A QUARTERLY PUBLICATION

TASK FORCE TIPS

WINTER 2002

TASK FORCE TIPS
www.tft.com

ALWAYS FIRST ON THE SCENE

As emergency responders, we are often called to motor vehicle accidents and expected to deal immediately with passenger entrapment, vehicle entanglement, leaking fuels, electrical and airbag issues, and even hazardous materials spills. **Being Prepared** isn't just a Boy Scout motto; it must be the underlying philosophy of every firefighter that is "*first on the scene.*" Being prepared is also having procedures, priorities, and the necessary skills and equipment to mitigate any situation.

IN THIS ISSUE

Consider the following MVA priorities:

- **Emergency Responder Health and Safety**
  Have a charged line with foam capabilities, proper protective clothing, and an adequate scene hazard assessment.
- **Vehicle Stabilization**
- **Patient Care, Extrication, and Transport**
- **Environmental Protection**
  Mitigate spills and run off.

Also, consider that being prepared when you are not acting as an emergency responder is an equally important duty. All too often, we find family members or ourselves in the role of the victim in auto accidents. With this in mind, Task Force Tips, Inc. has developed the unique patented *Res-Q-Me* to help you be better prepared. Designed to hang from your key ring for quick access, the *Res-Q-Me* incorporates a seat belt cutter and window punch into a single easy to use tool for rapid vehicle escape. For additional information, or to order this exciting new product, visit **www.res-q-me.com.** Being prepared has never been easier.

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WELCOME

At the age of 14, when I rode tiller with my father on the city streets of Gary, Indiana, the fire department's response to emergencies seemed straight forward, if not simplistic by today's standards. A fire was often confined or had geographic boundaries, and, although it contained many hidden hazards, it was easily understood and dealt with using time-tested tactics and equipment.

Certainly, with today's increasing threat of domestic terrorism, the challenges facing emergency responders have grown exponentially. Those time-tested initial attack firefighting tactics I remembered have been revised hundreds of times as departments try to cope and adjust to doing more with less. Less financial resources, less equipment, and fewer personnel, combined with increasing demands from those we serve and protect.

Since the late '60s, Task Force Tips, Inc. has been a leader in designing equipment to meet the expanding needs of emergency responders around the world. Here are just a few of the innovative products designed to provide maximum performance and firefighting crew effectiveness… safely.

- **Slide valve design for total firefighter flow control**
- **Crossfire Monitor with Safe-Tak shutoff valve**
- **PROpak for rapid foam applications and decontamination**
- **Blitzfire for maximum flow with limited staffing**
- **Dual pressure nozzles for maximum reach and penetration or maximum flow**

May we never for one moment forget the ultimate sacrifices made by those brave souls around our country that took the oath to serve and protect. And, as each of you re-writes the book of tactics to deal with your individual emergency response challenges, TFT will be there designing and producing equipment to make your job safer and more efficient.

Regards,

Stewart McMillian
President

TFT®
TASK FORCE TIPS

UPCOMING SHOWS

Apparatus Specification and Vehicle Symposium
January 20-23
Orlando, FL

Doug Miller, OEM Manager, will be in attendance to answer questions and review TFT's new LDH hardware products.

Fire Rescue East
February 1-2
Jacksonville, FL

Robert Brown, SE Regional Manager, will be in attendance with his demonstration/training vehicle and will be highlighting TFT's new LDH hardware line.

Long Island Fire-Rescue-EMS Mega-Show
February 2-3
Uniondale, NY

Chris Carson, NE Regional Manager, will be in attendance with his demonstration/training vehicle and will be highlighting the new Max-Force series of high-flowing handlines.

Fire Rescue West
February 2-14
San Jose, CA

Dave Burns, SW regional Manager, will be in attendance with his demonstration/training vehicle supporting the L.N. Curtis and Sons sales professionals and introducing TFT's new LDH product line.

Iowa State University Winter Fire School
February 17-18
Ames, IA

Ken Kendricks, NC Regional Manager, will be in attendance with his demonstration/training vehicle highlighting TFT's broad line of foam injection and application equipment.

