INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

COMMUNICATIONS FOR EMERGENCY OPERATIONS

April 1, 2026

INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

RADIO SUPERVISOR, JOSEPH BROOKS, LOCAL 718

PRINCIPAL OPERATOR, RALPH DOWLING, LOCAL 718

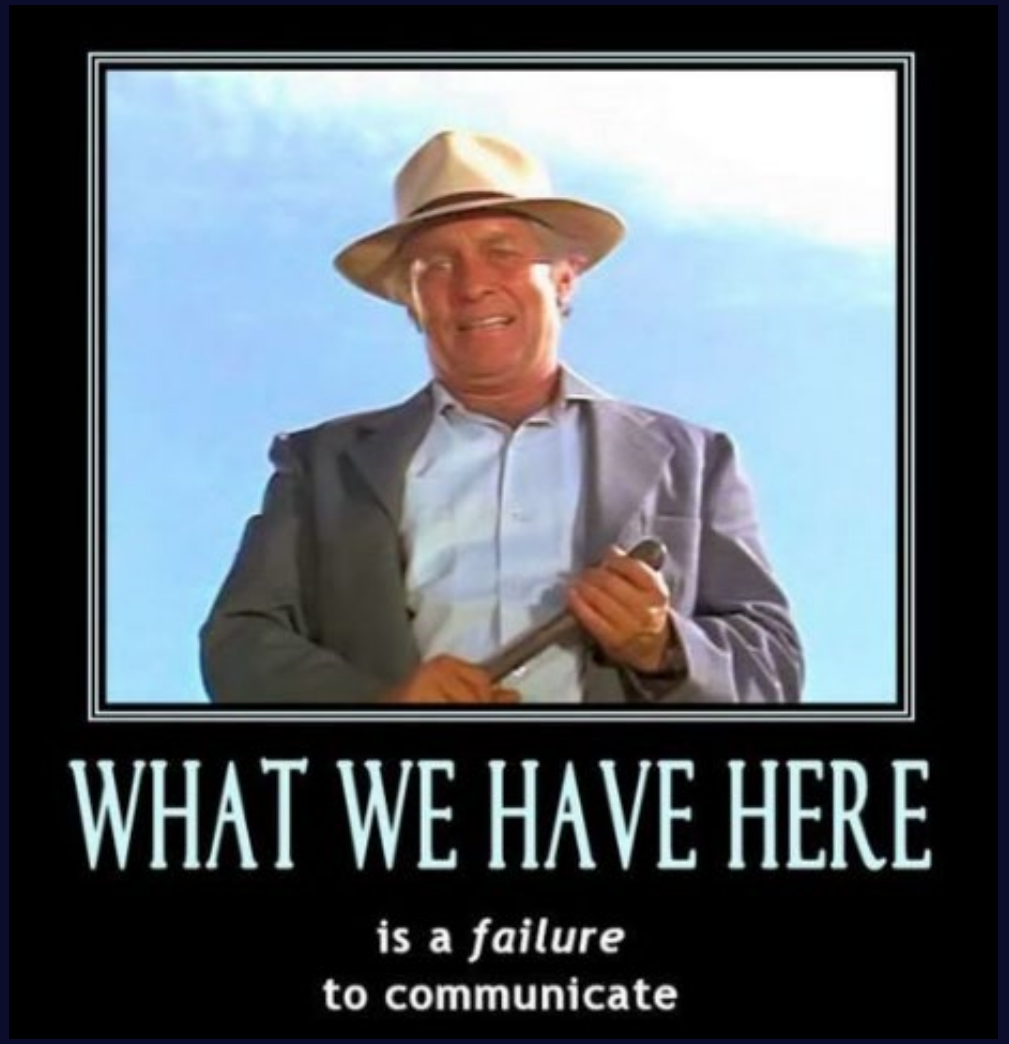
April 1, 2026

INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

National Institute for Occupational Safety and Health

NIOSH®

Fire Fighter Fatality Investigations



CONTRIBUTING FACTORS IN LINE OF DUTY DEATHS

F2016-07	Ineffective fire ground **communications**
F2020-01	Breakdown in **communication** components of the incident command system
F2020-02	Inadequate fire ground **communications**
F2020-02	Portable **radio** operational issues
F2019-09	Lack of fire fighter survival skills
F2019-18	Lack of incident management and command safety
F2020-10	Ineffective Mayday procedures and survival techniques
F2020-10	Radio/**communication** difficulties
F2018-13	Inadequate fire ground **communications**
F2018-13	Member operating on the wrong **radio** channel
F2019-02	Inadequate fire ground **communications**
F2018-07	Radio **communications** issues due to incident location
F2016-18	Ineffective fire ground **communications**

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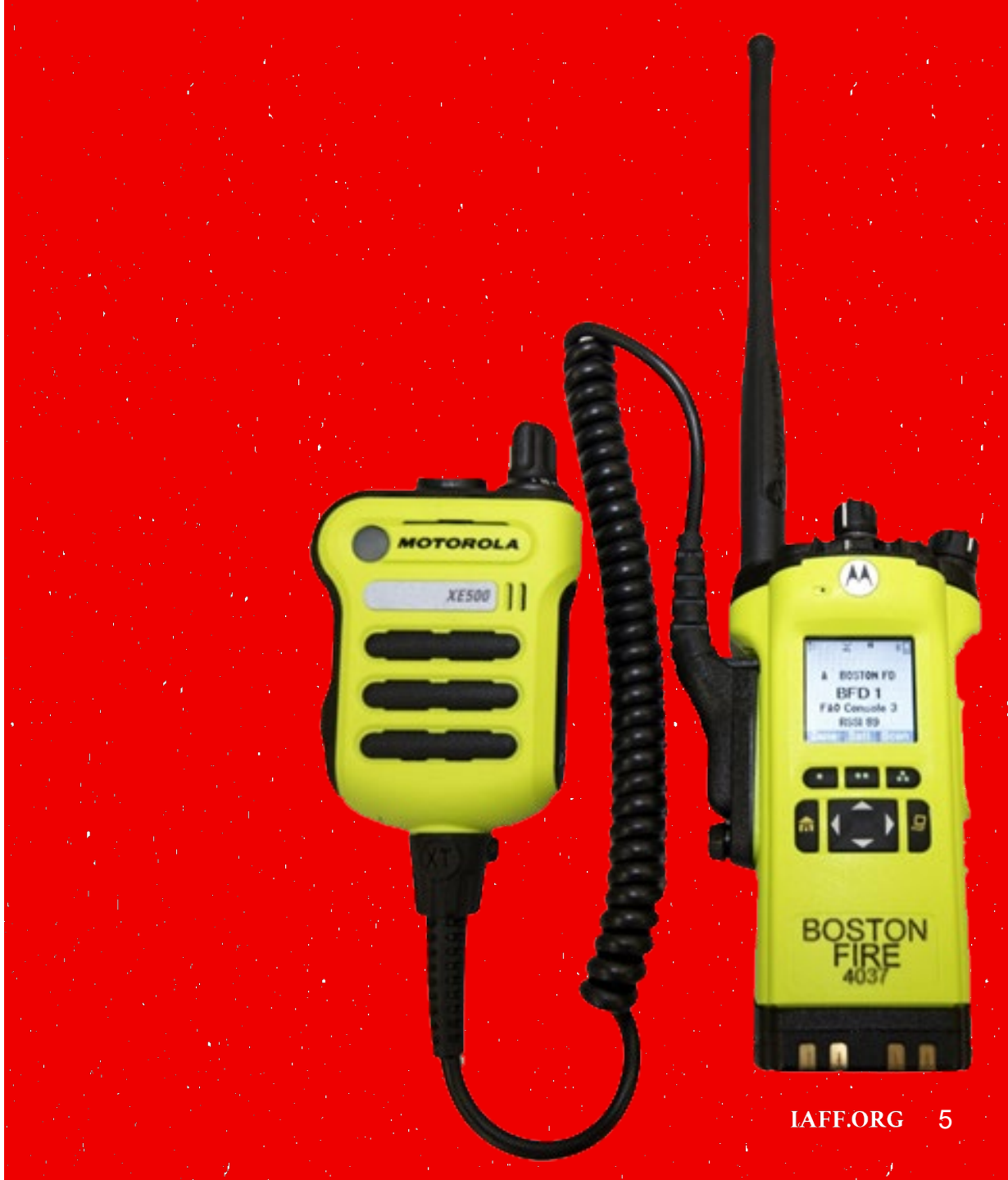
FIRE FIGHTER FATALITY INVESTIGATIONS

F2016-07 Ineffective fire ground communications

Fire fighter dies after running out of air and becoming disoriented in retail store in strip mall fire.

“Fire departments should ensure that crew integrity is properly maintained by sight, voice, or radio contact when operating in an immediately-dangerous-to-life-or-health (IDLH) atmosphere”



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FIRE FIGHTER FATALITY INVESTIGATIONS

F2016-07 Failure to call a Mayday in a timely manner

Fire fighter dies after running out of air and becoming disoriented in retail store in strip mall fire.

“Any delay in calling a Mayday reduces the chance of survival and increases the risk to other fire fighters trying to rescue the downed fire fighter”

REQUIREMENTS FOR PERFORMING IAFF FIRE GROUND SURVIVAL SKILLS

The IAFF Fire Ground Survival (FGS) program includes instructional materials to train fire fighters how to perform skills necessary to survive a MAYDAY. The training delivered in this program puts fire fighters in simulated MAYDAY events that duplicate the stressors of survival on the fire ground. Many of the skills require fire fighters to perform at or near maximal efforts for extended periods of time. To ensure the highest degree of safety for fire fighters during FGS training, fire departments should, at a minimum, provide the following training facilities and equipment, as well as ensure FGS instructors follow the following procedures.

IAFF FGS Train the Trainer course students must understand the nature of the activities to be performed while involved in field training activities, known as Fire Ground Survival Training, requires mental judgment and a high degree of physical fitness, agility, and dexterity, and that this may include strenuous exercise in varying environmental conditions, which requires physical fitness, strength, and stamina. Field training involves the risk of injury or death, and students voluntarily assume these risks.

FIRE DEPARTMENT INSTRUCTIONS

- Adhere to FGS use requirements as per licensing agreement
- All fire department instructors teaching the IAFF FGS program must have successfully completed the IAFF FGS Train-the-Trainer program
- Students participating in FGS hands-on training exercises must have successfully completed the online FGS Awareness training program
- Ensure fire fighters are appropriately trained in the use of all firefighting personal protective equipment (PPE) and be able to perform basic firefighting skills
- Ensure fire fighters are medically and physically capable of performing at or near maximal effort for extended periods of time
- Provide immediate access to BLS and ALS care (standby preferred)
- Provide a dedicated medical/rehabilitation area with proper hydration, cooling/warming measures, and ability to provide emergency medical attention by licensed/certified personnel

IAFF FGS MASTER INSTRUCTORS WILL PERFORM THE FOLLOWING TASKS DURING THE FGS TRAIN-THE-TRAINER PROGRAM. THESE WILL BE THE RESPONSIBILITY OF THE CERTIFIED FIRE DEPARTMENT INSTRUCTORS WHEN THEY DELIVER THE FGS OPERATIONS COURSE TO MEMBERS OF THEIR RESPECTIVE FIRE DEPARTMENT(S):

- Ensure ropes and equipment used for safety belay system within upper floor egress skills are, at minimum, consistent with NFPA 2500 Standards for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services

