UNITED STATES COAST GUARD

REPORT OF INVESTIGATION INTO THE CIRCUMSTANCES SURROUNDING THE PARASAILING ACCIDENT WITH LOSS OF LIFE AND INJURY ON THE

SMALL PASSENGER VESSEL M/V TURTLE (VI0776TC)

IN THE VICINITY OF ST THOMAS HARBOR, USVI ON NOVEMBER 15, 2011

U.S. Department of Homeland Security

United States Coast Guard

Commandant
United States Coast Guard

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16732/IIA#4189646
17 June 2022

INJURY AND LOSS OF LIFE ONBOARD THE PASSENGER VESSEL TURTLE WHILE CONDUCTING PARASAIL OPERATIONS IN THE VICINITY OF ST. THOMAS HARBOR, U.S. VIRGIN ISLANDS ON NOVEMBER 15, 2011

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 RECOMMENDATIONS

Safety Recommendation 1: It is recommended that the Commandant of the Coast Guard, in consultation with national parasailing organizations and/or the parasailing industry, establish distinct license, training, qualification, and experience requirements that apply to operators and crew of commercial parasail vessels.

Safety Recommendation 2: It is recommended that the Commandant of the Coast Guard require the inspection of the parasail gear and equipment, as necessary, to determine that the gear and equipment are in good working order and fit for the service intended, before the issuance of a Certificate of Inspection to any vessel that engages in commercial parasailing.

Safety Recommendation 3: It is recommended that the Commandant of the Coast Guard, in consultation with national parasailing organizations and/or the parasailing industry, develop parasail towline selection, inspection and retirement (removal from service) guidelines. These guidelines should require records to be kept that indicate the size, fiber, construction, length, manufacturer, minimum breaking strength, safe working load, date placed in service, and inspection interval for each towline. Inspections should be logged and should check for damage, wear and include caliper measurements of the towline diameter to determine if the towline has deteriorated. The master of the parasailing vessel should be responsible for keeping these records and reporting the same to management. For each towline, the records should be kept for the duration of its service life and should be made available for review by the Coast Guard upon request. When developing the guidelines, the Coast Guard should further evaluate: the need to conduct additional operational tests to determine a towline's required minimum breaking strength; the need to require the breaking strength of each towline to be certified by the manufacturer by subjecting a portion of the rope to destructive testing prior to its installation;

and the need to specify the use of more efficient connections (e.g., eye splices, thimbles, etc.) between the towline and the yoke.

Safety Recommendation 4: It is recommended that the Commandant of the Coast Guard require owners and operators of commercial parasail vessels to provide a comprehensive passenger safety briefing prior to departure to include a discussion of the inherent risks of parasailing, the route and operational limits imposed to mitigate these risks, and the proper procedures to be followed during the course a parasailing emergencies to include: unintended landing on water, winch malfunction, towline failure and propulsion machinery failure with a passenger in flight.

Safety Recommendation 5: It is recommended that the Commandant of the Coast Guard require owners and operators of commercial parasail vessels to conduct sufficient training, drills and exercises to ensure that crewmembers are proficient in parasailing emergency techniques and procedures. Training, drills and exercises shall be logged or otherwise documented for review by the Coast Guard upon request. Drills and exercises must test the proficiency of company and vessel personnel in assigned emergency response duties.

Safety Recommendation 6: It is recommended that the Commandant of the Coast Guard, in consultation with national parasailing organizations and/or the parasailing industry, develop operational readiness, maintenance and inspection requirements for winches used to deploy and recover passengers while parasailing. When developing the inspection requirements, the Coast Guard should develop minimum power ratings and further evaluate the need for redundant or emergency winch systems that could be used should the primary winch fail.

Safety Recommendation 7: It is recommended that the Commandant of the Coast Guard, in consultation with national parasailing organizations and/or the parasailing industry, review, modify and ultimately adopt and incorporate by reference in 46 CFR Subchapter T, the Professional Association of Parasail Operators Operating Standards and Guidelines, or a similarly produced and recognized industry standard. Where industry has not established suitable safety requirements addressing the causes of this casualty, the Coast Guard should provide the leadership and catalyze their development. These actions will allow the Coast Guard to capitalize on standards that they are already familiar with and will raise the level of safety provided to the level expected by the American public. Further, it will minimize the burdens on the parasailing industry associated with variations in safety standards imposed by various jurisdictions.

Safety Recommendation 8: It is recommended that the Commandant of the Coast Guard provide written guidance to marine investigators to be used during the investigation of parasailing marine casualties. This guidance should be taught at the Marine Inspection and Investigation School at Training Center Yorktown and be made available to the public and parasailing industry.

Safety Recommendation 9: It is recommended that the Commandant of the Coast Guard provide notice to the parasailing industry that failures of parasailing equipment to include the winch, towline, harness, and parasail, are considered to be occurrences that materially and

adversely affect a vessel's fitness for service, and are considered reportable marine casualties under 46 USC §6101 and its implementing regulations of 46 CFR 4.05-1(a)(4) and 185.202(a)(4).

Safety Recommendation 10: It is recommended that the Commandant of the Coast Guard require the operator of a commercial parasail vessel to record for each flight: the parasail canopy used and its operational limitations; the estimated weight of the passenger(s); the prevailing wind and sea state; the duration of the flight; and the details of any parasailing incident that occurred during the flight. The master of the parasailing vessel should be responsible for keeping these records and report the same to management. For each towline, the records should be kept for the duration of its service life and should be made available for review by the Coast Guard upon request.

Safety Recommendation 11: It is recommended that the Commandant of the Coast Guard designate a single point of contact within the Headquarters organization to provide field units, Investigating Officers and other CG personnel with both government and private entity weather information. Information such as weather trends, post casualty weather information, and potential adverse weather events in an operating AOR will greatly assist Investigating Officers and CG operators in gathering weather information quickly and accurately. The position or billet should be civilian for service continuity and should establish and maintain working relationships with private weather monitoring entities along with other government weather agencies.

Safety Recommendation 12: It is recommended that the Commandant of the Coast Guard examine the need for an improved working relationship with private weather monitoring and research companies. Recommend assessing the feasibility of integrating these companies' data into Coast Guard operating software so that Coast Guard operators, marine safety personnel, and Investigating Officers can gather weather information quickly and accurately at the unit level.

Safety Recommendation 13: It is recommended that Commercial Water Sports, Inc, the builder the M/V TURTLE (ON VI0776TC), advertise a service bulletin to the parasailing industry advising of the need to retrofit this particular class of vessel with a pressure gauge for the parasail winch hydraulic system, with notation of specific pressure relief setting.

Safety Recommendation 14: It is recommended that CWS Tours LLC develop, implement and enforce a quarterly training program for all company employees that adequately addresses equipment maintenance, weather forecasting, record keeping and parasail specific emergency procedures. CWS Tours LLC should keep records of all employee attendance and should base day to day crew selection on their training completion status.

Safety Recommendation 15: It is recommended that CWS Tours LLC develop, implement, and enforce a comprehensive weather forecasting and monitoring policy. The policy should identify a method of consistent monitoring from every vessel in the fleet.

Safety Recommendation 16: It is recommended that the Commandant of the Coast Guard provide a copy of this report to the following entities:

a. Area, District, and Sector Commanders;
b. Estates of the deceased;
c. Parties in interest;
d. Professional Association of Parasail Operators;
e. Parasail Safety Council;
f. Water Sports Industry Association;
g. Yale Cordage, Inc.;
h. US Virgin Islands Police Dept

Recommendations 1-16: I concur with the intent of these recommendations. The Coast Guard currently lacks regulatory authority to compel compliance with regard to parasailing operations, equipment, or parasail specific endorsements for merchant mariner licensing. However, since 2009, the Coast Guard has shepherded the development of consensus standards with Industry stakeholders including the Water Sports Industry Association (WSIA).

In January 2012, the Coast Guard requested that stakeholders and WSIA develop voluntary standards for the parasailing industry using the American Society for Testing and Materials (ASTM) consensus standards process. A subcommittee was formally established in the fall of 2012, and the first ASTM standards were published in April 2013.

The ASTM "Standard Practices for Parasailing" continue to be reviewed and have undergone multiple revisions over the past nine years, the most recent version being F3099-19. The parasail industry has taken extensive action towards improving operational safety. Key elements of the standard are: Weather Monitoring and Limits, Equipment, Towline Care, Operations, Crew Requirements, Emergency Procedures, and Patron Responsibility. The Coast Guard continues to monitor the industry's implementation of the ASTM standards and evaluate their effectiveness. This is completed through Coast Guard presence at annual parasailing conferences and engagement with the Water Sports Industry Association (WSIA) and by periodically providing casualty data to measure ASTM standard effectiveness.

Since 2009, the Coast Guard has issued multiple Safety Alerts and Marine Safety Information Bulletins (MSIBs) to the public, which are specific to the parasailing industry and include the following:

- 2009: 06-09 Safety Alert 'Parasailing Incidents'
- 2011: 05-11 Safety Alert 'Parasailing: Know your Ropes'
- 2012: The Commandant sent message (R 191851Z Jan 12) regarding commercial parasailing vessel safety and included the "Commercial Parasailing Vessel Safety Guidance," which prescribes how outreach to parasail operators should be conducted by Coast Guard units.
- 2013: 07-13 Safety Alert 'Parasailing Operations – Know Your Ropes (2)'

- 2014: 05-14 Safety Alert 'Overheating of Parasailing Vessel Hydraulic System'
- 2015: MSIB 003-15 'Parasailing - Flight Safety and Rules'
- 2015: 07-15 Safety Alert 'Prevent Parasail Accidents: Follow ASTM Standards and Follow Manufacturer Instructions!'
- 2018: 12-18 Safety Alert 'Hazards of Parasail and Watersport Passenger Transfers'
- 2019: MSIB 002-19 'Parasailing - Navigation Rules and Flight Safety'

A hazardous condition is any condition that may adversely affect the safety of any vessel, bridge, structure, or shore area or the environmental quality of any port, harbor, or navigable waterway of the United States. In July 2015, the U.S. Coast Guard issued Navigation and Vessel Inspection Circular (NVIC) 1-15, "TITLE 46, CODE OF FEDERAL REGULATIONS (CFR), PART 4 MARINE CASUALTY REPORTING PROCEDURES GUIDE WITH ASSOCIATED STANDARD INTERPRETATIONS." NVIC 1-15 clarifies that parasailing accidents not reaching reportable marine casualty thresholds in 46 CFR § 4.05-1 would still constitute a hazardous condition as defined in 33 CFR 160.202 and meet the subsequent reporting requirement of hazardous conditions as defined in 33 CFR §160.216.