12th Annual Duneland School of Emergency Response
February 16-17
Valparaiso/Chesterton, IN

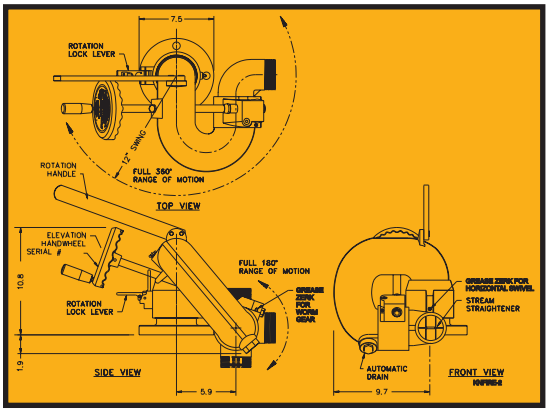
Rod Carringer and Doug Miller will present "Fire Streams to the Max" and "Foam Applications for Dummies." Also included will be factory tours and a TFT sponsored "Sunrise Seminar" with retired District Chief Bob Winston of the Boston Fire Department.

FDIC
April 11-13
Indianapolis, IN

Visit the entire TFT staff and all of our new products for 2002 in booth 3203

MONITOR TECH TALK

TFT's Exclusive Knightfire Monitor



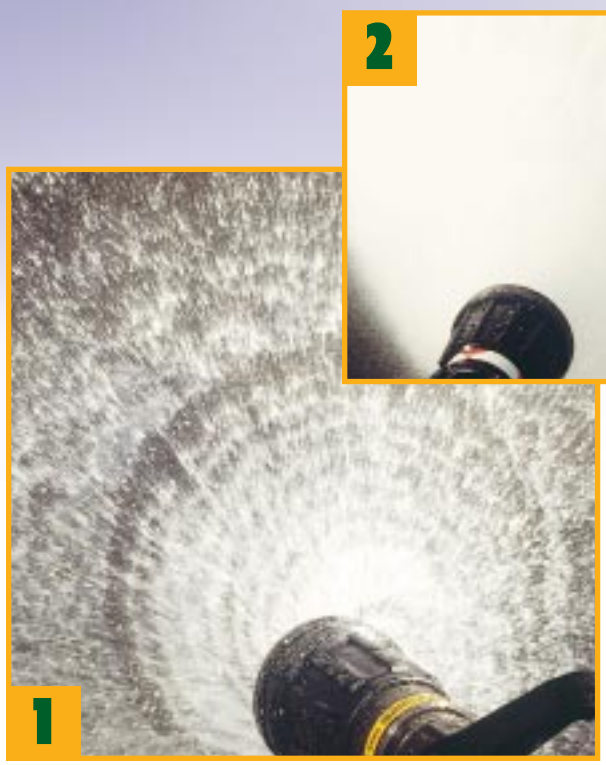
Designed to compete with the Akron Aries and the Elkhart Stingray, the TFT Knightfire monitor has been designed to meet the needs of fire service professionals worldwide who demand long-term performance under harsh environmental conditions. Here are just some of the unique features offered by the new Task Force Tips, Inc. Knightfire fixed industrial monitor.

- **High flow/low friction loss characteristics – up to 1250 gpm**
- **Offered in brass or TFT's exclusive hardcoated/anodized/powder coated finish**
- **Lever-activated rotational lock with full 360-degree rotation**
- **Multiple base inlet configurations**
- **ANSI 3" or 4" 150 flange mounts**
- **Specialty-base components built for customer specifications**
- **Built-in automatic drain valve**
- **Five-year warranty and 24-hour in-house repair service.**

PRODUCT SPECIFICATIONS

The Task Force Tips Knightfire is a durable, industrial, high capacity fixed monitor, available in either BRASS or ALUMINUM. Brass models feature corrosion resistant UNS C83600 alloy, while aluminum monitors are made from heat treated and hard-anodized ANSI A356.o-T6 alloy. Both types are protected with a tough powder-coated finish inside and out. A large hand wheel with stainless steel elevation drive makes the Knightfire one appliance that can stand up to tough service environments. The Knightfire is capable of flowing 1250 GPM while maintaining a FULL 360° rotational ability. The lever-action rotational lock is activated in one motion, visually confirmed, and securely holds the Knightfire in position. The placement of grease zerks allows the Knightfire monitor to be quickly and easily serviced and lubricated. The Knightfire industrial monitor comes with our exclusive five-year warranty.

IN A FOG OVE



For years, Task Force Tips has produced two very distinctive styles of firefighting fog patterns. All TFT automatic and dual pressure automatic nozzles incorporate a fully filled, fixed fog tooth design into the bonded front rubber bumper, while the single and selectable gallonage nozzles are offered with either a fixed or stainless steel spinning tooth design. Each of these unique patterns provides very different operational characteristics that need to be completely understood.

