CLOSE CALL/NEAR MISS

SWIFTWATER RESCUE TRAINING

March 21, 2012

INTRODUCTION

To ensure the safety of the Swiftwater Rescue instructors and students, this Close Call / Near Miss Report will identify safety concerns during training activities and the subsequent recommendations.

The Office of Health and Safety was made aware of an incident during a Swiftwater Rescue class in which a student felt that their safety was compromised. Although they were not injured, the purpose of this report is to make recommendations regarding procedural, operational, and cultural changes in order to safely move forward with the this program.

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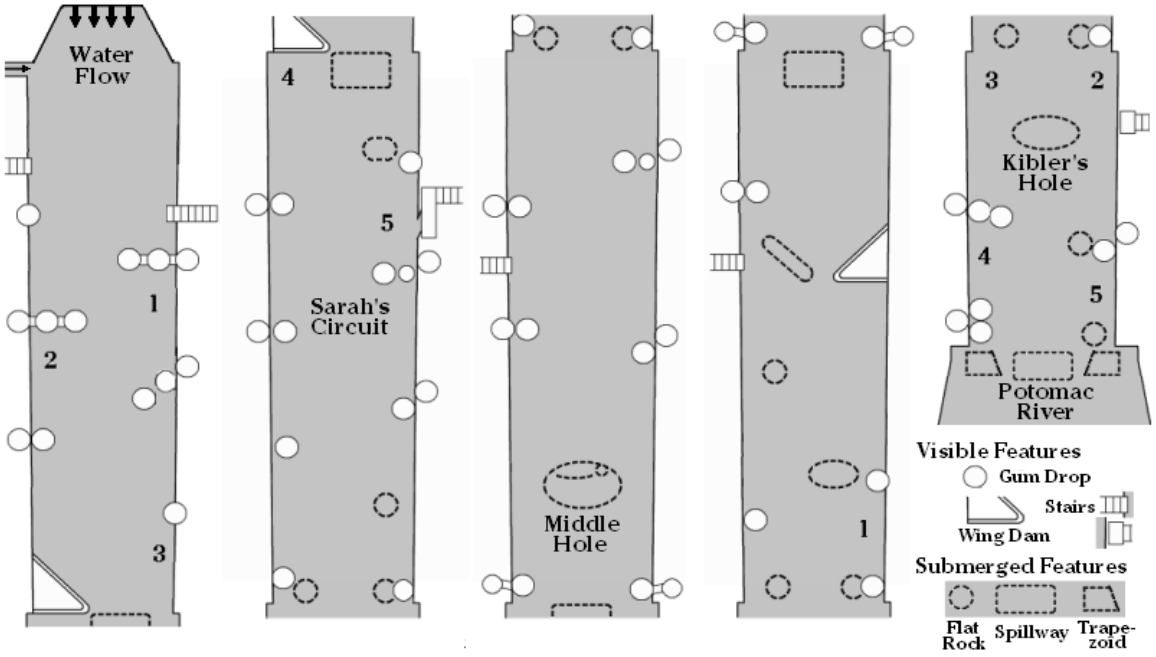
Definitions

Dickerson Flume: Located in Dickerson, MD. It was the first pump-powered artificial whitewater course built in North America, and is still the only one anywhere with heated water. It remains an active training center for whitewater slalom racing, swiftwater rescue training, and other whitewater activities.

Dickerson Course Map



Program Background / Timelines

On Wednesday March 21, 2012 Prince William County Department of Fire & Rescue held a swiftwater rescue operations training class located at the Dickerson flume in Maryland. The instructors for the day were a Captain, a Lieutenant, and a Technician II. The safeties for the day were a Lieutenant and a Technician I. During the morning training one of the students made the instructors aware that their dry suit was leaking and retaining water. The suit was switched for another dry suit during the lunch break for the student to wear for the remainder of the day. The second suit was too big for the student, and they were unable to remove all of the air and allowed it to remain trapped in the suit. This made it difficult to swim because the arms were constantly filling with air. The only solution for this was to continuously "burp" the suit.

