (2) (c) stated: *The Coast Guard Patrol Commander may forbid the movement of all vessels in the regulated area.* The USCG also had guidance and local policy on the enforcement of the special local regulation regulated area. The guidance provided to the Coast Guard in COMDTINST 16751.3 "Permitting of Regattas and Marine Parades" stated *...the primary responsibility of the PATCOM is to control transient craft to ensure their protection, eliminate safety hazards in the event area, and enforce special local regulations and that **the event sponsor, not the Coast Guard, is responsible for the safety of the event.*** Additionally, Sector Baltimore Instruction 3120.6 App. D-4 "Marine Events, Fireworks Displays & Other Events" stated that PATCOM responsibilities *included control transient craft to ensure their protection, eliminate safety hazards, and enforce special regulations.* Additionally it stated: *Regatta patrols are intended to control spectator craft and transient craft for their protection, eliminate safety hazards in the event area, and enforce special local regulation.* The Marine Event Permit #035-15 issued to KNRA stated: *As the sponsoring organization, you are responsible for the safe conduct of the event.* Testimony and evidence obtained during the investigation revealed that from a regulatory and policy standpoint, USCG Sector Baltimore did not have regulatory enforcement over vessels outside of the regulated area. The USCG's primary responsibility was to control transient craft from entering the regulated area. At the time of the incident, the USCG did not have the authority to control swimming, rafting or spectator craft outside of the regulated area; however, if the swimming or rafting was considered a safety hazard by the sponsor outside of the regulated area or was included in an event safety plan, the PATCOM could act on behalf of the sponsor and eliminate *a safety hazard in the event area.* The investigation determined that it would have been the sponsor's responsibility to control the spectator craft outside of the regulated area while it would be the Coast Guard's responsibility to restrict the transient craft from entering the regulated area.

55. The Marine Event Permit #035-15 did not stipulate any restriction or conditions that prohibited or restricted swimming or rafting during the Thunder on the Narrows event. In accordance with COMDTINST M16751.3 Permitting of Regattas & Marine Events, COTP and Designated Officials are to avoid using prescriptive conditions in the Marine Event Permit. The

permit specified that the sponsor is responsible for the safe conduct of the event which is consistent with the guidance provided in COMDTINST M16751.3 Permitting of Regattas & Marine Events: *“The primary responsibility to protect participants and spectators from the hazards of the event (including other participants) rests with the sponsoring organization”*; however, the USCG Patrol Commander retained the authority to postpone or shut down the event in the event of an unsafe condition. At the time of the event, swimming or rafting outside of the regulated area was not presented to the PATCOM by the sponsor as being unsafe. Swimming and rafting was not in violation of a regulatory requirement, nor a condition of the permit, and did not constitute a postponement or event shutdown by the Patrol Commander.

56. The APBA Inboard and General Safety Rules did not specify any restrictions on rafting or swimming during an APBA sanctioned event. Under Rule 4 of the APBA Inboard rules it stated:

“...The Race Rescue Director shall immediately advise the Referee if, in his/her opinion, any unsafe course conditions (including swimmers in the water, alcohol consumption on the course boats, underage children on course boats, lack of PFD use, debris on course, etc.) exist”.

This was the only reference found to swimming within the APBA Inboard and General Safety Rules. The majority of the safety requirements within those rules are related to the safety of the participants, not to the safety of spectators.

57. In the “Underwriting Information” section of the APBA Regatta Insurance application completed by the event sponsors, KNRA, and submitted to the APBA, it is clear that “No” is marked off next to the question: “Are spectators permitted access to the water for wading or swimming.” This was indicative that at the time of the insurance application submittal to the APBA for approval by the insurance underwriters, spectators were not permitted access to swim or wade at the “Thunder on the Narrows” race by KNRA; however, it did not indicate if rafting was permitted during the event. Testimony and evidence obtained during the investigation indicated that spectators were permitted to swim or enter the water in rafts as long as they remained behind the outside course markers. Testimony provided Mr. [REDACTED] Vice President of the KNRA, indicated that swimming or wading was not permitted while hydroplanes were on the water at any location and has never been permitted throughout the history of the event; however, allowing spectators in rafts while hydroplanes were on the water was not something that was not considered during the completion of the APBA Regatta Insurance application. The rafts from the incident were obtained as evidence during the investigation. Visual examination of the rafts revealed that the rafts offered no additional protection from outside forces specifically in comparison to spectators swimming and/or wading while power boats were on the water. Essentially, the investigation revealed that there would have been no difference in the outcome of the casualty had the spectators had been swimming in the water vice being on an inflatable raft.