First, let's review some of the operational capabilities of the fog pattern of a combination nozzle in firefighting operations.

- **A wide fog pattern can provide firefighter protection from direct flame and heat exposure.**
- **A fog pattern can be used to provide cooling during exposure protection operations.**
- **Fog patterns can move tremendous amounts of air during ventilation procedures.**
- **A "power fog" (15-30 degrees) can be used to produce quick steam conversion in a superheated atmosphere.**
- **Fog patterns can be used to mitigate a hazardous vapor release.**

No matter which style of fog tooth configuration you choose, the teeth are designed to impinge into the exiting stream of the nozzle, providing an operator-selected fog pattern. This impingement into the waterway breaks the straight stream into droplets of differing sizes, which are designed to do specific functions.

- **Small droplets provide quick steam conversion due to their high surface area-to-mass ratio.**
- **Medium-sized droplets make up the body of the pattern for firefighter protection.**
- **Large droplets give the pattern its reach and penetration.**

Spinning Tooth Fog Pattern

Since the late 1980s, Task Force Tips has chosen stainless steel for the manufacture of its spinning teeth. (photos #6 and #9). This was done specifically to prevent the pattern degradation caused by the bent, broken, or missing plastic teeth that have been in the marketplace for years. Note the high-speed photo #1 of a spinning tooth nozzle with some of the plastic teeth missing. When these teeth are not in place, or they do not spin, the potential for direct flame and heat impingement on the firefighting crew exists.

ER PATTERNS?

Refer to Chapter 4 of the NFPA 1962 *Standard for the Care, Use, and Service of Fire Hose Including Couplings and Nozzles*, which indicates that when teeth are broken or missing, "the nozzle should be immediately removed from service and repaired or replaced."

Another fact when using any spinning tooth nozzle is that the hollow central core of the wide pattern creates a low-pressure area, which tends to draw the heat and flames directly back toward the center of the nozzle (and the crew). Note photos #3 and #4, which show a spinning tooth nozzle working on a pressurized fuel fire (propane) and the importance to the firefighter's protection of a properly designed and maintained nozzle.

The Unique TFT Fog Pattern

Covered under U.S. Patent No. 4653693, the fixed fog tooth design incorporated in all TFT standard, low, and dual pressure automatic nozzles provides a much different pattern than that of the spinning tooth design. Instead of creating a hollow central core in wide fog, the fixed tooth design produces a fully filled pattern. Note photos #7 and #8, which offer a close-up of the unique bonded front rubber bumper and integrated fog teeth. This style of pattern, fully filled, does not allow flames to be drawn back toward the attack crew. Instead, the heat, flames, and smoke are pushed forward and away from the advancing firefighters. Photo #5 shows graphically how the force of the pattern moves the pressurized flames and heat ahead and away from the nozzle crew.

Whatever your choice of nozzle or fog pattern design, it is important to know and understand the benefits and limitations of each style. This can only be done through training and education. All too often, in an effort at providing a "higher flow," or "lower nozzle reaction," departments overlook the versatility of a properly pressurized combination nozzle and move to a smooth bore tip. This move often does nothing more than remove a valuable tool from the firefighter's initial attack toolbox. Instead of taking the tool away, better understand the operational opportunities that a fog pattern can provide. For additional information on the different fog pattern designs offered by Task Force Tips, please visit **www.tft.com/library/** or you may call and schedule an appointment for a training program with one of our regional managers.

1. **High-speed Photography shows how missing plastic spinning teeth affect the pattern's protection characteristics**
2. **No bent or broken teeth means complete firefighter protection**
3. **The only barrier between the flames and the firefighter is a perfect fog pattern**
4. **If the barrier is broken, the heat, flames, and smoke can easily come through the pattern**
5. **Fully filled TFT fog tooth design moves heat, flame, and smoke away from the firefighter**
6. **TFT's unique stainless steel spinning teeth**
7. **TFT's patented fixed fog tooth design**
8. **Fully filled fixed tooth design**
9. **Stainless steel spinning tooth design**

THE CAFS CHALLENGE

CAFS, or compressed air foam systems, continue to be evaluated by fire service professionals worldwide for use in interior structural attack operations. With over 4% of all pumping apparatus being delivered today with CAFS capabilities, there are several common misconceptions about the overall versatility of this manner of Class A foam application.

