GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
LANSING

ORLENE HAWKS
DIRECTOR

AGENDA
MICHIGAN FIRE FIGHTERS TRAINING COUNCIL REGULAR MEETING

Delta Township Fire Department, Station #1
811 N. Canal Road, Lansing, MI 48917
Tuesday, October 18, 2022
1:30 pm

I.	Call to Order, Moment of Silence, and Determination of Quorum	Chairperson Stokes
II.	Approval of Agenda	Chairperson Stokes
III.	Approval of Minutes: August 9, 2022 Regular Meeting	Chairperson Stokes
IV.	Communications	
V.	State Fire Marshal's Report	Fire Marshal Sehlmeyer
VI.	Curriculum Committee Update	Councilperson Blomstrom
VII.	Old Business:	
	a. Q Course Applications:	
	1. Fire Ground Communication/Opposing Fields of View **(FMQ22-015)**	Justin Holmes
	2. People Before Water **(FMQ22-018)**	Justin Holmes
	b. Computer-based Testing	Fire Marshal Sehlmeyer
VIII.	New Business:	
	a. Incident Command for Highrise Operations Train-the-Trainer	Fire Marshal Sehlmeyer
	b. Q Course Applications:	
	1. Company Officer Academy **(FMQ22-021)**	James Stevenson
	2. OCC Live Fire Search and Rescue **(FMQ22-022)**	Philip Hall
	3. Mountain Rescue Workshop **(FMQ22-023)**	Michael DeCraene
	4. Personal Skills Rescue Workshop **(FMQ22-024)**	Michael DeCraene
	5. Team Skills Rescue Workshop **(FMQ22-025)**	Michael DeCraene
	6. Responding to Gasoline Tanker Emergencies **(FMQ22-026)**	James Stevenson
IX.	Public Comment	
X.	Council Comment	
XI.	Adjournment	

Next Meeting:
Friday, December 2, 2022 at 1:00 pm
Park Place Hotel - 300 E. State Street, Traverse City, MI 49684

Agenda Items Due:
5:00 pm on Friday, November 18, 2022

MINUTES
MICHIGAN FIRE FIGHTERS TRAINING COUNCIL REGULAR MEETING

Delta Township Fire Department, Station #1
811 N. Canal Road, Lansing, MI 48917
Tuesday, August 9, 2022
1:30 pm

MEMBERS PRESENT:

Robert Stokes, Chairperson, Nominee of the State Fire Marshal
Kevin Beeson, Michigan Townships Association
Brian Blomstrom, Michigan Fire Service Instructors Association
Kurt Corradi, Michigan Association of Fire Chiefs
David Feichtner, Michigan Association of Fire Chiefs
Steve Richardson, Michigan State Firemen's Association
Kevin Sehlmeyer, State Fire Marshal, Ex-officio Member
Joseph Schehr, Michigan Professional Firefighters Union
Kyle Svoboda, Michigan Fire Inspectors Society

MEMBERS ABSENT:

None

BUREAU OF FIRE SERVICES STAFF PRESENT:

Hollie Metts, Assistant to the State Fire Marshal, Recording Secretary
Macie Smith, Department Technician, Fire Fighter Training Division, Recording Secretary
Dan Hammerberg, Region 1 Coordinator, Fire Fighter Training Division
Aileen Pettinger, Region 2 Coordinator, Fire Fighter Training Division
Liam Carroll, Certification Specialist, Fire Fighter Training Division

OTHERS IN ATTENDANCE:

William Race, Grand Rapids Fire Department
Bryan Butcher, Wyoming Fire Department
Jim Stevenson, Warren Fire Department
Mark Fankhauser, Grand Rapids Fire Department
Kevin Thompson, Comstock Fire Department
Brandon Hausbeck, Saginaw Fire Department
Mark Cleveland, Egelston Township Fire Department
Christopher VanLoo, Saginaw Township Fire Department
Josh Mosher, Midland Fire Department
Dennis Cotton, Oakland Community College
Tim Baker, Lansing Community College
Douglas Gildner, Schoolcraft College
John Cieslik, Rochester Fire Department

I. CALL TO ORDER AND DETERMINATION OF QUORUM:

Chairperson Stokes called the regular meeting to order at 1:31 pm. A moment of silence was observed for our fallen firefighters. Roll call was taken by recording secretary, Hollie Metts. A quorum was determined present.

II. REVIEW AND APPROVAL OF AGENDA:

22-08-01
A **MOTION** was made by **Councilperson Blomstrom** and seconded by **Councilperson Richardson** to approve the August 9, 2022 regular meeting agenda as presented. **MOTION CARRIED.**

III. REVIEW AND APPROVAL OF MINUTES:

22-08-02
A **MOTION** was made by **Councilperson Schehr** and seconded by **Councilperson Corradi** to approve the June 14, 2022 regular meeting minutes as presented. **MOTION CARRIED.**

IV. COMMUNICATIONS:

Fire Marshal Sehlmeyer received an inquiry from Chief Carroll regarding the Fire Officer III Train-the-Trainer qualifications. Specifically, how the current requirements were set. Fire Marshal Sehlmeyer explained the qualifications were set based on processes by the Bureau of Fire Services (BFS).

V. STATE FIRE MARSHAL'S REPORT:

a) **Council Appointments:** As part of LARA's process to onboard new board members, Fire Marshal Sehlmeyer and Hollie Metts traveled around the state to meet with every new council member. During new business, council will vote on a vice chairperson to serve a two-year term. Following the meeting, pictures will be taken of the council members and will be posted on the BFS website along with their contact information and the fire group they represent.

b) **Staffing Updates:**

   i. **Macie Smith, Department Technician:** Fire Marshal Sehlmeyer took the time to welcome and introduce Macie Smith. A quick overview was given of the tasks that the technician position completes. This will be a training process over the next few months with Macie taking over as sectary for the council. Macie is a returning a member of the BFS and was previously a student assistant and then a general office assistant.

c) **FY22 Course Summary:** Fire Marshal Sehlmeyer gave an overview of the course summary. Council was provided a handout in their packet (dated 8/8/2022). Please note: a firework funded course must have at least 8 students to run.

d) **Fire Officer III:** BFS is in the process of developing the Fire Officer III curriculum, which will be available after October 1, 2022. The train-the-trainer is scheduled for Monday, August 22, 2022. The deadline to submit documents to apply for this course is Wednesday, August 10, 2022. Those applications will be reviewed, and applicants will be notified by Friday, August 12, 2022 as to whether they are accepted into the train-the-trainer. This information was shared in a memo that was sent out to all the fire groups. Please note: all future memos that are sent out by the BFS will be sent to council and the organizations they represent.

e) **Curriculum Committee Membership:** The Curriculum Committee will work on the Fire Officer III exam in September. BFS sent a letter to all fire service groups to confirm their

representatives on the committee. As of today, there is still one group the BFS is waiting for a response from.

f) **Fire Training Video:** Fire Marshal Sehlmeyer advised this is a legislative requirement for all Michigan fire departments to show a 14-minute video on the health, handling, and proper use of Class B AFFF to their members. To date, 480 fire departments have completed this training. The goal is to get to 1,100 fire departments to complete the training. There was some concern from fire departments as to whether all departments must complete the training. The Fire Marshal asked everyone to reference Rule 29.407 which discusses "in service" training programs. The training video was sent to every department in April 2022 and was given the deadline of July 1, 2022 to complete. For those departments that did not complete the training or provide a training roster, the BFS will follow up with their township supervisor or city manager with another letter requesting compliance.

g) **Fire Department Survey:** The Fire Marshal also asks that all fire chiefs complete a short fire department survey. To date, a total of 295 departments have responded. The information will be used to update SMOKE (training database), the Fire Service Directory, and to get a better understanding of the recruiting and retention challenges affecting Michigan fire departments. Fire Marshal and Chairperson Stokes encourage everyone to always make sure in SMOKE there is a current email, address, position, etc.

h) **JC5 Fire Training:** The training was held in Lansing in March, Lapeer in April, and Gaylord in May. The training in Lansing was well attended (approximately 130 people). Hands-on Training was also well received for all three locations; however, due to low registration some of the lecture classes were cancelled in both Lapeer and Gaylord. Fire Marshal Sehlmeyer gave an overview of the JC5 Fire Training survey results. Council was provided a handout in their packet and a copy of the results were put onto the MFFTC SharePoint.

i) **County Training Committees:** The annual training surveys were due by June 15, 2022 and are required to receive FY23 county funding. There are still 11 counties who have not completed the training. The counties who have not completed the training are Alcona, Alger, Hillsdale, Houghton, Iron, Isabella, Lenawee, Luce, Mackinac, Ontonagon, and Shiawassee.

j) **FY23 Funding:** Council was provided a handout in their packet and the Fire Marshal Sehlmeyer gave an overview. The document had a full list showing the counties that still have money left for this fiscal year. Council would like to see an updated list next meeting to reevaluate the counties who are not using as much of the money as they should be.

k) **NFIRS Non-Reporting Departments:** 152 departments that have not reported at all this year.

l) **Legislative Updates:**
   i. Senate Bill 991: Involves the replacement of underground storage tanks. This bill has Passed.
   ii. House Bill 5561: Involves radio systems in K-12 schools. If passed, this bill will require schools to install a repeater and antenna system in every school district in Michigan. This bill has not had a decision made yet.

m) **Fatal Fire Update:** To date, there have been a total of 83 deaths in 68 fires statewide. This is a 10% increase year to date based on 5-year average between 2017-2021. There is a Fire Prevention Month Kit being created that will be released the last week of September. The Fire Marshal added the Department of Licensing and Regulatory Affairs recently was budgeted funding (one-time funding) of $1 million dollars for BFS to purchase smoke alarms. Also, in the FY23 budget is funding of $270,000 towards public assemblage.

n) **Wednesday Wrap-Up Dates/Times:** The next wrap up is on August 10, 2022 at 4:00 pm along with 7:00 pm, and again on August 24, 2022 at 4:00 pm.

o) **Bureau Website:** All departments in the State of Michigan have moved to a new web platform. All links on the BFS website have been corrected and should now work properly. Also, the Council membership page has been updated with council members names, organizations, terms, and state email address already. If something on the website is found to not work, please contact the Bureau right away so that we may correct that.

VI. CURRICULUM COMMITTEE UPDATE:

Councilperson Blomstrom asked for the bureau to let him know when the test banks are ready to go and then a date for the work session can be selected.

VII. NEW BUSINESS:

a. **Vice Chairperson Vote:** Chairperson Stokes asked for those who are interested in the Vice Chairperson position to please speak up. Councilmen Svoboda and Blomstrom chose to run for the Vice Chairperson position. Chairperson Stokes then called for all members of council to write their choice onto the index card found in their meeting folders. The count was taken for this vote with Councilperson Blomstrom receiving 2 votes and Councilperson Svoboda receiving 7 votes. The new Vice Chairperson for the next 2 years will be Councilperson Kyle Svoboda.

b. **FY23 Funding:**

22-08-03
A **MOTION** was made by **Councilperson Beeson** and seconded by **Vice Chairperson Svoboda** to approve the FY23 funding. **MOTION CARRIED.**

c. **Computer-Based Certification Testing:** Councilperson Blomstrom is getting quite a bit of feedback from across the state asking if computer-based certification testing will be coming back as an option. Fire Marshal Sehlmeyer stated there is potentially an opportunity here to use a brand-new computer-based testing system and not the current system. The main questions for a new computer-based testing system are what the cost is and how would it be funded. Potentially, the fireworks reserve to fund could be used to fund computer-based testing. Fire Marshal Sehlmeyer has done some research and has found there are systems out there, but it would require the individual to bring their own device and use a lockdown system on the computer to not allow outside search during the exam. Council would like the Fire Marshal to do further research to find multiple platforms and how much each would cost.

22-08-04
A **MOTION** was made by **Councilperson Corradi** and seconded by **Councilperson Schehr** to have the Fire Marshal research all Learning Management Systems (LMS/Exam Systems and their costs for computer-based testing to bring back to the next meeting in October 2022. **MOTION CARRIED.**

d. **Q Course Applications:**

1. Aggressive Command Supports Aggressive Firefighting **(FMQ22-016)**
   Instructor: Justin Holmes and Nick Martin
   Phone: 616-788-9436

2. 1st Alarm Strategy & Tactics **(FMQ22-017)**
   Instructors: Justin Holmes and Nick Martin
   Phone: 616-788-9436 and 610-637-8315

3. Live Fire Training **(FMQ22-020)**
   Instructor: Brandon Hausbeck
   Phone: 989-274-7285

22-08-05
A **MOTION** was made by **Councilperson Blomstrom** and seconded by **Councilperson Corradi** to **approve** Q Course applications **FMQ22-016, FMQ22-017 and FMQ22-020. MOTION CARRIED.**

4. Fire Ground Communication – Opposing Fields of View **(FMQ22-015)**
   Instructors: Justin Holmes and Curt Isackson
   Phone: 616-788-9436 and 850-393-0581

5. People Before Water **(FMQ22-018)**
   Instructors: Justin Holmes and Curt Isackson
   Phone: 616-788-9436 and 850-393-0581

22-08-06
A **MOTION** was made by **Councilperson Feichtner** and seconded by **Councilperson Richardson** to **table Q Course applications FMQ22-015 and FMQ22-018 until next meeting** due to no course syllabuses. These courses will be reviewed again at the next meeting October 18, 2022. **MOTION CARRIED.**

IX. PUBLIC COMMENT:

Mark Fankhauser, Grand Rapids Fire Department: Commended council for the appointment of the vice chairperson and thanked council for all the work they do for the State. Wanted to reiterate how important it is that all fire departments in the State of Michigan are equally deserving of an appropriate level of quality and competent training. He believes council needs to ensure the funding is equally distributed throughout every county appropriately and commends the council for looking into the breakdown of funding for each county. He also brought forth the concern if Pro Board authorizes the use of any LMS System being looked at to effectively use their test in the new system.