Figure 20- Images of the decedent's inflatable raft (left) and Mr. [REDACTED] inflatable raft (right)

58. The USCG Auxiliary maintained the spectator fleet zones on behalf of the sponsoring organization. The USCG Auxiliary did not receive any direction by KNRA, the "Thunder on the Narrows" Race Committee, Referee, or from the PATCOM USCG Station Annapolis that swimming or rafting were not permitted at the event. Testimony provided by the USCG Auxiliary indicated that they were only instructed by the race organizers to keep the spectator fleet beyond the gold outside course markers. There was not specific instruction given that prohibited spectators from swimming and/or rafting in the water. The Auxiliarists assumed that as long as it occurred outside of the gold course markers swimming or rafting was allowed. The Auxiliarists indicated that swimming and rafting had been allowed to occur in previous year's events. Testimony obtained during the investigation revealed that no meeting was held concerning the safety or disallowance of swimmers or rafters.

Work Rest History and Medications

59. [REDACTED] was a type II diabetic and on several medications to control his diabetes. A review of the medications was conducted by Dr. [REDACTED] with the USCG Merchant Mariner's Credentialing Program and [REDACTED] PA-C (Physician Assistant-Certified) Medical Evaluator with the USCG National Maritime Center. The review revealed that the combination of the diabetes medications could possibly result in a hypoglycemic (low blood sugar) episode, particularly if the individual wasn't eating regularly causing an excessive drop in blood sugar. The symptoms of hypoglycemia include: fatigue, shakiness, sweating, anxiety, pale skin, irritability, confusion, visual disturbances, seizures, and loss of consciousness. The 96 hour work-rest history revealed that Mr. [REDACTED] was eating, resting and drinking properly in the hours leading up to the race. Throughout the course of the investigation there was no evidence or testimony that indicated Mr. [REDACTED] was experiencing symptoms of hypoglycemia and was not determined to be a causal factor.

7. Conclusions

In accordance with the Marine Safety Manual, Volume V, the Initiating Event (or first unwanted outcome for this casualty) was the vessel's maneuverability. The wash from the sponson onto the windshield of the cockpit obscured the vision of Mr. [REDACTED] restricting him from making necessary course adjustments to avoid alliding with the moored or anchored spectator boats, and striking spectators in the water.

1. The casual factors that lead to this casualty are:

a) Environment (Hardware): There was no environmental causal factor identified.

b) Personnel (Liveware): There were six personnel causal factors identified.

1. [REDACTED] [REDACTED] failed to slow down or alter course when water spray from the GNH-12's sponsons covered the windshield of the cockpit and obstructed his vision. Mr. [REDACTED] was more concerned with impeding the starting positions of the three other qualified drivers on the course than the location and proximity of the spectators observing the race. While the GNH-12 was travelling at a relatively high rate of speed, had Mr. [REDACTED] decreased his speed or attempted to stop when his vision was obscured, he may have slowed the vessel enough to mitigate damage, serious injury, and loss of life.
2. Mr. [REDACTED] knowingly operated the GNH-12 during a power boat race without maintaining two-way continuous communication with the GNH-12 crew as required by the APBA Inboard Grand National Hydroplane Class Rule 47.12. Mr. [REDACTED] knew his helmet radio was not compatible with the GNH-12's onboard portable radio system; however, he still willingly participated in the competition without continuous two-way communication with a designated spotter. Had Mr. [REDACTED] maintained two-way communication with a designated spotter, he may have been advised that he was heading off course and towards the direction of spectator vessels enabling him to alter course and/or reduce the speed of the hydroplane.
3. The GNH-12 owner failed to advise Mr. [REDACTED] that the GNH-12 had a predisposition to spill water over the port sponson onto the cockpit windshield obscuring the driver's vision and previous low oil pressure issues with vessel. The owner assumed Mr. [REDACTED] was aware of the past issues with the GNH-12 based on their personal relationship. However, Mr. [REDACTED] was generally unaware of any prior issues or predispositions with the GNH-12.
4. Mr. [REDACTED] was an "Unqualified Rookie" and had no experience operating the GNH-12, or a Grand National Hydroplane with a fully enclosed cockpit until he attempted to qualify in a live competition. If Mr. [REDACTED] was more experienced with operating the GNH-12 and it's fully enclosed cockpit, he may have been more familiar with the hydroplane's tendencies and more comfortable operating in a fully enclosed cockpit type hydroplane.