In 2015, U.S. Coast Guard Training Center Yorktown added a parasail casualty scenario to the Investigating Officer Course curriculum. This scenario offers Coast Guard Investigators the opportunity to consider the unique investigation considerations associated with parasail operations.

Since this incident occurred, parasailing fatalities and injuries have declined. The Coast Guard will continue to monitor parasail safety and encourage the combined efforts of stakeholders to improve safety.

Through safety initiatives in public education and outreach, established ASTM standards, and continued partnership with WSIA and ASTM representatives, it is clear that the intent of these recommendations has been addressed as is evidenced through the downward trends in casualties. The closure of this case will allow the Coast Guard to share it and any third party safety recommendations with our parasailing industry partners to further strengthen safety measures within the parasailing industry.

This report, along with similar parasailing cases, will be posted and available to the public on the DCO website here:

https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Inspections-Compliance-CG-5PC-/Office-of-Investigations-Casualty-Analysis/Marine-Casualty-Reports/.

[redacted]
J. D. NEUBAUER
Captain, U.S. Coast Guard
Acting Director of Inspections and Compliance

U.S. Department of Homeland Security

United States Coast Guard

Commander
U.S. Coast Guard Sector San Juan

5 Calle La Puntilla
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16732
February 14, 2012

[redacted]

CG SECTOR San Juan

Reply to CDR Berliner
Attn of: (787) 729- 2378

To: CGD Seven (dp)

Subj: M/V TURTLE PARASAILING ACCIDENT WITH LOSS OF LIFE AND INJURY, ST THOMAS HARBOR, ON NOVEMBER 15, 2011.

Ref: (a) Marine Safety Manual Volume V, COMDTINST M16000.10A

1. Our Report of Investigation (ROI) for subject marine casualty is forwarded as an enclosure to this memo and has been posted in MISLE. After careful review of the ROI, I concur with the Investigating Officer's (IO) findings of fact, his analysis, and furthermore his conclusions and recommended actions.

2. On Page 29 of the ROI the IO recommended three actions at the Sector level. Based on reference (a), Part C, Chapter 7, which indicates the District Commander must determine whether to pursue referring the matter to the Department of Justice, I redirect the first recommendation to you for action. I recommend referral for prosecution at the earliest opportunity and have made the U. S. Attorney in the Virgin Islands aware of the case. I have taken action on recommendation 2 and 3. Under my Officer in Charge of Marine Inspection authority, we have initiated administrative suspension & revocation proceedings against the license of the master of the M/V TURTLE for misconduct and/or negligence under 46 United States Code 7703(1). In addition, we have initiated civil penalty proceedings against the company owner for operating the M/V TURTLE without being under the direct control of a licensed mariner and for falling to conduct pre-employment chemical test of a crewmember.

#

Enclosure: (1) Report of Investigation memo 16732 dated 01 Feb 2012.

U.S. Department of Homeland Security
United States Coast Guard

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16732
February 01, 2012

MEMORANDUM

From: [redacted] LT
tigating Officer
CG Sector San Juan

To: D. W. Pearson, CAPT
CG Sector San Juan (s)

Thru: D. F. Berliner, CDR[redacted]
CG Sector San Juan (sp)

Subj: PARASAILING ACCIDENT INVOLVING LOSS OF LIFE AND INJURY ONBOARD M/V TURTLE ON NOVEMBER 15, 2011

Ref: (a) Title 46 United States Code, Chapter 63
(b) Title 46 Code of Federal Regulations Part 4
(c) Marine Safety Manual Volume V, COMDTINST M16000.10A

Preliminary Statement:

On November 15, 2011 an informal investigation was initiated into a parasailing accident resulting in the death of one passenger, serious injury of another which required treatment beyond first aid and hospitalization for more than 48 hours, and two other passengers suffered minor injuries while aiding rescue efforts. The United States Coast Guard assumed the Lead Investigative Role in the incident and I the Investigations Division Chief, USCG Sector San Juan was assigned as the Lead Investigating Officer. [redacted]tes Coas[redacted]tigative team involved in inv[redacted]s case: MSTC [redacted] MSSD2 [redacted] LT [redacted] [redacted]and CIV [redacted] During the cou estigation gat ce collect o ascertain causal factors leading up to the initiating and subsequent events. Analysis has been conducted as thoroughly as possible in order to draw conclusions in accordance with the above references. All times contained 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 Marine Information for Safety and Law Enforcement (MISLE) Incident Investigation Activity number 4189646.

Executive Summary:

On November 15, 2011 at approximately 1545, the United States Coast Guard inspected Small Passenger Vessel (SPV) M/V TURTLE(VI0776TC) was conducting parasailing operations with five passengers and two crewmembers onboard, approximately 1 mile South of Water Island. At approximately 1550, while retrieving two in-air parasailers with winds gusting 22 mph, the onboard parasail winch motor stopped, and the parasail towline parted an estimated 57 feet from the tow reel. The two passengers in the air at the time, Bernice Kraftcheck and [redacted] descended to the water's surface where winds caught the still inflated parachute canopy, dragging them in the water at an estimated speed of 28-30 mph. The master of the M/V TURTLE immediately radioed a "code yellow", meaning a parted towline/runaway parachute. He then attempted to catch the parachute, and once there, made three attempts to deflate the canopy by having someone jump on the canopy in order to stop its momentum. The first two attempts were made by crewmember [redacted] and were unsuccessful. The final attempt was made by the master, [redacted] and was successful in deflating the canopy. The estimated time from towline parting to final collapsing of the canopy by crewmembers was 8-10 minutes.

Once the canopy was collapsed, the crewmember and one passenger, [redacted] entered the water with the master to assist the passengers. Master and crewmember attended to Ms. Kraftcheck who was unconscious while Mr. [redacted] floated nearby with Ms. [redacted] who was still conscious and alert. The M/V TURTLE was rendered disabled due to the parachute components fouling the vessel's propellers. A passenger, [redacted] threw the crewmembers a life ring and pulled them to the adrift vessel where several attempts were made to get Ms. Kraftcheck onboard. Although they had a difficult time getting Ms. Kraftcheck transferred onto the M/V TURTLE, they eventually got her onboard where the master and another passenger, [redacted] initiated Cardio Pulmonary Resuscitation (CPR) on her, as she was not breathing and did not have an apparent pulse.

Mr. [redacted] and deckhand [redacted] successfully transferred Ms. [redacted] from the water to the M/V TURTLE, where passenger witness statements stated that her eyes rolled back and she lost consciousness. The passengers and crew found her pulse and she was still breathing, so they laid her on her side in order to prevent her from choking on seawater or vomit. By this time, another CWS Tours LLC vessel, the M/V HOLY CHUTE, and another Good Samaritan vessel, the M/V OCEAN RIDER, had arrived on scene after hearing the "Code Yellow" on the VHF radio. The crewmembers transferred Ms. Kraftcheck to the M/V OCEAN RIDER and Ms. [redacted] to the M/V HOLY CHUTE and both vessels transited to West Indian Company (WICO) dock in Charlotte Amalie, St Thomas where emergency responders were waiting.

Ms. [redacted] was transferred to the Roy Lester Schneider Hospital where she underwent surgery to relieve pressure in her brain prior to being flown to New Jersey for additional medical care. The US Virgin Island (USVI) medical examiner report and hospital records show numerous

contusions and other injuries were consistent with being dragged out of control at high rate of speed. Both passengers had brain injuries but the exact cause is unknown. On November 17, 2011, the USVI medical examiner determined Ms. Kraftcheck's cause of death to be drowning.

Vessel Data:

Name	**M/V TURTLE**
Official number	VI0776TC
Service	Passenger (Inspected)
Vessel type	Parasail winch boat
Route	Lakes, Bays, and Sounds plus Limited Coastwise, waters of the U.S. Virgin Islands no more than three (3) miles offshore
Manning	1 Master, 1 deckhand
Passengers	No more than 12
Keel laid date	Nov 11, 2004
Built by	Commercial Water Sports, Inc
Hull material	Fiberglass reinforced plastic
Gross tons	13 (GRT)
Owner	Beach Management Services 6501 Red Hook Plaza Ste 201 St Thomas USVI 00802
Managing operator	CWS Tours LLC 6501 Red Hook Plaza Ste 201 St Thomas USVI 00802
Length	31 ft
Breadth	10 ft 6 inches
Propulsion	Single diesel reduction 420 hp
Maximum speed	28 mph (calm waters)
Inspection subchapter	46 CFR Subchapter T

Certification date	January 06, 2011
Certification expiration date	January 06, 2016

Personnel Data:

Deceased passenger	Age	Role	Cause of death
Bernice G Kraftcheck	[redacted]	Passenger	Drowning

Injured passenger	Age	Role	Injury type
[redacted]	[redacted]	Passenger	Head injury

Other passengers	Age	Role
[redacted]	[redacted]	Passenger
[redacted]	[redacted]	Passenger-Minor Injury(Rope Burn)
[redacted]	[redacted]	Passenger-Minor Injury(Scrapes)

M/V TURTLE Crewmember	Total parasailing experience	Time with company
[redacted] (master)	9 years	6 years
[redacted] (crewmember unlicensed)	Limited < 1 year	3 days

Personnel involved	Alcohol Test Results	Drug Test Results
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]

Findings of Fact:

1. Professional Association of Parasail Operators(PAPO) founded to promote safety and standards throughout parasail industry. Operating Standards and Guidelines (OSAG) enacted in 2005. CWS Tours LLC employee rules, regulations & policies state that captains shall adhere to PAPO at all times.