X. COUNCIL COMMENT:

Chairperson Stokes: stated it is a joy to be back in the arena amongst the other constituents he had an opportunity to work with. He is excited about this opportunity to serve.

XI. ADJOURNMENT:

22-08-07
A **MOTION** was made by **Councilperson Svoboda** and seconded by **Councilperson Feichtner** to **adjourn** the meeting. **MOTION CARRIED.** The meeting adjourned at 3:38 pm.

APPROVED:

"Q" COURSE APPLICATION

Michigan Department of Licensing & Regulatory Affairs
Bureau of Fire Services, Fire Fighter Training Division
P.O. Box 30700 Lansing, MI 48909
Email: LARA-BFS-SMOKE@MICHIGAN.GOV

To add a seminar/course to be listed in SMOKE submit this form to the following email address: LARA-BFS-SMOKE@MICHIGAN.GOV for review. The request will be reviewed and forwarded to the Michigan Fire Fighter Training Council (MFFTC) for curriculum review at the next scheduled MFFTC meeting (all requests must be made at least 15 days prior to the next regularly scheduled meeting).

SECTION I

Name of Applicant:	SMOKE PIN:	Date:
Justin Holmes	609268	06/10/2022

Host Fire Department:	County:
Dutton Fire Department	Kent

Applicant Street Address: 3471 68th St SW

City:	State:	Zip Code:	Email:
Kentwood	MI	49548	justin.holmes@gainestownship.org

Applicant Phone Number:	Alternate Number:
616-788-9436	269-998-2391

SECTION II

Seminar/Course Name: Fire Ground Communication – Opposing Fields of View - Curt Isackson CF Tactics

Instructor(s):	Instructor Phone Number:
Justin Holmes, Curt Isackson	616-788-9436, 850-393-0581

Instructor Email/URL: https://countyfiretactics.com/ **Flyer Attached:** ☑

Course Description: (Include course syllabus and detailed course expenses-you may attach additional pages if needed)

Communicating clearly and effectively during emergency operations is paramount to the overall safety and success of the incident for both firefighters and civilians. To reinforce this statement, NIOSH has identified communication as one of the top five (5) casual factors of firefighter deaths and injuries on the fireground. The last few years have taught us that opposing fields of view tend to sway decision-making.

Applicable NFPA Standard(s): 1021, 1041, 1001

Class Capacity: TBD	Total Hours of Training: 8

SECTION III

Applicant Signature:	Date:
Justin Holmes	06/10/2022

BFS USE ONLY

Date Approved by MFFTC:	"Q" Course Number Assigned:	Date Course Catalog Updated:

Dutton Fire Department

Fire Ground Communication
Opposing Fields of View

Communicating clearly and effectively during emergency operations is paramount to the overall safety and success of the incident for both firefighters and civilians. To reinforce this statement, NIOSH has identified communication as one of the top five (5) casual factors of firefighter deaths and injuries on the fireground. The last few years have taught us that opposing fields of view tend to sway decision-making. **Curt Isakson, Professional Speaker, Motivator, Educator, Consultant**

Curt "Ike" Isakson is a 30+ year veteran of the fire service, with experience working in volunteer, career, and combination departments in urban, suburban, rural, and countywide settings.

Class Cost: TBD

Class Size: TBD

Class Location: TBD

Class Date: TBD

Class Time: TBD

Contact: Justin Holmes- justin.holmes@gainestownship.org

Curt “Ike” Isakson is a 30+ year veteran of the fire service, with experience working in volunteer, career, and combination departments in urban, suburban, rural, and countywide settings.

He is currently a Battalion Chief for Escambia County Fire Rescue in Florida where he has worked for the last 21 years. Before his time with Escambia, Curt was a Company Officer with the Pensacola Fire Department assigned to Heavy Rescue 31 for 9 years.

He also worked for the City of Mary Esther as a Fire Inspector. His fire service experience started at a young age as a Junior Firefighter with the Midway Fire Protection District and rose through the ranks to Captain.

Curt normally charge $5,000 for a one day, $10,000 two days, and $13,000 for three days. Price covers everything.

Speaking Fee, Flyer, Admin Fee, Travel, Lodging, Advertising if requested. We require 50% deposit to lock in dates. I’m basically booked until 2024. If you are flexible and it’s for weekdays, I could maybe squeeze it in around my 48/96 schedule at Escambia.

This course is to extend the understanding of fire ground communication. One of the number 5 items on almost all NIOSH LODD reports. Fireground commanders (FGCs) must understand the importance of sizing up their contribution percentage to mitigating operational needs and that actions on the fireground are dependent on their order of arrival to the scene.

FGCs also should arrive in a properly equipped vehicle that’s based on their fire department response model and organizational structure—for example, a chief who never is the first to arrive or who never must operate alone, or a chief of a county-type fire department who might be the first to arrive and must wait for the first-arriving company.

"Q" COURSE APPLICATION

Michigan Department of Licensing & Regulatory Affairs
Bureau of Fire Services, Fire Fighter Training Division
P.O. Box 30700 Lansing, MI 48909
Email: LARA-BFS-SMOKE@MICHIGAN.GOV

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SECTION I

Name of Applicant:	SMOKE PIN:	Date:
Justin Holmes	609268	06/10/2022

Host Fire Department:	County:
Dutton Fire Department	Kent

Applicant Street Address: 3471 68th St SW

City:	State:	Zip Code:	Email:
Kentwood	MI	49548	justin.holmes@gainestownship.org

Applicant Phone Number:	Alternate Number:
616-788-9436	269-998-2391

SECTION II

Seminar/Course Name: People Before Water - Curt Isackson CF Tactics

Instructor(s):	Instructor Phone Number:
Justin Holmes, Curt Isackson	616-788-9436, 850-393-0581

Instructor Email/URL: https://countyfiretactics.com/ **Flyer Attached:** ☑

Course Description: (Include course syllabus and detailed course expenses-you may attach additional pages if needed)

Today ' s fireground requires tactics that take today ' s fire behavior, building construction, and response models into consideration. We must also use the UL studies, Firefighter Rescue Survey results, and civilian fire fatalities data to better deploy our local fire resources to meet life safety and property loss priorities. When smoke detectors fail, the fire service cannot fail. We are the last line of defense. This class will give attendees a possible approach to getting the annual civilian fire fatality numbers consistently below 2,000 a year. It shows how to use data to assist us in adjusting our fireground assignments in the first five to seven minutes to remove trapped occupants sooner while still using decades of proven fireground tactics that work.

Applicable NFPA Standard(s): 1021, 1041, 1001

Class Capacity: TBD	Total Hours of Training: 8

SECTION III

Applicant Signature:	Date:
Justin Holmes	06/10/2022

BFS USE ONLY

Date Approved by MFFTC:	"Q" Course Number Assigned:	Date Course Catalog Updated:

Dutton Fire Department

People before Water

Today's fireground requires tactics that take today's fire behavior, building construction, and response models into consideration. We must also use the UL studies, Firefighter Rescue Survey results, and civilian fire fatalities data to better deploy our local fire resources to meet life safety and property loss priorities. When smoke detectors fail, the fire service cannot fail. We are the last line of defense. This class will give attendees a possible approach to getting the annual civilian fire fatality numbers consistently below 2,000 a year. It shows how to use data to assist us in adjusting our fireground assignments in the first five to seven minutes to remove trapped occupants sooner while still using decades of proven fireground tactics that work.

Curt Isakson, Professional Speaker, Motivator, Educator, Consultant

Class Cost: TBD

Class Size: Lecture portion could be large based on location

Class Location: Venue large enough to host

Class Date: Fall of 2023

Class Time: Weekend dates

Contact: Justin Holmes- justin.holmes@gainestownship.org

Curt “Ike” Isakson is a 30+ year veteran of the fire service, with experience working in volunteer, career, and combination departments in urban, suburban, rural, and countywide settings.

He is currently a Battalion Chief for Escambia County Fire Rescue in Florida where he has worked for the last 21 years. Before his time with Escambia, Curt was a Company Officer with the Pensacola Fire Department assigned to Heavy Rescue 31 for 9 years.

He also worked for the City of Mary Esther as a Fire Inspector. His fire service experience started at a young age as a Junior Firefighter with the Midway Fire Protection District and rose through the ranks to Captain.

Curt normally charge $5,000 for a one day, $10,000 two days, and $13,000 for three days. Price covers everything.

Speaking Fee, Flyer, Admin Fee, Travel, Lodging, Advertising if requested. We require 50% deposit to lock in dates. I’m basically booked until 2024. If you are flexible and it’s for weekdays, I could maybe squeeze it in around my 48/96 schedule at Escambia.

This course covers mutiple ISFSI, and UL studies explianing the ideology of early water on a fire. The lecture can be broken down over one day or mutilpe days. This is pivotal information for Kent county firefighters to understand, as some juridications are limitmed on the hydrants in their community. This course would be a be game changer for our state and region.

"Q" COURSE APPLICATION

FMQ22-021

Michigan Department of Licensing & Regulatory Affairs
Bureau of Fire Services, Fire Fighter Training Division
P.O. Box 30700 Lansing, MI 48909
Email: LARA-BFS-SMOKE@MICHIGAN.GOV

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SECTION I

Name of Applicant:	SMOKE PIN:	Date:
James Stevenson	562593	09/19/2022

Host Fire Department:	County:
Warren Fire Department	Macomb

Applicant Street Address: 23295 Schoenherr Road

City:	State:	Zip Code:	Email:
Warren	MI	48089	jstevenson@warrenfiredept.org

Applicant Phone Number:	Alternate Number:
586.202.1987	586.756.2800

SECTION II

Seminar/Course Name: Company Officer Academy

Instructor(s):	Instructor Phone Number:
Chief (ret) Rick Lasky Chief (ret) John Salka	Chief Lasky: 214.673.1161 Chief Salka: 914.755.6866

Instructor Email: chieflasky@gmail.com **Flyer Attached:** ☐

Course Description: (Include course syllabus and detailed course expenses-you may attach additional pages if needed)

Please see attached for information regarding the "Company Officer Academy".

Applicable NFPA Standard(s): NFPA 1021 Fire Officer Qualifications

Class Capacity:	Total Hours of Training: 24	Amount Requested: 14,000+travel&hotel

SECTION III

Applicant Signature:	Date:
	09/19/2022

BFS USE ONLY

Date Approved by MFFTC:	"Q" Course Number Assigned:	Date Course Catalog Updated:

The Company Officer Academy
Please find below the information regarding "The Company Officer Academy".

Academy Description:
The program, "The Company Officer Academy" is the result of numerous requests and discussions the chiefs have had with chief and company officers across the nation concerning company officer training and preparedness. Many departments simply promote a new company officer and send them to a new assignment with no formal training. This often results in creating a more stressful and challenging situation for the new officer and the unit. Chiefs Salka and Lasky have put together a dynamic multi-day program that addresses the many skills and abilities that company officers need to have to be effective in the firehouse and on the fireground.

Designed For:
New Company Officers - Current Officers - Future Officers

Your Instructors:
Chiefs Lasky and Salka have decades of experience as chiefs and company officers and have handled many of the difficult and challenging situations that you are likely to face sometime in your fire service future. They will explain some of the myths concerning performance evaluations and discipline and how to get a handle on your daily firehouse routine. Join them as they guide you through the challenges you will face tomorrow with concepts and solutions that have served them well. The success of a company officer on the fireground is often determined by their success as a leader in the firehouse. This is where the rubber meets the road!

Academy Topics: (**Please keep in mind there are more segments/programs that can be added in place of one of those listed below. It kind of depends on what you may have had already program wise or again which group and what you're looking to accomplish.)