5. The “Thunder on the Narrows” hydroplane race involved high speed water craft travelling at speeds in excess of 150 mph posing an extraordinarily high degree of risk, particularly, to spectators in the waters surrounding the race course. A significant contributing cause to the serious injuries to Mr. [REDACTED] and Mrs. [REDACTED] and the loss of the life was the decision to enter the water while hydroplane boats where on the race course. The spectators that were onboard the string of recreational vessels in the immediate vicinity of the casualty escaped with either minor injuries, or no injuries at all. Had Mr. [REDACTED] Mrs. [REDACTED] and the decedent not been in the water when hydroplane boats were on the race course, serious injury and the tragic loss of the decedent may have been avoided.
6. The “Thunder on the Narrows” hydroplane race had a 25 year track record of safe event operation with minimal incidents or casualties. This exemplary safety record along with the perception that power boat races such as the Thunder on the Narrows were not considered complex Marine Events allowed complacency to affect the coordination for the safety of the event. At no point was a pre-event meeting conducted between KNRA, USCG Sector Baltimore, USCG Station Annapolis and USCG Auxiliary regarding the safety of the event and the safety of the spectator fleet. While a pre-event meeting isn’t a requirement for all marine events, both USCG Sector Baltimore and USCG Commandant policy indicate that the PATCOM should communicate with the event sponsor prior to and if needed, during the event. This type of coordination did not occur for the Thunder on the Narrows event. While the USCG Auxiliary briefly spoke with the race organizers on the morning of the event, critical information such as the minimum 250’ safe spectator fleet distance and sponsor rules regarding swimming and/or rafting were not relayed to them and/or the PATCOM.

c) Equipment (Hardware): There was one equipment causal factor identified.

1. The GNH-12 had a previous history of spilling water over the sponsons and obscuring the driver’s vision while the vessel was not on a “plane” or attempting to “plane”. While the exact cause as to the reason why water was spraying onto the windshield could not be determined, it appeared as though this is a relatively common occurrence with Grand National Hydroplanes equipped with fully enclosed cockpits. Since the design of the hydroplane is intended to for the boat to be on a “plane”, there is little consideration given to the design and the stability of the vessel when not on a “plane”. To combat the inherent design, drivers attempt to get on a “plane” as quickly as possible; however, at the time of the incident, the GNH-12 was struggling to maintain a plane causing an excessive amount of water to spray over the port sponson and onto the cockpit windshield. Had the GNH-12 been equipped with some device or wiper that could clear the cockpit’s windshield of water other than coming up on a plane, Mr. [REDACTED] may have had enough time to see the closing spectator fleet and altered course to avoid the incident.

d) Procedures (Software): There were seven procedural causal factors identified.

