

Water Rescue

NFPA 1670 Awareness Level



*Kansas Search & Rescue
Response System
General Training Requirement*

NFPA 1670

Water Rescue

- (1) Recognizing the need for water search and rescue
- (2) Implementing the assessment phase
- (3) Identifying the resources necessary to conduct safe and effective water operations
- (4) Implementing the emergency response system for water incidents

NFPA 1670

Water Rescue

- (5) Implementing site control and scene management
- (6) Recognizing general hazards associated with water incidents and the procedures necessary to mitigate these hazards within the general search and rescue area
- (7) Determining rescue versus body recovery

We Keep Killing Ourselves

- 1986-3 Texas Firefighters drown and died trying to rescue a lady who drove into a flooded roadway
 - 2 feet of water, 11 mph, No training,
 - no equipment, in full structural PPE
- 1996-Arizona Firefighter drown and died while attempting to rescue a dead body in a vehicle
 - No risk assessment, 4 feet of water, 17 mph,

Denver Firefighter Swept Away by High Water During Rescue

Five-Hour Search Ends Tragically

- An exhaustive five-hour search ended late Thursday night when the body of a Denver firefighter (Robert Crump, 37) swept away by high water while helping save a stranded motorist was found in a drainage culvert.

August 2000

Crump leaves behind a wife and three children, daughters ages 9, 11 and 13.



Preplanning and Incident Management



"Preplanning"

- Examine all aspects:
 - Potential of Future Problems
 - History of Past Problems
 - Devise methods of dealing with them safely and effectively
- Information to be gathered may include:
 - Location
 - Access
 - Maps
 - Resources (Auto or Mutual Aid)
 - Communications
 - Equipment and Training Needs

"Incident Management"

- Dealing with a water rescue incident is first a management problem
 - Conduct an adequate size-up and hazard assessment
 - Isolate and deny entry to shore line
 - Assess resource and equipment needs
 - Provide safety for rescuers and victim
 - Utilize the ICS to identify specific roles or "positions"
 - Rescue versus Recovery

Size-Up, Terminology & Hazard Assessment



"Size-Up"

- **Facts** – Includes information from preplanning and on scene observations: Time of day, number of victims, victim situation, access and egress, past site history, water flow/stage/temp, rescue or recovery
- **Probabilities** – Determining the probable course of events allows personnel to make informed decisions about rescuer and victim safety, resource needs, and rescue methods
- **Options** – What options are available with the existing resources?
Talk, Reach, Throw, Row, Go, or Helo
- **Execute** – Implement the option and have a back up plan
- **Evaluate** – Must be ongoing