-The Leader, Manager, and Supervisor "traits" of the Company Officer.
-What it takes to be that great Company Officer.
-The Roll Call: Setting Up and Planning Your Day, Riding / Tool Assignments, Company Training and "Quick Drills."
-Communications; Shift to Shift – "Pass It On" – Up & Down the Ladder.
-Your Firefighter's First Day: The Company Officer's Role.
-Your Company Officer's First Day: The Chief's Role.
-Riding the Front Seat.
-Values - Vision – Mission, Performance Evaluations, "The Gold Book"
-Coaching & Counseling
-Records of Exceptional Performance
-Disciplinary Issues
-Situational Leadership Workshop

-Fireground Responsibility. This portion of the Academy will deeply examine several actual recent firefighter line-of-duty deaths with a focus on what the "real" factors were that contributed to the death. The contributing factors and the responsibility for the firefighter's death rest with

several people including the firefighter himself, the company officer, and the chief or incident commander. We must take an honest look at these operations and find out what we are doing wrong to learn how we can increase the safety and survival of our firefighters.

-The First-In Officer. With this portion of the Academy the student examines a number of different types of structural fires. Fires in private dwellings, commercial buildings, apartment houses, and office buildings. During the fire scenarios, the tactics, strategies and other factors will be analyzed and discussed, but most importantly it is related to "their" staffing so they leave truly knowing how to make it all work for their department and with how they are staffed.

Academy Costs:
Option A: (via Five Alarm Leadership, LLC)

Scenario 1) 3-day program with both Chiefs on all three days is $14,000 plus hotel and travel expenses.

Scenario 2) 3-day program with one Chief on day 1, both Chiefs on day 2, and the other Chief on day 3, is $10,000 plus hotel and travel expenses.

Scenario 3) 2-day program with both Chiefs on both days is $10,000 plus hotel and travel expenses.

Scenario 4) 2-day program with Chief Lasky on one day and Chief Salka on the other is $6,800 plus hotel and travel expenses.

Scenario 5) 1-day program with both Chiefs is $6,000 plus hotel and travel expenses.

No need for per deim, a rental car, or a cap on enrollment like some instructors request, as long as they can all see and hear the more the merrier, and if you have someone that can get us back and forth to the airport that would be great.

Option B: (via Columbia Southern University-CSU)

Typically, before CSU commits to a certain area/town they like to make sure that the host department/agency is mindful of all that goes into hosting a COA. They prefer that the host departments/agencies are aware and able to accommodate the following:

-We must be able to meet the minimum number of registrants in order to break even (usually this number is around 110-120 registrants).
-Help find a free/discounted venue location suitable for 120+ people with tables and chairs.
-AV needs to include a projector and two lapel mics with sound for the instructors.
-Assist with marketing and recruiting registrants in the surrounding areas.
-Aid in finding potential sponsors.
-Be able to provide onsite assistance if needed.

CSU is responsible for all of the logistics related to COA. They handle registrations, payments, collateral, marketing efforts, room blocks, and the scheduling of the Chiefs' hotel. They also cover all the expenses related to the conference, which include the Chiefs' honorariums, flights, hotels, meals, and snacks and beverages for the attendees.

Obviously with the 3-day venue we can cover a lot of information. As for program content it depends a lot on which route you take and with which instructors on what days, etc. Also whether it will be paid firefighters and officers, or a mix of paid and volunteer or just volunteer. That'll help us with the program selection as well. Some of the leadership programs are designed for paid members and some are set up for volunteer members and the challenges they face. Depends on what we have for an audience.

Depending on which scenario fits your budget we can look at the day or days, and the "topics" to be covered on each day. Please note, there is a ton of information covered in all of them and they would need to be full days.

When we end up with both of us there it's an incredible day. We really get them fired up. The goal is to have them leave the last day and get back to the firehouse with everything they need to be better at what they're doing or preparing to do.

Bio for Chief Lasky

Chief Rick Lasky (ret.) a 40-year veteran of the fire service, served as chief of the Lewisville (TX) Fire Department for 12 years, prior to that as Fire Chief in Coeur d'Alene Idaho. Rick followed in his father's footsteps beginning his career as a firefighter in the suburbs on the southwest side of Chicago and while in Illinois received the 1996 International Society of Fire Service Instructors "Innovator of the Year" award for his part in developing the *"Saving Our Own"* program. Throughout his 40-plus years in the fire service he has served as a career and volunteer firefighter. He served as the co-lead instructor for the H.O.T. Firefighter Survival program at FDIC for over 10 years, is a long-standing editorial advisory board member for *Fire Engineering Magazine* and also serves on the *FDIC International* advisory board. Rick is the author of the best-selling books *"Pride and Ownership-A Firefighter's Love of the Job"* and *"Five Alarm Leadership: From the Firehouse to the Fireground"* published by *Fire Engineering Books & Videos* and is the co-host for the podcasts "The Command Post" heard on FireEngineering.com and "Old School" heard on iTunes. In 2017, he was the recipient of the Tom Brennan Lifetime Achievement Award.

Bio for Chief Salka

Battalion Chief John Salka (ret.) a 40-plus year veteran of the fire service, served with the FDNY for over 33 years, the last 15 years a battalion chief in the 18th Battalion in the Bronx. Prior to the 18th Battalion he served in several of the FDNY's busiest and most active units. His tenure as an officer in the department also included instructing at the Probationary Firefighters School, the Captains Management Program, and the Battalion Chiefs Command Course. He is a New York State certified instructor and also

lectures nationally. He is a seminar presenter and has presented at Firehouse Expo in Nashville, FDIC International in Indianapolis, the NY State Association of Fire Chiefs show and many other venues. Chief Salka writes the monthly back page column "The Fire Scene" in *Firehouse Magazine* and has also written for *Fire Engineering Magazine*, *Size-Up* and the FDNY training magazine *WNYF*. He served as the co-lead instructor for the H.O.T. Firefighter Safety and Survival program at FDIC for over ten years, serves on the Firehouse Expo advisory board and is the co-host for the podcasts "The Command Post" heard on FireEngineering.com and "Old School" heard on iTunes. Chief Salka has also found the time to work for the NIOSH Firefighter Fatality Investigation and Prevention Program. He is the author of the best-selling books *"First In-Last Out: Leadership Lessons from the New York Fire Department," "The Engine Company"* and *"Five Alarm Leadership: From the Firehouse to the Fireground."* He received the 2001 FDIC Training Achievement Award for his *Get Out Alive* firefighter survival training program and travels extensively training firefighters throughout the 50 states and Canada in tactics, strategy, leadership and safety & survival. Chief Salka has also served as a volunteer firefighter throughout his entire fire service career and was inducted into Firehouse Magazine's *Hall of Fame* in 2019.

FMQ22-022

"Q" COURSE APPLICATION

Michigan Department of Licensing & Regulatory Affairs
Bureau of Fire Services, Fire Fighter Training Division
P.O. Box 30700 Lansing, MI 48909
Email: LARA-BFS-SMOKE@MICHIGAN.GOV

To add a seminar/course to be listed in SMOKE submit this form to the following email address: LARA-BFS-SMOKE@MICHIGAN.GOV for review. The request will be reviewed and forwarded to the Michigan Fire Fighter Training Council (MFFTC) for curriculum review at the next scheduled MFFTC meeting (all requests must be made at least 15 days prior to the next regularly scheduled meeting).

SECTION I

Name of Applicant:	SMOKE PIN:	Date:
Philip Hall	574134	09/16/2022

Host Fire Department:	County:
Oakland Community College	Oakland

Applicant Street Address: 2900 Featherstone

City:	State:	Zip Code:	Email:
Auburn Hills	MI	48326	ffpdhall@hotmail.com

Applicant Phone Number:	Alternate Number:
248-379-4906	248-232-4580

SECTION II

Seminar/Course Name: OCC Live Fire Search and Rescue

Instructor(s):	Instructor Phone Number:
OCC Instructors	248-232-4580

Instructor Email: pdhall@oaklandcc.edu **Flyer Attached:** ☒

Course Description: (Include course syllabus and detailed course expenses-you may attach additional pages if needed)

The purpose of the LIVE FIRE SEARCH AND RESCUE course is to provide Michigan Fire Fighters with the opportunity, in a controlled environment, to practice and hone their Search and Rescue skills under live fire conditions. This course will be a combination of lecture and hands on training. This is a NFPA 1403 compliant course that will take place in our Class B training tower, and our Class A burn chambers. The goal is to make search and rescue safer and more efficient for Michigan fire fighters and citizens.

Applicable NFPA Standard(s): MIOSHA PART 74 NFPA 1001, 1021, 1403, 1500, 1971, 1981

Class Capacity: 24	Total Hours of Training: 8	Amount Requested: $10,000

SECTION III

Applicant Signature: Philip Hall	Date: 09/16/2022

BFS USE ONLY

Date Approved by MFFTC:	"Q" Course Number Assigned:	Date Course Catalog Updated:

Topic: Live Fire Search & Rescue

Submitted by: Philip Hall, #574134

Format: Lecture and Practical

Instructional Hours: 8

Description: The purpose of the LIVE FIRE SEARCH AND RESCUE course is to provide Michigan Fire Fighters with the opportunity, in a controlled environment, to practice and hone their Search and Rescue skills under live fire conditions. This NFPA 1403 compliant course will be a combination of lecture and hands on training. The lecture portion of the course will focus on size up, building construction, types of searches, hazards, and victim movement. The hands-on portion of the class will begin in our Class B Burn Tower, progress to our Class A Phase 2 VEIS live fire container, and end in our Phase 4 live fire container. Students will utilize Thermal Imaging Cameras to monitor fire conditions while searching for victims (mannequins). It is our intent to make search and rescue, one of the most dangerous tasks on the fire ground, safer for our citizens and firefighters through training.

Objectives:

- Perform building size up
- Complete rescue profile
- Perform primary search
- Perform secondary search
- Perform orientated search
- Perform split search
- Perform tethered search
- Perform VEIS
- Utilize thermal imaging cameras

Standards:

MIOSHA Part 74
NFPA 1981
NFPA 1971
NFPA 1500
NFPA 1403
NFPA 1021
NFPA 1001

"Q" COURSE APPLICATION

FMQ22-023

Michigan Department of Licensing & Regulatory Affairs
Bureau of Fire Services, Fire Fighter Training Division
P.O. Box 30700 Lansing, MI 48909
Email: LARA-BFS-SMOKE@MICHIGAN.GOV

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SECTION I

Name of Applicant:	SMOKE PIN:	Date:
Michael DeCraene	597114	06-14-2022

Host Fire Department:	County:
St. Clair Shores	Macomb

Applicant Street Address: 843 Walnut Glen Ct.

City:	State:	Zip Code:	Email:
Oakland Twp.	MI	48363	mpdecraene@gmail.com

Applicant Phone Number:	Alternate Number:
313-363-1377	

SECTION II

Seminar/Course Name: Mountain Rescue Workshop

Instructor(s):	Instructor Phone Number:
Michael DeCraene	313-363-1377

Instructor Email: mpdecraene@gmail.com **Flyer Attached:** ☒

Course Description: (Include course syllabus and detailed course expenses-you may attach additional pages if needed)

The Mountain Rescue Workshop is a minimalist approach to mountain rescue procedures and teaches the access, stabilization and extrication of patients involved in mid-face free or aid climbing accidents, especially those where the accident site is only accessed from below. There is a heavy emphasis on advanced knotcraft (several boutique bowlines) in this workshop. The student will learn how to design and build system anchors from bolts, pitons and active and passive rock climbing camming devices. Strong emphasis is also placed on wilderness improvised techniques where heavier equipment is not usable.

Applicable NFPA Standard(s): NFPA 1006, NFPA 1670, NFPA 1983, NFPA 1500, NFPA 2500, NFPA 1858, Part 74

Class Capacity:	Total Hours of Training:	Amount Requested:
12	70	$20,000

SECTION III

Applicant Signature:	Date:
Michael DeCraene	9.9.22

BFS USE ONLY

Date Approved by MFFTC:	"Q" Course Number Assigned:	Date Course Catalog Updated:

ROPES THAT RESCUE LTD.
1400 SHANGRI LA DRIVE
SEDONA, AZ USA 86336 (928) 282-7299

Michigan MRW INFO Sheet

Mountain Rescue Workshop

See Current RTR Open Schedule for Dates

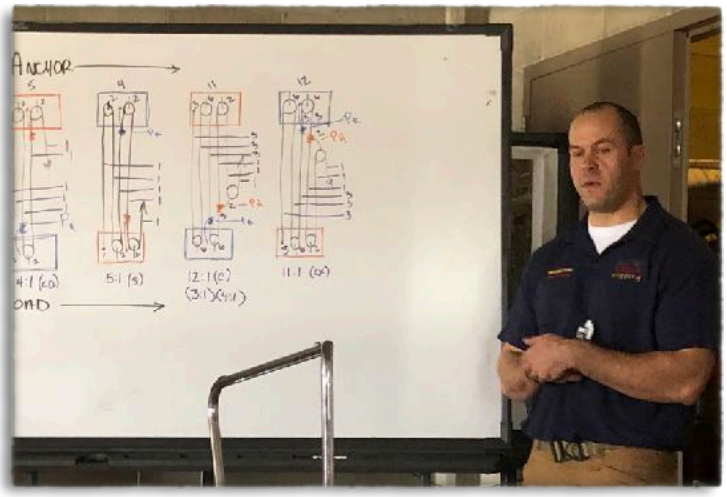
Grand Ledge, Auburn Hills, MI

Instructor: Michael DeCraene

"An Excursion into the Vertical Realm" with Instructors Michael DeCraene

Ropes That Rescue is always proud to announce the MOUNTAIN RESCUE WORKSHOP in Michigan. See RTR Schedule for start date. SAR volunteers from AZ get a 50% discount. This program starts out with lecture inside at Auburn Hills, MI and moves into on rope time at Grand Ledge which is the perfect venue for this program.