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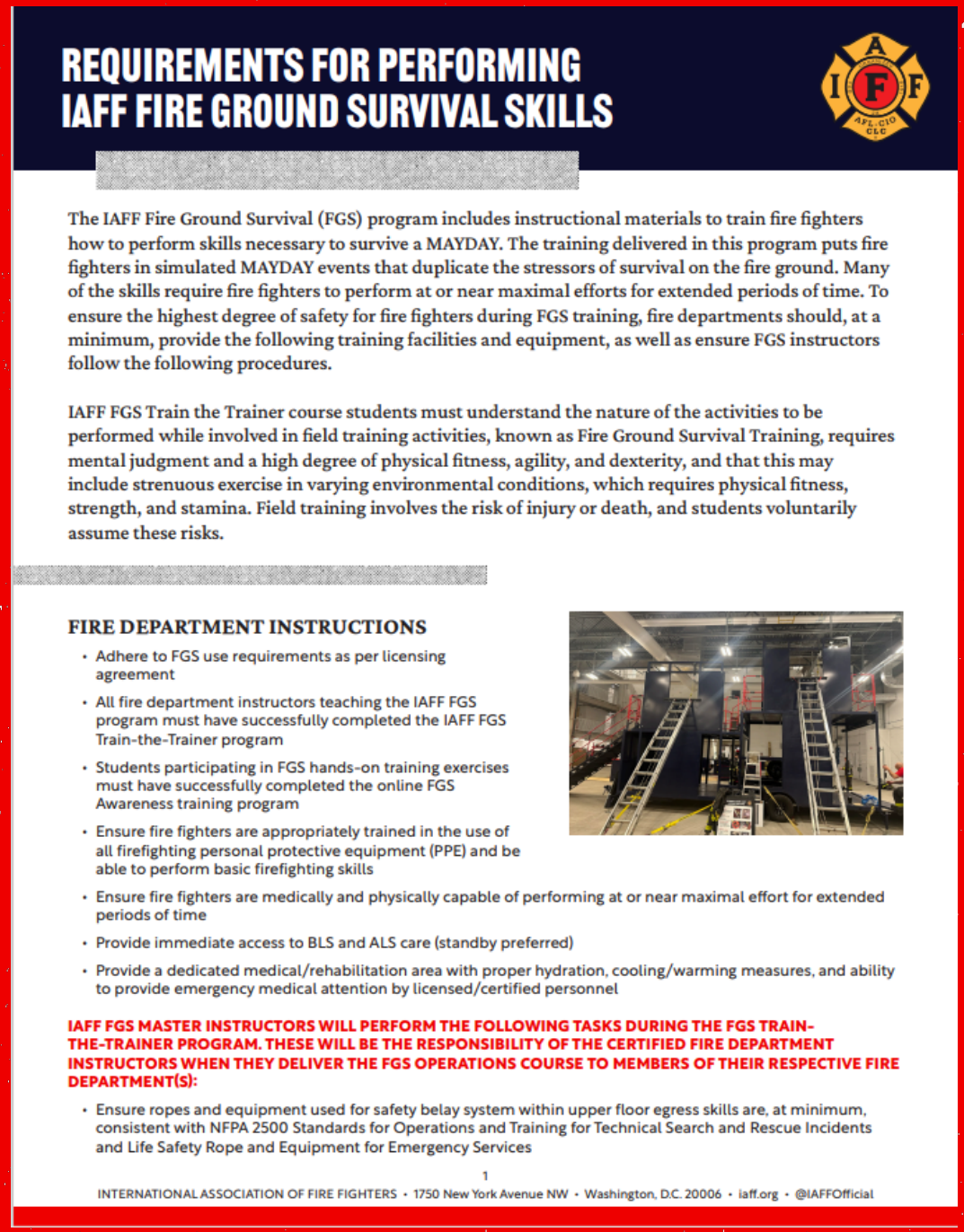
FIRE FIGHTER FATALITY INVESTIGATIONS

F2020-02 Inadequate fire ground communications

Fire fighter dies after falling into the basement due to floor collapse at a modular home structure fire.

"Fire departments should ensure that all fire fighters and fire officers are trained for Mayday operations."



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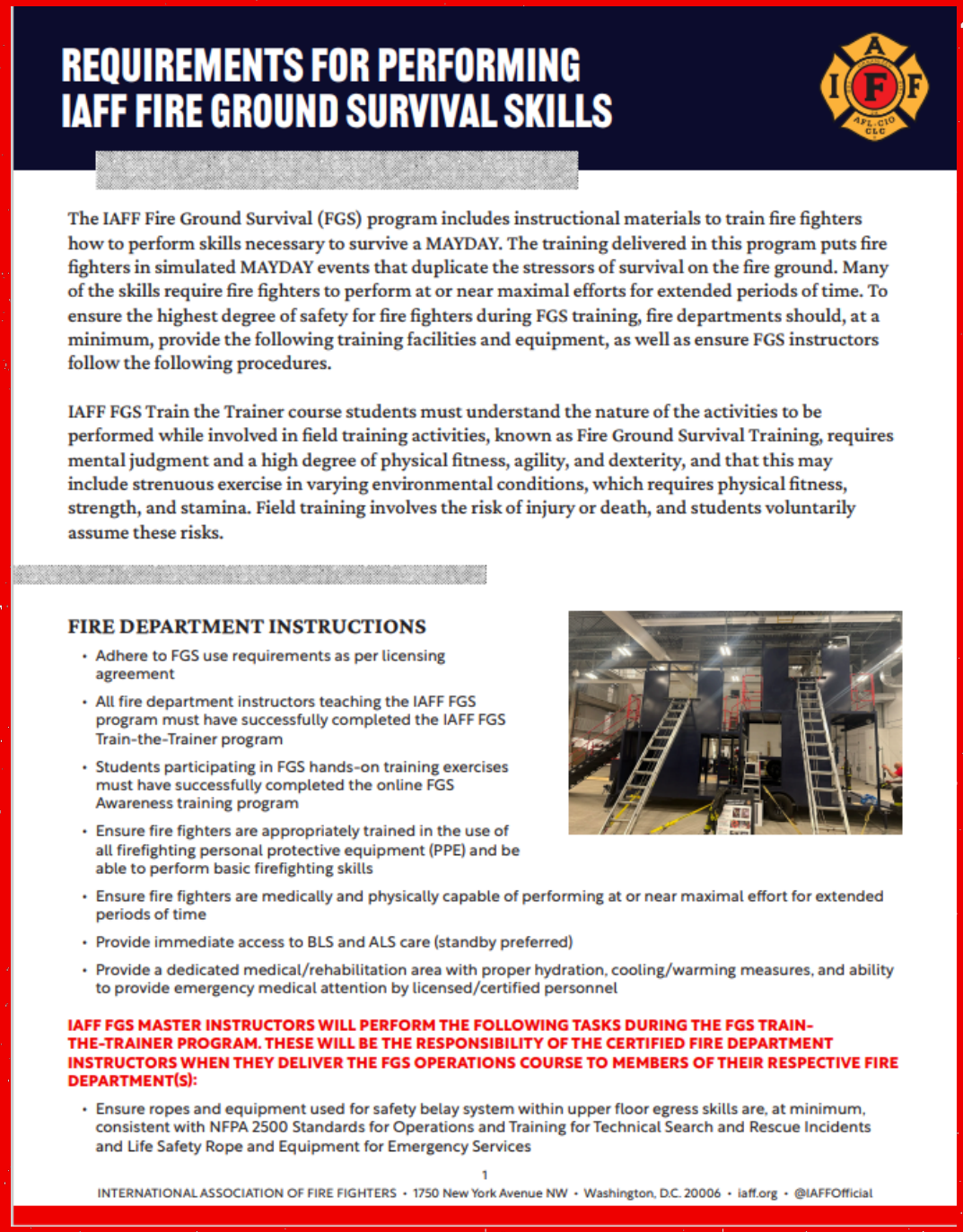
FIRE FIGHTER FATALITY INVESTIGATIONS

F2019-09 Lack of fire fighter survival skills

Fire fighter becomes disorientated and dies following stairway collapse in two-story vacant structure fire.

"Fire departments should ensure Mayday training programs are developed and implemented so fire fighters are prepared to call a Mayday."



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FIRE FIGHTER FATALITY INVESTIGATIONS

F2020-10 Ineffective Mayday procedures and survival techniques

Captain and fire fighter die after running out of air during a search in a public library.

"Fire departments should ensure fire fighters are trained in Mayday procedures and survival techniques."

INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

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FIRE FIGHTER FATALITY INVESTIGATIONS

F2016-07 Ineffective fire ground communications

Fire fighter dies after running out of air and becoming disoriented in retail store in strip mall fire.

"Fire departments should train company officers and fire fighters to report interior conditions to the IC as soon as possible and on a regular basis"

"Fire fighters and officers should ensure critical benchmarks, such as progress or lack of progress, are communicated to the IC and that positive communication disciplines are used."

A Portable radio's primary role is to "Paint the Picture" for Command.

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FIRE FIGHTER FATALITY INVESTIGATIONS

F2019-18 Lack of incident management and command safety

Lieutenant dies and four fire fighters injured at a 3-story multi-family residential occupancy.

Lack of incident management and command safety

"Fire departments should ensure that once Command is established at an incident, the incident commander maintains control of situation status, resource status, fireground communications, and ensures the completion of the tactical objectives"

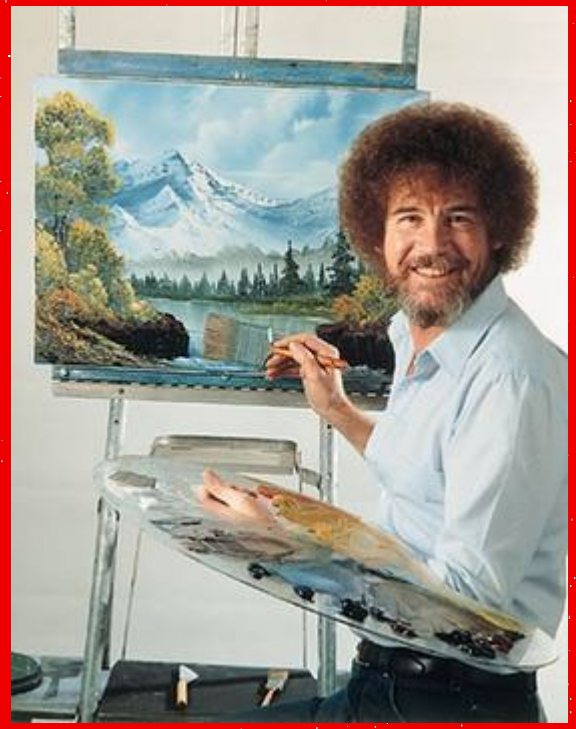
FIRE FIGHTER FATALITY INVESTIGATIONS

F2019-02 Inadequate fire ground communications

Captain died after crew was trapped during a search for a civilian in a 3rd floor apartment fire.

"Fire departments should ensure fire fighters communicate critical incident benchmarks to incident commanders throughout the incident."

"The overall outcome of the incident can be traced back to the quality of the Radio Communications among the Participants."



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FIRE FIGHTER FATALITY INVESTIGATIONS

F2020-01 Breakdown in communication components of the department's incident command system

Fire fighter-EMT dies after falling from the roof of a five-story commercial and residential condominium complex.

"Fire departments should ensure all fire fighters are trained in situational awareness and personal safety, particularly during adverse environmental conditions"

To prevent miscommunication, NFPA 1561 (6.2.2) requires communications to be clear and concise.

After the messenger transmits, the receiver acknowledges and repeats the basic content of the message.

Then the messenger confirms or corrects the repeated message.

Do not allow the receiver of a message to simply reply with "copy," or 'copy that."

FIRE FIGHTER FATALITY INVESTIGATIONS

F2020-02 Inadequate fire ground communications

Fire fighter dies after falling into the basement due to floor collapse at a modular home structure fire.

"Fire departments should ensure all members and dispatchers are trained on the safety features of their portable radio, particularly the features useful during a Mayday."