Size Up May be Easy



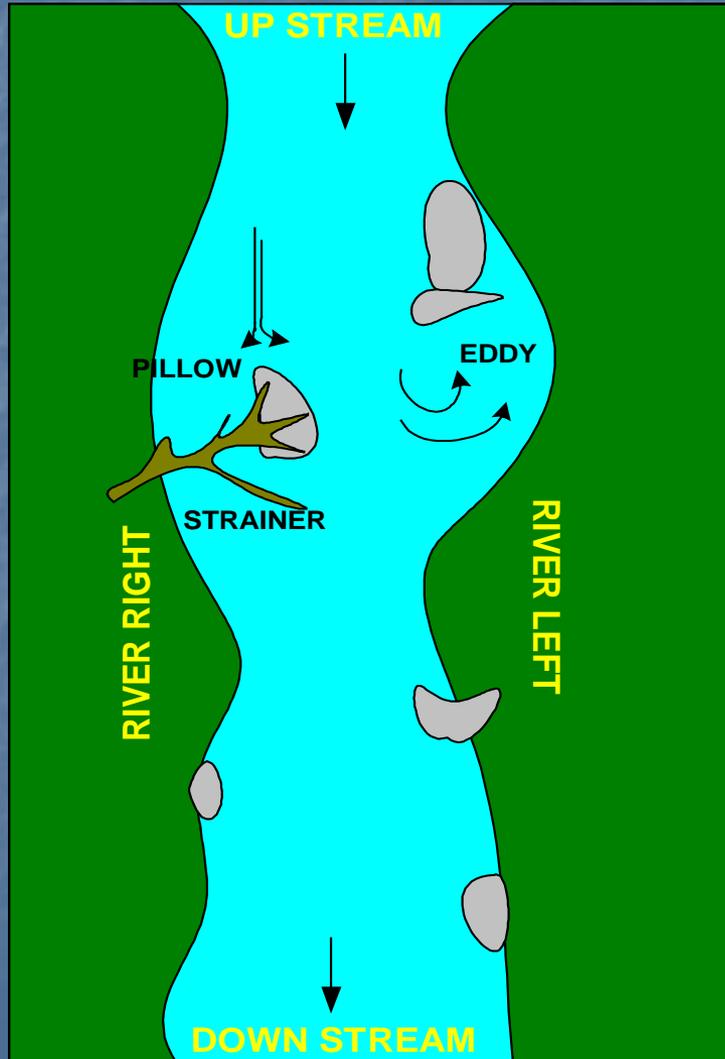
Or More Difficult



Characteristics of Swift water

- Powerful
- Relentless
- Predictable
- Water – 62 lbs. per CF

Terminology



"Hazard Assessment"

- During your size-up, recognizing hazards is vital
- Operate only to your level of training and consider PPE and rescue equipment available
- Some of the hazards that may be encountered are:
 - Utilities
 - Electrical – Power lines and sheared power poles
 - Natural Gas – Roadways may be undermined exposing both main and service lines
 - Hazardous Materials
 - Water
 - The force of moving water is deceptive and unforgiving