The MRW fulfill the 90% solution on most rope rescues within wilderness locations. It is designed for the serious search and rescue practitioner wishing to improve their personal rigging skill and capability. This workshop is sometimes mistakenly perceived as a beginning program due to the personal nature of many of the evolutions. In fact, it is for those that never seem to get enough on rope experience or time over the edge. The MRW begins with valuable, yet simple definitions for belays, self belays, conditional belays and conditional self belays and how these differ in their engineering. It goes into important orientation on personally carried gear such as ascenders and descenders, self belay devices, Purcell prusiks, the ever useful AZTEK and other items essential to safety in the vertical realm and then moves into practical and fun-filled days where multiple one-on-one rope stations keep the practitioner busy throughout the day. Students in the MRW practice their skills and learn to work together as a team in successful retrieval of this patient in a non-threatening environment. These are found in the Seven Minimalist Rescue Archetypes (7MRA) that lay a groundwork for understanding how solo versus semi-solo rescues vary in their risk to the rescuer. The MRW goes well into often overlooked personal skills that are taken for granted on most rescue teams.



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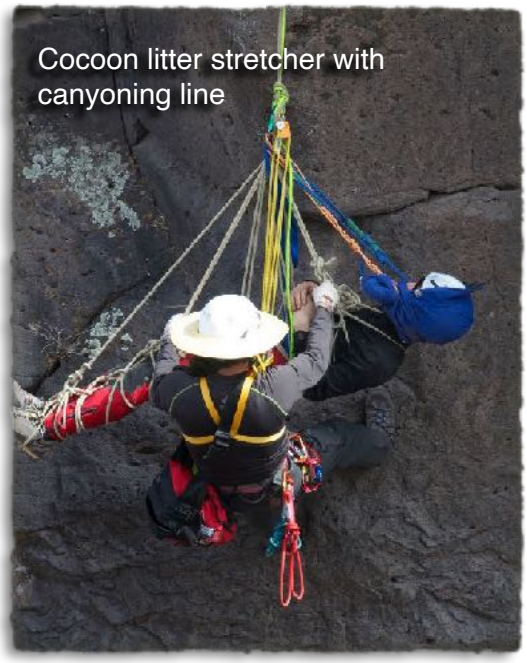
SEDONA, AZ USA 86336 (928) 282-7299

There is also considerable time spent on rope learning to climb/descend rope by multiple methods (even improvised if you drop your friction appliance). Passing knots, deviations, rebelays, rope to rope transfers, aid climbing and problem solving are all part of the MRW. Proficiency through repetition to mastery are encouraged. There is a very very strong emphasis on advanced knotcraft in this workshop! Students are tested throughout the program for proficiency and the ability to tie under pressure. All in fun, of course!


Cocoon litter stretcher with canyoning line

MRW KEY POINTS -

- *Strong emphasis on personal mountain rescue skills*
- *Rope coiling methods-Rope management*
- *Improvisation and minimalism "What do you do if the gadget does not show up?"*
- *Knotcraft to the extreme (There is a strong emphasis on knot skills)*
- *Introduction to pulley systems*
- *Beginning litter work in high angle evacuations (practice at "attending")*
- *"V" strap (pike and pivot) litter evacuations*
- *Cocoon stretcher with canyoning lines*
- *Rope problems needing strong personal skill base*
- *True belays/self belays/conditional belays and conditional self belays*
- *Self rescue techniques / Buddy rescue techniques*
- *Complete AZTEK kit orientation for personal and team operations:*
  - *Single and double part hasty rappels*
  - *Belays and self belays*
  - *Dynamic fixed and traveling brakes*
  - *Dynamic directionals*
  - *Personal travel restrict and fall protection*
- *Complete Seven Minimalist Rescue Archetypes*
- *Solo rescuer pick off ("gecko" and hanging)*
- *Semi-solo rescuer pick offs ("gecko" and hanging)*
- *Lead climbing (optional) and down climbing techniques* *(continued next page)*
- *Sound anchoring principles: simple through advanced system anchors*
- *One on one rescues (solo):*
  1. *Pitch Head Rescue (rescue of one below hanging by rescuer on top)*
  2. *Pitch Toe Rescue (rescue of one from base of cliff to top by rescuer hauling)*
  3. *Counterbalance Method of rescue (if time allows)*
- *Much more....*


Extensive rock pro


Focused floating anchors

"Q" COURSE APPLICATION

FMQ22-024

Michigan Department of Licensing & Regulatory Affairs
Bureau of Fire Services, Fire Fighter Training Division
P.O. Box 30700 Lansing, MI 48909
Email: LARA-BFS-SMOKE@MICHIGAN.GOV

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SECTION I

Name of Applicant:	SMOKE PIN:	Date:
Michael DeCraene	597114	06-14-2022

Host Fire Department:	County:
St. Clair Shores	Macomb

Applicant Street Address: 843 Walnut Glen Ct.

City:	State:	Zip Code:	Email:
Oakland Twp.	MI	48363	mpdecraene@gmail.com

Applicant Phone Number:	Alternate Number:
313-363-1377	

SECTION II

Seminar/Course Name: Personal Skills Rescue Workshop

Instructor(s):	Instructor Phone Number:
Michael DeCraene	313-363-1377

Instructor Email: mpdecraene@gmail.com **Flyer Attached:** ☒

Course Description: (Include course syllabus and detailed course expenses-you may attach additional pages if needed)

The Personal Skills Rescue Workshop is considered by many past students as our most enjoyable, interactive and physically demanding course. There is no shortage of "on-rope" time at this workshop! The PSRW, and the Team Skills Rescue Workshop are the courses which fulfill the 90% solution on most rope rescues within industry and wilderness locations. It is designed for the serious rope rescue practitioner wishing to improve their personal rigging skill and capability. Students in the PSRW practice their skills and learn to work together as a team in successful retrieval of patients in a non-threatening environment. The PSRW goes well into often overlooked personal skills that are taken for

Applicable NFPA Standard(s): NFPA 1006, NFPA 1670, NFPA 1983, NFPA 1500, NFPA 2500, NFPA 1858, Part 74

Class Capacity:	Total Hours of Training:	Amount Requested:
12	70	$20,000

SECTION III

Applicant Signature:	Date:
Michael DeCraene	9.9.22

BFS USE ONLY

Date Approved by MFFTC:	"Q" Course Number Assigned:	Date Course Catalog Updated:

ROPES THAT RESCUE LTD.
1400 SHANGRI LA DRIVE
SEDONA, AZ USA 86336 (928) 282-7299

Michigan PSRW INFO Sheet

Personal Skills Rescue Workshop

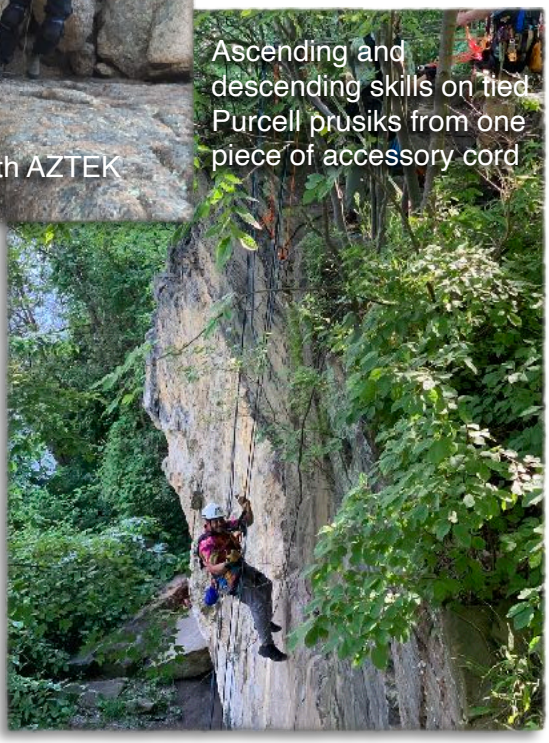
See Current RTR Open Schedule for Dates

Grand Ledge, Auburn Hills, MI

Instructor: Michael DeCraene

Minimalist Rescue Archetype #4

Pitch Toe solo rescue with AZTEK



Ascending and descending skills on tied Purcell prusiks from one piece of accessory cord

"An Excursion into the Vertical Realm" with Instructors Michael DeCraene

Seven full days of on rope climbing, rescue and rope access skills where you will come away with confidence in your ability in personal rigging.

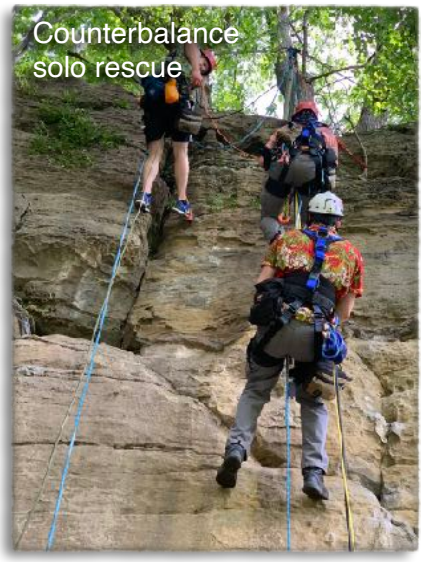
The Personal Skills Rescue Workshop is considered by many past students as our most enjoyable, interactive and physically demanding. There is no shortage of "on-rope" time at this workshop! The PSRW, and the Team Skills Rescue Workshop are the courses which fulfill the 90% solution on most rope rescues within industry and wilderness locations. It is designed for the serious rope rescue practitioner wishing to improve their personal rigging skill and capability. This workshop is sometimes mistakenly perceived as a beginning program due to the personal nature of many of the evolutions. In fact, it is for those that never seem to get enough on rope experience or time over the edge. The PSRW begins with valuable, yet simple definitions for belays, self belays, conditional belays and conditional self belays and how these differ in their engineering. It goes into important orientation on personally carried gear such as ascenders and descenders, self belay devices, Purcell prusiks, the all valuable AZTEK kit and other items essential to safety in the vertical realm and then moves into practical and fun-filled days where multiple one-on-one rope stations keep the practitioner busy throughout the day.

Students in the PSRW practice their skills and learn to work together as a team in successful retrieval of this patient in a non-threatening environment. These are found in the Seven Minimalist Rescue Archetypes (7MRA) that lay a groundwork for understanding how solo versus semi-solo rescues vary in their risk to the rescuer. The PSRW goes well into often overlooked personal skills that are taken for granted on most rescue teams.

There is also considerable time spent on rope learning to climb/descend rope by multiple methods (even improvised if you drop your friction appliance). Passing knots, deviations, rebelays, rope to rope transfers, aid climbing and problem solving are all part of the PSRW. Proficiency through repetition to mastery are encouraged. There is a very very strong emphasis on advanced knotcraft in this workshop! Students are tested throughout the program for proficiency and the ability to tie under pressure. All in fun, of course!

ROPES THAT RESCUE LTD.
1400 SHANGRI LA DRIVE
SEDONA, AZ USA 86336 (928) 282-7299

PROGRAM LIAISON: *(INFO, Location / Meeting Place / and Logistics)*
Michael DeCraene (RTR Instructor) Email: michael@ropesthatrescue.com
Phone: (313) 363-1377 Please, only during regular business hours.

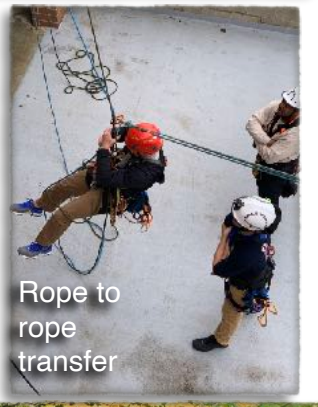


PSRW KEY POINTS -

TOP-DOWN RESCUE:
Students in the PSRW practice their personal rescue skills and learn to work together as a semi-team (one or two rescuers) in successful retrieval of this patient in a non-threatening environment. These are found in the predominantly top-down Seven Minimalist Rescue Archetypes (7 MRA) that lay a groundwork for understanding how solo versus semi-solo rescues vary in their risk to the rescuer. Top-down rescue is easier as it relies on friction which is helpful at times. The PSRW goes well into often overlooked personal skills that are taken for granted on most rescue teams. The 7 MRA are therefore well suited for industrial and wilderness rescue team members. Some of these skills are repeated in the Mountain Rescue Workshop as well. Example being the Juneau, Alaska MRW in 2022.