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FIRE FIGHTER FATALITY INVESTIGATIONS

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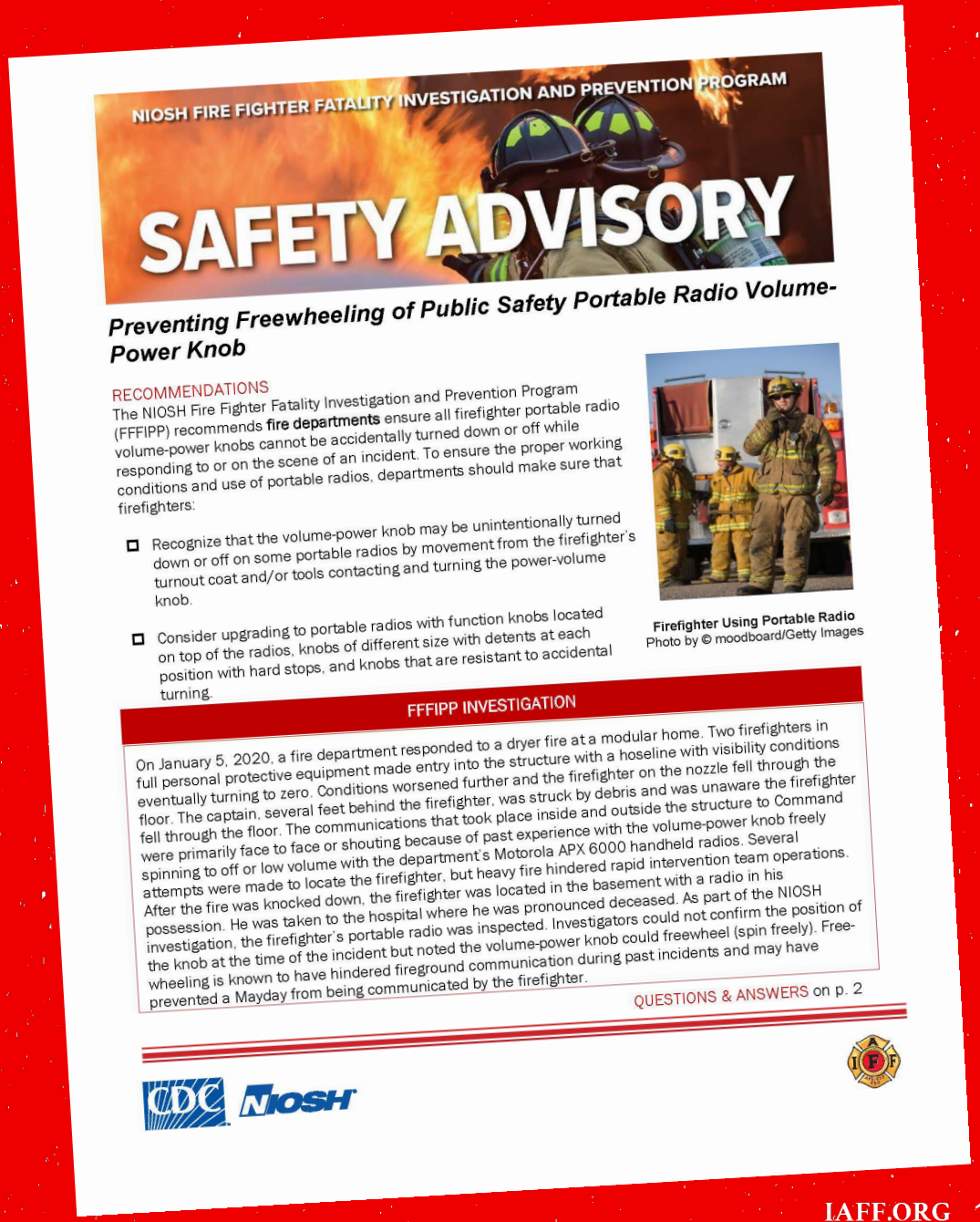
FIRE FIGHTER FATALITY INVESTIGATIONS

F2020-02 Portable radio operational issues

Fire fighter dies after falling into the basement due to floor collapse at a modular home structure fire.

"Fire departments should ensure all fire fighter portable radio volume-power knobs cannot be accidentally turned down or off when in use."



NIOSH FIRE FIGHTER FATALITY INVESTIGATION AND PREVENTION PROGRAM

SAFETY ADVISORY

Preventing Freewheeling of Public Safety Portable Radio Volume-Power Knob

RECOMMENDATIONS

The NIOSH Fire Fighter Fatality Investigation and Prevention Program (FFFIPP) recommends **fire departments** ensure all firefighter portable radio volume-power knobs cannot be accidentally turned down or off while responding to or on the scene of an incident. To ensure the proper working conditions and use of portable radios, departments should make sure that firefighters:

- Recognize that the volume-power knob may be unintentionally turned down or off on some portable radios by movement from the firefighter's turnout coat and/or tools contacting and turning the power-volume knob.
- Consider upgrading to portable radios with function knobs located on top of the radios, knobs of different size with detents at each position with hard stops, and knobs that are resistant to accidental turning.

Firefighter Using Portable Radio
Photo by © moodboard/Getty Images

FFFIPP INVESTIGATION

On January 5, 2020, a fire department responded to a dryer fire at a modular home. Two firefighters in full personal protective equipment made entry into the structure with a hoseline with visibility conditions eventually turning to zero. Conditions worsened further and the firefighter on the nozzle fell through the floor. The captain, several feet behind the firefighter, was struck by debris and was unaware the firefighter fell through the floor. The communications that took place inside and outside the structure to Command were primarily face to face or shouting because of past experience with the volume-power knob freely spinning to off or low volume with the department's Motorola APX 6000 handheld radios. Several attempts were made to locate the firefighter, but heavy fire hindered rapid intervention team operations. After the fire was knocked down, the firefighter was located in the basement with a radio in his possession. He was taken to the hospital where he was pronounced deceased. As part of the NIOSH investigation, the firefighter's portable radio was inspected. Investigators could not confirm the position of the knob at the time of the incident but noted the volume-power knob could freewheel (spin freely). Free-wheeling is known to have hindered fireground communication during past incidents and may have prevented a Mayday from being communicated by the firefighter.

QUESTIONS & ANSWERS on p. 2

CDC NIOSH

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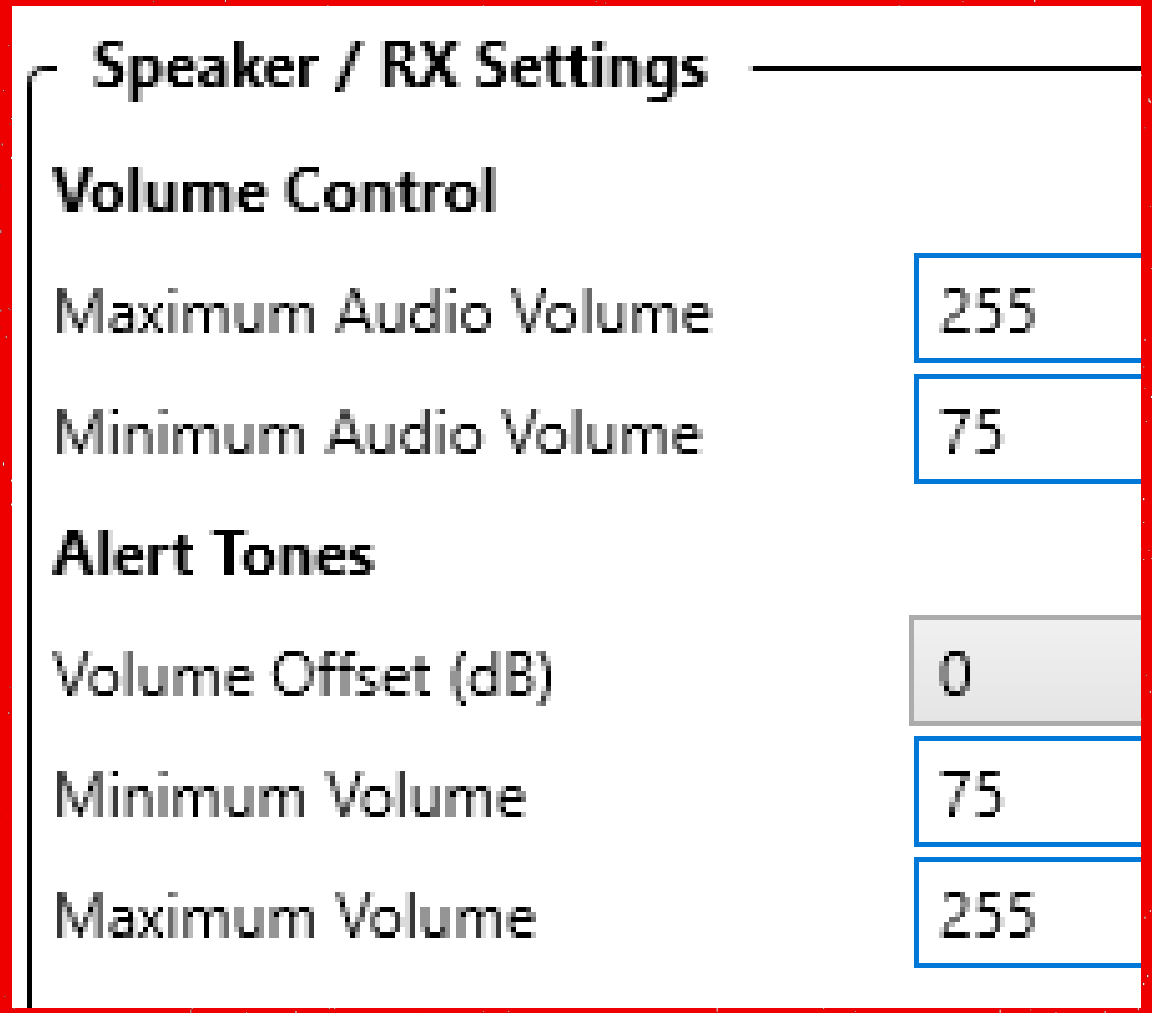
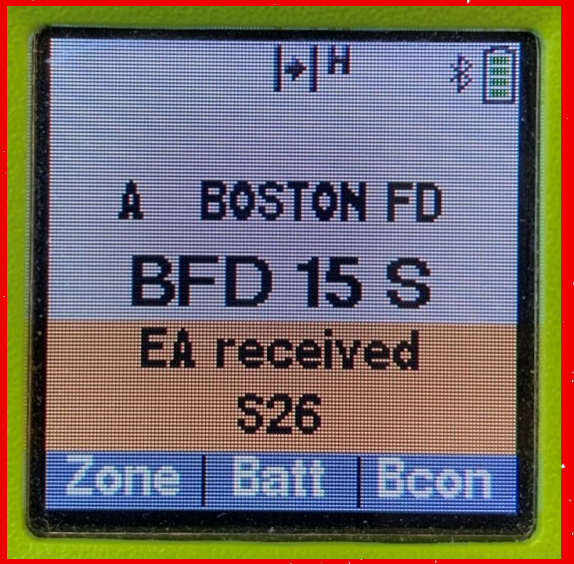


FIRE FIGHTER FATALITY INVESTIGATIONS

F2020-10 Radio/communication difficulties

Captain and fire fighter die after running out of air during a search in a public library.

“Fire departments should ensure all fire fighters are trained on radio discipline and proper use, including using the emergency alert button (EAB) on their portable radio.”



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FIRE FIGHTER FATALITY INVESTIGATIONS

F2018-13 Member operating on the wrong radio channel

Fire fighter dies after falling through a floor at a large area residential structure fire.

"Fire departments should have a procedure to ensure all members operating in the hazard zone have their radios on the designated radio channel."

Portable radios should utilize the Channel Announcement feature.

National Institute for Occupational Safety and Health NIOSH®

FIRE FIGHTER FATALITY INVESTIGATIONS

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Fire fighter dies after falling through a floor at a large area residential structure fire.

"Fire departments should have a procedure to ensure all members operating in the hazard zone have their radios on the designated radio channel."

Radio channels should be assigned at the time of dispatch.

Radio channels should not be changed unless necessary.

All hazard zone ops and Mayday ops should remain on the same channel when a Mayday has been declared.

When a radio channel is assigned, the company officer must ensure that all members are on the correct channel.

Avoid using radios in the scan mode when assigned to an incident.

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FIRE FIGHTER FATALITY INVESTIGATIONS

F2018-07 Radio communications issues due to incident location

One fire fighter dies, and one fire fighter burned during fire fighting operations at a grass fire.

“Fire departments that operate Type V or Type VI Wildland Apparatus should have radio or intercom communications between the driver/operator and fire fighters.”

“Fire fighters operating from the side step position on a wildland engine are exposed to the elements and surrounding noise from the operation of the vehicle’s fire pump, apparatus engine and other equipment that may be operating.”

“Communication between the fire fighters and driver/operator is vital for safe operation of the apparatus as well as the safety of all members riding on the apparatus.”

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FIRE FIGHTER FATALITY INVESTIGATIONS

F2018-13 Inadequate fire ground communications

Fire fighter dies after falling through a floor at a large area residential structure fire.