2. All PAPO members, as a condition of membership, among other things, must adhere to the OSAG while conducting commercial parasail operations. These guidelines are available to PAPO members, the parasail industry and the public.

3. The Coast Guard does not officially endorse PAPO or its OSAG; however, the organization and its standards and guidelines have been referenced in unit level literature as a best practice.

4. The U.S. does not have any regulations that govern a commercial parasail vessel's parasail winch, towline, associated parasail equipment or the parasail itself.

5. The U.S. Virgin Islands do not have any regulations that govern a commercial parasail vessel's parasail winch, towline, associated parasail equipment or the parasail itself.

6. The U.S. Coast Guard inspects the M/V TURTLE (VI0776TC) under 46 CFR subchapter T. This inspection does not include any of the parasail equipment or winch systems.

7. CWS Tours LLC failed to present any manufacturer manuals or reference materials for the winch equipment onboard the M/V TURTLE (VI0776TC) or any other of their vessels. No vessel drawings, owner's manuals or technician manuals are kept by company.

8. Maintenance logs produced by CWS Tours LLC were infrequently completed by employees. The daily and monthly checklists produced by CWS Tours LLC were not consistently completed. Several discrepancies were noted by crewmembers and company mechanics during the checks. However, there are no documentary records of any actions that may have been taken to remedy the issues.

9. PAPO OSAG states that no vessel shall be operated when sustained wind is in excess of 20 mph or when excessive or dangerous wind gusts are present. PAPO also states that it is the Captain's responsibility to evaluate and determine if weather conditions are favorable for parasailing and that a daily weather log shall be maintained.

10. CWS Tours LLC does not keep records of the replacement of parasailing equipment. CWS Tours LLC did not have records showing the installation date for the line onboard the vessel. There is no way of knowing what length of time a particular line has been installed on a vessel. The same is true for the parachutes; invoices for parachutes are kept, however the there is no indication/records of how long the equipment has been in service or the frequency of its usage.

11. CWS Tours LLC does not enforce a standard method or schedule for trimming the parasail line. Vessel masters are trimming the line at their discretion, mostly without logging or keeping cut portions. During interviews, crewmembers contradicted one another by stating differing cut lengths ranging from 2-3 inches to 1 foot. This contradicted company policy which refers directly to PAPO OSAG.

12. CWS Tours LLC does not have a standard method of monitoring weather. During interviews with the vessel captain, he stated that he visually checks conditions while operating. CWS Tours LLC Owner stated that the captains use various smart phone applications or computer programs. (CWS Tours LLC policy designates an *Office Dispatcher;* however, nowhere in the policy does it assign the responsibility of weather monitoring to that position. Nowhere in CWS Tours LLC policy does it state it is the Master's responsibility to monitor weather before and during operations.)

13. CWS Tours LLC owner was unaware of company's enrollment status with PAPO for either CWS Tours, LLC, Beach Management Services Inc. or its employees. PAPO enrollment status was found to be expired for the companies.

14. CWS Tours LLC owner was unable to provide any records of crew training as per 46 CFR 185.420 or PAPO OSAG. The following is verbiage regarding minimum *flight crew requirements* (PAPO OSAG Section six OSAG-39):

OSAG -39. MINIMUM FLIGHT CREW REQUIREMENTS.
A minimum of two experienced crewmembers shall be onboard vessel at all times while engaged in parasailing activities and must meet the following minimum experience requirements prior to employment:
Qualified Flight Captain
1. Must be USCG Licensed (where applicable) for the appropriate operating area waters and vessel type, size, tonnage and passenger limitations as required by USCG. (or applicable equivalent outside U.S.)
2. Must be current in certification of CPR and First Aid.
3. Must be proficient in emergency techniques and procedures and proper use of safety equipment.
4. Must be currently enrolled in an approved random Drug testing program.
5. Must have successfully completed the on-line or written version of the "OSAG Review Module"
6. Must meet a minimum parasailing experience requirement of: 600 actual full rotation flights, with written verification of experience or;
7. Must have successfully passed a flight training course and/or a flight captain evaluation offered by a Certified PAPO Flight Instructor or;
8. Have had attended a PAPO Sponsored OSAG Training Clinic, Seminar or CD-Rom Training Module. (Currently not available)
Qualified First Mate/Flight Technician
1. Must have had successfully completed the PAPO, on-line or written version, of the "OSAG Review Module."
2. Must be currently enrolled in an approved random drug testing program.
3. Must successfully complete an 800' (245 meters) swim in less than 6 minutes.
4. Must meet a minimum parasailing experience requirement of: 200 passenger handling, full rotation flights, with written verification of experience or;
5. Must have successfully passed a flight technician training course or flight technician evaluation offered by a Certified PAPO Flight Instructor or;
6. Have had attended a PAPO Sponsored OSAG Training Clinic/Seminar or completed a CD-Rom Training Module. (Currently not available.)

15. CWS Tours LLC owner was unable to provide any records of abandon ship/man overboard or fire fighting drills as per 46 CFR 185.520 and 46 CFR 185.524 respectively. A historical examination of U.S. Coast Guard inspection history did not reveal that this had been an issue identified during vessel examinations.

16. The master, Mr. [redacted] of the M/V TURTLE (VI0776TC) at the time of the incident was operating on an expired license. His license (Master, 50 GT) expired on June 26, 2011. CWS Tours LLC owner stated that he was aware of the upcoming license expiration prior to June, but did not follow up with Mr. [redacted] to ensure he followed through with renewal.
17. Master, [redacted] was enrolled in a random drug testing program as per 46 CFR 16.230 or PAPO OSAG.

18. Crewmember, [redacted] was not required to submit and pass a pre employment chemical test prior to filling a safety sensitive position as per 46 CFR 16.210 or PAPO OSAG.

19. Both the master and crewmember had adequate rest the night before the incident occurred.

20. As part of post casualty chemical testing of personnel involved, crewmember [redacted] tested [redacted].

21. According to passenger statements, Mr. [redacted] was unfamiliar with CPR procedures and seemed to be "in training." Passenger [redacted] assisted the master with chest compressions and rescue breathing.

22. According to passenger statements, the captain and crewmember onboard the vessel did not give a safety brief/orientation prior to getting underway that fulfilled the requirements in 46 CFR 185.506 or PAPO OSAG.

23. M/V TURTLE (ON VI0776TC) was designed and constructed by Commercial Water Sports in Cape May Court House, New Jersey. The vessel was sold to Daytona Beach Parasail and issued a Small Passenger Vessel decal by the US Coast Guard on March 30, 2005.

Figure 01. Photo of SPV TURTLE post casualty

24. M/V TURTLE (ON VI0776TC) was purchased by Beach Management Services, the current owners, and placed into service in St Thomas on January 06, 2006.
25. M/V TURTLE (ON VI0776TC) had an annual COI examination on January 06, 2011 by a US Coast Guard Marine Inspector. The following deficiencies were noted: Inoperable RPM

gauge on vessel helm, expired portable fire extinguisher, expired EPIRB, out of date nautical publications. All deficiencies were rectified on January 07, 2011.

26. The towline onboard the M/V TURTLE (ON VI0776TC) at the time of the incident was Yale Cordage 7/16", yellow "Double Esterlon" double braided nylon line. CWS Tours LLC purchased the line from Sea Gear Marine on March 18, 2011. The date of installation is unknown due to lack of CWS Tours LLC installation records. See Figure 02.

27. The parachute being used at the time of the incident was a Custom Chutes Inc, 39' diameter, GALAXY XXTREME. The item was purchased and shipped on September 13, 2011. Custom Chutes recommends a range of 0-12 mph range for this particular parachute. See figure 03 for design elements of parasail parachutes. The parachute was not recovered after the incident.

28. The passenger bar was purchased from Custom Chutes Inc. No purchase date identified due to lack of CWS Tours LLC records. The passenger bar hooks into the parachute yoke and the passenger harnesses clip into the bar, hanging below the bar during flight. The passenger bar was not recovered after the incident.