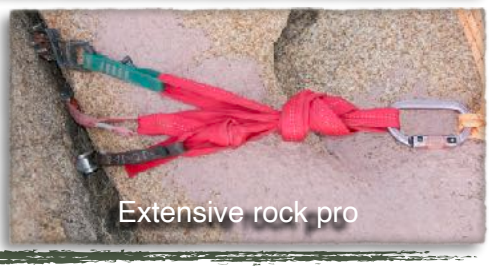
BOTTOM-UP RESCUE:
There are three differing bottom-up rescue techniques that we offer to PSRW students. They are a bit esoteric, but they are valuable "personal" skills which most past students seem to especially appreciate. They totally rely, once again, on the AZTEK kit and also the hand tied Purcell prusiks (tied from one 10 meter piece of 6mm supple accessory cord). Also, unlike the top-down rescue techniques of the 7 MRA, here you are fighting friction. Therefore these are more difficult and require perseverance. Again, some of these skills are repeated in the Mountain Rescue Workshop as well. Example being the Juneau, Alaska MRW in 2022.

1) PITCH HEAD RESCUE: RTR took the well-known rope access "pitch head rescue" where the rescuer at the TOP or "head" of the pitch breaks into the line the victim is hanging on with their AZTEK set of fours, and establishes a progress capture in that line to bring the victim to the top of the pitch. They must also monitor the belay line up as well so the victim is on two solid points for the raising. If the victim is down 50', the rescue will need to do this several times with the AZTEK until the victim reaches the top.



2) PITCH TOE RESCUE: RTR Lead Instructor, Keith Thorne came up with the name for the "pitch toe rescue". It is the grand finale of the PSRW and the student really feels a sense of accomplishment when they finally complete it. The rescue (victim and rescuer) starts at the bottom, or "toe" of the pitch. The rescuer ascends the rope either in full ascent (Croll and handled ascender), or in half and half mode (half ascender and half descender with or without added pulley on handled ascender — which we jokingly call the "fat boy" technique") stretching out their AZTEK SO4s as they go with the orange ratchet engaged only. So, they are able to ascend upwards of about 12' as that is all a SO4s will allow. The orange AZTEK pulley is attached to the top of the handled ascender. The blue AZTEK pulley goes to the victim. To ascend and not fight the prusik ratchet you must first pull all available rope through the top orange ratchet and let it dangle or pile it on the victims lap below. Once up the first 12', attach second handled ascender (you can steal the one from the victim) to fair lead of AZTEK and use foot stirrup to pump away with leg, lifting victim up to your new position. The belay is managed also by the rescuer. Once victim is at your location secure them, and repeat the process until you are at the top with victim in tow. It is a good workout.

3) COUNTERBALANCE RESCUE: The "counterbalance" is an optional, however fun, personal skillset in the PSRW. It is really in between the pitch head and the pitch toe solo rescuer techniques. Once again you start with the rescuer at the anchor on top and the victim whatever distance below you hanging on rope. Rescuer uses both of their personal Purcell prusiks here in various configurations to transfer the anchored loaded line to the victim to their own rescue system. This involves the rescuer using their own mass hanging below a progress capture pulley to "counterbalance" the victim up as they go down. Rescuer must also manage belay for victim. Again, I don't see this being a skill that students must complete for the PSRW at this time. However, things do change as the PSRW grows in difficulty.
Basically, the Personal Skills Rescue Workshop is a full-on solo & semi solo rescuer extravaganza. There is no framing, no litter work, no offsets, and no lecture other than to set forth the top down and bottom up scenario. Just the student on rope as a victim or on rope performing a rescue by their self.



"Q" COURSE APPLICATION

FMQ22-025

Michigan Department of Licensing & Regulatory Affairs
Bureau of Fire Services, Fire Fighter Training Division
P.O. Box 30700 Lansing, MI 48909
Email: LARA-BFS-SMOKE@MICHIGAN.GOV

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SECTION I

Name of Applicant:	SMOKE PIN:	Date:
Michael DeCraene	597114	06-14-2022

Host Fire Department:	County:
St. Clair Shores	Macomb

Applicant Street Address: 843 Walnut Glen Ct.

City:	State:	Zip Code:	Email:
Oakland Twp.	MI	48363	mpdecraene@gmail.com

Applicant Phone Number:	Alternate Number:
313-363-1377	

SECTION II

Seminar/Course Name: Team Skills Rescue Workshop

Instructor(s):	Instructor Phone Number:
Michael DeCraene	313-363-1377

Instructor Email: mpdecraene@gmail.com **Flyer Attached:** ☒

Course Description: (Include course syllabus and detailed course expenses-you may attach additional pages if needed)

The Team Skills Rescue Workshop is ideal for industrial and wilderness rescue teams and is designed to begin where the Personal Skills Rescue Workshop leaves off and carry on into more demanding rescue practices and team-building skills. Lectures on intermediate physics and how it relates to rope rigging are common throughout the duration of this seminar. Emphasis is places on "why" we do something, rather than " how". Students,as a team unit,learn how to build seemingly complex arrangements for reaching, treating and extricating a patient from the vertical high angle environment. The TSRW is not by any means a beginning rope rescue program.It is a serious venture

Applicable NFPA Standard(s): NFPA 1006, NFPA 1670, NFPA 1983, NFPA 1500, NFPA 2500, NFPA 1858, Part 74

Class Capacity: 12	Total Hours of Training: 70	Amount Requested: $20,000

SECTION III

Applicant Signature:	Date:
Michael DeCraene	9.9.22

BFS USE ONLY

Date Approved by MFFTC:	"Q" Course Number Assigned:	Date Course Catalog Updated:

ROPES THAT RESCUE LTD.
1400 SHANGRI LA DRIVE
SEDONA, ARIZONA 86336 (928) 282-7299

Michigan TSRW INFO Sheet

Team Skills Rescue Workshop

See Current RTR Open Schedule for Dates

Grand Ledge, Auburn Hills, MI

Instructor: Michael DeCraene

About the TSRW Program:

The Team Skills Rescue Workshop is ideal for industrial and wilderness rescue teams and is designed to begin where the Personal Skills Rescue Workshop leaves off and carry on into more demanding rescue practices and team-building skills. This, and the PSRW, are the workshops which fulfill the "90% solution" on most rope rescues within industry and wilderness locations. Lectures on intermediate physics and how it relates to rope rigging are common throughout the duration of this workshop. Emphasis is places on "why" we do something, rather than "how". Students, as a team unit, learn how to build seemingly complex arrangements for reaching, treating and extricating a patient from the vertical high or steep angle environment whether in industrial locations or in the wilderness.

The Team Skills Rescue Workshop focuses on these main areas:

Anchoring:
This would include so called "bombproof", substantial and marginal (contributory) anchors and anchor systems. It also covers anchor plates, rigging pods, bipods and tripods (AZ VORTEX if applicable). In some TSRW, rock protection is thoroughly practiced within the program (if applicable).

Physics:
"Barn floor physics" (as opposed to "loft" physics) lessons on anchor loading and directional loading are done in the classroom on the whiteboard. A favorite part of the TSRW for many as it brings home the importance of understanding force (compression and tension). These lectures reinforce the upcoming lectures on artificial high directionals with relevant discussions on component force vectors and resultant force vectors

Pulley Systems:
Pulley system understanding is key to understanding what is happening in our rope systems. We delve into class 1, 2 and 3 pulleys. working and non working systems, simple, compound and complex pulley systems. We also cover the Arizona Progression of 7, a series of learn-by-rote pulley systems for the general rescue practitioner. Also, these systems produce differing loading on our anchors so attention is paid to tension units as well

High Directionals: *(AZ VORTEX or other)*
This includes, in most TSRW, the use of the Arizona Vortex (frame) as a tripod, bipod and monopod at the edge and for anchors back from the edge (see "Anchors" above). Extensive lectures on the basic setups for this appliance found in the User Manual. Extensive guying section for frames with the use of non-working pulley systems.

High Angle Offsets:
The TSRW includes an extensive lecture and practical section on alternatives to highlines in the form of "offsets". Ropes That Rescue has become known for its projection of these offsets as an alternative to training intensive highlines in the past 25 years. Offsets employ standard high angle techniques that most rescuers already know and so are more forgiving in the training curve than more elaborate systems. These offsets are: 1) Tag Line, 2) Guiding Line, 3) Tracking Line, 4) Skate Block, 5) Deflection Line, 6) Two Rope.

ROPES THAT RESCUE LTD.
1400 SHANGRI LA DRIVE
SEDONA, ARIZONA 86336 (928) 282-7299

TSRW Key Points:

Over 200 page manual with reproduction of part of the lectures and slide shows (available in color for extra charge)

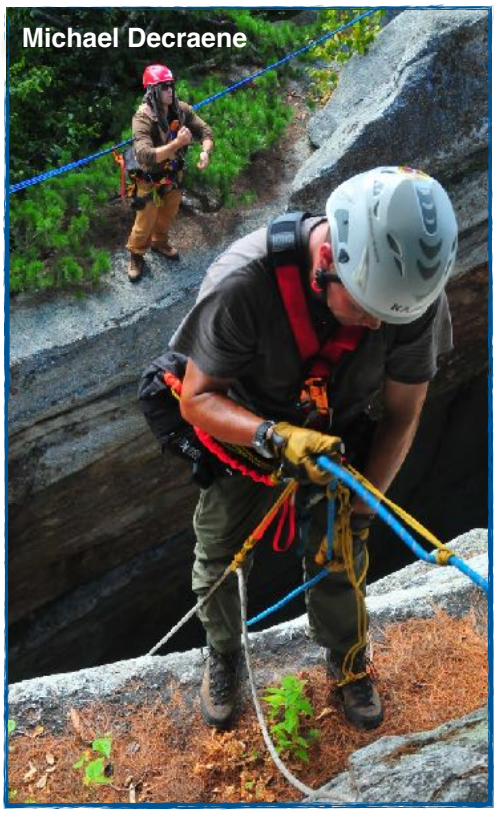
- *Technical evacuations using litter: High angle and steep angle*
- *Strong emphasis on team-oriented skills*
- *Knot craft and mastery of rigging - learning to lash and secure things*
- *Intermediate pulley systems (simple through complex)*
- *Physics of rope rescue*
- *Two tensioned rope systems analysis (Steep angle evacs)*
- *Frames: Arizona Vortex® (as options)*
  - *Gin pole monopods - Rigging pods*
  - *A-frames*
  - *Sideways A-frames - Lazy leg SA frames*
  - *Easel A-frames*
  - *Arizona "Doortex" - Jamb poles*
- *Directionals and anchor angle force calculations*
- *Batwing compound pulley systems - AZ progression of 7*
- *Complete AZTEK kit orientation for team operations:*
  - *Personal travel restrict and fall protection*
  - *Single and double part hasty rappels*
  - *Belays and self belays*
  - *Dynamic fixed brakes, directionals, butt blocks, etc.*
  - *Dynamic directionals*
  - *Personal travel restrict and fall protection*
- *Mid face attendant-based and team-based litter scoops*
- *Team-based pick offs*
- *Belays, self belays, conditional belays and conditional self belays*
- *Sound anchoring principles: intermediate through advanced systems anchors, beach head anchors, etc.*
- *Focused and focused-floating anchors using opposition anchors*
- *Low edge mitigation - no high directional*
- *Hot and cold changeovers using the CMC MPD®*
- *Non-highline solutions to rescue scenarios*
- *Offsets for the high angle evacuation:*
  - *Deflected offsets*
  - *Tracking line offsets (with belay and self belay elements)*
  - *Skate block offsets (with belay and self belay elements)*
  - *Two rope offsets*

Lecture on safety factor and safety margin and "bracketing" rope strength
Much, much more...

RTR programs are student-driven in what is covered. In seven short days (even though we are doing 10 to 12 hour days) we cannot cover it all. Students are encouraged to come forth with ideas given our available venues early in the class to help delineate the direction the program takes.

Required Equipment:

Also, make sure you have the REQUIRED EQUIPMENT for this program! The AZTEK is a must for this training. Other items can be substituted. Contact us if you have any questions about equipment.



"Q" COURSE APPLICATION

FMQ22-026

Michigan Department of Licensing & Regulatory Affairs
Bureau of Fire Services, Fire Fighter Training Division
P.O. Box 30700 Lansing, MI 48909
Email: LARA-BFS-SMOKE@MICHIGAN.GOV

To add a seminar/course to be listed in SMOKE submit this form to the following email address: LARA-BFS-SMOKE@MICHIGAN.GOV for review. The request will be reviewed and forwarded to the Michigan Fire Fighter Training Council (MFFTC) for curriculum review at the next scheduled MFFTC meeting (all requests must be made at least 15 days prior to the next regularly scheduled meeting).