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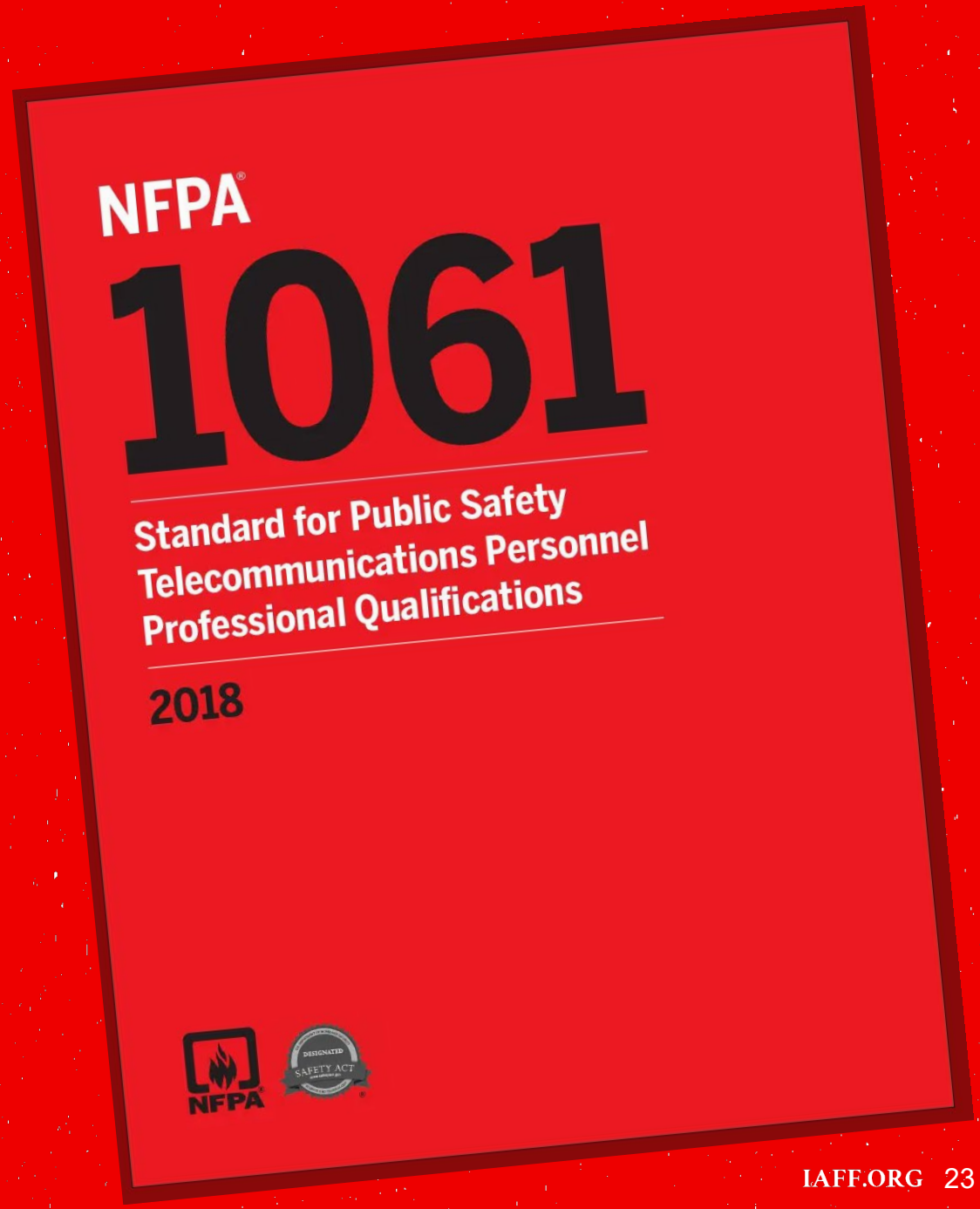


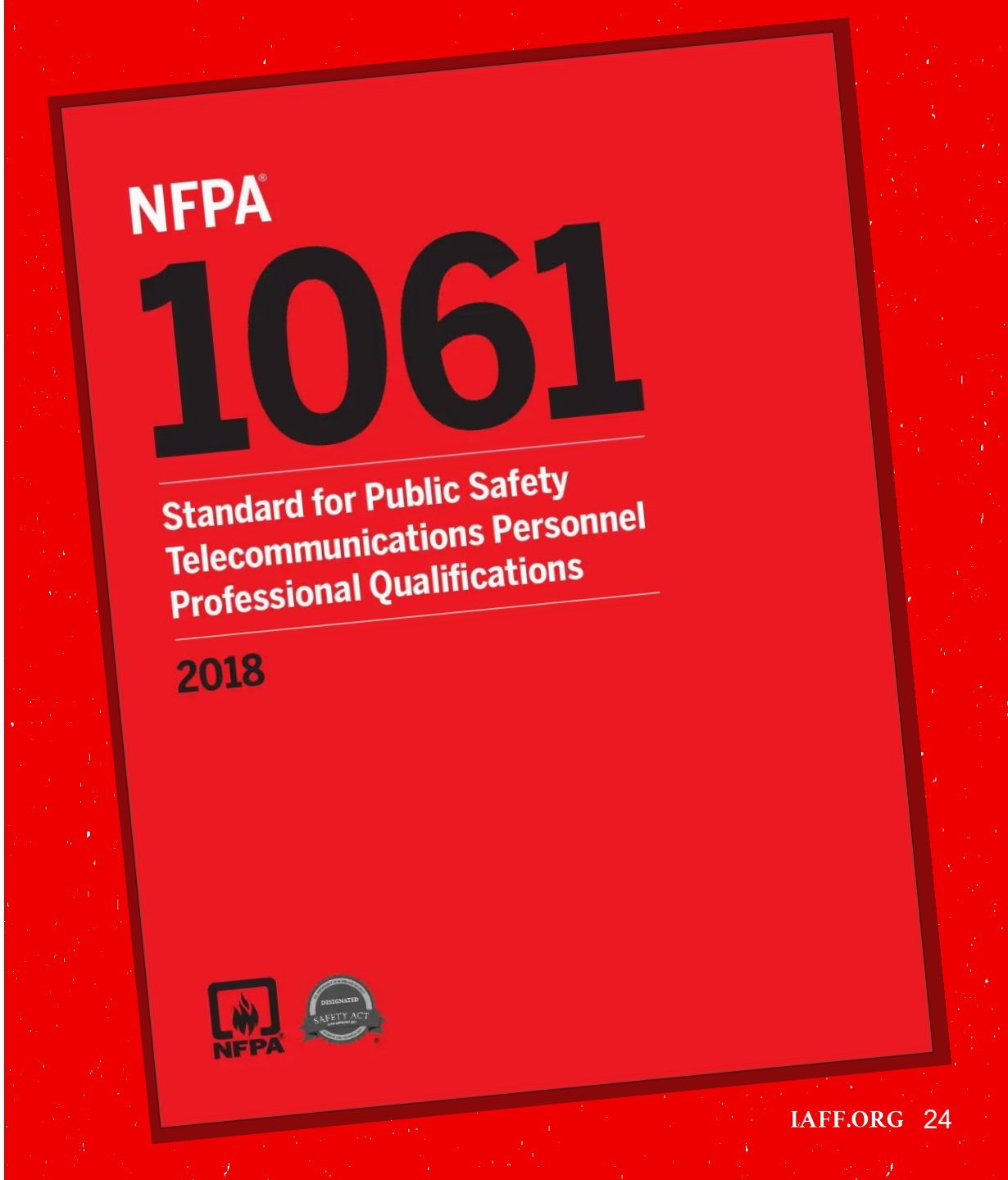
FIRE FIGHTER FATALITY INVESTIGATIONS

F2016-18 Ineffective fire ground communications

Arson fire kills three fire fighters and injures four fire fighters following a floor collapse in a row house.

“Fire departments should ensure that a communication SOP is in place for dispatchers to support fire ground operations and the IC.”

“Effective fire ground radio communication is an important tool to ensure fire ground command and control as well as helping to enhance fire fighter safety and health.”



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FIRE FIGHTER FATALITY INVESTIGATIONS

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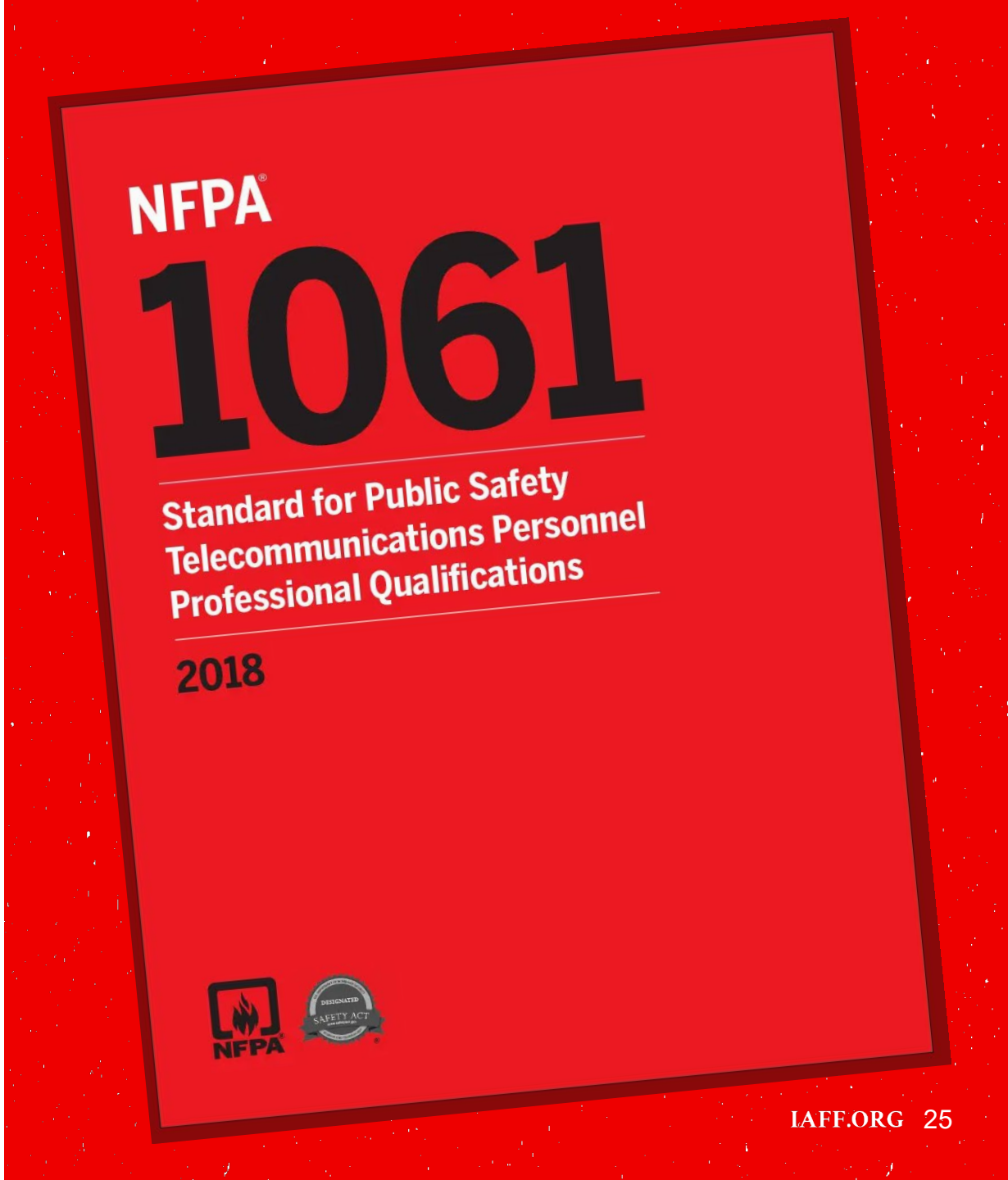
Arson fire kills three fire fighters and injures four fire fighters following a floor collapse in a row house.

"The radio system must be dependable, consistent, and functional to ensure that effective communications are maintained, especially during emergency incidents."