1. The qualification requirements listed in the 2015 APBA Inboard Rules allow for an Unqualified Rookie to participate with other qualified drivers in a live competition. The Unqualified Rookie must give way and stay to the outermost portion of the course closest to the spectators when being passed by qualified drivers. If [REDACTED] was on the course without additional drivers in competition, he wouldn't have attempted to give way and veer towards the outside of the course. Mr. [REDACTED] concern of impeding the qualified drivers on the course and abiding by the APBA Inland qualification rules, ultimately, caused him to slow down and steer towards the outside of the course in the direction of spectator vessels.
2. The APBA Regatta Insurance application indicated a recommended minimum distance of 250' from the outside course markers to the start of the spectator fleet. The chartlet submitted with the Marine Event application by KNRA to Sector Baltimore for review did not contain the locations or coordinates for the outside course markers and the spectator fleet distance requirements. At the time of application, the chartlet submitted with the application met the requirements of the Marine Event application (CG 4423), 33 CFR 100.15, and had previously been acceptable in past Thunder on the Narrows applications; however, had a chart or scale drawing been submitted with the Marine Event application that contained the coordinates of the outside course markers and the safe spectator fleet distance by the sponsor or requested by USCG Sector Baltimore, it would have enabled USCG Sector Baltimore to determine whether or not the spectator fleet areas were outside of the required minimum 250' safe spectator fleet distance required by the APBA Regatta Insurance application.
3. The investigation revealed that the course set up and layout by the event organizers on the morning of June 28, 2015 played a critical role in the outcome of this casualty. The 250' safe spectator fleet distance from the outside course marker required by the APBA Insurance application and the course diagram submitted with the insurance application was not established during the initial course set up by the race organizers. The sponsor and race organizers allowed the spectator fleet inside of the 250' clear zone and failed to advise the USCG Auxiliary patrolling on PWC of this requirement. Had the initial race course been set up in accordance with the 250' safe spectator fleet distance requirement, the event organizers would have observed that the surrounding waters were too shallow to allow for a spectator fleet zone at the incident location. The location of where the incident occurred should not have been part of a spectator fleet area based on the safe spectator fleet distance of 250'.
4. There were two separate driver qualification requirements listed in the 2015 APBA Inboard Rules that were applicable to [REDACTED] [REDACTED]. There is a general driver qualification requirement under Rule 11 and a specific Grand National Hydroplane class driver qualification requirement under Rule 47. Mr. [REDACTED] did not present his four written signatures of approval to drive in the GNH class, a brief summary of previous experience, a copy of his current physical, or his APBA membership number

- to the Referee. The Referee did not request to see the documentation prior to Mr. [REDACTED] attempting to qualify. Had the Referee been following the driver qualification requirement under Rule 47, Mr. [REDACTED] would not have been allowed to operate the GNH-12 during the Grand National Hydroplane heat without providing the required documentation to the Referee.
5. The APBA Regatta Insurance application indicated that swimming or wading was not permitted during the Thunder on the Narrows event; however, the investigation revealed that all forms of water entry were allowed while power boats were on the water. While the decedent and the injured parties were in rafts at the time of the incident, the investigation determined that there would have been no additional protection for rafters while power boats were on the water. Since the PATCOM had little authority over swimming/rafting outside of the regulated area and the sponsor is overall responsible for the safety of event, it was the responsibility of the sponsor to enforce the swimming/wading restriction. KNRA failed to enforce the swimming restriction and communicate that restriction to the PATCOM.
 6. A significant contributing causal factor to the casualty was the lack of awareness and enforcement of the minimum 250' safe spectator fleet distances as required by the APBA Regatta Insurance application. Throughout the entire Marine Event Permitting process from the application submitted by KNRA to USCG Sector Baltimore to the monitoring of the event on June 28, 2015, all USCG personnel involved in the Marine Event process were not made aware by KNRA of the minimum safe spectator fleet distances. The awareness of the required minimum distance would have been crucial particularly during the safety review of the Marine Event application. Had USCG Sector Baltimore been made aware of the minimum required spectator fleet distances, they could have increased the regulated area to include the 250' minimum safe spectator fleet distance and/or required a safety plan from KNRA that addressed it.
 7. At the time of the incident there was not a requirement, regulation or policy that required that the regulated area and/or special local regulation incorporate a "buffer zone" or safe spectator distance. While COMDTINST M16751.3 "Permitting of Regatta and Marine Parades" suggested the use of establishing three specific areas for power boat race: spectator area, buffer zone and race area it was listed as an example and not a requirement. Had a requirement to establish these three areas been in place, USCG Sector Baltimore may have requested a course diagram that more accurately depicted the spectator area, buffer zone and race area rather than the chartlet with hand drawn spectator fleet locations that was provided with the original Marine Event application submitted by KNRA.
 2. The investigation noted miscommunication between USCG Station Annapolis and the USCG Sector Baltimore Law Enforcement Boarding Officers regarding the responsibility of the Official Patrol for the Thunder on the Narrows event, but was not determined a causal factor in the casualty. While both the USCG Station Annapolis response boat and the Sector Baltimore Boarding Officers were not aware that they were acting as the Official Patrol enforcing the regulated area, the USCG Auxiliary maintained constant