SECTION I

Name of Applicant:	SMOKE PIN:	Date:
James Stevenson	562593	09/30/2022

Host Fire Department:	County:
Warren Fire Department	Macomb

Applicant Street Address: 23295 Schoenherr Road

City:	State:	Zip Code:	Email:
Warren	MI	48089	jstevenson@warrenfiredept.org

Applicant Phone Number:	Alternate Number:
586.202.1987	586.756.2800

SECTION II

Seminar/Course Name: Responding to Gasoline Tanker Emergencies

Instructor(s):	Instructor Phone Number:
Batt Chief (ret) Leigh Hollins	941.374.6364

Instructor Email: StarfireTS@aol.com **Flyer Attached:** ☐

Course Description: (Include course syllabus and detailed course expenses-you may attach additional pages if needed)

Please see attached

Applicable NFPA Standard(s): NFPA 11, 472

Class Capacity:	Total Hours of Training: 4	Amount Requested: $1500+travel/hotel

SECTION III

Applicant Signature:	Date:
Jon Stevenson	09/30/2022

BFS USE ONLY

Date Approved by MFFTC:	"Q" Course Number Assigned:	Date Course Catalog Updated:

Attached along with the lesson plan are 2 articles I have written for Fire Engineering on the subject.

Instructor Bio:
Leigh Hollins retired as a Battalion Chief with the Cedar Hammock (FL) Fire rescue after serving 30 years with the department. He joined the fire service with the Nottingham Fire Company in Hamilton Square, New Jersey, in 1976. Hollins is an editorial advisory board member for Fire Engineering and FDIC International and has been a lead instructor for Hands-On Training at FDIC since 1996.

PLAN OF INSTRUCTION

TITLE	Responding to Gasoline Tanker Emergencies
COURSE DESCRIPTION	This class will review the construction features and various components of the MC306/406 Gasoline Tanker, which is the most common Haz-Mat transport tanker/truck on the roads of the US. There will also be discussion/information about the chemistry/properties of the materials carried by these tankers, mostly Gasoline & Diesel fuels. The class will also highlight the various safety features on the tanker and how all the systems operate so that emergency responders have a basic working knowledge of the tanker features in the event of a leak, spill, rollover or fire situation. Actual case history of several incidents will be reviewed and if possible, a tanker will be on display outside to actually look and see the features that were taught in the class and review the points made. Also covered will be a short segment on learning and instructional techniques to assist those who are attending to teach others at their agencies. Also discussed will be the fuel on-loading process and safety features and the process and safety features of off-loading at gas stations and above ground storage facilities. This portion is aimed at fire inspectors, whose duties may include inspecting such facilities.

TIMEFRAME	4 Hours
MATERIALS / AIDS	Computer, projector, sound amplification.
LOCATION	
OBJECTIVES	At the completion of class, students will; - know the construction features & components of the MC306/406 Gasoline Tanker - know that the MC306/406 is the most common Haz-Mat transport tanker/truck on the roads of the US - know the various safety features on the tanker - know how all the systems operate - will have a basic working knowledge of the tanker features in the event of a leak, spill, rollover or fire situation and know the chemical properties of the hazardous materials carried and how they affect emergency operations at such an incident – will better understand student learning and instructional techniques – will have a better understanding of the processes and safety features when these tankers on-load and/or off-load fuel at terminals, above ground storage facilities and gas stations.
PRESENTATION	The class is a lecture format with power-point graphics, pictures and video to enhance the instructor's comments & lecture. Whenever possible, an actual gasoline tanker will be on site for the students to view and review what was learned in class. Questions may also be posed to the tanker driver and company rep, as available. If a tanker is not available at the class, the instructor will fill that time by reviewing actual incidents that have occurred involving gasoline tankers that have crashed, rolled over and/or been involved in some type of spill or fire situation.

EVALUATION	Course evaluations will be completed by host agency
OUTSIDE ASSIGNMENT	View an actual Gasoline Tanker, when available
TARGET AUDIENCE	☒ INSTRUCTORS ☒ INSPECTORS ☒ FIREFIGHTERS ☒ HAZMAT TECHNICIANS

Gasoline Tanker Emergencies, Part 1

BY LEIGH T. HOLLINS

THE INITIAL CALL TO A GASOLINE tanker incident will certainly get your attention. The call will generally be one of several types, such as a tanker that is involved in a collision, has overturned, is leaking, is overfilled, or is on fire. Pick any one, and your adrenaline just got cranked up because an incident involving a gasoline tanker can be a catastrophic event. This is a low-frequency/high-risk incident.

Part 1 of this two-part article outlines the gasoline tanker trailer's characteristics, construction, features, components, and some common problems. Part 2 will cover mitigating the various emergency situations cited above and review a couple of case histories. Together, this information will provide you with enhanced knowledge for a safer, more efficient, and more professional operation and help support the mission of saving lives and property.

The U.S. Department of Transportation (US DOT) designates the gasoline tanker trailer as MC (motor carrier) 406 (photo 1). Before September 1995, the gasoline tanker trailer was built to slightly different specifications and was designated as MC-306; prior to 1967, the designation was MC-305. The updated MC-406 specifications mandated a thicker tanker shell and better safety performance of the various components during a rollover. Keep in mind that the shell of such a tanker is less than ¼ inch thick. Except for those changes, the MC-306 and MC-406 are very similar. Many MC-306 tankers are still on the road today. Although I have never run across one, there probably are a few MC-305s around.

The general tanker component information here applies in most cases; there are exceptions. For example, although generally gasoline tanker shells are constructed of aluminum, a few tankers were made of steel many years ago. Generally, a ladder will provide access to the top of the tanker; but of the thousands of tankers I have seen, I did see one without a ladder.

Although the US DOT MC-305/306/406 tanker trailers are often called "gasoline tankers," they haul various products across North American highways. The most common product they transport is gasoline, followed by diesel fuel. A substantial number of these tankers carry a mixed load of gasoline and diesel fuel, since most are multicompartment tankers, commonly with four to five compartments. The typical MC-306/406 tanker carries about 8,000 gallons of product in most states. However, the maximum load that a tanker can carry is designated in pounds, not gallons, and varies state by state. A typical load is 8,000 to 8,500 gallons (approximately 60,000 pounds), depending on what type of product is being transported. In many western states, such as Montana, double trailers are permitted, substantially raising the potential maximum load (photo 2). In some areas of Canada, these capacities can be greatly increased (photo 3).

Tanker Features and Components

Following are a typical tanker's components/features and what they do:

- The ***product compartment*** holds the product being carried.
- The ***belly valve*** at the bottom of each compartment allows filling and emptying.
- The ***emergency shutoff*** closes all the belly valves at once in an emergency.

(1) A typical MC-406 tanker trailer and truck tractor. *(Photos by author.)* **(2)** A double tanker truck/trailer combination, which is only legal on the highways of some states, such as Montana. **(3)** This Canadian double trailer combination can transport up to 15,000 U.S. gallons (56,000 liters).

- The ***compartment external valve*** is on the right side where a flexible hose is attached for off-loading and most times on-loading product.
- The ***belly pipe*** (the "wet line") is the piping under the tanker that extends from the belly valve to the external valve.
- The ***landing gear*** are the legs that support the front of the tanker when it is not attached to a tractor.
- The ***vapor recovery system*** is a series of pipes and connections to which flexible hose is attached to recover flammable vapors.
- The ***belly valve controls*** are mounted in a box and provide individual control to each compartment belly valve.
- The ***thermistor/optic/Scully outlet*** is where a device at the loading terminal is plugged into to disperse static electricity and prevent overfilling.
- The ***pressure relief valves*** allow pressure to enter or exit the compartment system to keep the pressure within the tank's design limits.
- The ***overturn protection/vapor rail*** is the hollow rail along the top of each side of the tanker that protects the various components on the top of each compartment during a rollover. The right rail is also part of the vapor recovery system.
- The ***dome hatch*** is the locking lid for the large opening at the top of each compartment.
- The ***vapor valve*** is at the top of each compartment and allows vapor to enter the compartment as liquid product is off-loaded.
- The ***Scully device*** is an overfill protection sensing device at the top of each compartment that shuts off the flow of product being on-loaded if an error is made and if the terminal is equipped for same.
- The ***bulkhead*** is a solid wall between compartments.
- The ***baffle*** is a wall within a compartment with holes in it, designed to reduce the movement of liquid (weight) front to back during transport. The holes are in the middle and at the 6 and 12 o'clock positions. Some have holes at the 3 and 6 o'clock positions and have indicator black dots on the end of the tanker at those positions.

Tanker Tour

Let's start at the left front of the tanker trailer and go around the tanker in a counterclockwise fashion; then we will go topside.

Emergency shutoff. At the left front corner is one of the most important features, the emergency shutoff. This safety device comes in many shapes and sizes and is sometimes marked, sometimes not. It will be on the front or the side of the trailer, very close to the corner. When activated, it is designed to close all the belly valves at once, thus stopping the flow of liquid into the belly piping (wet lines). This would be helpful if a tanker is on its wheels or its side; if the tanker is upside down, it is not an issue. The device is connected to the belly valves by a steel cable (photo 4) or by pneumatic pressure lines (photos 5 and 6). Another safety feature within this system is a high-heat component, either a fusible link in the steel cable or a meltaway line in the pneumatic system that is designed to shut off all belly valves if a fire occurs under the tanker trailer.

(4) A cable device that is operated by pulling on the red latch. **(5)** A pneumatic device that is operated by pressing on the round red plunger at the left.

(6) An unmarked pneumatic breakaway emergency shutoff device (arrow) that is operated by the breaking off device.

Specification plate. Moving along the left side, the specification plate is mounted on the side of the trailer, about one-third of the way from the front. Although it is not critical to locate and read the spec plate, it includes such useful information as the MC number (MC 306/406), the material from which the tank is made (AL=aluminum), the total tanker capacity in gallons and pounds, and the maximum capacity of each compartment in gallons (photo 7).

(7) A typical specification plate.

Landing gear. In the same area, under the tanker, is the landing gear. These are two legs, usually made of metal, and a hand crank or pins that allow raising or lowering. You may also find a sticker warning you that they *will not support a loaded tanker.* However, even if there is a warning label, it may be faded and unreadable as in photo 8 (photos 8 and 9).

Belly pipes. Proceeding to the middle left side, under the tanker are the belly pipes, also known as wet lines. In most situations, unless all the tanker compartments are empty, there will be product in the belly pipes, which are about four inches in diameter and constructed of aluminum. You can figure that each foot of pipe will contain about a half gallon. In the case of an underride by a smaller vehicle, up to 30 gallons of product could be spilled or burning from these pipes. Photo 10 shows the belly pipes of a four-compartment trailer.

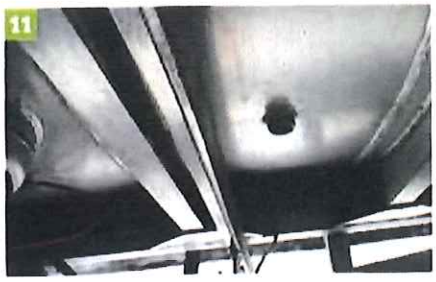
(8) The warning label (arrow) area on this pin-type leg support landing gear is completely faded. **(9)** This may be the only warning you will get to prevent a catastrophe. Many legs are not marked.

Double bulkhead opening. Also in this area, looking under the middle belly, you may see a ¾-inch nipple with internal threads; you may see more as you look along the length of the tanker belly. This is a vent hole between bulkheads when two compartments are separated by a double bulkhead, which is common but not always the case. Some transport companies spec the double bulkhead when they order tanker trailers that carry a mixed load, to prevent the costly contamination of two compartments of fuel (one gasoline/one diesel) should a single bulkhead fail or crack. With a double bulkhead, if one cracks, the product will leak from this bottom vent hole but not contaminate either compartment with a fuel mix. Drivers typically carry a plug in their tractor for such events (photo 11).

Overturn protection rail. Moving back away from the left middle of the tanker, you can observe the entire tanker, which is pretty much "clean" and devoid of any features on the left side. The overturn protection rail is one good identification feature of the MC 306/406 tanker, an eight-inch-high box on the top running the tanker's full length, which is not found on other tanker trailer types. The right side overturn protection rail also acts as part of the vapor recovery system. From this vantage point, you may also see a ladder, typically on the rear or possibly on the front of the tanker (photo 12).

Rear of tanker. Moving to the rear of the tanker, observe that the tank is not round; it is more of a flat oval or an elliptical shape, which is specific to the MC 306/406 tanker. No other tankers have this shape. The ladder rails also act as a drain for the eight-inch-deep area atop the tanker that runs its length. If you respond to a "leaking" gasoline tanker parked at a truck stop, the liquid coming from this area is likely snow melt from the top (photo 13).

(10) The belly piping (wet lines) of a four-compartment tanker trailer.



(11) A vent hole between a double bulkhead. **(12)** A typical MC-406 tanker trailer. Along the top is the eight-inch overturn protection rail (arrow) through which runs the vapor recovery system and the access ladder at right.