Figure 02. Parasail towline used on the M/V TURTLE on the day of the incident

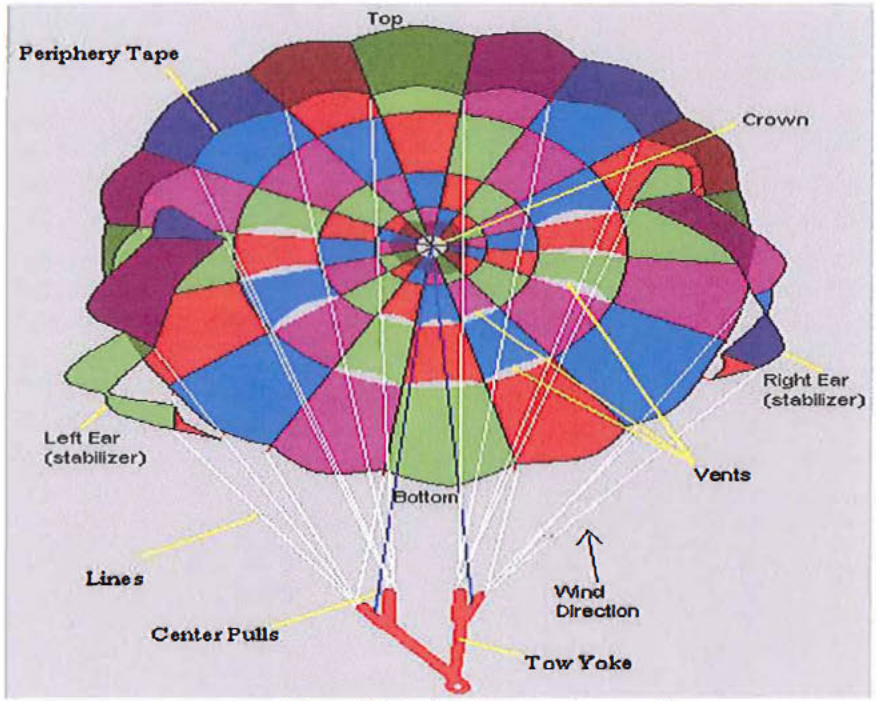

Figure 03. Design elements of a parasail

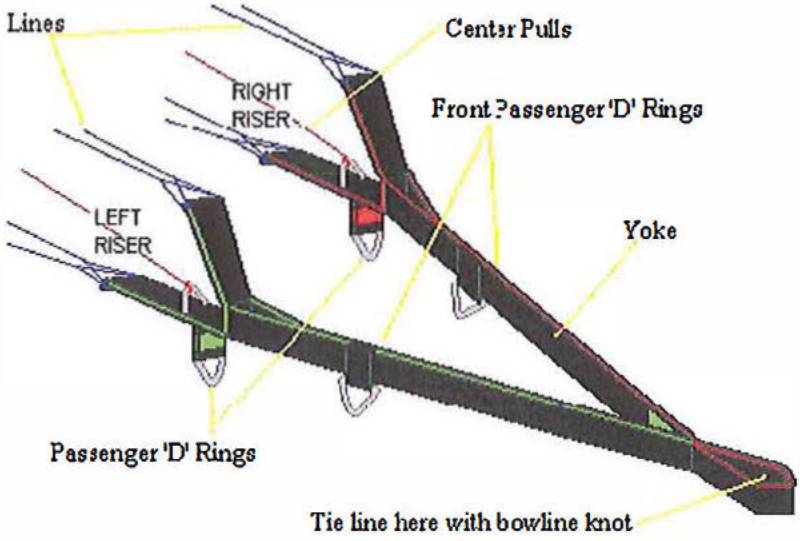

Figure 04. Graphic of a parasail harness

29. The passenger harnesses were both manufactured by Custom Chutes Inc. The passenger harnesses have two leg openings and a padded back rest and seat. Once placed on the passengers, they sit in the harness, with feet hanging below them, during flight. Both passenger harnesses were recovered after the incident. No equipment failure found.

Figure 05. Representative picture of parasailing components as they would be with passengers in flight. (Not actual equipment used on M/V TURTLE)

30. The M/V TURTLE's (VI0776TC) parasailing winch drum was built by Mark I Industries and is made of heavy duty, stainless steel parts, equipped to handle 1,000 feet of 7/16-inch towline.

31. The winch drum is turned by a hydraulic motor, which is driven by the engine through a clutch and a power take-off (PTO) unit. The system has a hand operated control level located at the vessel's helm. Van Air and Hydraulics supplied Commercial Water Sports several significant components used in the hydraulic system. Installation of the winch system was completed by Commercial Water Sports. There are no U.S. Coast Guard recognized industry standards or regulations for designing, building, operating, maintaining or inspecting a parasail winch system onboard Coast Guard inspected small passenger vessels. Subsequent tests on the winch and hydraulic systems showed no leaks, equipment damages, or any other forms of excessive wear, system operated satisfactorily.

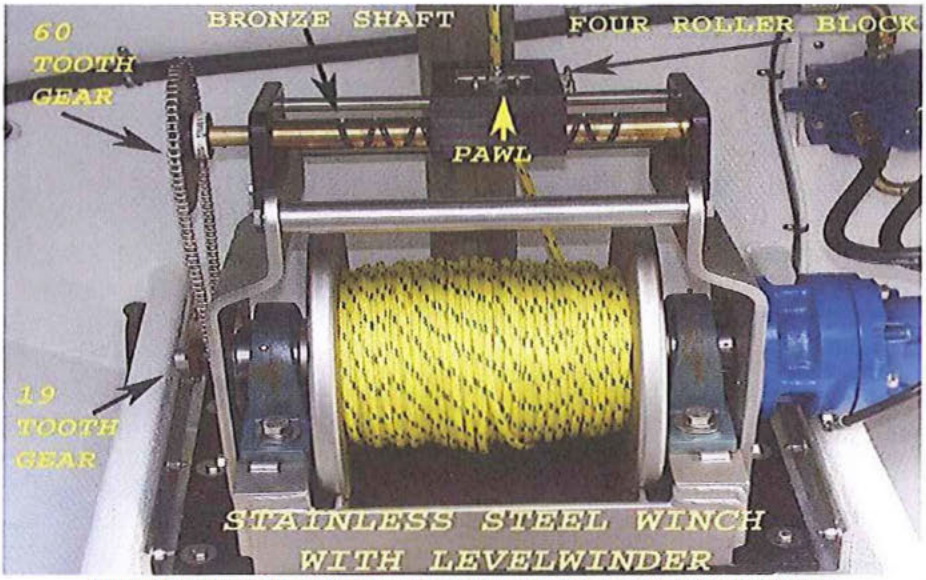

Figure 06. Manufacturer picture of the type of winch installed on the TURTLE

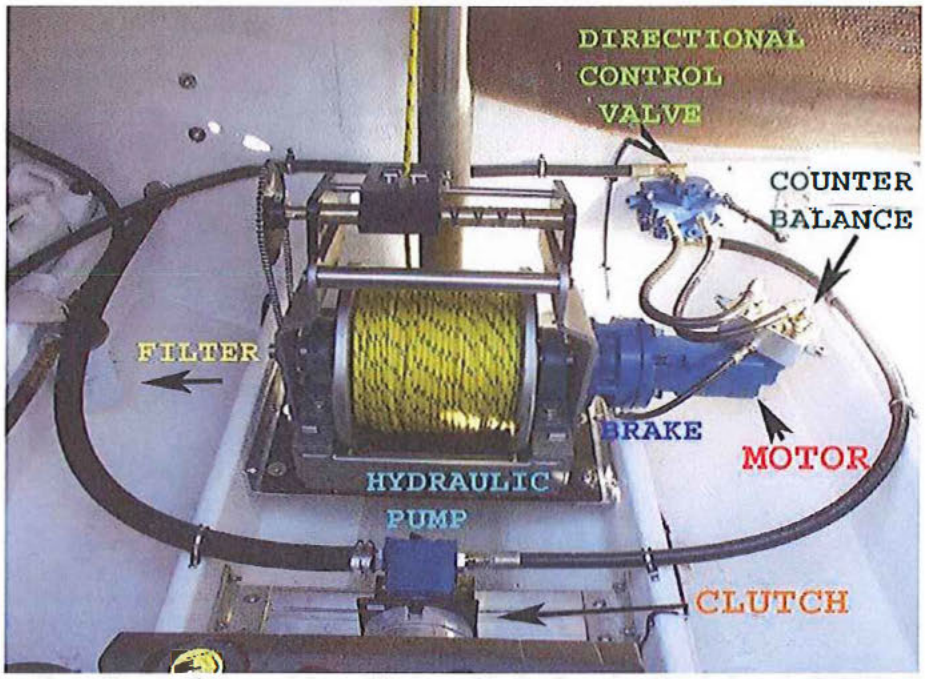

Figure 07. Manufacturer picture of the type of hydraulic system installed on the TURTLE

32. A tri-roller head with a two and a half inch diameter swivel mount, equipped with bearings, two vertical rollers on each side, one horizontal roller and a safety mechanism called a knot breaker at the bottom of the line guide was installed on the vessel's tow post. The roller onboard the M/V TURTLE (VI0776TC) was mounted on the tow post using set screws. The roller is capable of swiveling from left to right at approximately 180 degrees as passengers are in flight. Equipment found to be operable post casualty.

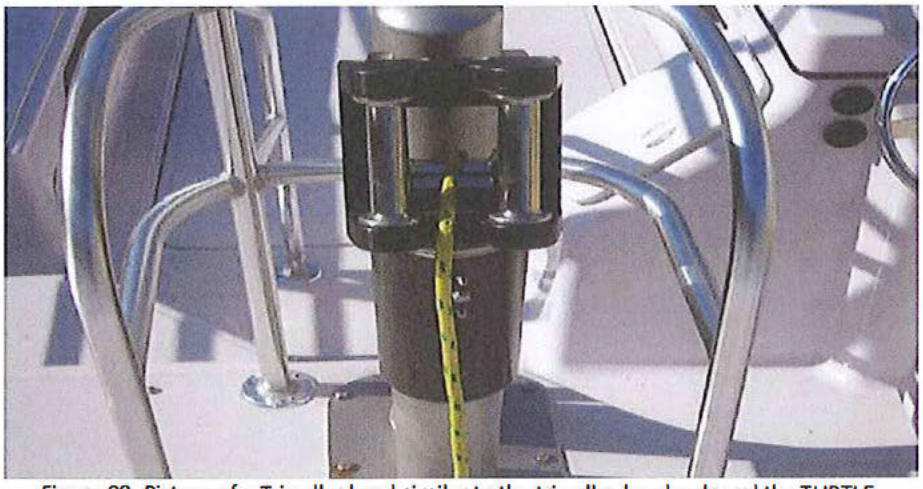

Figure 08. Picture of a Tri-roller head similar to the tri-roller head onboard the TURTLE

33. The onboard hydraulic winch system is fitted with a 3000 pressure per square inch relief setting. When relief pressure is reached, hydraulics will stop; hydraulic system will re-circulate fluid, preventing a hydraulic line failure, winch overload, or free spooling of the towline.