communication with the PATCOM throughout the event. The Auxiliary ensured the spectator fleet stayed outside of the outside course markers as directed by the event sponsor. There was no evidence presented throughout the investigation that indicated spectator vessels entered the regulated area. Station Annapolis not meeting Sector Baltimore's local policy of providing at least one dedicated asset, or not providing adequate communication to Sector Baltimore's Boarding Officer regarding their status as Official Patrol had little outcome on the casualty. The investigation revealed that Coast Guard Sector Baltimore had the most presence at the 2015 Thunder on the Narrows event since 2009. No on-scene personnel were aware of the 250' minimum safe spectator distance required on the APBA insurance application.

3. The investigation revealed the following:

- a) By not maintaining two-way radio communications [REDACTED] [REDACTED] violated Rule 47.12 of the 2015 APBA Rules for Inboard Racing. It is recommended that the APBA seek the appropriate penalty allotted within the APBA Rules for Inboard Racing for a violation of a safety and/or class rule.
- b) By not presenting four written qualified GNH driver's signatures, a brief summary of previous experience, a copy of his current physical and his APBA membership number to the Referee prior to commencement of the race, [REDACTED] [REDACTED] violated Rule 47.12 of the 2015 APBA Rules for Inboard Racing. It is recommended that the APBA seek the appropriate penalty allotted within the APBA Rules for Inboard Racing for a violation of a safety and/or class rule.
- c) By approving [REDACTED] [REDACTED] to operate the GNH-12 as a new Grand National Hydroplane driver applicant in a competitive race without verifying that [REDACTED] possessed four written qualified GNH driver's signatures, a brief summary of previous experience, a copy of his current physical and his APBA membership number to the Referee prior to commencement of the race, Referee [REDACTED] [REDACTED] violated Rule 6.3.5 of the 2015 APBA Rules for Inboard Racing. It is recommended that the APBA seek the appropriate penalty allotted within the APBA Rules for Inboard Racing for a violation of a safety and/or class rule.
- d) No acts of misconduct, incompetence, negligence, or willful violation of law under 46 Code of Federal Regulations Part 5 were committed by any individual licensed, certificated, or documented that contributed to the cause of the incident;
- e) No acts of misconduct, incompetence, negligence, or willful violation of law committed by any Coast Guard personnel, including an officer, employee, contributed to the cause of the incident;
- f) No evidence that a criminal act under the laws of the United States has been committed.

8. **Safety Recommendations**

- a. It is recommended that the Commandant consider the lessons learned from this investigation and provide additional guidance on the Marine Event permitting process for power boat races throughout the Coast Guard. This will help ensure consistency of the Marine Event permitting process for power boat races throughout the Coast Guard.
- b. It is recommended that the Commandant develop a method that better ensures each COTP reviewing Marine Event permit applications for power boat races occurring in their respective COTP zones are aware of the criticality in ensuring that the section of chart and/or scale drawing of the race course required by 33 CFR 100.15(d) (9) accurately depicts the inside and outside course markers, proposed spectator fleet area(s) if applicable, buffer zone(s), and the race area from the sponsor prior to the approval of the Marine Event application.
- c. It is recommended that the Commandant develop a method that better ensures that COTP's throughout the Coast Guard and their respective designated PATCOM and/or PATCOM's representative verify with the power boat race event sponsor the overall course layout paying particular attention to the location of the outside course markers, spectator areas, and safe spectator fleet distances and compare the course layout with the chart and scale drawing of the course layout provided with the Marine Event application and the approved Marine Event Permit (CG-4424).
- d. It is recommended that the Commandant ensure that each COTP reviewing Marine Event permit applications for power boat races occurring within their respective COTP zone that if the sponsors of power boat races indicate that the spectators will be swimming, rafting, or otherwise entering the water, the COTP request that the sponsor submit a safety plan that addresses how the sponsor intends on managing spectators swimming, rafting, or otherwise entering the water particularly, when hydroplane boats are on the race course or operating during the event.
- e. While not determined a causal factor in the incident, it was revealed during the course of the investigation that COMDTINST M16751.3 "Permitting of Regatta and Marine Parades" Chapter 7 allowed the COTP to designate a PATCOM as long as the individual was a commissioned, warrant or petty officer. At USCG Sector Maryland-NCR, this PATCOM designation was assigned to a USCG Station OINC; however, the USCG Station OINC was often not on-scene and was being represented on-scene by USCG Station personnel and/or USCG Auxiliary who may not be as familiar with the PATCOM designation requirements and/or authorities. It is recommended that Sector Maryland-NCR establish a mechanism that ensures that personnel representing the PATCOM are familiar with the PATCOM designation requirements and authorities.
- f. It is recommended Sector Maryland-NCR ensure that a pre-event meeting between all parties responsible for the safety of the event is considered for all future power boat race Marine Events that occur within the COTP Maryland-NCR Zone, and that the Pre-Event