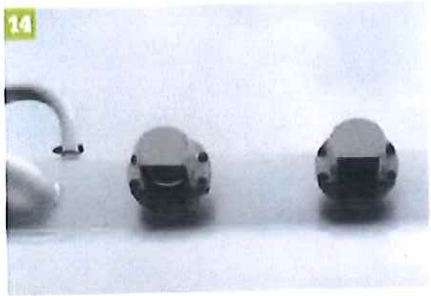
In some cases, you may observe a secondary emergency shutoff device at the rear of the tanker.

Vapor recovery system. On the right rear, vertical piping for the vapor recovery system may be present. This external piping, if present, will run from one or two connections on the right side of the tanker up to the overturn protection/vapor rail. Some of the newer versions of the MC-406 tanker have this vertical pipe as an integral part of the tanker so it is not visible on the outside; it usually runs through the middle right compartment.

Pressure relief valves. Moving to the right side, looking up at the

(13) From the rear, note the elliptical shape, the ladder, and the vapor recovery piping. This tanker has baffle holes in the 3 and 6 o'clock positions, as indicated by the black dots. This allows liquid to flow to both sides of the baffle when the tanker is on its side. Also note the water drain hoses (arrows) connected to the hollow ladder rail, as described previously.

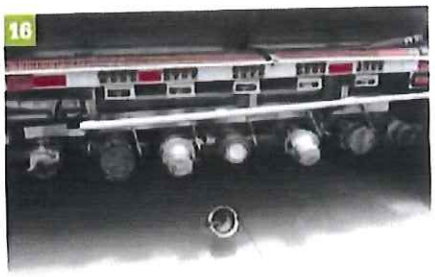
overturn protection/vapor rail, there may be two pressure relief valves on the rail toward the rear. If you cannot see them, they, too, are integral, but they are there (photo 14). One will be a positive-pressure relief and the other a negative pressure relief. The MC-306/406 tanker is a nonpressurized tank; pressures of more than four pounds per square inch will activate the positive-pressure relief so that no more pressure can build up and any negative pressure will open the negative pressure relief valve and allow air to enter so the aluminum tank will not buckle in. A loaded tanker on its right side will leak product from the relief valve.



(14) Pressure relief valves.

Compartment external valves. In the middle area of the right side are the compartment external valves and ports (photos 15 and 16). There will be one per compartment. Typically, to the left of the external valve area will be a box with a door to store various fittings and related items. To the right of the external valves will be a box with a door containing the belly valve controls. The driver operator manually operates each external valve individually once the flexible hoses are attached and the corresponding belly valve is opened. The flexible hoses also have built-in grounding wires to dissipate any static electricity during the off-loading. The typical situation is that a compartment of fuel is fully off-loaded at one site. Partial off-loading of a compartment is rare. In many areas of the United States, a loaded tanker is completely off-loaded at one site, whereas a split load is off-loaded at more than one site.

In this area you will also find one, two, or three vapor recovery system pipes with capped ends. They are used to recover flammable vapors from the tanks



(15) These four external ports and valves have separate intake (top) and discharge ports (bottom). The capped pipes on each side are vapor recovery lines. (16) These five two-way external ports and valves can be used for either intake or discharge, depending on the adapter used. The capped pipes on each side are vapor recovery lines.

being filled by the tanker as it is being off-loaded. The liquid flowing into the tank being filled pushes the vapors from the tank, which travel through a flexible hose connected from the tank to one of these vapor recovery pipes, thus making it a closed system that does not allow the flammable vapors to escape into the atmosphere. The vapor recovery hose and pipe take the vapors to the vapor recovery rail and back into the tanker trailer compartments.

All tankers are set up to on-load and off-load from the bottom. However, there are still many small loading docks throughout America that may load a tanker from the top (photo 17). Regardless, all tankers off-load from the bottom. The ports on the tanker where the hose is connected at the external valve may be set up in the same way as a fire pumper with separate intake and discharge ports (photo 16). Other tankers may be equipped with a port that can flow both ways, depending on which fitting is attached, as shown in photo 17.

Belly valve controls. They are in a box with a door to the right of the external valves. Most valve box doors are set up with a plunger-type switch that ensures the trailer brakes are activated prior to operating the belly valve. Some of these switches also open all the vapor valves at once when the valve box door is opened. Otherwise, there will be a switch to open all the vapor valves at once before the operator can operate the belly valve. The vapor valves must be opened when product is off-loading to prevent the tank from buckling from negative pressure. The individually operated belly valves are either manually operated (photo 18) by a steel cable from the belly valve to the belly valve controls or by pneumatic air lines (photo 19). Pressure opens the belly valve, and loss of pressure closes it.

(17) A top-loading fuel dock and tanks.

(18) Manual belly valve controls on a four-compartment tanker. (19) Pneumatic belly valve controls on a five-compartment tanker. Note the two black plungers on the door that release the corresponding actuators when the door is opened. The actuators simultaneously lock the trailer brakes and open the top vapor valves. Also note the thermistor/optic plugs in the lower left for static control at the loading rack.

Dome hatch/vapor valve. Climbing up the rear or front ladder, we come to the top of the tanker trailer, which looks like a walkway. Each compartment will have a manhole, as seen in photo 20. Within each manhole is the dome hatch, vapor valve, and Scully device.

The dome hatch is the largest opening in a compartment and the most likely to leak in a rollover. Hazmat teams typically are equipped with a dome clamp, which applies pressure to the lid to try to seal it better, since the rubber gaskets on these dome lids are many times brittle and worn (photo 21).

As shown in photo 20, the vapor valve is attached to the right overturn protection/vapor rail by a rubber hose. When opened, the vapor valve prevents the compartment from buckling while product is being off-loaded from the bottom and allows the vapors being pushed out (of a tank being filled) to enter the compartment as part of the vapor recovery system.

(20) On the manhole, clockwise from left (arrow) are the dome hatch, the Scully device, and the vapor valve.

Product PTO pump. Stepping up to the tractor truck that hauls the trailer, you may see a power take-off (PTO) pump inside the right frame rail of the chassis, between the rear of the truck cab and the rear wheel assembly (photo 22). This pump will pump product to aboveground tanks. Normally, the tanker is off-loaded by gravity feed into a belowgrade tank. However, with an aboveground tank, the product must be pumped. The operator connects a flexible hose from the external valve (of the compartment being off-loaded) to the intake of the pump. A pressure-rated hose is connected between the pump discharge and the inlet of the tank being filled. If the aboveground tank is so equipped, a vapor hose is connected between the aboveground tank vapor outlet and the tanker trailer vapor recovery connection. Grounding connectors may also be employed to control static electricity. The PTO is engaged, and the product is pumped from the tanker compartment to the aboveground tank (photo 17).

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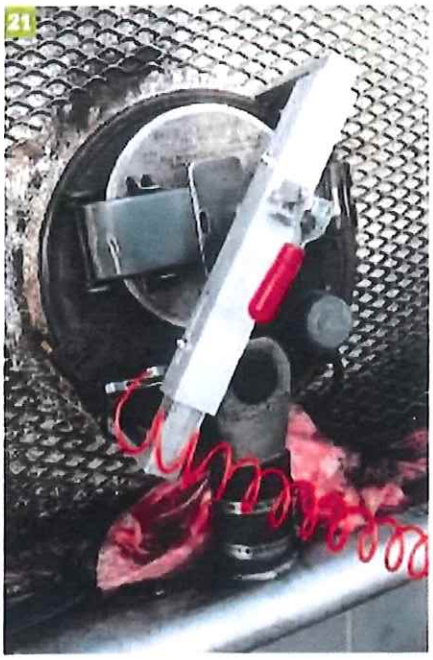
All responders would benefit from seeing and reviewing the features of an MC 306/406 tanker truck. See if your local fuel distributor would bring an MC 306/406 tanker to your department or allow you to visit its facility. If not, check with your local gas station manager and



(21) A tanker dome clamp. (22) A PTO pump for filling aboveground tanks.

see if you can be present when a tanker is off-loading at the site. You can thus enhance what you learned from this article and better understand the various components and how they work. Speaking with the tanker operator will also provide you with additional information and a chance to have any questions answered.

In Part 2 of this article, I will present various emergency situations that you may face at the scene of a gasoline tanker emergency and discuss some options for safely mitigating them. ■

LEIGH T. HOLLINS retired as a battalion chief with Cedar Hammock (FL) Fire Rescue after serving 30 years with the department. He joined the fire service with the Nottingham Fire Company in Hamilton Square, New Jersey, in 1976. Hollins is an editorial advisory board member of *Fire Engineering* and FDIC International and has been a lead instructor for hands-on training at FDIC since 1996.

Response to Gasoline Tanker Emergencies, Part 2

BY LEIGH T. HOLLINS

PART 1 (NOVEMBER 2018) OUTLINED THE gasoline tanker trailer's characteristics, construction, features, and components (photo 1). Also mentioned was that the initial call to a gasoline tanker incident will get your attention and increase your adrenaline flow because this is a low-frequency/high-risk incident and the visual of such an incident can be spectacular and catastrophic.

During a major gasoline tanker fire in the daylight, the ink-black, thick smoke plume may be hundreds of feet tall and visible for miles (photo 2). A nighttime event may have a visible flame plume that is well over 100 feet tall (photo 3). Both situations are sure to draw a great amount of attention from the public, the press, and your area emergency response agencies, and the emergency resources required can be quite extensive. Less catastrophic/spectacular incidents are also bound to draw an equal amount of attention and may require the same amount of resources or more. These incidents may include gasoline tankers that are not on fire but are leaking or that have been overfilled, an aboveground or belowground tank that has been overfilled, an overturned tanker, or one involved in a collision.

(2) This I-75 and U.S. 301 tanker crash occurred in 2008. *[Photo courtesy of North River (FL) Fire District.]* **(3)** An I-75 tanker fire that occurred in 1998. *(Photo courtesy of Phil Collier.)* **(4)** St. Johns County tanker, gas station, fuel farm fire in 2011. *[Photo courtesy of Joel Sneed, St. Johns (FL) County Fire Department.]*

This article covers how to mitigate various emergency situations involving an MC 306/406 gasoline tanker, provides helpful "points to ponder," and reviews incidents that have occurred (photo 4). Together, this information will provide emergency responders with an enhanced knowledge that will hopefully result in a safer, more efficient and professional operation and help support the mission of saving lives and property while at the same time keeping yourself and crew members safe.

(1) An MC 306/406 gasoline tanker. *(Photo by author.)*

Throughout this article, the term "gasoline tanker" is used generically, and the tactics, strategies, and incidents are based on the MC 306/406 tanker carrying flammable/combustible liquids such as gasoline, diesel fuel, jet fuel, and alcohol/ethanol. The MC 306/406 tanker trailer may carry other regulated or nonregulated products such as kerosene, biodiesel (vegetable/animal fat oil), poisons, and nonpotable water. Many information sources say food products such as milk may be carried in an MC 306/406 tanker, although I doubt that. Liquid food products are typically carried on the MC 407 tanker trailer, which is totally different from the MC 306/406.

"Location" and "Small"

Generally, two words are very important when dealing with a gasoline tanker incident. The first word is "location"; the second word is "small."

The location of an incident will dictate many things about the incident, whether it is a leak, spill, or fire. This list includes the life hazard to those involved, the general public, and the responders; the type and the quantity of resources required on scene; the potential environmental damage; the disruption of area transportation routes; the physical size of the incident; the potential exposures; and many more factors.

Unfortunately, we cannot control the location of such an incident. It will happen where it happens, and we must be prepared no matter where that may be. It is also possible that your agency, local municipality, county, or even region cannot provide the resources to mitigate a large-scale gasoline tanker incident and that what is going to happen is going to happen. You can mitigate only the end result of such an incident. An example would be a gasoline tanker that overturns and spills thousands of gallons of gasoline that ignites. The burning gasoline runs off into the local river and is carried downstream along the river banks, burning every dock, boat, and house for a half mile. Picture that scenario. It is doubtful that any responding agency could stop such an incident from escalating once it is in motion.

Obviously, fewer resources are needed at the incident scene when the event is small than when it is allowed to grow larger. This "strategy" is usually within an agency's control, but not always.

Take the case in the previous paragraph, and let's go back to the word "location." If that incident had occurred on a bridge over the river and the burning gasoline were spilling directly into the river, chances are that, as stated, not much could have been done to stop it once it was in motion. However, if the same situation had occurred at a location 1,000 feet from the river and the burning gasoline had entered a swale/ditch along the roadway and was flowing to the river, it may have been possible to keep the incident "small" by commandeering a front-end loader or backhoe in the area and stopping the flow with a pile of dirt. Maybe this can even be done with shovels. Both of these approaches have been used many times with success (photo 5). The end result is that you have kept the physical size of the incident "small" and that allowed you to mitigate the incident with fewer resources and less damage, and in less time.

(5) An I-75 tanker crash in Sarasota, Florida, in 2014. *(Photo courtesy of Ed Effron.)*

Points to Ponder

With all that said, here are some points to ponder that can assist you with your decision making during an incident involving a gasoline tanker.