Towards the end of the day the students received additional practice with throw bags. The groups were split in half, with some of the personnel to be used as "victims" and the others as "rescuers". The victim group reported to the jump in point of the flume with the Lieutenant instructor. The others went to the bottom of the flume to practice deployment of throw bags to the students acting as victims exiting the Flume. The above mentioned student was to be used as a "victim" and told to go ahead and enter the water at the top of the flume. The student jumped into the flume and navigated the swift water down to the area where thrown bags were to be deployed. As the student navigated down the waterway, a rescue bag was thrown from a fellow student that was missed in an attempt to catch it by the "victim". The victim student then continued to try and aggressively rescue swim to the river right side where they were supposed to exit the water. The Captain instructor then threw the struggling student a throw bag and was successfully caught. The student then turned their back to shore and put the rope over their left shoulder, like they had been instructed to do. The student then immediately felt that there was no tension on the rope, so they rolled over and looked back to shore. The Captain had let go of the rope. As it was picked up by another safety, the Captain instructed the safety to drop it. The Captain made eye contact with the student, and simply said "swim". At this point the student, whom was already fatigued as well as experiencing issues with the dry suit, was rapidly moving down the river (further than any of them had traveled all day) and stated later that they felt very unsafe. The student was aggressively swimming but not getting any closer to shore, it appeared to the student and several witnesses that the water current and the large suit were both working against any progress. The student yelled to the Lieutenant that was acting as a safety for a rope bag, as they were passing quickly. This Lieutenant was the last safety in place and quickly deployed the throw bag. With a successful catch the student was pulled to shore safely. Missing the last throw bag could have resulted in the student being dumped into the Potomac River.

Course Outline

SWIFT WATER RESCUE OPERATIONS

Instructors –
Safety –

MARCH 20, 2012

STATION 507 CLASSROOM

0600

PPE

SECTION I: SAFE RESCUE

SECTION II: MEDICAL CONSIDERATIONS

SECTION III: SELF RESCUE

SECTION IV: RESCUE EQUIPMENT AND TECHNIQUES

1100 – 1200 LUNCH

1230 – 1530

POOL SESSION

- SWIM TEST
- SKILLS PRACTICE
- Help / Huddle positions

MARCH 21, 2012

0600 - 1800

STATION 507
LEAVE FOR THE FLUME

Knots, eight and water knot

Self Rescue skills, water dynamics

Float down stream – ferry angles

Throw bag skills, recoils

Swift Water Vest Blow Out

Strainer

Reaching and throwing rescue, pendulum victim to shore

MARCH 22, 2012

0600 - 1800

STATION 507
LEAVE FOR THE FLUME

Foot entrapments

Line Rescue Systems (entrapment rescue), support line, snag line (weighted line and floating line) Double line floating tether

Moving water crossings

Multiple Rescue crossings

Advanced line systems – Zip line, Z-drag

Reaching and throwing rescue, pendulum victim to shore

Live Bait / Rescue Swimmer

TEST

CLEAN UP

FINDINGS, DISCUSSIONS AND RECOMMENDATIONS

Findings, Discussions

While looking into this incident we were made aware of several other occasions in which similar unsafe events occurred. We also discovered:

- Management and oversight of the program appears loose and unregulated.
- Complacency - live training evolutions should be approached with the same consideration and standards as a live burn; it is not a controlled environment.
- Lack of proper paperwork and the filing of paperwork or lack thereof (completed swim test forms, completed skills sheets, waivers...),
- Unclear certification requirements for lead instructors,
- Lack of a site safety plan or daily safety briefing, each should be done on every training day
- Unclear what the training safety officer's true responsibilities are and what experience level is required,
- Use of the Dickerson flume may be too challenging for an operational level course.

Recommendations

Instructor Model

- *All* Instructors must possess Instructor Level II Certification (Lead & Assists)
    - Mirrors other Special Operations disciplines and High Hazard Training
- Lead Instructor will oversee the class and act as overall safety
- Assist Instructors will teach individual skills/stations
- Two (2) Safeties/Technicians will be assigned to each Assist Instructor
    - i.e. (1) Lead Instructor, (2) Assist Instructors, (4) Safeties/Technicians
- Recommended Class Size = 12 to 16 Students

# of Students	# of Assist Instructors
0-16	2
17-24	3
25-32	4

SWR Safety Personnel

- Safeties will be used to supplement Assist Instructors, act as "Down Stream Safeties" and have all necessary equipment ready to perform a rescue if a student or Instructor is in distress or needs assistance
- No Rank Associated with Safeties but must possess Swiftwater Rescue Technician Level Certification
- Will be chosen by SWR Program Manager and current Instructor Cadre must attend ***mandatory*** Safety Class to discuss roles and responsibilities of the SWR Safety. (To be developed by the program manager in cooperation with the Health & Safety office).