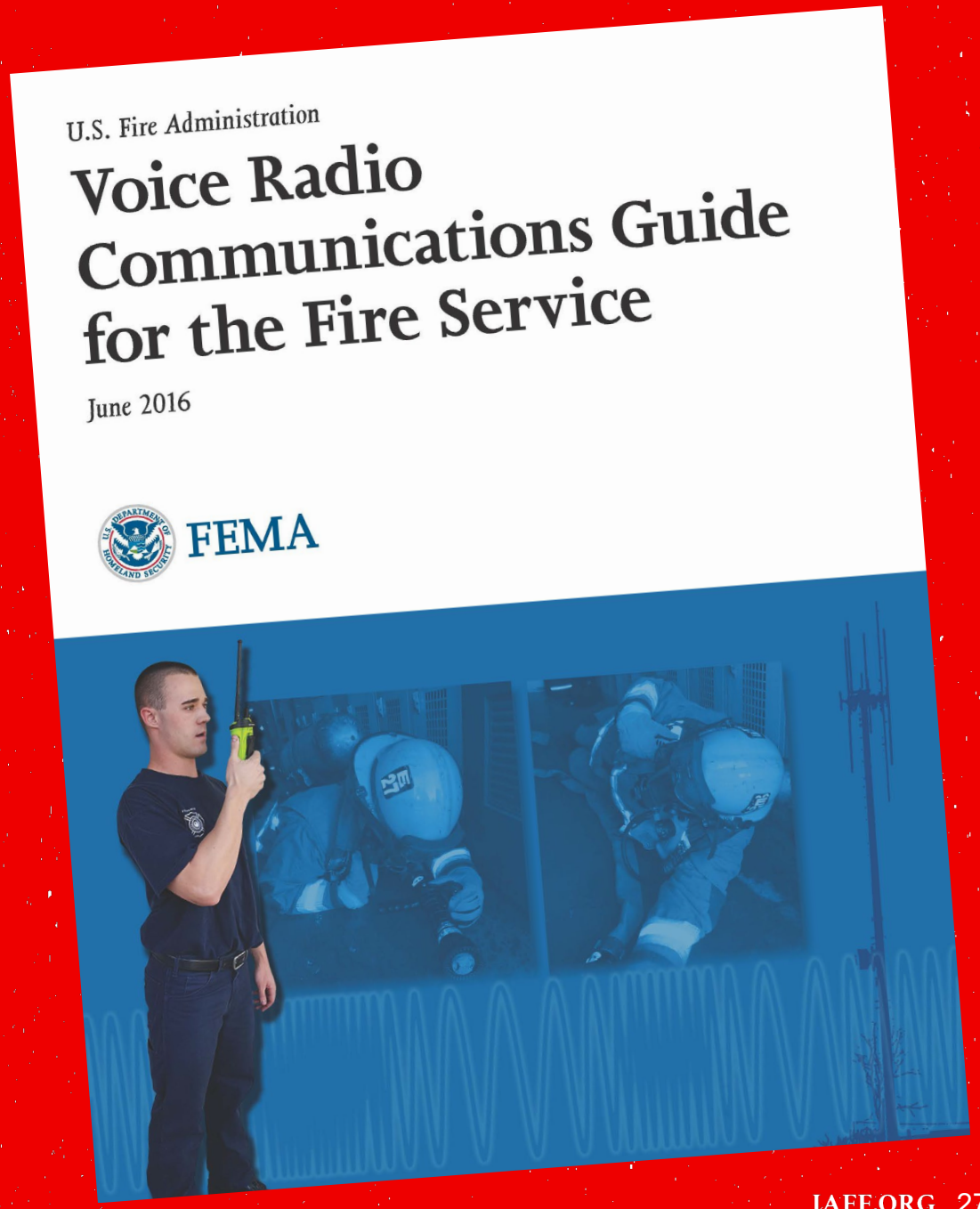
"Fire departments should have a "Communications" SOP that outlines the communication procedures for fire ground operations."



CARE OF THE PORTABLE RADIO

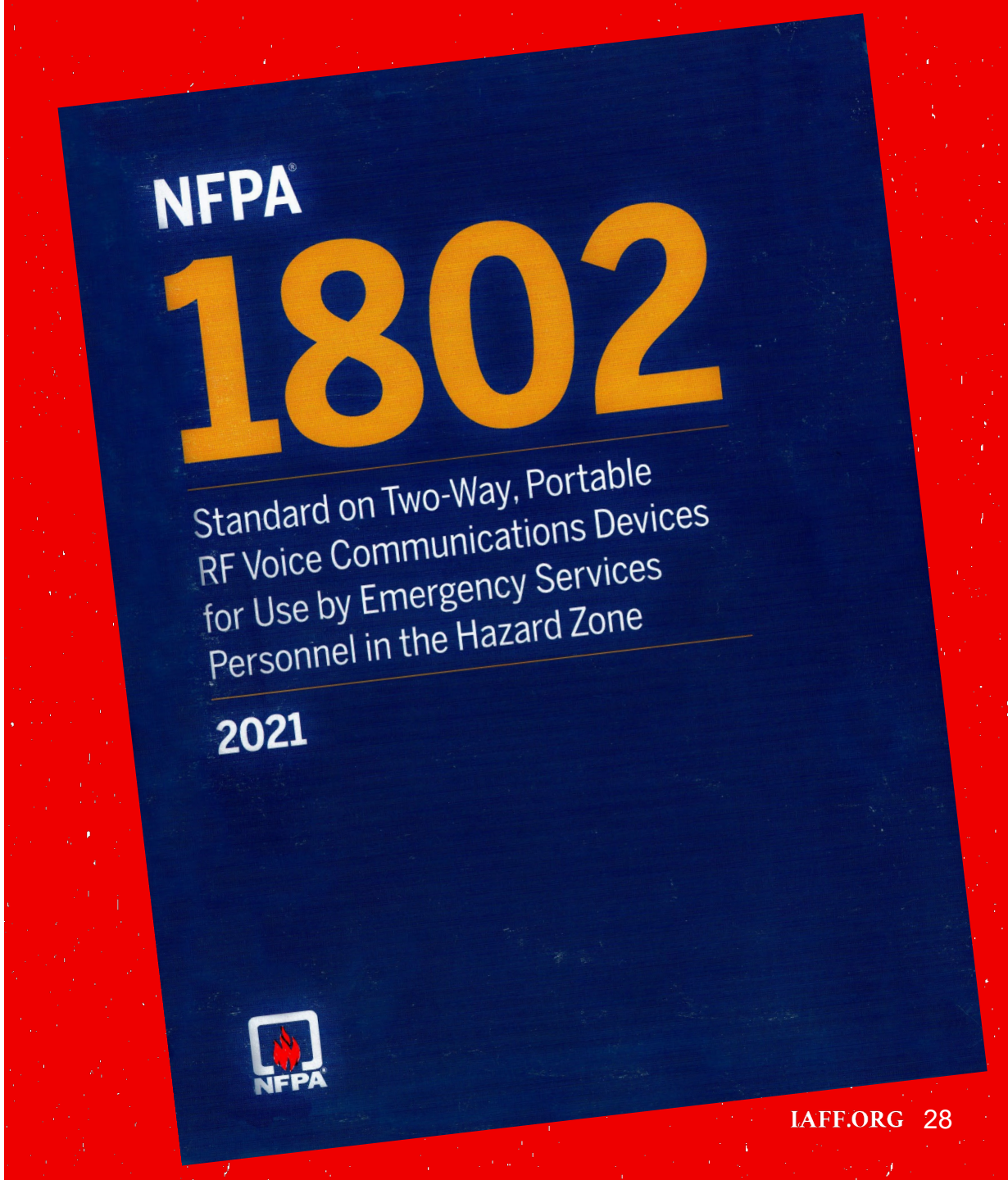
U.S. FIRE ADMINISTRATION

"The life safety of fire fighters and citizens depends on reliable, functional communication tools that work in the harshest and most hostile of environments."



NATIONAL FIRE PROTECTION ASSOCIATION

A new standard on the design, performance, testing, and certification of two-way, portable land mobile radios for use by emergency services personnel.



MANUFACTURER'S NOTIFICATION

When software or hardware defects are often discovered in a product after it reaches the market.

Manufacturers will publish instructions on how to deal with the defect.

MOTOROLA SOLUTIONS

DOCUMENT NUMBER:	MTN-0098-24
ISSUE DATE:	2024-07
EXPIRY DATE:	2024-12

Motorola Solutions Technical Notification (MTN)

Title
XVE500 UL Div2 RSM replacement - product may exhibit intermittent audio disconnection during transmission

Technology
Energy & Accessories used with ASTRO Devices (APX 8000 XE & APX NEXT XE)

Severity Recommendation
High/Safety - Perform Immediately

Symptoms
In rare cases, over time, the use of the XVE500 UL Div2 RSM PTT could cause intermittent audio disconnection during transmission. Someone using an affected device could knowingly or unknowingly transmit an incomplete audio communication. As a result, the recipient of the communication could experience intermittent audio reception. The issue could be more evident to the sender on a trunked system because the talk permit tone may indicate an unexpected interruption of the transmit communication. It has been determined that the root cause is a degradation of a hardware component caused by repeated use.

Models Affected
PMMN4132A, PMMN4132ABLK, PMMN4137A and PMMN4137ABLK

When To Apply
Perform Immediately

Workaround/Recovery
No workaround is currently available.
If you experience this issue, remove any affected XVE500 UL Div2 RSMs from service.

Resolution And Repair Procedure
Motorola Solutions will replace all XVE500 UL Div2 RSMs at no cost with their respective XVE500 UL Div1 RSM models as described below. Our customer care team is proactively contacting customers to schedule RSM replacements. Customers can also contact us at 1-800-MSI-HELP and request Order Management when prompted. When ordering replacements, reference MTN-0098-24.

IAFF SAFETY ADVISORY

When IAFF members discover a safety issue, the IAFF Safety Committee will investigate and if needed, will publish a Safety Advisory.

IAFF SAFETY ADVISORY

DEFECTIVE REMOTE SPEAKER MICROPHONES ON MOTOROLA APXNEXT RADIOS • SEPTEMBER 2024

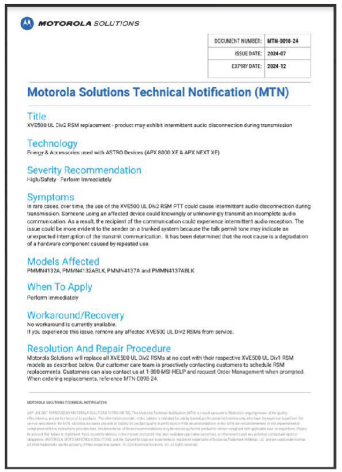
The IAFF is issuing a safety alert to inform members of concerns about a recalled Motorola Remote Speaker Microphone (RSM).

The IAFF was recently contacted by a Local experiencing issues with APX NEXT radios utilizing the XVE500 remote speaker microphone. During fireground operations, the microphone would stick in the transmit mode causing a loss of communications. The problem was more apparent when the RSM was wet during the overhaul phase.

The push-to-talk switch (PTT), when depressed, would also intermittently unkey and key the radio causing delays in transmitting critical messages.

Motorola has determined that the XVE500 RSMs should be immediately removed from service. Refer to Motorola's Technical Notification (MTN-0098-24) for product replacement.

The IAFF recommends that all APX NEXT radios with an XVE500 RSM be inspected and evaluated by radio technicians.


MOTOROLA SOLUTIONS

Motorola Solutions Technical Notification (MTN)

Title

Technology

Severity Recommendation

Symptoms

Models Affected

When To Apply

Workaround/Recovery

Resolution And Repair Procedure

INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS • 1750 New York Avenue NW • Washington, D.C. 20006 • iaff.org • @IAFFOfficial

FIRMWARE UPDATES

Like any other piece of software, your radio's software needs to be kept current.

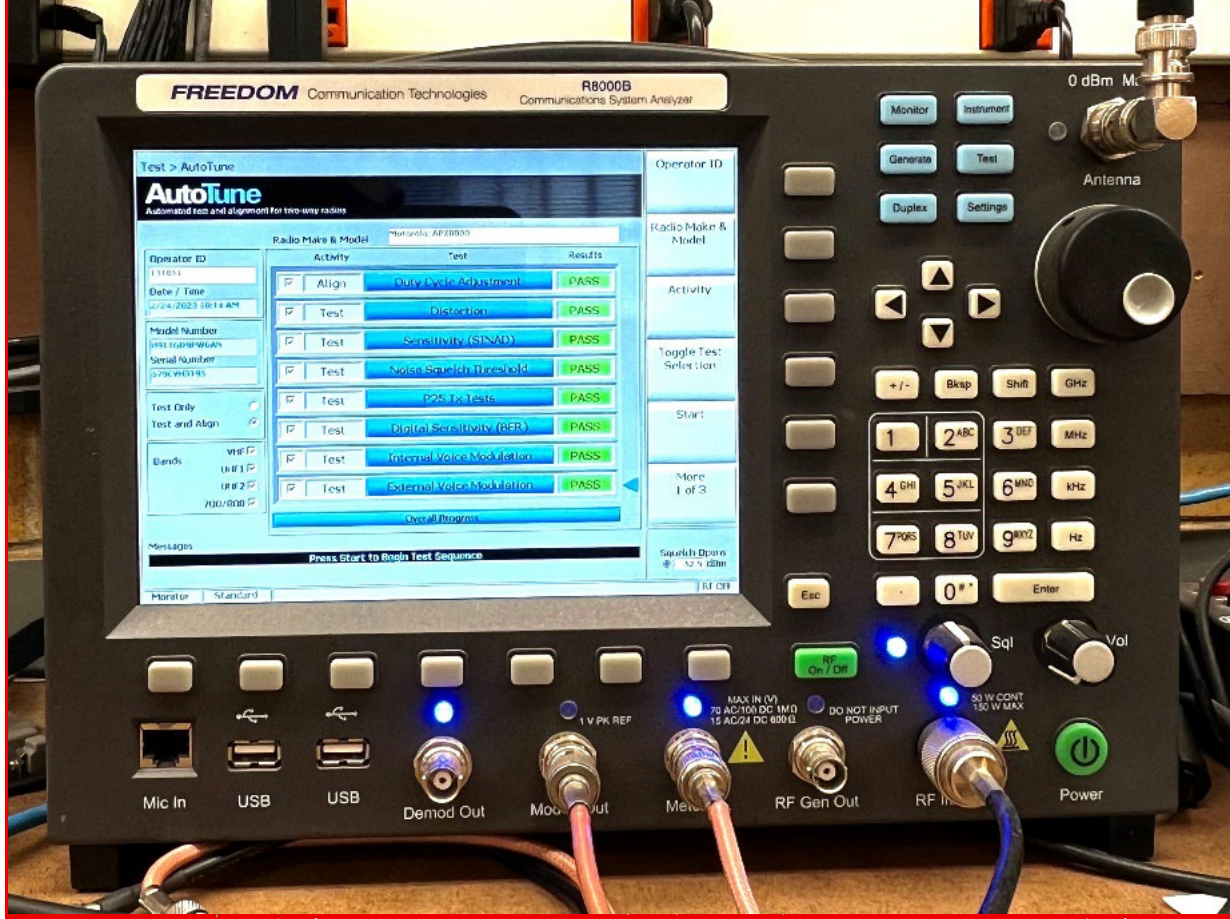
Always read the notes to determine what is being changed in your radio.