- **CAFS is a high-energy delivery system for Class A foam. Just as a nozzle or a nozzle with a foam aspiration tube is a low-energy delivery method. Class A foam is nothing more than the soap agent that makes the water foam up as it is agitated. Often, departments do not realize that common pumping systems and regular nozzles and attachments will work fine with Class A foam.**
- **As has been proven many times in testing done by NFPA/UL and the National Institute for Standards and Technology, the foam application method has no effect on the necessary critical application rate. It is important to remember that the chemical chain reaction we call fire requires a minimum application rate of water to absorb the BTUs being generated. Foam (water) either from a CAFS attack or from a standard nozzle must be applied in sufficient quantity for successful suppression to take place. Class A foam is an enhancement to, not a replacement for, water.**
- **Hose handling characteristics of high-energy CAFS lines require additional training and understanding for crews to be safe and effective. Though lightweight and easy-to-maneuver, these lines are actually storing the energy of the air compressor's pressurization. When opened and the stored energy is released, substantial nozzle reaction can be expected. Crews need to be prepared for this force. Additionally, kinking of a CAFS line will certainly change both foam quality and flow rate and ultimately could case "slug flow." Slug flow is an inconsistent mixture of air, water, and foam concentrate in the hose that causes the line to uncontrollably react.**

- **Many firefighters that have viewed finished CAFS streams are amazed by the consistent bubble structure of the highly expanded "shaving cream" quality foam. This "dry" foam is outstanding for exposure pretreatment, but often lacks the necessary water within the bubble structure to drain into the fuels to which it was applied. It is not uncommon to have a fire continuing to burn in fuels that have had CAFS foam applied to them. This is due to the limited drain out of water in the bubble structure and can lead to rekindling and overhaul challenges. Using a wetter foam is often more preferable when dealing with deep-seated fires.**
- **The best source of information on the use of CAFS in structural firefighting is** *"NFPA 1145 – Guide for the Use of Class A Foams in Manual Structural Firefighting – 2000 edition."* **This guide offers suggested nozzle choices for different manual firefighting challenges.**

  – Exterior or Interior Direct Attack

  "When using a high-energy foam system (CAFS), the system should be adjusted to provide a wet foam. A conventional nozzle can be used to provide a protective fog pattern, though reach and foam quality may be diminished."

  – Exposure Protection

  "The appropriate foam can be produced by varying the mix ratio, and/or changing the discharge device. Smooth bore nozzles or open ball valves should be used for the delivery of dry foam in CAFS."

Ultimately, the selection of the nozzle used in CAFS applications is key to the successful suppression of the fire. Task Force Tips, Inc. recommends a combination of our VITG series of integral smooth bore/ball valve in combination with our Thunderfog 250 gpm selectable gallonage tip. This break-apart combination will provide maximum performance for all CAFS applications. The smooth bore inserts can be customized to your system for dry foam applications and the Thunderfog tip can provide a protective fog pattern for your attack crew or wetter foam for penetration.

For additional information on Class A foam and CAFS applications, request TFT's Class A Foam Operations Class Workbook from our customer service group at 800-348-2686.

GOIN' DEFENSIVE WITH STYLE

There are many considerations command has to keep in mind when making the decision to move from an aggressive interior offensive attack to an exterior defensive operation. Here are just a few tactical issues that need to be reviewed before *goin' defensive.*

- **Care must be taken to avoid mixing an interior offensive and an exterior defensive attack as the changeover takes place.**
- **Fire ground accountability challenges will grow as additional resources respond.**
- **Apparatus placement becomes an important issue and defensive positioning can be a key factor in reach and penetration of the big streams.**
- **An uninterrupted water supply becomes imperative if you're going to be using high flowing master stream equipment.**
- **And finally, having staff that knows how to pump the nozzles on the aerial devices and deck guns is key to achieving maximum performance.**

Determining standard operating guidelines for pump discharge pressures with nozzles on aerial devices or deck guns can be complicated. Nozzle operating pressure, internal truck plumbing, available water supply, and pump capacities must all be taken into consideration. Still, to be effective, flow and pressure objectives should be determined well in advance of actual need at a large defensive operation.