Site Safety Plans

- Overall Site Plans and layout of training sites
    - i.e. Great Falls-Virginia Chute, The Flume
- Includes access points, terrain, water level parameters (Flood Stages, low water levels detrimental to training), hazards, etc.
- Includes "Actual Emergency" Procedure in the event something occurs at the training site.
    - Notify local jurisdiction that would provide emergency response that we are training in their area and determine the best way to call for their service.
    - Necessary equipment brought to the training site to assist in this procedure.
- Utilized for the Safety Brief/Class for SWR Safeties and Instructors
- Safety Brief given EACH day of training to include current weather conditions

Instructor Files Audit

- Conduct an audit of ALL current SWR Instructors and Safeties
    - Instructor Certifications?
        - Upgrade all SWR Instructors to VA Department of Fire Programs Instructor Level II
        - Pennsylvania Curriculum Train-The-Trainer
        - Any other necessary credentials
    - Program Manager maintains accurate and complete Instructor Files

Paperwork/Course Forms Checklist

- Establish a "Master" Checklist for all forms needed for each SWR Course
    - i.e.- Rosters, Skills Sheets, Tests, Swim Test, Course Evaluations, Site Safety Plans
- Create a Master Folder with all necessary forms
- Folder should be complete and turned in to Program Manager after each course
    - Completed Folder sent to Special Operations Training Lieutenant @ PSA for course records

Injury/Illness Reporting System

- Program Manager creates and maintains an Injury/Illness reporting system

- After each class any injury or illness reported is added to database
  - Nature of illness/injury & Location
  - Looking for trending at certain locations or with certain classes/Instructors
- Injury forms can be included in Course Paperwork
- Necessary SIG-011 still needs to be completed

Swim Test

- Program Manager and Instructors must research a validated Swim Test to use for the SWR Program.
- Current one is not validated to the best of our knowledge
- One standard Swim Test for both Operations & Technician Level Training

SWR Equipment Issues/Inventory

- Maintain appropriately fitted training gear for all students
  - Assorted sizes, well maintained
- Create and maintain:
  - Maintenance Records
  - In-Service Dates
  - Repairs Done and Dates
- Adhere to NOVA Ops Helmet Colors that relate to certification level

The Flume

- Per the Pennsylvania Water Rescue Curriculum Manager and Instructors:
  - The use of the Flume is ***NOT*** suitable for Operations Level Classes
    - The end of the Flume where it meets the river can be used for Operation level training
  - The Flume may be used for Technician Level Classes and advanced Continuing Education classes
    - Pennsylvania Water Rescue Instructors do not recommend the flume for Operation level classes.
      - It does not allow for instructors to properly evaluate skill levels of entry level swimmers
      - Difficult to set up adequate safeties due to steep sides and protective chain link fence.

Technician Level Skills in Operations Classes

- **WRER (Operations level class) must follow skills sheets and class curriculum of the Pennsylvania Boat and Fish Commission**
- "Blow Out" Drills and "Live Bait" Rescues are ***NOT*** to be taught in Operations Level Classes

Staffing Levels for Swiftwater Units

- When weather events are predicted/occur and County Personnel are relocated to SWR Units, only Technician Level SWR Personnel will be used as Staffing
  - In conjunction with the skills taught in Operations vs. Technician
    - Operations= Save yourself

        - Technician= Rescue techniques

Command and Control

- A clear leader or Incident Commander (IC) must be identified for each and every training evolution.
- IC is responsible for identifying and documenting the roles and responsibilities for each member of the training staff for the event and communicates these to the instructors and students.
- IC is responsible for communicating and documenting the Incident Action Plan (Training Plan) to all instructors and students.
- Comprehensive pre-training planning should be completed to include:
    - Site Planning and visual documentation
    - Emergency procedures that identify the roles and responsibilities of instructors and safeties in a “true emergency”.
    - Documentation of this planning in ICS or similar worksheets that contain:
        - Incident Action Plan
        - Site Plan
        - Safety Plan (including briefing script)

Cultural Shift

- Breakdown complacency among SWR Instructors
- All personnel must be empowered to stop unsafe acts.
- Leadership of this program must instill need for accountability and professionalism in all activities