34. The M/V TURTLE(VI0776TC) was not outfitted with a gauge of any kind showing the current psi pressure of the hydraulic system.

35. The towline in use onboard the M/V TURTLE (VI0776TC) was a 7/16-inch diameter Double Esterlon polyester double braided rope supplied by Sea Gear Marine, a distributer for Yale Cordage, the manufacturer. Advertising literature supplied by Yale Cordage in September 2009, Industrial Catalog 8th Edition, indicated the rope is designed for industrial use and offers low stretch, high strength, and an excellent wear life. According to advertising literature, the line has an average and minimum breaking strength of 7,600 pounds and 6,840 pounds, respectively, and has a recommended safe working load of 1,900 pounds. The working load is based on static or moderately dynamic lifting/pulling operations. Instantaneous changes in load, up or down, in excess of 10% of line's rated working load constitutes hazardous shock load and voids normal working load recommendations.

36. According to witnesses, it was rainy and cloudy when the vessel left the docks.

37. There were no National Weather Service watches, warnings, or advisories for the area on the date of the incident, however the following *Short Term Forecast* was issued at 1355:

SCATTERED SHOWERS EMBEDDED IN THE A MODERATE TO LOCALLY FRESH NORTHEASTERLY TRADE WIND FLOW WILL CONTINUE TO AFFECT THE NORTH AND EAST SECTIONS OF PUERTO RICO AS WELL AS CULEBRA...VIEQUES AND THE U.S. VIRGIN ISLANDS FROM TIME TO TIME. IN ADDITION...ISOLATED THUNDERSTORMS WILL CONTINUE TO DEVELOP ACROSS THE SOUTHWEST SECTIONS OF PUERTO RICO IN THE NEXT FEW HOURS. SOME OF THESE SHOWERS

WILL BE CAPABLE OF PRODUCING LOCALLY HEAVY RAIN...PONDING OF WATER ON ROADWAYS...REDUCED VISIBILITIES AND HAZARDOUS DRIVING CONDITIONS THROUGH AT LEAST 5 PM AST. See Figure 10

38. Based on witness statements and evidence gathered throughout the investigation, the following is an approximation of the observed weather conditions from weather stations located closest to the estimated incident location at different time periods leading up to and immediately following the incident: See Figure 09

Weather Station info	**1545**	**1600**	**1615**
WeatherFlow Inc Weather station on Two Brothers Natl Park, NE of incident location	15 mph avg, w/ gusts of 21 mph	20 mph avg, w/ gusts of 23 mph	12 mph avg, w/ gusts of 17 mph
WeatherFlow Inc Weather station on Buck Island, SE of incident location	17 mph avg, w/ gusts of 20 mph	23 mph avg, w/ gusts of 26 mph	32mph avg, w/ gusts of 38 mph

Weather Station info	**1553**	**1609**	**1611**
National Weather Service weather station at Cyril King Int. Airport (inside harbor)	13 mph avg, w/ gusts of 22 mph	22 mph avg, w/ gusts of 28	21 mph avg, w/ gusts of 28

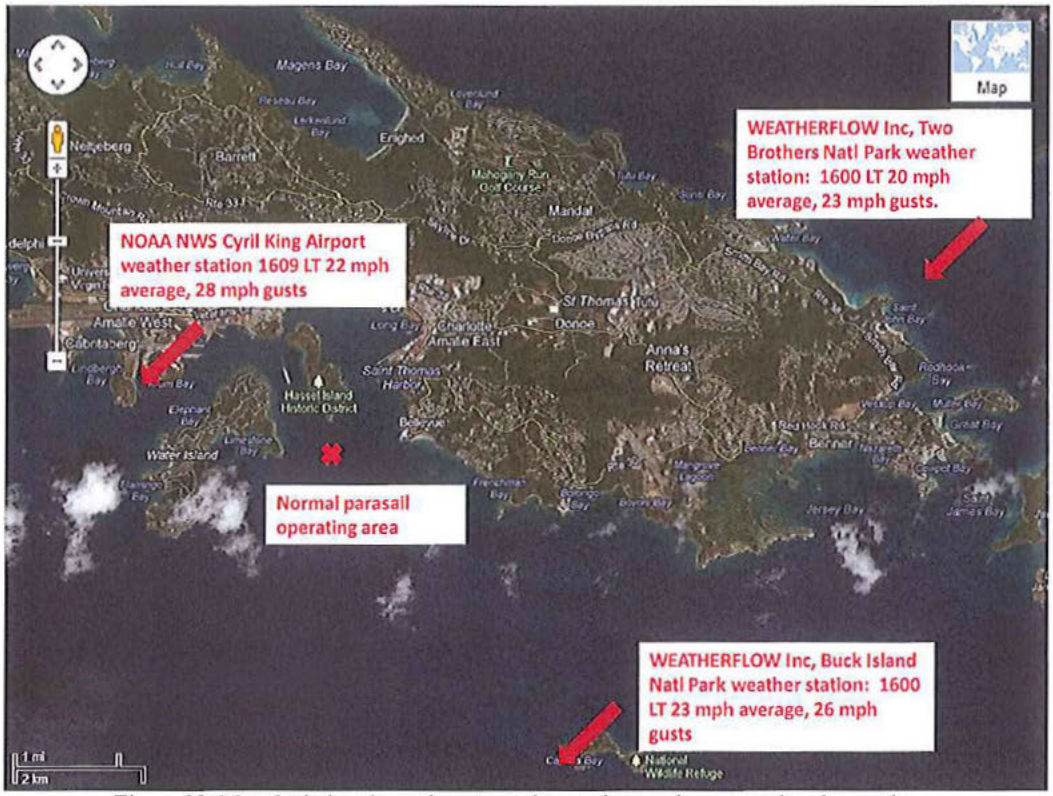

Figure 09. Map depicting three closest weather stations and pre-casualty observations.

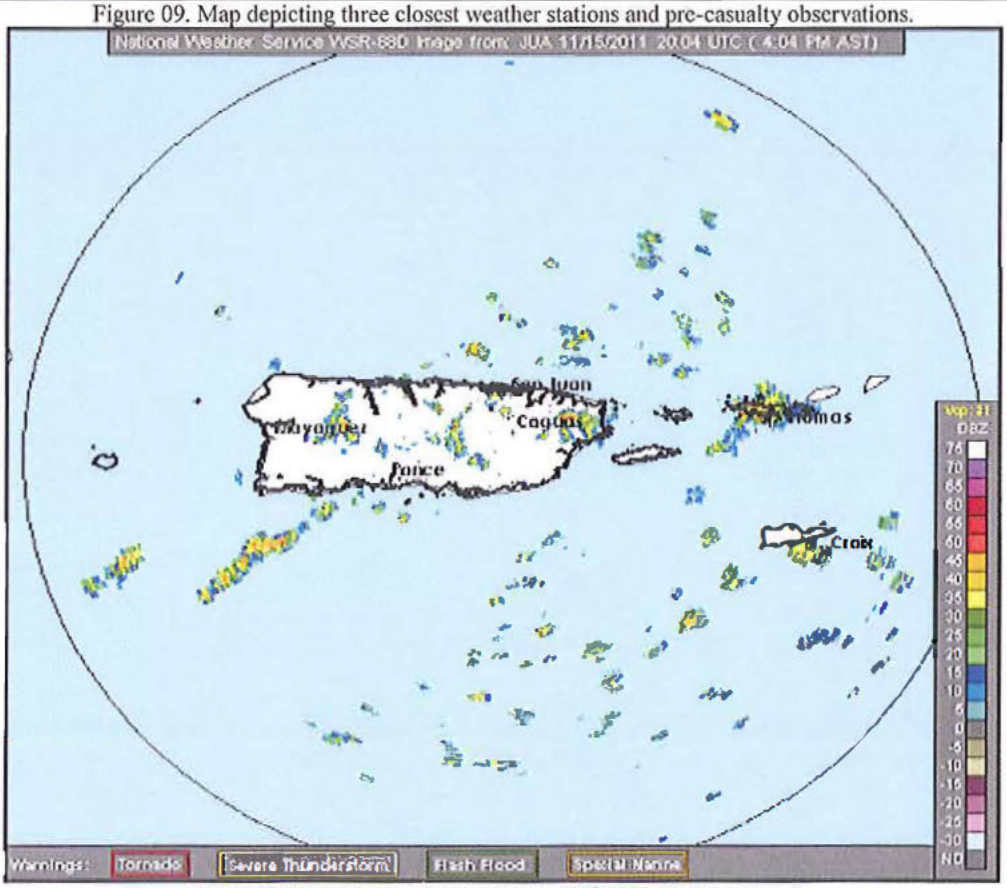

Figure 10. NWS radar image minutes before incident occurred

39. The passengers purchased their tickets for the parasailing excursion on the M/V CELEBRITY ECLIPSE (ON9404314), an import cruise ship operated by Celebrity Cruise Lines.

40. The passengers all initialed and signed an *Express assumption of risk waiver & release of liability*, prior to boarding the M/V TURTLE (VI0776TC).

41. At 1530 on November 15, 2011, the master got the M/V TURTLE (VI0776TC) underway from its mooring with 05 passengers and one crewmember onboard.

42. At 1540 on November 15, 2011, the M/V TURTLE (VI0776TC) arrived at the location the master decided on to begin parasailing.

43. At 1550 on November 15, 2011, the master harnessed and hooked in Ms. [redacted] and Ms. [redacted] and began their flight. The flight lasted 5-7 minutes and the passengers were safely brought back onboard.