Automatic nozzles, with either 100 psi or 80 psi operating pressures, are your best choice for changing fire ground hydraulic conditions. As pressures and flows vary with additional lines being opened and shut, the automatic will compensate immediately and will provide a hard-hitting stream regardless of available flows. Although most agencies don't have one, a flow meter can be an excellent tool in predetermining engine pressures for various flows. And, even though many friction loss charts are printed for different pumping scenarios, it is important that actual tests be run with your department's equipment. Often, the average numbers provided by these charts may not represent the actual flows and pressures you wish to achieve.

Once actual friction loss calculations are collected at different flows with your equipment, a standard operating guideline can be easily created that will maximize the performance of your equipment and allow you to **Go Defensive with Style**. Complete information on establishing these written guidelines can be found on TFT's Web site. Just request *"Determining Flow with Automatic Nozzles on Pre-Piped Monitors."*

Task Force Tips produces the following master stream nozzles to meet any of your high flow nozzle needs:

- **150-1250 gpm automatic Master Stream**
- **300- 2000 gpm automatic Monsoon**
- **500-4000 gpm automatic Typhoon**

All of these TFT master stream nozzles can have their operating pressures either pre-set at the factory or modified in the field to meet your individual performance objectives. Also, each model is designed to be either electrically or hydraulically remotely controlled. For additional information on our full line of high flow nozzles visit *www.tft.com*.

The newest addition to TFT's high performance fire streams management equipment is the exclusive Ball Intake Valve. Designed to provide maximum flow up to 2000 gpm with minimal loss, the new BIV incorporates TFT's innovative triple-coating process, which offers the ultimate in corrosion protection. Also, this new, patented inlet valve is designed with some of the following features.

- **Valve Position Indicator**
- **Galvanic Insulation of Valve Body from Apparatus**
- **Swiveling Inlet to Reduce Inlet Hose Kinking**
- **Can be Used for Suction or Pressure**
- **Two Slow-close Hand Wheel Position Choices**
- **Large Unobstructed Waterway for Maximum Flow**

The new RES-Q-ME from Task Force Tips is a small versatile tool that can save your life! This ingenious device is intended to be placed with your car keys. It contains a spring-loaded stainless steel pin that will break any tempered glass window and a stainless steel blade for cutting seatbelts. The break away design allows the RES-Q-ME to be quickly removed from its storage location without removing the keys from the ignition. The RES-Q-ME is easily carried on a key ring or can be attached to different places in your vehicle. Order one today for only $14.95 from any TFT authorized dealer or directly from the internet at http://www.res-q-me.com !

ASK THE EXPERT

Mike Grcich
Service Manager
800-348-2686

Q: We have a number of PROpaks on our engine companies, and on several occasions when the crews refilled them, they mixed Class A foam and AFFF-ARC foam concentrates in the PROpak tank. The outcome was a thick jello substance and a plugged up system. Is there a simple procedure for cleaning out the valve/eductor assembly?

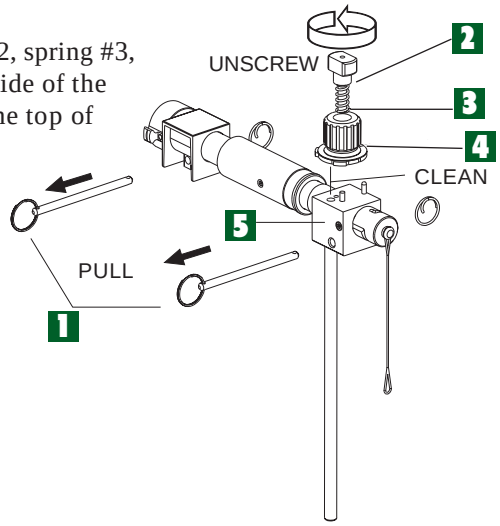
A: Do not mix different types of foam concentrates or foams of the same type from different manufacturers. Mixing of foam concentrates can cause the contents of the foam tank to gel and produce unpredictable results. Clean tank and foam passages thoroughly when changing foam types.

TO SHUT DOWN

To prevent concentrate from drying in the foam passages, the following is recommended. While still connected to water supply, remove circle cotters and pull pins. Remove control unit from tank. Attach the cap directly to the quick-connect in the control block. Turn the valve half way on until the discharge is foam free. This will back flush a small amount of water through the foam passage. Rotate the percentage knob back and forth to make sure all foam passages are flushed.

TO CLEAN OUT IF PLUGGED

See Illustration. Remove screw #2, spring #3, and knob #4. Inspect the underside of the knob. Inspect the two holes in the top of the control block #5. If they are plugged, pull pins #1, remove block assembly and clean out pickup tube and holes.



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