Checklist included in COMDTINST M16751.3 "Permitting of Regatta and Marine Parades" Enclosure 9 or local equivalent is suggested to be completed by the PATCOM prior to the start of the Marine Event.

- g. It is recommended that Sector Maryland-NCR require that the sponsor submit a copy of the completed APBA Regatta Insurance Application and APBA approval of the application for all future APBA sanctioned power boat races occurring within the COTP Maryland-NCR zone with the Marine Event application to ensure that event is sanctioned by the APBA and that safe spectator fleet distances are established.
- h. It is recommended that the APBA consider requiring that sponsors holding APBA sanctioned power boat races use distinguishing marking devices to delineate between the outside course markers and any spectator fleet areas if established. This will enable the sponsor and the USCG PATCOM and/or patrol to more easily identify any race event layout requirements and additionally verify that it's in compliance with the chart and/or scale drawing of the course layout provided with the Marine Event application and the approved Marine Event Permit (CG-4424).
- i. The APBA should consider revising Rule 11 "Driver Qualifications" of the 2015 APBA Rules for Inboard Racing to require that "Unqualified Rookies" and/or "New Drivers" obtain more experience, training and familiarity with the hydroplane class they are attempting to qualify for prior to competing or qualifying with other qualified drivers involved in an actual competition.
- j. It is recommended that APBA develop separate training and qualification requirements for first time fully enclosed cockpit drivers to ensure safe operation on a race course prior to allowing participation in competitive events. While the APBA has required capsule training, it concentrates on driver extraction and use of self contained breathing air systems. A requirement to include a driver's test for new fully enclosed cockpit drivers would aid in providing driver familiarity and proficiency level prior to competing or qualifying in an actual competition.
- k. The APBA should develop a means to determine that two-way continuous communication required by certain hydroplane classes in the 2015 APBA Rules for Inboard Racing is equipped, operational and being utilized prior to the commencement of any competitive race, or "milling period" by qualified drivers, and qualified and unqualified rookies.
- l. It is recommended that the APBA require that all qualified drivers and qualified and unqualified rookie Inboard hydroplane drivers that require two-way continuous communications have a "spotter" assigned to observe and relay their location on the race course to them along with the location of the other competing drivers during competitive events to include the five minute "milling" period.

- m. It is recommended that the APBA revise the APBA Regatta Insurance application part VI “Underwriting Information”, line A-4, that asks: “Are spectators permitted access to the water for wading or swimming?” to include rafting or otherwise entering the water.
- n. It is recommended that the APBA develop recurring familiarization training for Referees in the Inboard category of power boat racing to ensure that all Referees maintain adequate knowledge of the APBA Inboard Rules, General Safety Rules, and specific class rules and are additionally aware of recent changes or updates to these rules.
- o. It is recommended that sponsor’s of power boat racing events occurring within the COTP Baltimore zone conduct a survey of their respective course location to ensure that the location of the outside course markers and recommended minimum safe spectator distance is maintained throughout the proposed spectator fleet locations. The results of the surveys should be submitted to the APBA and USCG Sector Maryland-NCR prior to their next planned power boat racing event.

9. **Administrative Recommendations**

- a. It is recommended that the Commandant provide a copy of this report to the following entities upon closure:
 - a. American Power Boating Association;
 - b. Kent Narrows Racing Association;
 - c. Maryland Natural Resource Police;
 - d. State of Maryland Boating Law Administrator;
 - e. The National Transportation Safety Board
 - f. Queen Anne’s Country Department of Health
 - g. United States Coast Guard Auxiliary
- b. It is recommended that the casualty investigation be closed.

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