 - The wisest action an awareness level responder can make is usually to request specialized resources
 - Numerous would –be rescuers drown every year because they fail to assess the hazards of still and moving water

Other Hazards

- Low Head Dams
- Strainers
 - Trees & Logs
 - Fences
 - Vehicles
- Foot Entrapment
- Stationary Objects
- Panicked Swimmer
- Hypothermia
- Debris

Flood Debris



Loads

- Top Loads – things that float
- Suspended load – heavy objects that can't float but move with the current; more dangerous because they can't be seen
- Bottom Loads – stationary and non-stationary objects on bottom; can cause foot entrapment

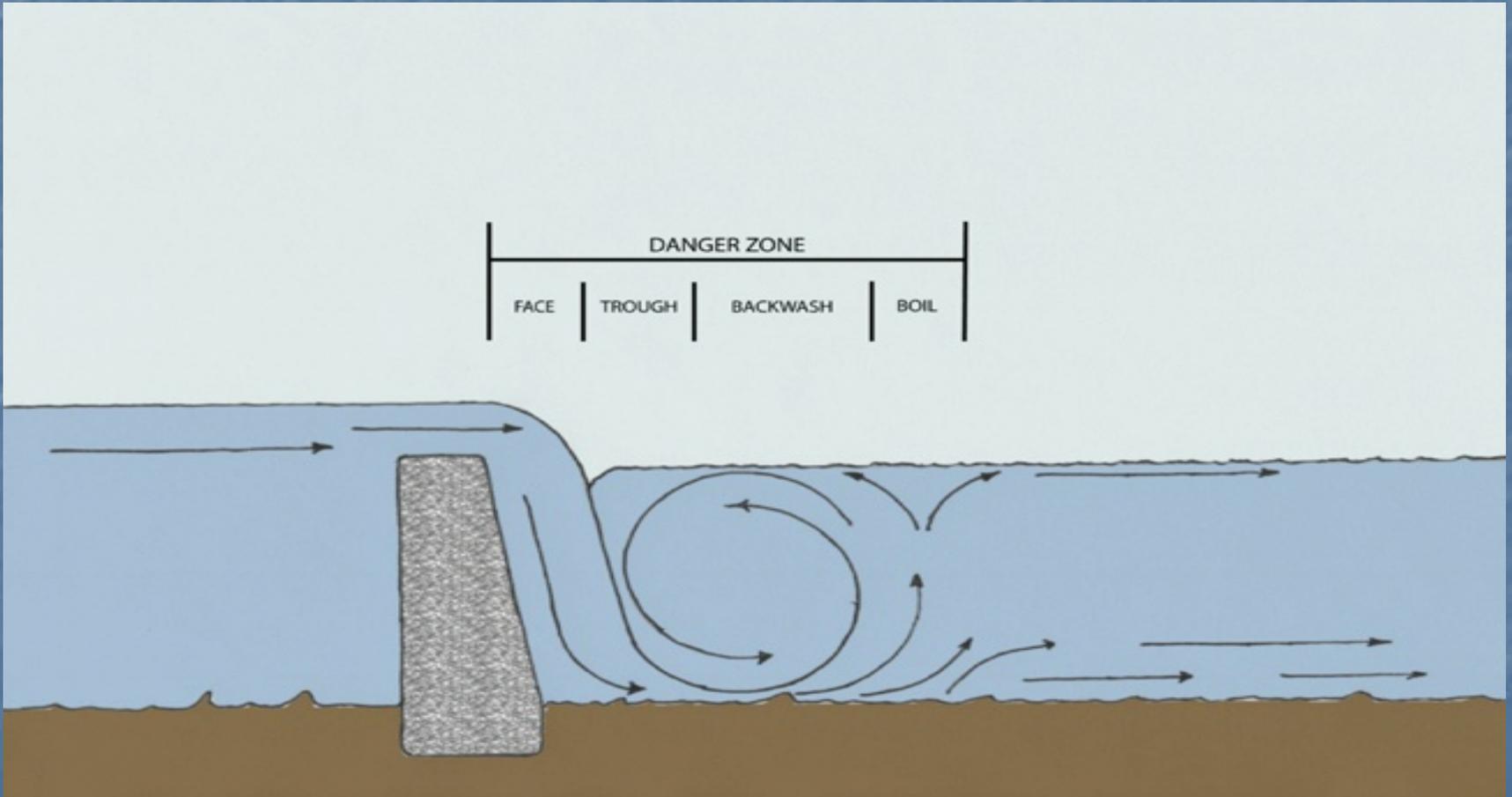
"Utilities and Haz-Mat"