The notes will also tell you how urgent the update.

Battery chargers and RSMs may also need software updates

TUNING

- Portable radios require tuning every 1-2 years
- Firmware should be updated regularly
- Battery chargers and RSMs may also need software updates

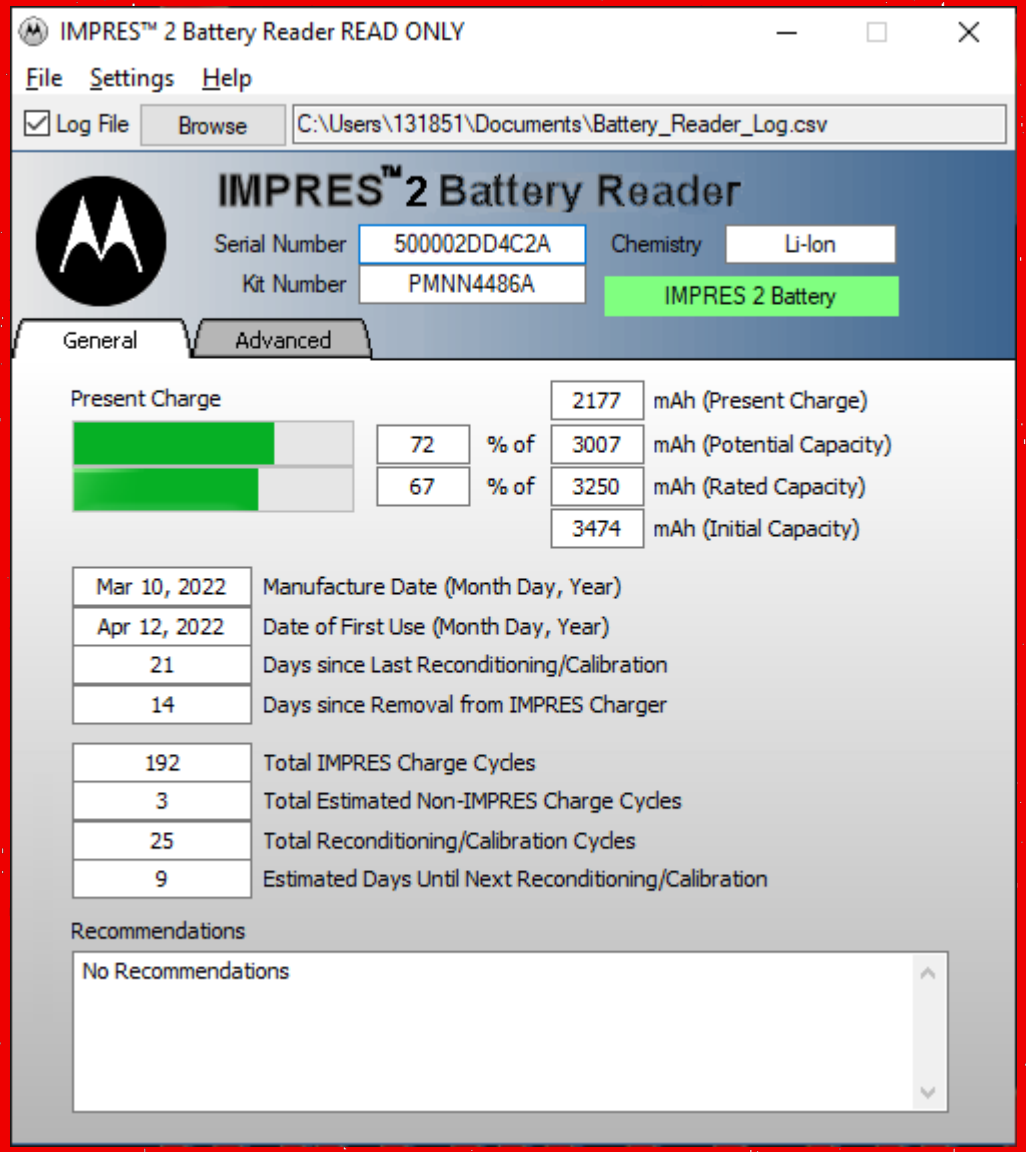


BATTERIES

76–100%	
51–75%	
26–50%	
0–25% Flashing	

- **BUY GOOD BATTERIES!**
- **Recondition when indicated**

Your Station may be working 24s, but your battery is working 10s and 14s!



ANTENNAS & REMOTE SPEAKER MICROPHONES (RSMs)

- Inspect daily
- Both need to be securely attached to the radio!

ERRCS

Emergency

Responder

Radio

Communication

System

Aka – **BDA**

Bi-Directional Amplifier

BOSTON FIRE DEPARTMENT

Requirements for the Installation of Two-Way Radio Communications Enhancement Systems

Effective 7/1/2024

The installation and operation of two-way radio communications enhancement systems must comply with:

10th Edition 780 CMR: STATE BOARD OF BUILDING REGULATIONS AND STANDARDS
MASSACHUSETTS AMENDMENTS TO THE INTERNATIONAL BUILDING CODE 2021
Chapter 9, Section 918 Amendments

Property owners who maintain compliance with this document are granted permission to operate a two-way radio communications enhancement systems on frequencies licensed to the Boston Fire Department by the Federal Communications Commission. The failure to maintain compliance with this document will result in the automatic withdrawal of said permissions.

This document provides the technical criteria for installing a two-way radio communications enhancement system in Boston. (NFPA 1221 9.6.14)

The Boston Fire Department does not endorse, recommend or specify any specific product, service provider or configuration as the means to comply with 780 CMR.