44. At 1600 on November 15, 2011, the master harnessed and hooked in Ms. [redacted] and Ms. Kraftcheck and began the second flight of the voyage.

45. During the flight, the master told Mr. and Mrs. [redacted], who both hadn't flown yet, that he would not be putting them up on another flight due to the worsening weather conditions.

46. At 1607 on November 15, 2011, the master started to winch in Ms. [redacted] and Ms. Kraftcheck. When the women were approximately 57 feet from the stern of the vessel the winch motor stopped and attempts by master to continue reeling in passengers were unsuccessful.

47. At 1610 on November 15, 2011, the towline parted approximately 57 feet away from the roller assembly in what witnesses describe as "very high winds."

48. At 1610 on November 15, 2011, Ms. [redacted] and Ms. Kraftcheck descended to the surface of the water, where winds caught the still attached parachute, dragging them along the surface of the water for an estimated 8 – 10 minutes at approximately 28-30 mph based on witness estimates.

49. The master of the M/V TURTLE (VI0776TC) brought the vessel about and began to attempt to catch up to the parachute and attached passengers. He also made a radio call to other vessels announcing a "code yellow", CWS Tours LLC code for a runaway parachute situation.

50. According to CWS Tours LLC employee statements, the maximum speed of the M/V TURTLE (VI0776TC), in its current operating condition was between 25-28 mph. The master stated that it took at least 3 minutes just to catch up to the parachute.

51. At 1613 on November 15, 2011, the master of the M/V TURTLE (VI0776TC) Mr. [redacted] managed to maneuver the vessel alongside the parachute. He instructed the deckhand to jump onto the canopy in an attempt to deflate it. The deckhand, Mr. [redacted] made the jump, with the vessel at full speed but failed to reach or deflate the canopy successfully.

52. At 1616 on November 15, 2011, the master recovered the deckhand and another similar unsuccessful attempt was made by the deckhand to deflate the canopy.

53. At 1620 on November 15, 2011, after recovering the deckhand again, the master navigated the vessel alongside the parachute again, this time telling the deckhand to take the helm. The master jumped onto the canopy, successfully deflating it, stopping its forward progress.

54. Both women were still attached to the parasail rigging. Ms. [redacted] was conscious but dazed, floating on her back with her Type 3 PFD on. Ms. Kraftcheck was floating face down, without a Type 3 PFD or shirt, apparently ripped off during the incident.

55. At 1621 on November 15, 2011, the master and crewmember swam to Ms. Kraftcheck in order to get her onboard the vessel. Passenger, Mr. [redacted] jumped into the water and swam to Ms. [redacted] and assisted in keeping her afloat.

56. At 1623 on November 15, 2011, passenger, Ms. [redacted] threw a life ring to the master and deckhand and pulled them to the side of the M/V TURTLE (VI0776TC).

57. The master and deckhand had a difficult time lifting Ms. Kraftcheck onboard the vessel, but were able to successfully lift her onto the stern of the vessel, aft of the parasail platform.

58. Once onboard, the master and passenger Ms. [redacted] started CPR on Ms. Kraftcheck. The crewmember helped Mr. [redacted] bring Ms. [redacted] onboard the M/V TURTLE (VI0776TC). At this time, Ms. [redacted] had lost consciousness but was still breathing and had a pulse. Ms. [redacted] was placed on her side on the deck of the vessel.

59. The parasail canopy and its rigging became entangled in the M/V TURTLE's (VI0776TC) propeller, rendering the vessel inoperable. The gear was cut away by company employees post incident and was not recovered.

60. At 1630, two assist vessels, the M/V OCEAN RIDER (VI0644TC) and M/V HOLY CHUTE (1164328) arrived on scene. Ms. Kraftcheck was transferred to the M/V OCEAN RIDER (VI0644TC) along with M/V HOLY CHUTE (1164328) crewmember [redacted] who took over chest compressions on Ms. Kraftcheck and continued for duration of vessel transit to WICO docks in Charlotte Amalie.

61. Ms. [redacted] and the remainder of the crew and passengers from the M/V TURTLE (VI0776TC) were transferred to the M/V HOLY CHUTE (1164328) and brought into the WICO docks in Charlotte Amalie. M/V TURTLE (VI0776TC) was taken back to company docks post incident by other company employees.

62. Both women and all passengers and crew were met by emergency personnel at the pier.

63. Investigation did not reveal who declared death of victim. Autopsy was performed on the deceased by Dr. [redacted] at Roy Lester Schneider Hospital in St. Thomas. On November 17, 2011 the cause of death was determined to be drowning.

64. Ms. [redacted] was transferred to Roy Lester Schneider Hospital in St. Thomas where she was diagnosed to have a serious acute subdural hematoma on the front left portion of her brain. She also sustained numerous abrasions and bruises on her legs and torso.

65. On November 16, 2011 Mr. and Mrs. [redacted] both noted on separate Royal Caribbean-Guest Injury Statements that they each suffered minor injuries during the recovery of the parasailers. Mr. [redacted] sustained scrapes and Mrs. [redacted] sustained a cut to her left hand while grabbing a parasail line.

66. On September 20, 2011 the owner/operator of the M/V TURTLE (VI0776TC) was fully aware of the U.S. Coast Guard's concerns and expectations regarding vessel and passenger safety before the marine casualty. The owner/operator received the marine safety alert 05-11 for parasailing operations safety instructions before the marine casualty as a part of Marine Safety Detachment St. Thomas parasailing industry awareness outreach to increase safety industry engagement.

Analysis:

Pre-flight weather conditions:

During the investigation, weather data was gathered from The National Weather Service weather observation station at the Cyril E. King International Airport as well as the privately maintained, WeatherFlow Inc. observation stations located at Buck Island National Park and Two Brothers National Park. Although not a governmental managed program, WeatherFlow stations gather weather information in the following manner in order to provide mariners with real time wind information:
5 second samples are taken, with subsequent records calculated at the end of each 5 minutes. Those values are:

THE GUST (highest 5 second value) during the 5 minute interval (60 samples per 5 minutes = 5 min X 12 samples/min)

THE AVERAGE (the average of the 60 samples collected during the 5 minute interval)

THE LULL (lowest 5 second value)

The Master of the vessel stated that he used a phone application called WindAlert on his Smartphone to check wind conditions prior to engaging in parasailing operations. WeatherFlow

Inc. is the parent company of the WindAlert program. At any given point, prior to the incident, any CWS Tours LLC employee could have referenced that application and viewed the same wind data that was collected post casualty by investigators. Weather data collected by investigators shows how dynamic the maritime weather can be in the vicinity of the incident, and showcases the need for constant monitoring of the weather, specifically wind, when conducting parasailing operations in the Caribbean.

Vessel equipment:

CWS Tours LLC did not keep or maintain M/V TURTLE's (VI0776TC) technical manuals regarding the vessel or its onboard equipment. Items such as equipment lifespan recommendations, safety settings, and equipment weather limitations were not readily accessible to anyone within CWS Tours LLC. Records of towline service dates, bitter end trimming, and line retirement dates were not kept by CWS Tours LLC. CWS Tours LLC management has no way of keeping track of the wear and fatigue the parasail gear is going through other than visual inspections.

The towline winch onboard the M/V TURTLE (VI0776TC) is powered by a hydraulic motor located in the vessel's engine space. The hydraulic motor receives hydraulic fluid from a gear driven pump located between the fluid reservoir tank and the motor itself. A spring actuated break is located between the motor and the winch. A directional flow valve leads to the vessel's helm where the vessel operator controls the system using a manual lever. When the directional valve is actuated, the motor's break is released, and applied when the system is in neutral. The valve contains a pressure relief valve set at 3000 psi. When the safety relief setting is reached, the valve re-circulates the fluid back through a counter balance to the system reservoir, preventing a "free-spool" of the towline, or a shock load of the system. Post casualty testing of the winch and hydraulic system onboard showed the system working properly and as designed. The system most likely reached this relief setting, making it impossible for the master to retrieve the parasailers.