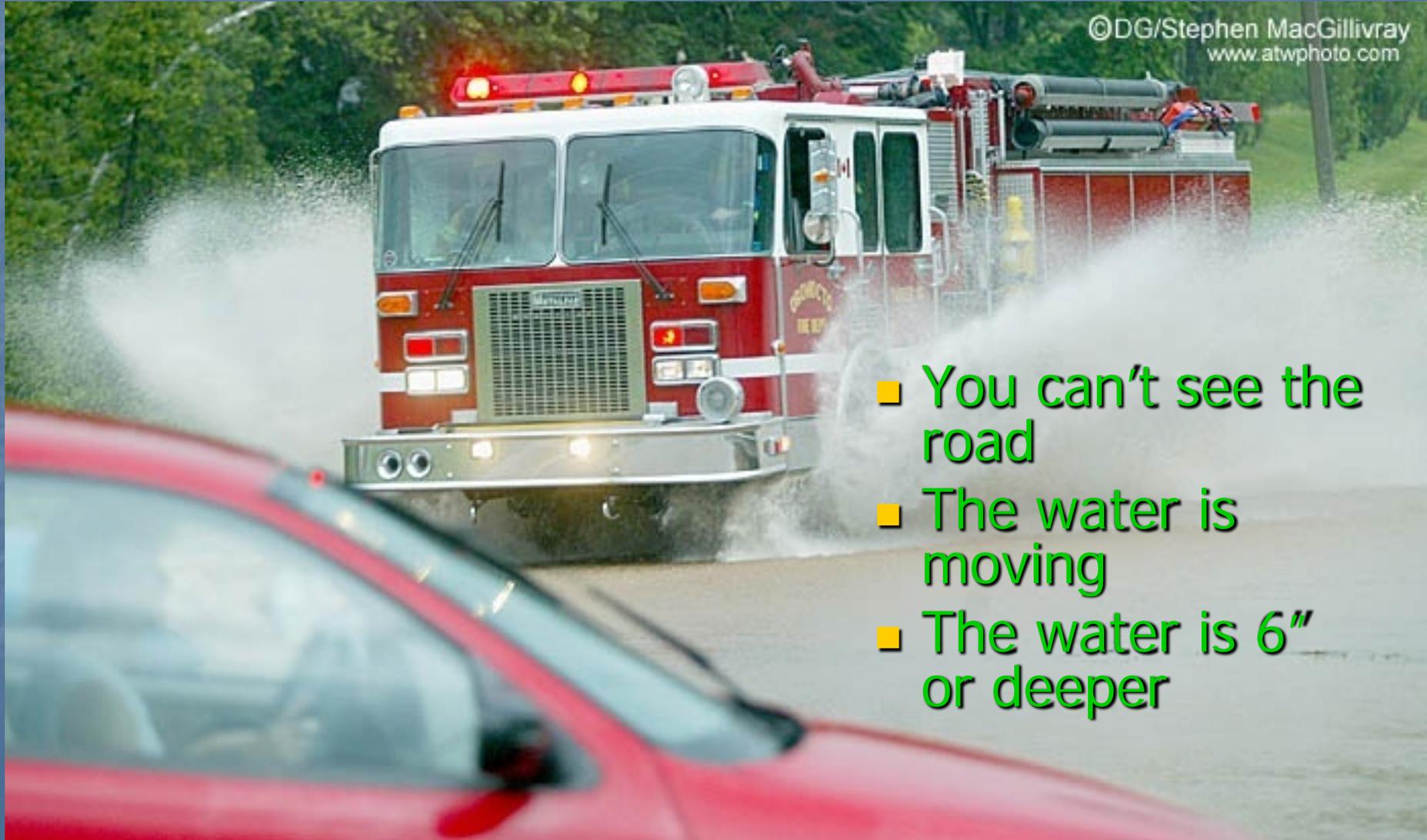
PHOTO BY ERIC LIAN
www.ericlian.com

Low-head Dam

The current created at the downstream base of the dam (backwash/roller) can hold a body/boat indefinitely.



Don't drive your vehicle into the water if...



- You can't see the road
- The water is moving
- The water is 6" or deeper

"Road Hazards"

May or may not be visible



You Can't Help if You Become Part of the Problem



PPE
and
Rescue Equipment

Personal Floatation Device (PFD)

- All personnel should wear a personal floatation device (PFD) when operating within 10' of the water, or when there is a potential to fall in the water
- Types I - V



Other PPE

- Gloves, Shoes



- Fins



- Accessories



Wet and Dry Suits



Helmets



Of course some rescues require even more specialized equipment



Basic Water Rescue Methods

The "*Seven Sequential*" rescue methods:

- **AWARENESS LEVEL**
 - TALK
 - REACH
 - THROW
- **OPERATIONS/TECHNICIAN LEVEL**
 - ROW
 - GO
 - HELO



Always use the fastest, lowest risk and least complex methods during water rescue emergencies

"Talk"

- Direct victim to safety
- Victim may be able to walk, float or swim to shore
- Consider utilizing a P.A. or Mega Phone



"REACH"

Safe operations for rescuer and victim



"THROW"



PHOTO BY ERIC LIAN 2004

“Wade?”



Wading in water

- Never wade in water unless you have...
 - The proper training
 - The proper PPE/Equipment
 - Considered Haz Mat Issues
- Always beware of potential foot entrapments



- Some "Row" operations are simple evacuations



"ROW"

But many are more complex



"GO"

In-Water Rescue



Always Send
Your Best



"HELO"



Let's Hope it's Not to Rescue the Rescuers!

- Las Vegas, NV Engine Company
- 4 F/F's rescued by helicopter
- \$100,000 damage
- Another reason why we should stop at all red signal lights!



General Rescue Area - Summary

- Must control and limit access to area by unnecessary personnel
 - Hot zone—in the water (technician)
 - Warm zone—within 10' of the water (operations)
 - Cold zone—outside of warm/hot (awareness)
- Identify all hazards and remove or reduce their impact
- Utilize PFD's and other PPE

What You Can Do

- Establish Command
- Gather information
- Recognize this is a technical rescue
- Assess the possible rescue situation and the ability for the victim to assist in the rescue.
- Request the necessary resources

Gathering Information

- Point Last Seen - point at which the victim(s) were last seen. No search needs to be performed upstream of this.
 - Number of victims
 - Age
 - Time since last seen
 - Type/color of clothing, PFD?
 - Search immediate area
 - Observe 10 foot rule
 - Relay information to TR teams

Self Rescue

- Get in a Self Rescue Position
 - Mouth shut
 - Heels Up and pointed downstream-knees bent
 - Use your hands to navigate
 - Lay back and relax
- Eddy is your friend
- Flip and crawl over obstructions
- DON'T PANIC!



Successful rescues are
based on:

Training
Practice
Experience
Judgment

Don't count on Luck!

Be Safe

This completes the general training
requirement for NFPA 1670
Water Rescue Awareness Level

Click the box below to take a quiz and
receive a Certificate of Completion.

FINAL QUIZ