Revised 8/14/2024

Joseph F. Brooks
Radio Supervisor
Boston Fire Department

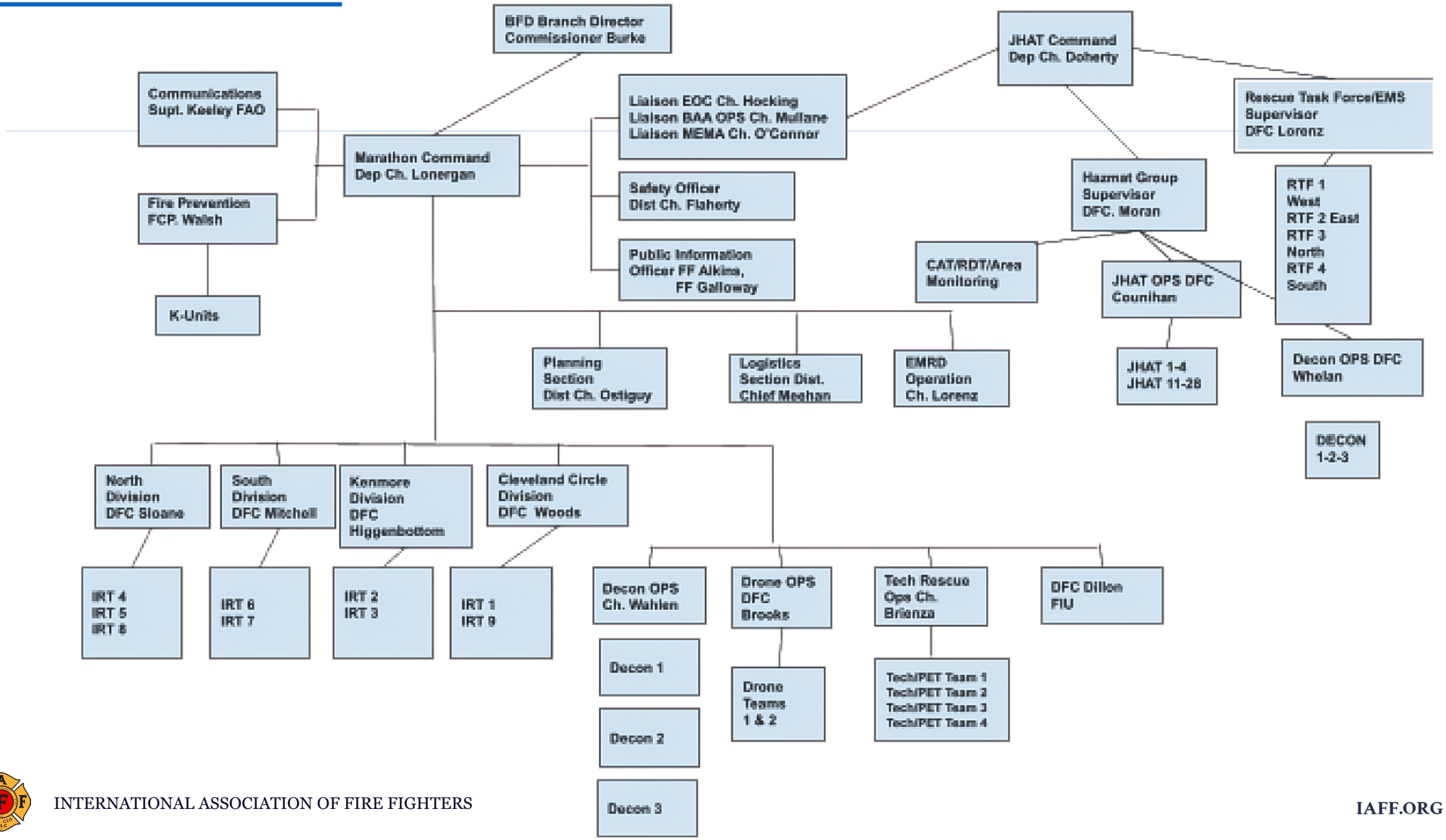
Page | 1

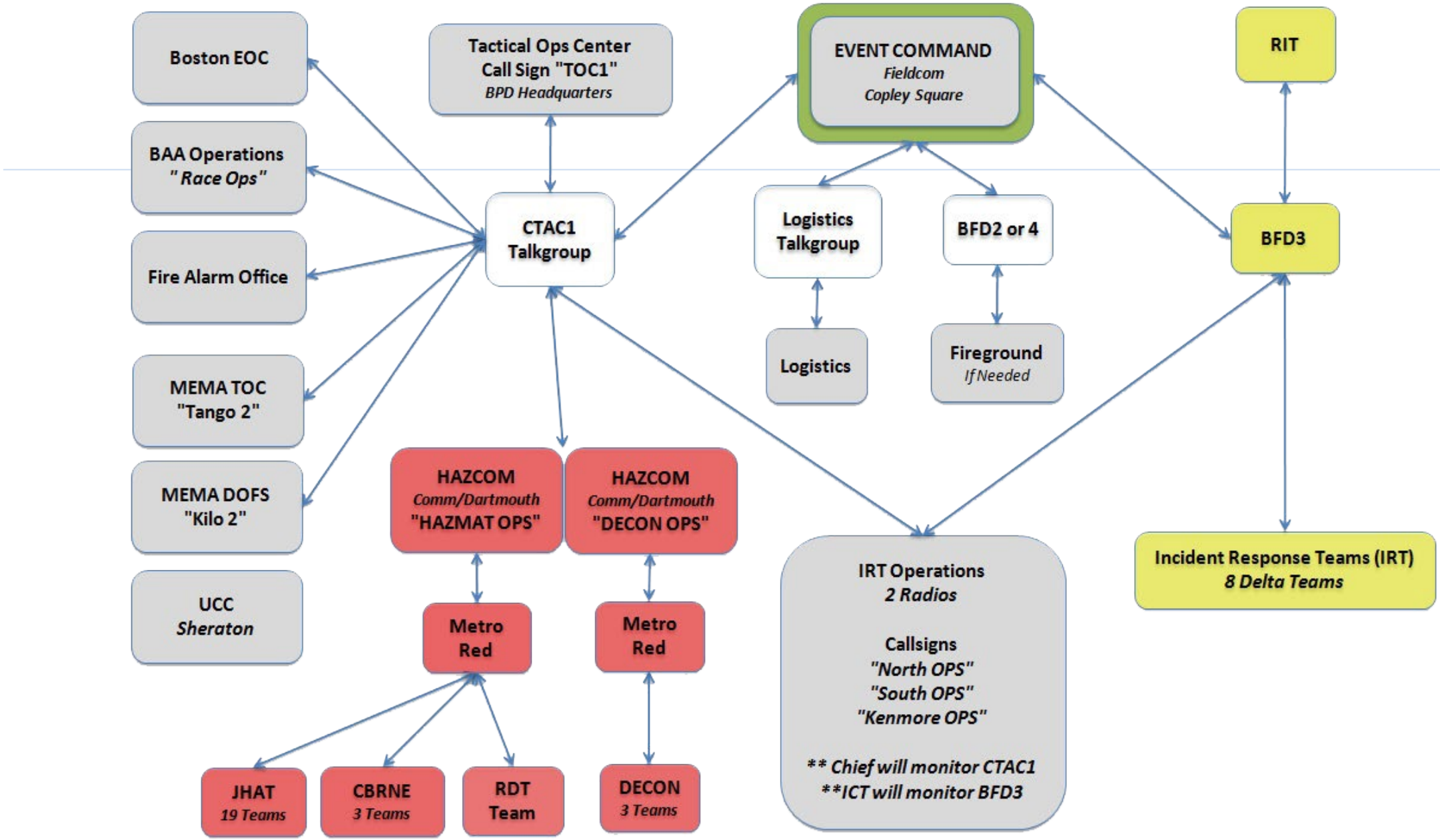
OPERATIONS

BOSTON MARATHON RESPONSE


FOX NEWS .com
EXPLOSIONS AT BOSTON MARATHON
INJURIES REPORTED NEAR FINISH LINE
BREAKING NEWS

Boston Marathon IAP




Boston EOC
Tactical Ops Center
Call Sign "TOC1"
BPD Headquarters
EVENT COMMAND
Fieldcom
Copley Square
RIT
BAA Operations
" Race Ops"
CTAC1
Talkgroup
Logistics
Talkgroup
BFD2 or 4
BFD3
Fire Alarm Office
Logistics
Fireground
If Needed
MEMA TOC
"Tango 2"
MEMA DOFS
"Kilo 2"
HAZCOM
Comm/Dartmouth
"HAZMAT OPS"
HAZCOM
Comm/Dartmouth
"DECON OPS"
UCC
Sheraton
IRT Operations
2 Radios
Callsigns
"North OPS"
"South OPS"
"Kenmore OPS"
** Chief will monitor CTAC1
**ICT will monitor BFD3
Incident Response Teams (IRT)
8 Delta Teams
Metro
Red
Metro
Red
JHAT
19 Teams
CBRNE
3 Teams
RDT
Team
DECON
3 Teams

INCIDENT RADIO COMMUNICATIONS PLAN	Incident Name: 2024 Boston Marathon	Date/Time Prepared: 3/12/2024	Operational Period Date/Time: APR 15, 2024 0600 – APR 15, 2024 TBD

Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	Zone/ Position *(1)*	RX Freq N or W	RX Tone/NAC	TX Freq N or W	Tx Tone/NAC	Mode A, D or M	Remarks
1	Operations	BFD 3	BFD Units	A - 3	483.2125 N	516	486.2125 N	271	A	"Marathon Command"
2	Tactical	BFD 2	Fire ground	A – 2	483.1875 N	114	486.1875 N	205	A	
3	Tactical	BFD 4	Alt. FG	A – 4	483.2375 N	731	486.2375 N	306	A	
4	INTEROP	LPS 1 *(2)*	Command	800 MSP LPS	Commonwealth Trunked Radio System				A	Command Interop
5	HAZMAT/ DECON	Metro Red	HAZMAT	A-9	482.0250 N	3Z	485.0250 N	346	A	
6	Command Net	OPS2	Fire Command	700 BFD P25	MBHSR Trunked Radio System				D	SECURE
7	Command	BFD Wide	Tech OPS	800 Boston FD Pos 15	Commonwealth Trunked Radio System				A	Assign if operating out of Boston
8	Tactical	BFD 15 DIG S	Tech Team	A - 15					D	Assign if operating out of Boston
9		***(1) Zone and Position data is valid for BFD Portable Radios Only***								
10		***(2) Primary INTEROP channel. Will be patched to multiple agencies***								
11										
12										
13										
14										

Prepared By (Communications Unit)

Joseph Brooks, COML

Incident Location

County ***Suffolk*** State ***MA*** Latitude ***42° 20' 59.90" N*** Longitude ***71° 04' 40.22" W***

Typically, 150 personnel assigned to cover the Marathon race course and the finish line.

Rank	Name		Call Sign	Position	Location
COMM	Paul Burke	C1	Fire Branch Director	Event Command	Mobile Command Post / Copley Plaza
DEP	James Greene	D100 D719	Marathon Command		
DFC	Ellis	Console	MEMA OPS	Liaison to State TOC	Framingham - Bunker
DEP	Walsh	Console D722	RACE OPS	Liaison to BAA Ops	Library
DEP	Tully	D729	JHAT Command	Liaison to BPD TOC	BPD HQ Fl. 4 (BRIC)
DEP	Hocking	Console	BOSTON EOC	Liaison to Boston EOC	Boston EOC
CPT	Chris Flaherty				
DFC	Papineau	D228 D720	H1	SAFETY	Various
ICT	McCarthy	D229	H100		
FF	Galloway		C22	PIO	Various
FF	Alkins		C23	PIO	

DFC	Minehan	D102 D721	Cleveland Circle Ops	Cleveland Circle Division	Cleveland Circle Area
ICT	Palermo	D103	Cleveland Circle 100		
FCP	R. Farnham	D104	IRT 1	Incident Response Team 1	Wade St (Entire St) and 1940 - 2000 Commonwealth Ave
FF	K. Luddy	D105	IRT 101		
FF	G. Constant	D106	IRT 102		
LT	Cullinane	D107	IRT 9	Incident Response Team 9	Cleveland Circle
FF	W. Condon	D108	IRT 901		
FF	J. Capece	D109	IRT 902		
FF	B. Humphrey	D110	JHAT 1	Joint Hazard Assessment Teams	Brighton - Commonwealth Ave
FF	C. Wright	D111	JHAT 2		
FF	S. More	D112	JHAT 3		Brighton - Cleveland Cir
FF	W. Malcomb	D113	JHAT 4		

DFC	Johnson	D114 D723	Kenmore Ops	Kenmore Division	Kenmore Square Area
ICT	Roach	D115	Kenmore 100		
LT	S. Boyle	D116	IRT 2	Incident Response Team 2	Audubon Circle
FF	K. Tobin	D117	IRT 201		
FF	S. Finn	D118	IRT 202		
FF	T. Canavan	D119	IRT 203		
FCP	F. Hollien	D120	IRT 3	Incident Response Team 3	Kenmore Square
FF	R. Higgins	D121	IRT 301		
FF	K. Moore	D122	IRT 302		
FF	M. Glora	D123	IRT 303		
FF	A. Gambon	D124	IRT 304		
FF	S. Esposito	D125	JHAT 11	Joint Hazard Assessment Teams	Beacon St. near Audubon Cir.
FF	J. Nelson	D126	JHAT 12		
FF	T. Simpson	D127	JHAT 13		Kenmore Square
FF	W. McGuirk	D128	JHAT 14		
FF	D. Mahoney	D129	JHAT 15		Kenmore to Charlesgate
FF	D. Wolusky	D130	JHAT 16		Charlesgate to Mass. Ave.

DFC	Sloane	D131 D724	Northside Ops	North Side Division	Mobile Command Post
ICT	Ortiz	D132	North 100		
LT	J. Whittad	D133	IRT 4	Incident Response Team 4	Hereford St., Comm. Ave. Boylston, Hereford to Exeter (odd side)
FF	C. Dockins	D134	IRT 401		
FF	D. Presume	D135	IRT 402		
FF	T. Dever	D136	IRT 403		
FF	J. Spinale	D137	IRT 404		
LT	B. Denomy	D138	IRT 5	Incident Response Team 5	Boylston St. Exeter to Clarendon St. (odd side)
FF	M. Korman	D139	IRT 501		
FF	K. Parsons	D140	IRT 502		
FF	D. Lynch	D141	IRT 503		
FF	M. Gautreau	D142	IRT 504		
LT	M. Alexander	D143	IRT 8	Incident Response Team 8	Boylston/ Berkley-Arlington, St James
FF	T. Edwards	D144	IRT 801		
FF	C. Flaherty	D145	IRT 802		
FF	J. Plaza	D146	IRT 803		
FF	M. Astrofsky	D147	IRT 804		
FF	D. Joseph	D148	IRT 805		
FF	J. Sameski	D149	JHAT 17	Joint Hazard Assessment Teams	Mass Ave. to Hereford
FF	J. Gormley	D150	JHAT 18		Hereford St.
FF	E. Pagan	D151	JHAT 19		Hereford to Gloucester
FF	T. Flaherty	D152	JHAT 20		
FF	J. Kane	D153	JHAT 21		Gloucester to Exeter
FF	M. Marian	D154	JHAT 22		
FF	T. Kelley	D155	JHAT 23		Exeter to Dartmouth
FF	T. McGrory	D156	JHAT 24		

DFC	Vinitski	D157 D725	Southside Ops	South Side Division	Mobile Command Post
ICT	Rakauskis	D158	South 100		
LT	Greatorex	D159	IRT 6	Incident Response Team 6	Hereford St. Comm. Av to Boylston to Exeter (even)
FF	M. Flynn	D160	IRT 601		
FF	M. Fearon	D161	IRT 602		
FF	M. Crosby	D162	IRT 603		
FF	L. Beasley	D163	IRT 604		
LT	J. Brooks	D164	IRT 7	Incident Response Team 7	Boylston St. Exeter to Clarendon (even)
FF	M. Bannion	D165	IRT 701		
FF	J. Mooney	D166	IRT 702		
FF	J. Kenney	D167	IRT 703		
FF	R. Treanor	D168	IRT 704		
FF	C. McCarron	D169	JHAT 25	Joint Hazard Assessment Teams	Finish line & medical tent
FF	R. Granfield	D170	JHAT 26		Copley Square
FF	T. Briffet	D171	JHAT 27		Stuart St./Trinity Place
FF	J. Higgins	D172	JHAT 28		

DFC	Coppney	(Tango 3) D726	HAZMAT Ops	HAZMAT COMMAND	Mobile Command Post
FF	Cumminga	(Tango 15)	CAT 4	CBRN Teams	Brighton
FF	Houlihan	(Tango 16)	CAT 6		Audubon Circle to Finish Line
FF	Hamblin	(Tango 14)	CAT 7		Hereford St. to Dartmouth St.
LT	Pacheco	(Tango 6)	TANGO 6		Safe Site Monitoring
LT	Weekes	D173	RDT 1	RDT 1	Stage at Hynes Loading Dock
FF	Benitez-Rivera	D174	RDT 101		
FF	Gonzales	D175	RDT 102		
FF	Wetterhahn	D176	RDT 103		
FF	Camas	D177	RDT 104		
FF	Colista	D178	RDT 105		

DFC	Cherry	D179 D727	Decon OPS	Decon Operations	Various Locations
ICT	Klontke	D180	Decon OPS 100		
FCP	McGovern		Tango 4	DECON Leader	
FF	Brady		Tango 13	DECON	
LT	Dever	D181	Decon Engine 1		Arlington & Boylston
FF	Pierre	D182	Decon Engine 101		
FF	Laquerre	D183	Decon Engine 102		
FF	Molina	D184	Decon Engine 103		
FF	Cho	D185	Decon Engine 104		
FLT	Dunn	D186	Decon Engine 2		Dartmouth & Newbury
FF	Corey	D187	Decon Engine 201		
FF	Nee	D188	Decon Engine 202		
FF	McDonaugh	D189	Decon Engine 203		
FF	Owens	D190	Decon Engine 204		
LT	Sameski	D191	Decon Engine 3		Comm Ave & Charlesgate East
FF	Goff	D192	Decon Engine 301		
FF	Rothwell	D193	Decon Engine 302		
FF	Simpson	D194	Decon Engine 303		
FF	Cuevas	D195	Decon Engine 304		
FF	D. Exilien	D196	Decon 1	DECON 1 Unit	Arlington & Boylston
FF	S. Ratchiell	D197	Decon 100		