Hydraulic Circuit

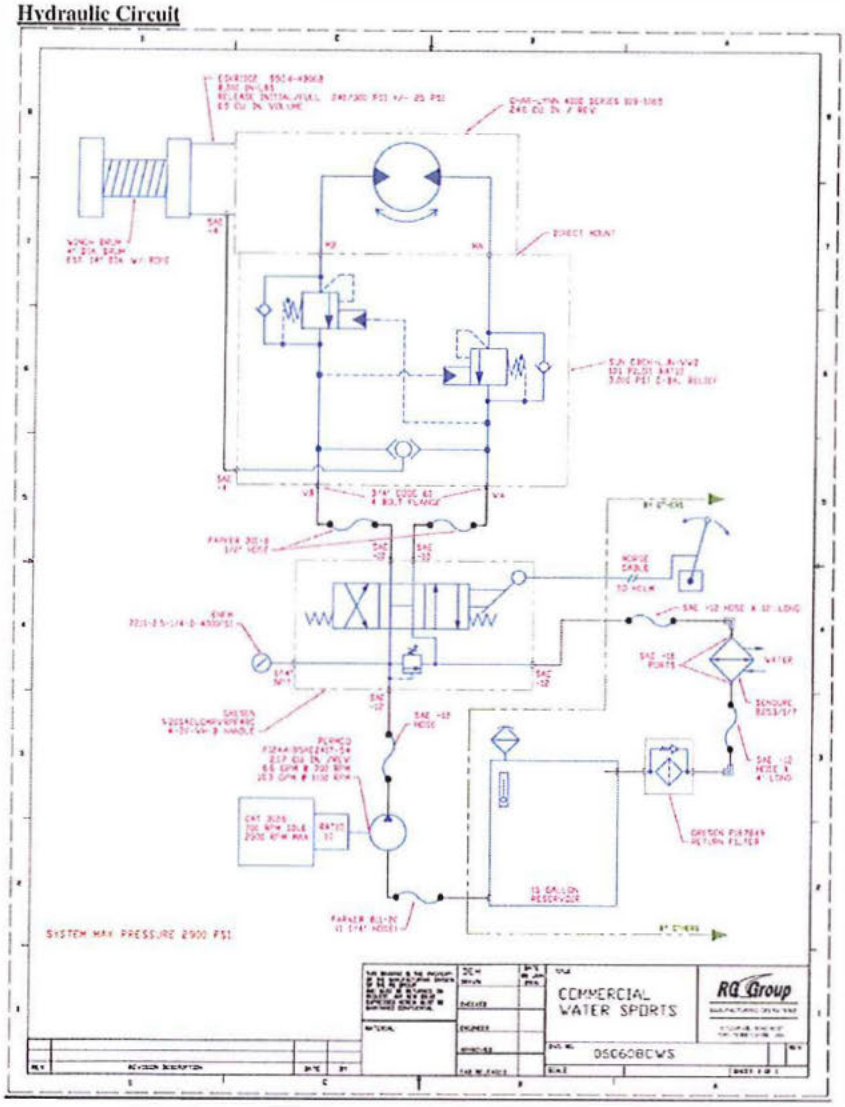

Figure 11. TURTLE's onboard Hydraulic schematic

The parasail canopy, yoke, and passenger spreader bar were cut away by crewmembers after fouling the M/V TURTLE's (VI0776TC) propeller. The gear was not recovered, therefore could not be analyzed and inspected post casualty.

The towline in use onboard the M/V TURTLE (VI0776TC) was a 7/16-inch diameter Double Esterlon polyester double braided rope supplied by Sea Gear Marine, a distributer for Yale Cordage who is the manufacturer. The towline was purchased by CWS Tours LLC on March 18, 2011. It is unknown when the towline was placed in service on the vessel.

Southwest Ocean Services Inc. examined and conducted laboratory tensile tests on the M/V TURTLE (VI0776TC) towline and on a new (exemplar) 7/16-inch diameter Double Esterlon polyester double braided rope manufactured by Yale Cordage and supplied by Yale Cordage. A series of tensile tests were conducted on both ropes without and with bowline knots.

Detailed information of the towline tensile strength tests are contained in the Memorandum of Rope Inspection, dated February 2, 2012. Testing was IAW Cordage Institute International Standard CI 1500-02 (V.2 May 2006), Test Method for Fiber Rope. This standard provides information and procedures for line testing.

Tensile Tests of New Towline

a. The un-knotted exemplar rope average failure load of 7,258 pounds was 418 pounds (6.1%) above the manufacturer's minimum breaking strength of 6,840 pounds.

b. The knotted exemplar rope always failed at the knot, and the average failure load of 5,300 pounds was a significant 1,540 pounds (22.5%) below the manufacturer's minimum breaking strength of 6,840 pounds.

c. The exemplar rope tested 27% weaker with the bowline knot than without the bowline knot.

Exemplar Line	As Tested Average Breaking Strength (lbs.)	Percent Diff. from Manufacturer's Reported Minimum Breaking Strength
Without Bowline Knot	7,258	+6.1% Above Min
With Bowline Knot	5,300	-22.5%

Percent Difference with Knot	-27%

Tensile Tests of M/V TURTLE's (VI0776TC) Towline

c. After unknown days of service, the M/V TURTLE (VI0776TC) un-knotted towline average failure load of 3,625 pounds was a significant 3,215 pounds (47%) below the manufacturer's minimum breaking strength of 6,840 pounds.

d. The knotted M/V TURTLE (VI0776TC) towline average failure load of 3,365 pounds was a significant 3,475 pounds (50.8%) below the manufacturer's minimum breaking strength of 6,840 pounds. As with the exemplar rope, all failures were at the bowline knot.

e. The M/V TURTLES (VI)0776TC) towline rope tested 7.1% weaker with the bowline knot than without the bowline knot.

M/V TURTLE(VI0776TC) Towline	As Tested Average Breaking Strength (lbs.)	Percent Diff. from Manufacturer's Reported Minimum Breaking Strength	Percent Diff. from Exemplar Rope as tested Average Breaking Strength
Without Bowline Knot	3,625	-47%	-50%
With Bowline Knot	3,365	-50.8%	36.5%

Percent Difference with Knot	-7.1%

A detailed visual examination of the M/V TURTLE (VI0776TC) towline revealed broken filaments that could be seen on its surface giving it a fuzzy appearance. This fuzzy appearance is consistent with a braided rope that has filament breakage.

Bowline Knot: There is evidence that the M/V TURTLE (VI0776TC) towline strength was significantly reduced by the bowline knot.

A bowline knot is the knot typically used throughout the parasailing industry to fasten the towline to the parasail harness as it is simple to tie and easy to undo.

To mitigate this structural damage, within the parasailing industry it is common practice to cut the bitter end of the towline back after a certain number of flights, thus discarding the used portion of the rope. The PAPO OSAG requires that a minimum of two feet be trimmed from the towline bitter end within a maximum period of 7 days, every 400 flights, or as may become necessary.

During the course of the investigation, Federal and State regulations that pertained to the operations of parasail vessels were reviewed, along with industry created safety protocols. CWS Tours LLC was not a member of the Professional Association of Parasail Operators (PAPO), an industry-lead group of members that promotes safety in the parasail industry through agreed upon safety standards found in the Operating Standards and Guidelines (OSAG). CWS Tours enrollment with PAPO was expired. It is unknown when CWS Tours enrollment the PAPO expired. CWS Tours LLC and Beach Management Services company policies, as they relate to operations safety, refer directly to PAPO OSAG as the standards to follow within the company.

Conclusions:

In accordance with reference (b) the Initiating Event (or first unwanted outcome) for this casualty was the winch's inability to retrieve the passengers in flight during high winds due to its operating capacity being exceeded.

1. The causal factors that led to this casualty are as follows:

   a) Environment: There is one environmental causal factor.

      1) The weather, (specifically wind speed), was a key factor in this casualty. Weather data gathered throughout the investigation shows areas of consistently shifting, high winds in the vicinity of the incident. The average wind speed from the three closest weather stations between 1545-1615 was 19.5 mph with average gusts of 25.5 mph. Even though it may be true, as the master stated that the winds were calm at the EXACT location of the incident WHEN he deployed the parachute and passengers; the fact that the immediate area contained storm systems near the vessel's location clearly had a negative effect on the flight in question. The vessel likely entered a squall area where the high wind speeds and higher gusts, coupled with the 39' diameter parachute canopy, exceeded both the pressure relief setting on the winch and the tensile strength of the towline.

   b) Equipment: There are four equipment related causal factors.

      1) The vessel's parasail winch pressure relief setting of 3000 psi was most likely reached during the high wind conditions. The relief setting effectively shut down the winch motor, locking the brakes, in order to prevent a hydraulic system failure or free spool situation. The crew onboard the M/V TURTLE (VI0776TC) had no method of knowing if the system's pressure relief setting was being reached due to a lack of a system gauge on this class of vessel.

      2) The towline failing, parting approximately 57 feet from the roller assembly in high winds. The distance from the yoke and bowline knot to the location of the line failure is unknown due to the unrecovered equipment.

      3) The towline's rapid and significant degradation in strength while in parasailing service. Parasailing is a severe application that leads to rapid degradation and strength loss in a towline. Investigation of the M/V TURTLE (VI0776VI) towline indicated it had a 47% reduction in strength from an unknown number of days in service. The loss of strength was due to the combined effects of cyclical tension wear, shock loading, external abrasion and flex fatigue.

      4) The towline's significant reduction in strength due to the use of a bowline knot to fasten the towline to the parasail harness. Lab testing indicated that the bowline knot

reduced the breaking strength of the M/V TURTLE (VI0777TC) towline an additional 7% beyond that provided by the towline in its worn condition. At the time of the casualty, the average breaking strength of the M/V TURTLE (0776TC) towline was a significant 51% below the manufacturer's minimum breaking strength.

c) Safety regulations/standards: There are four causal factors related to safety regulations/standards.

1) Parasail towlines are exposed to constantly changing environmental conditions along with variable operating loads and strains. Currently, there are no established replacement requirements for parasail towlines.

2) Currently, there is no regulatory authority for parasail equipment onboard vessels. The U.S. Coast Guard regulates, inspects and oversees the operation of vessels inspected under the Small Passenger Vessel regulations found in 46 CFR Subpart T however, these regulations do not encompass the parasail equipment (i.e. winch, hydraulics, towline, parasail equipment, roller assembly).

3) Although there are industry lead organizations such as PAPO that create operating standards and guidelines for members to follow, there is no follow up or engagement after enrollment. Enrolling with PAPO and following its guidelines are two different issues. CWS Tours LLC owner did not even know if his enrollment was active when interviewed and employees clearly weren't knowledgeable on the OSAG nor did they follow them. There are no audits or inspections of enrolled companies conducted by any of the industry organizations.