- The specific gravity of these petroleum products is below 1; therefore, these products will float on water.
- These products have a vapor density well above 1; therefore, the vapors will sink.
- These products have a low ignition temperature (about 400°F), depending on the grade and blend.
- The operation temperature of a catalytic converter on a typical vehicle is more than 400°F, providing an ignition source for petroleum vapors.
- Petroleum products such as ethanol and E-85 (85 percent ethanol) gasoline for "flex fuel" vehicles are polar solvents and mix well with water; therefore, normal firefighting foam will not work well when used as a blanket on unignited spilled fuel or as a firefighting agent. Polar solvents necessitate special foam agents and mix ratios.
- Most areas of the country have one fuel terminal, either a coastal port or a pipeline terminal, from where all of the fuel delivered to that area originates. Therefore, a good rule of thumb is that any tanker traveling away from the terminal location will be loaded and any tanker traveling toward the terminal location will be empty. However, never use that rule as a definite conclusion but rather as a guideline until confirmed. For example, the port of Tampa, Florida, supplies more than 50 percent of the fuel to Florida gas stations. The county I live in is south of Tampa. A tanker headed south on I-75 is very likely to be full.
- Depending on the tanker transport company and region of the country, most tankers that leave the loading terminal are full. Most tankers deliver to one location and then return to the terminal to reload or to their company yard. Some tankers leave the terminal to deliver a "split load," meaning they will off-load the fuel at two or more locations. The local companies in the Tampa area drop at one location well over 90 percent of the time. This tells me that a tanker will most likely be completely empty or completely full. Check with your local tanker fleet

companies to learn of their operation.

- Tankers are usually multicompartment (four or five compartments are most common) and often carry a "mixed load," such as three compartments of gasoline and one compartment of diesel.
- U.S. Department of Transportation (DOT) placarding requires that a tanker carrying various regulated products (mixed load) be placarded with whatever product was, or is, in a compartment that has the lowest flash point. For example, a tanker with 6,000 gallons of diesel fuel onboard and an empty compartment that contained gasoline will be marked with the placard for gasoline because the flash point of gasoline is less than that of diesel (Figure 1).
- Storm water drains/systems typically lead to either a retention area/pond, a creek/stream/river, or the bay/ocean. Many areas now have stormwater retention areas under parking lots. Some areas have stormwater pipes that lead to a water treatment facility. Know where the spilled tanker products will be traveling to in your area. They may be on fire or traveling toward an ignition source—location, location!
- Because a gasoline tanker is a nonpressure tank, is constructed of aluminum, and has many openings, there is no chance of a boiling-liquid, expanding-vapor explosion (BLEVE).
- How do you know if a fire involving a tanker or at a gas station is a flammable-vapor or a flammable-liquid fire? By the smoke! Vapor fires lack smoke; liquid fires will emit massive amounts of black smoke.

Figure 1. U.S. DOT Placarding for Gasoline, a Flammable Liquid, and Diesel, a Combustible Liquid

Gasoline:

Most common HazMat in the world
- Flashpoint minus 50 F
- Ignition Temp 445-845 F
- Flammable range 1.2 – 7.6%
- Specific gravity .74
- Vapor density 2.5+
- Boiling point 140 F

Diesel Fuel
- Flashpoint above 100 F
- Ignition Temp 350+ F
- Flammable range 1.3 – 6%
- Specific gravity .80
- Vapor density 4.5
- Boiling point 325+ F

Strategies and Tactics

This section of the article reviews emergency situations involving gasoline tankers and offers additional points to ponder as well as strategies and tactics that will enhance your knowledge for safely and successfully mitigating these dangerous incidents.

The U.S. DOT *Emergency Response Guidebook* offers some great advice under the topics "Resist Rushing In" and "Approach Incident from Upwind and Uphill or Upstream." You should heed this advice. As first responders, we are trained to act in the case of an emergency. With many hazardous materials incidents, other important steps may need to be taken before any actions are initiated.

As with any incident, life hazard is the priority—the life hazards faced by those directly involved, the general public, and the responders. Another high priority is to identify the product involved in the spill, leak, or fire. When dealing with a gasoline tanker, this will most likely involve obtaining the answers to three questions: (1) Is there product onboard? (2) What is the product? (3) How much product is there (photo 6)?

How might we find the answers to these questions? Well, if there is an active leak/spill or a fire involving product from the tanker, the question "Is there product onboard?" is answered. As for the other two questions, let's consider the following points:

- The first choice is, ask the operator/driver. However, the operator may not be on scene or may be unable to answer questions because of injury or death (as was the case in the incident in photo 6).
- View the placard. (You know from the points to ponder above that this information may be subject to the U.S. DOT placarding criteria.)
- Obtain the bill of lading from the cab of the truck if possible. A bill of lading is a legal document between a shipper and the carrier that details the type, quantity, and destination of the product being shipped. However, this document will confirm only what was loaded onto the tanker.
- Call the company that owns the tanker. Most tanker transport companies have a "dispatch" center that should know the answer to all three questions. When an operator delivers fuel, typically an electronic log is updated and sent to dispatch. In most areas, dispatch will also track their tankers with onboard GPS sensors.
- Use a thermal imaging device to view the liquid level in the tanker compartments.

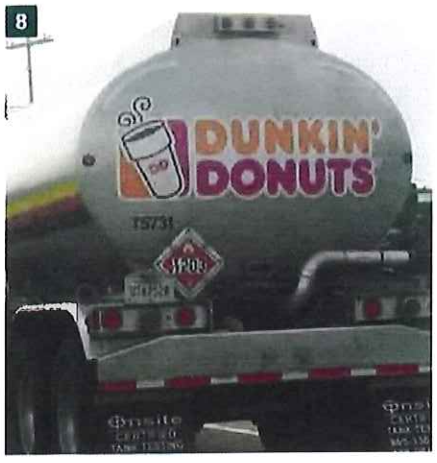
(6) An overturned tanker on U.S. Hwy 2, in Williams County, North Dakota, in 2018. *[Photo courtesy of Williams County (ND) Emergency Management.]*

(7) A tanker rollover on I-75 in Bradenton, Florida, in 2007. *(Photo courtesy of Troy Toman.)*

When a gasoline tanker that is full or substantially full overturns, the tanker cannot be "righted" until it is offloaded. This is mainly because of the weak aluminum construction of the tanker, which may further rupture under the load, which when fully loaded is about 8,500 gallons/60,000 pounds on a single MC 406 tanker trailer. Double-tanker trailers, found mainly on the roads of the western United States, carry even larger loads. When such an incident happens (photo 7), the tanker trailer needs to be stabilized and grounded/bonded. An empty tanker needs to be brought in, and either a private recovery company or the local hazmat team will need to drill a large hole (three- to four-inch) in each compartment that contains product and pump the product out of the overturned tanker. This is a high-hazard operation that requires special training, tools, and equipment.

The Black Dots

Many responders have seen the black dots but do not know what their significance is (photo 8). Any compartment longer than four feet will have a baffle to control the movement of liquid inside a tank. The black dots in photo 8 mean this tanker has holes in the baffles at the 3 and 6 o'clock positions. This allows liquid to flow to both sides of the baffle when the tanker is on its side. Therefore, such a compartment will need to be drilled only once. Without the 3 and 9 o'clock holes, such a compartment would need to be drilled and pumped on each side of the baffle to remove all the product.



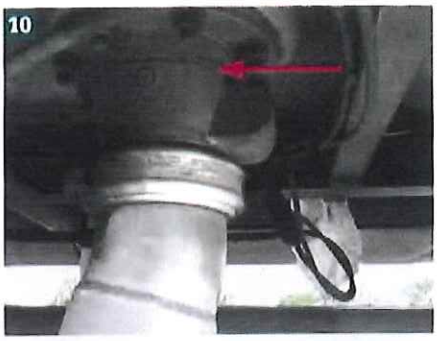
(8). Note the black dots at the 3 and 9 o'clock positions. *(Photo by author.)*

(9). The emergency valve, which closes all the belly valves on the trailer. *(Photo by author.)*

A fairly common emergency situation involving a gasoline tanker will involve some type of fire under the tanker trailer. The common causes include a smaller vehicle underriding the tanker, vapors released from an underground tank being filled, an overfill of an underground or aboveground tank, a brake fire that ignites the tires, a tire blowout that causes a tire fire, or other situations that may cause a fire under the tanker. Several points will help you understand such emergencies and how to handle some of them. In all cases, at the top of the priority list is to get to the front left of the tanker and activate the emergency valve, which closes all the belly valves on the trailer (photo 9).

- If a smaller vehicle underrides a tanker, the belly valve at the bottom of each compartment is designed to shear off, leaving the valve in place (photos 10 and 11). Know that although the compartment belly valves may stay in place, the damaged piping may contain product.
- The assembly that opens and closes the belly valve, be it cable operated or air operated (photos 10 and 11), will have a heat-sensitive component that will melt at approximately 250°F and close all the belly valves during a fire situation under the tanker.

During an incident in north Florida (photo 12), a brake fire extended to the rear axle tires of this tanker. When such an incident occurs, the emergency valve should be activated and the fire aggressively attacked with class B fire extinguishers (preferred) or a hoseline. Photo 12 shows what will be the result if the compartment is empty. When the fire breaches the aluminum wall (1,100°F-1,200°F), the vapors will flash and quickly burn. Note the baffle with holes at the 3 and 9 o'clock positions. If the compartment above the fire contains product, the product will not allow the fire to breach the aluminum below the liquid level. The aluminum above the liquid (the vapor space) may burn through and allow the vapor on top of the product to burn.



(10) Note the shear point of this cable-operated belly valve housing (arrow). *(Photo by author.)*
(11) Note the shear point of this air-operated belly valve housing (arrow). *(Photo by author.)*

During an incident like the one depicted in photo 12, an initial strategy may be to "save" the tractor truck (exposure) attached to the tanker trailer by lowering the legs/landing gear of the trailer, releasing the "king pin," and letting the operator drive the tractor truck away. If it is certain that the tanker trailer is empty, this is a good move. However, if the rest of the trailer, specifically the front compartment (usually the largest compartment on the trailer), has product onboard, the result may be that the landing gear, because it is not designed to support a loaded tanker trailer, may puncture the compartment above, spilling the contents catastrophically. *Beware*!

(12) Baldwin, Florida, tanker fire, 2018. *(Photo courtesy of John Cooper.)*

A Catastrophic Scenario

Below is a discussion of a catastrophic event that is much too common around the country: A fully loaded tanker trailer crashes and burns, endangering the lives of those directly involved, the motoring public, the residents in the area, and the first responders (photos 13-15).

Considerations. Location is the key. As mentioned previously, we have no control over that. *Note*: Most areas of the country do not have enough foam concentrate to extinguish a burning fully loaded tanker and to maintain the active foam blanket needed for several hours while recovery workers pump off the hot fuel.

Strategy. Keep it *small*. That may be easier said than done, but having the "keep it small" mindset will help tremendously if you are able to accomplish that objective.

To burn or not to burn? Again, location will dictate that. If runoff is controlled and there are no exposures or the exposures have already been lost or severely damaged, like the overpass in this incident (photo 15), let it burn. Do not become impatient several hours into the incident and extinguish the fuel. Let it burn all the way down. The product in the compartments will burn down, and the aluminum shell will melt at the liquid level as it burns down. Burn time will be approximately one hour per foot of fuel.

Are there cases when you should extinguish such a fire? Sure. Again, the location will dictate that. In cases where conditions are less than catastrophic, the incident commander will make the decision of whether to extinguish or let the tanker burn.

(13) Fully loaded tanker crash and fire on I-75/U.S. 301 in Ellenton, Florida, in 2008. Resist the urge to apply water to such incidents, as it will probably have a negative effect on the incident. *[Photo courtesy of North River (FL) Fire District.]*

In 1982, there was a major gasoline tanker fire in downtown Tampa in front of the multistory occupied federal courthouse. Because of this location, the fire, rightfully so, was extinguished. If your action plan calls for an airport crash truck to extinguish a tanker trailer fire, be advised that this may be a difficult resource to obtain unless it is preplanned. A commercial airport will typically need to shut down if the crash fire rescue equipment and crew leave the property, and that probably is not going to be authorized for your tanker fire.

(14) Tanker crash and fire on I-75/U.S. 301 in Ellenton, Florida, in 2008. During this fire, the spilled fuel was allowed to completely burn itself out. *[Photos 14 and 15 courtesy of North River (FL) Fire District.]* (15) Tanker crash and fire on I-75/U.S. 301 in Ellenton, Florida, in 2008. Note the massive amount of concrete spalling. This overpass is a total loss and the months it took to replace it caused a major transportation crisis in the region. However, no amount of resources could have saved this bridge.

When such situations occur, the operation to remove the product from the now open, burned-away compartments is extremely difficult and hazardous. That is the main reason major tanker trailer fire incidents in an open location without exposures should be allowed to burn. Also, be aware that if such an incident is allowed to burn itself out, the public and the press will want to know why. Know your strategy and tactics, be confident in your knowledge and experience, and be prepared to provide valid reasons, and you will be successful in your decision making and the mitigation of these tanker trailer-related incidents.

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