4) Currently, there are no master or crew licensing or training requirements specific to the unique procedures or safety precautions associated with parasailing operations. The U.S. Coast Guard requires U.S. licensed mariners be in direct control of vessels carrying passengers for hire, however there are no license endorsements or special training requirements needed to operate a parasail vessel.

d) Personnel: There are three personnel related causal factors

1) CWS Tours LLC owner's lack of daily operations oversight was clearly evident in this case. Company Policy, OSAG and Federal regulations were not being followed in regards to:

a. equipment checks
b. equipment maintenance and replacement
c. passenger safety briefs
d. weather forecasting and monitoring
e. crew qualifications
f. employee drug testing requirements
g. crewmember training

2) The master's unfamiliarity with, or disregard for, CWS Tours LLC policy, PAPO OSAG and federal regulations was apparent in this case. The master failed to:

a. trim towline bitter end as per PAPO OSAG
b. log any towline trimming
c. give a passenger safety brief meeting standards of PAPO OSAG
d. give a passenger safety brief meeting requirements in 46 CFR 185.506
e. ensure proper training of onboard crewmember

3) The master claims to have referenced an application on his phone called WindAlert, to check winds prior to getting underway. If he did in fact check the weather prior to getting underway, he would have seen that the winds in the area were above CWSTours LLC company policy limits (PAPO OSAG). His failure to accurately identify the present environmental hazards, prior to getting underway with passengers directly contributed to the initiating event occurring. Compounding that fact was his failure to use his own maritime experience to recognize the surrounding frontal systems in the area where he was to begin parasailing operations. Passengers with little to no experience in the marine environment even stated that they felt the weather was questionable at the time of Ms. Kraftcheck and Ms. [redacted] flight. Passengers stated that rain was present while boarding the vessel, and enroute to the location and conditions appeared to be worsening after the first of the two flights.

2. The causal factors that existed or occurred during the rescue efforts are as follows:

a) Safety regulations/standards

1) Currently, there are no master or crew licensing or training requirements specific to parasail emergency preparedness and response. The U.S. Coast Guard requires U.S. licensed mariners be in direct control of vessels carrying passengers for hire, however there are no license endorsements or special training requirements needed to operate a parasail vessel. There are no federal drill or training requirements which address responding to a parasail related emergency.

b) Personnel

1) The crewmember onboard M/V TURTLE (VI0776TC) tested [redacted] during post casualty drug testing. While it is not known if he was under the influence of a dangerous drug on the day of the incident, it cannot be ruled out as a possible factor in the response to the emergency.

2) The crewmember onboard did not have adequate training to be prepared for, and adequately respond to an emergency. Passengers stated that he seemed to be in training, not knowing CPR or how to effectively stop a broken away parachute.

3. There is no evidence that work/rest related issues contributed to this casualty.

4. The investigation did not identify any inconsistencies with regards to the U.S. Coast Guard's vessel inspection history for the M/V TURTLE (VI0776TC).

5. There is no evidence that any personnel of the U.S. Coast Guard or of any other agency or any other person contributed to this casualty, or to a death involved in this casualty.

Safety Recommendations:

1. It is recommended that the Commandant of the Coast Guard, in consultation with national parasailing organizations and/or the parasailing industry, establish distinct license, training, qualification, and experience requirements that apply to operators and crew of commercial parasail vessels.

2. It is recommended that the Commandant of the Coast Guard require the inspection of the parasail gear and equipment, as necessary, to determine that the gear and equipment are in good working order and fit for the service intended, before the issuance of a Certificate of Inspection to any vessel that engages in commercial parasailing.

3. It is recommended that the Commandant of the Coast Guard, in consultation with national parasailing organizations and/or the parasailing industry, develop parasail towline selection, inspection and retirement (removal from service) guidelines. These guidelines should require records to be kept that indicate the size, fiber, construction, length, manufacturer, minimum breaking strength, safe working load, date placed in service, and inspection interval for each towline. Inspections should be logged and should check for damage, wear and include caliper measurements of the towline diameter to determine if the towline has deteriorated. The master of the parasailing vessel should be responsible for keeping these records and reporting the same to management. For each towline, the records should be kept for the duration of its service life and should be made available for review by the Coast Guard upon request. When developing the guidelines, the Coast Guard should further evaluate: the need to conduct additional operational tests to determine a towline's required minimum breaking strength; the need to require the breaking strength of each towline to be certified by the manufacturer by subjecting a portion of the rope to destructive testing prior to its installation; and the need to specify the use of more efficient connections (e.g., eye splices, thimbles, etc.) between the towline and the yoke.

4. It is recommended that the Commandant of the Coast Guard require owners and operators of commercial parasail vessels to provide a comprehensive passenger safety briefing prior to departure to include a discussion of the inherent risks of parasailing, the route and operational limits imposed to mitigate these risks, and the proper procedures to be followed during the course of a parasailing emergencies to include: unintended landing on water, winch malfunction, towline failure and propulsion machinery failure with a passenger in flight.

5. It is recommended that the Commandant of the Coast Guard require owners and operators of commercial parasail vessels to conduct sufficient training, drills and exercises to ensure that crewmembers are proficient in parasailing emergency techniques and procedures. Training, drills and exercises shall be logged or otherwise documented for review by the Coast Guard upon request. Drills and exercises must test the proficiency of company and vessel personnel in assigned emergency response duties.

6. It is recommended that the Commandant of the Coast Guard, in consultation with national parasailing organizations and/or the parasailing industry, develop operational readiness, maintenance and inspection requirements for winches used to deploy and recover passengers while parasailing. When developing the inspection requirements, the Coast Guard should develop minimum power ratings and further evaluate the need for redundant or emergency winch systems that could be used should the primary winch fail.

7. It is recommended that the Commandant of the Coast Guard, in consultation with national parasailing organizations and/or the parasailing industry, review, modify and ultimately adopt and incorporate by reference in 46 CFR Subchapter T, the Professional Association of Parasail Operators Operating Standards and Guidelines, or a similarly produced and recognized industry standard. Where industry has not established suitable safety requirements addressing the causes of this casualty, the Coast Guard should provide the leadership and catalyze their development. These actions will allow the Coast Guard to capitalize on standards that they are already familiar with and will raise the level of safety provided to the level expected by the American public. Further, it will minimize the burdens on the parasailing industry associated with variations in safety standards imposed by various jurisdictions.

8. It is recommended that the Commandant of the Coast Guard seek legislative authority to inspect parasail vessels that carry at least one passenger for hire and enact implementing regulations. This action when taken in concert with this report's other recommended actions will result in a regulatory regime that provides a set of minimum safety standards for commercial parasailing on U.S. navigable waters, and will result in lives saved.

9. It is recommended that the Commandant of the Coast Guard provide written guidance to marine investigators to be used during the investigation of parasailing marine casualties. This guidance should be taught at the Marine Inspection and Investigation School at Training Center Yorktown and be made available to the public and parasailing industry.

10. It is recommended that the Commandant of the Coast Guard provide notice to the parasailing industry that failures of parasailing equipment to include the winch, towline, harness, and parasail, are considered to be occurrences that materially and adversely affect a vessel's fitness for service, and are considered reportable marine casualties under 46 USC §6101 and its implementing regulations of 46 CFR 4.05-1(a)(4) and 185.202(a)(4).

11. It is recommended that the Commandant of the Coast Guard require the operator of a commercial parasail vessel to record for each flight: the parasail canopy used and its operational limitations; the estimated weight of the passenger(s); the prevailing wind and sea

state; the duration of the flight; and the details of any parasailing incident that occurred during the flight. The master of the parasailing vessel should be responsible for keeping these records and report the same to management. For each towline, the records should be kept for the duration of its service life and should be made available for review by the Coast Guard upon request.

12. It is recommended that the Commandant of the Coast Guard designate a single point of contact within the Headquarters organization to provide field units, Investigating Officers and other CG personnel with both government and private entity weather information. Information such as weather trends, post casualty weather information, and potential adverse weather events in an operating AOR will greatly assist Investigating Officers and CG operators in gathering weather information quickly and accurately. The position or billet should be civilian for service continuity and should establish and maintain working relationships with private weather monitoring entities along with other government weather agencies.

13. It is recommended that the Commandant of the Coast Guard examine the need for an improved working relationship with private weather monitoring and research companies. Recommend assessing the feasibility of integrating these companies' data into Coast Guard operating software so that Coast Guard operators, marine safety personnel, and Investigating Officers can gather weather information quickly and accurately at the unit level.

14. It is recommended that Commercial Water Sports, Inc, the builder the M/V TURTLE (VI0776TC), advertise a service bulletin to the parasailing industry advising of the need to retrofit this particular class of vessel with a pressure gauge for the parasail winch hydraulic system, with notation of specific pressure relief setting.

15. It is recommended that CWS Tours LLC develop, implement and enforce a quarterly training program for all company employees that adequately addresses equipment maintenance, weather forecasting, record keeping and parasail specific emergency procedures. CWS Tours LLC should keep records of all employee attendance and should base day to day crew selection on their training completion status.

16. It is recommended that CWS Tours LLC develop, implement, and enforce a comprehensive weather forecasting and monitoring policy. The policy should identify a method of consistent monitoring from every vessel in the fleet.

17. It is recommended that the Commandant of the Coast Guard provide a copy of this report to the following entities:

    a. Area, District, and Sector Commanders;
    b. Estates of the deceased;
    c. U.S. Attorney;
    d. Professional Association of Parasail Operators;
    e. Parasail Safety Council;
    f. Water Sports Industry Association;

g. Yale Cordage, Inc.;
h. U.S. Virgin Islands Police Dept

Enforcement:

1. It is recommended that Sector San Juan, which exercises OCMI authority closest to the owner of the M/V TURTLE (VI0776TC), initiate criminal enforcement process referring this matter to the Department of Justice (DOJ) for criminal prosecution as per U.S. Coast Guard Marine Safety Manual Volume V Part C Chapter 7 & 33CFR 1.07-90.

2. It is recommended that Sector San Juan, which exercises OCMI authority closest to Captain [redacted] home of record, initiate administrative suspension and revocation actions against the license of the master of the M/V TURTLE (VI0776TC) for misconduct and/or negligence under 46 USC 7703(1).

3. It is recommended that Sector San Juan, which exercises OCMI authority closest to the owner of the M/V TURTLE (VI0776TC), initiate civil penalty action against the company owner for operating the M/V TURTLE (VI0776TC) without being under direct control of a licensed mariner and for failing to conduct pre-employment chemical test for crewmember.

Administrative recommendations:

1. Recommend closure of this investigation.

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