DFC	Brooks	D198 D728	Tech/PET Ops	Technical Rescue Operations	
ICT	P. McIntyre	D199	Tech/PET 100		
FCP	S. Donovan	D202	Tech 1	Tech / PET	Scotia & Boylston sts
FF	M. Ferraro	D203	Tech 101		
FF	D. Adjemian	D204	Tech 102		
FF	K. Llunuma	D205	Tech 103		
FF	J. Bogan	D206	Tech 104		
LT	R. Bottari	D207	Tech 2	Tech / PET	Kenmore Square
FF	J. Sullivan	D208	Tech 201		
FF	M. Baudouin	D209	Tech 202		
FF	R. Thornton	D210	Tech 203		
FF	D. McKeeney	D211	Tech 204		
FCP	Q. Lee	D212	Tech 3	Tech / PET	Audubon Circle
FF	J. Carrington	D213	Tech 301		
FF	G. Williams	D214	Tech 302		
FF	A. Lopez	D215	Tech 303		
FF	G. Mottola	D216	Tech 304		
LT	J. McManus	D217	Tech 4	Tech / PET	Cleveland Circle
FF	G. Dardia	D218	Tech 401		
FF	M. McKinnies	D219	Tech 402		
FF	P. Buchanan	D220	Tech 403		
FF	R. Gainey	D221	Tech 404		
FF	B. Ponce	D222	Tech Support 103	Collapse Unit (H6)	Engine 42's Quarters
FF	M. McManus	D223			
FF	M. Molina	D224	Tech Support 104	TRSU 1 (H9)	
FF	K. Galewski	D225			

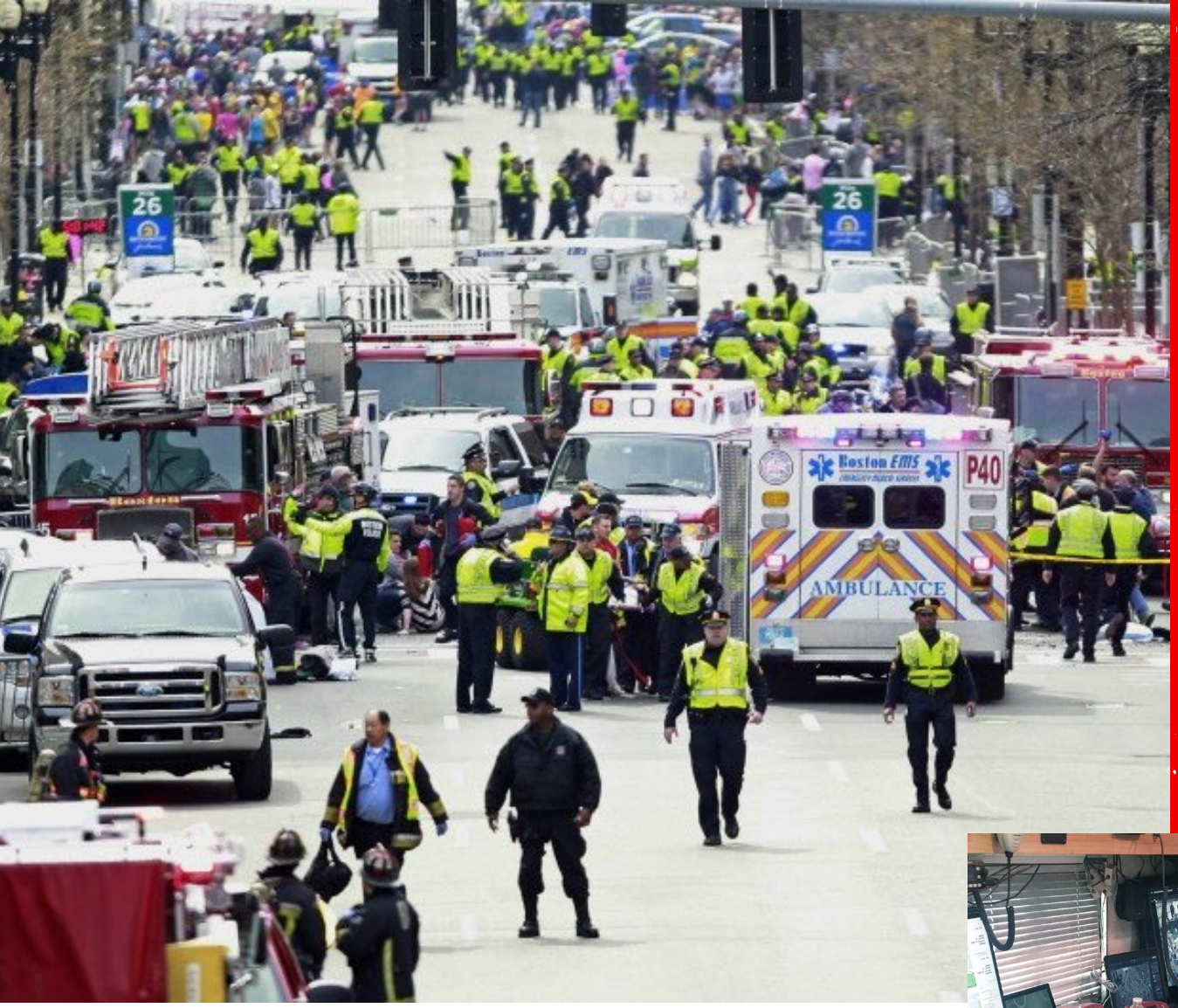
				FIRE PREVENTION	
DFC	Mike Dillon		Kilo 3	FIU	Various
LT	K. McCarthy		Kilo 6A		
LT	Glen Campbell		Kilo 5A		
FF	Troy Osgood		Kilo 4A		
FF	John Mannion & Klo		Kilo 9		
FCP	S. Hardiman		Kilo 44	Special Hazards	0800 - end Comm. Ave.
LT	J. Henriquez		Kilo 31		0800 - end 1955 Beacon
FF	D. Fowler		Kilo 37		0800 - end 901 Beacon
FF	J. Rodriguez		Kilo 35		0800-end 464 Comm Ave.
CPT	D. Melendy		Kilo 32		0800-end Copley SQ.
FF	P. Foley		Kilo 34		0800-end Copley SQ.
FF	C. Gilmore		Kilo 41	Nightclub Inspectors	1200-1800 Copley SQ.
FF	R. Dalmar		Kilo 60		1200-1800 Copley SQ.
FF	R. Cox		Kilo 50		1200-1800 Boylston St.
FF	P. Ryan		Kilo 27		1200-1800 Boylston St.
FF	T. Freda		Kilo 53		1200-1800 Kenmore Sq.
FF	R. Davis		Kilo 49		1200-1800 Kenmore Sq.

				LOGISTICS / EMS	
DFC	KevinMeehan		C105	Logs Chief	Various
DFC	David Ostiguy		Golf 2	Planning Section	
CPT	Flaherty		Golf 3	OFS Section Leader	
CPT	Chris Jerry		W7	Logistics	
LT	Kevin Jordan		Golf 4	Planning	
LT	Sheila Leahy	D226			
FF	Margaret Connolly	D227			
FF	George Paige		W14		
DFC	Fred Lorenz	X1 D730	X-1	EMRS	
LT	John Martin		X-3		
FF	William Torney		Golf 9		
FF	Joe Magee		X-4		
RO	White		S6 White	Communications	0700 - 1100

				UNMANNED AIRCRAFT SYSTEMS	
DFC	Murphy		Tango 2	Drone Monitor	1 Schroeder Plaza
FF	Pavone		Tango 21		Tac-Com, Blagdon St.
FF	H. Cancel			Drone Team 1	Cleveland Circle
FF	L. Martinez				
FF	B. Hardiman			Drone Team 2	Copley
FF	R. Holmes				

Time	Channel	Unit (from)	Unit (to)	Message/Report
14:49:38	3	N5	FLDCOM	We have an explosion. Strike Box. 671 Boylston St, multiple people down, Boylston & Fairfield, Boylston & Ring Rd
14:50:28	1	DELTA 136	FAO	Unreadable message.
14:51:15	1	FAO	GEN. BROADCAST	Struck box 1572.
14:52:16	1	ENG 4	FAO	All companies use caution. We have hysteria in the streets. All the streets are blocked with people. All companies use caution.
14:52:18	3	N5	FLDCOM	We have 40-50 people down.
14:52:40	2	TL17	FAO	At 774 Boylston St, 2 Explosions, multiple casualties, dozens of serious injuries.
14:52:50	1	FAO	GEN. BROADCAST	All companies use caution. There is hysteria in the streets. Streets are blocked with people. All companies use caution.
14:52:53	3	G5	FLDCOM	We have amputations - people missing limbs.
14:52:55	1	CAR 4	FAO	Have all companies come in from Exeter, from Huntington Ave to Exeter. They can make progress at that point. Explosion is opposite the Boston Public Library at the Finish Line.
14:53:02	3	N5	FLDCOM	Straight down Boylston for apparatus.
14:53:25	3	KENMORE 1	FLDCOM	We have numerous victims @ Exeter & Newbury Sts. Request units responding to Comm Ave. to meet victims leaving.

BOSTON MARATHON

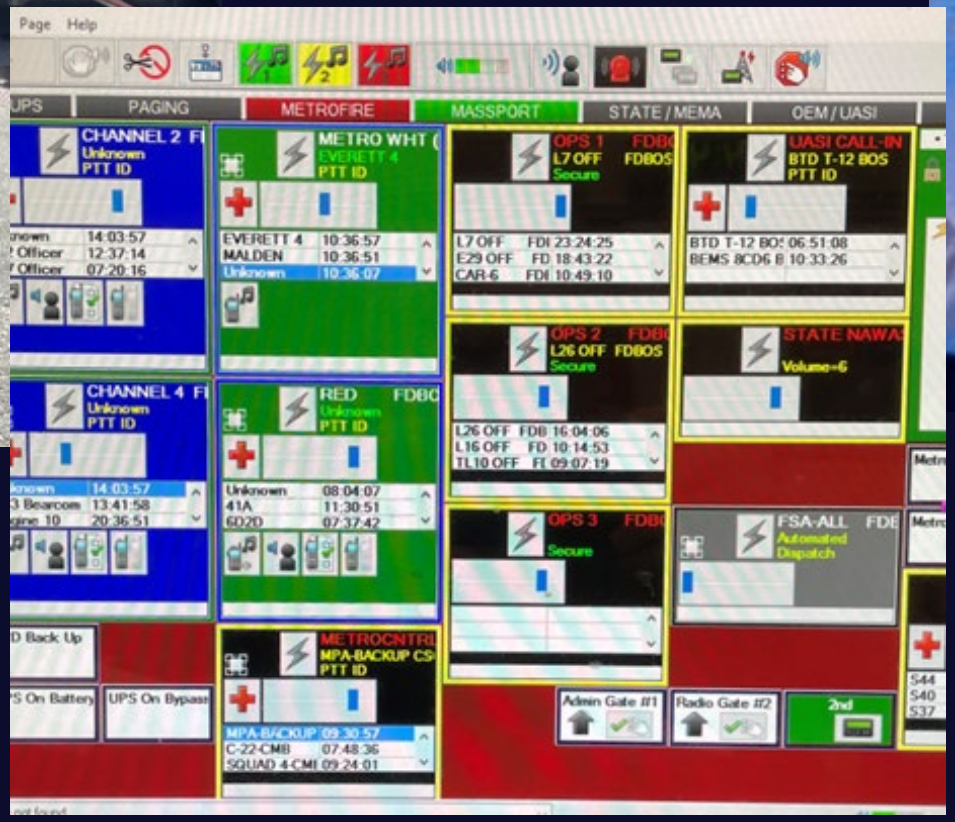


LESSONS LEARNED….

BEACON STREET

Lessons Learned…….


16
16


Page Help
UPS
PAGING
METROFIRE
MASSPORT
STATE / MEMA
OEM / UASI
CHANNEL 2 FI
Unknown
PTT ID
METRO WHT (
EVERETT 4
PTT ID
OPS 1
L7 OFF
Secure
UASI CALL-IN
BTD T-12 BOS
PTT ID
CHANNEL 4 FI
Unknown
PTT ID
RED
Unknown
PTT ID
OPS 2
L26 OFF
Secure
STATE NAWA
Volume=6
OPS 3
Secure
FSA-ALL
Automated
Dispatch
Admin Gate #1
Radio Gate #2
2nd
UPS On Battery
UPS On Bypass
MPA-BACKUP 09:30:57

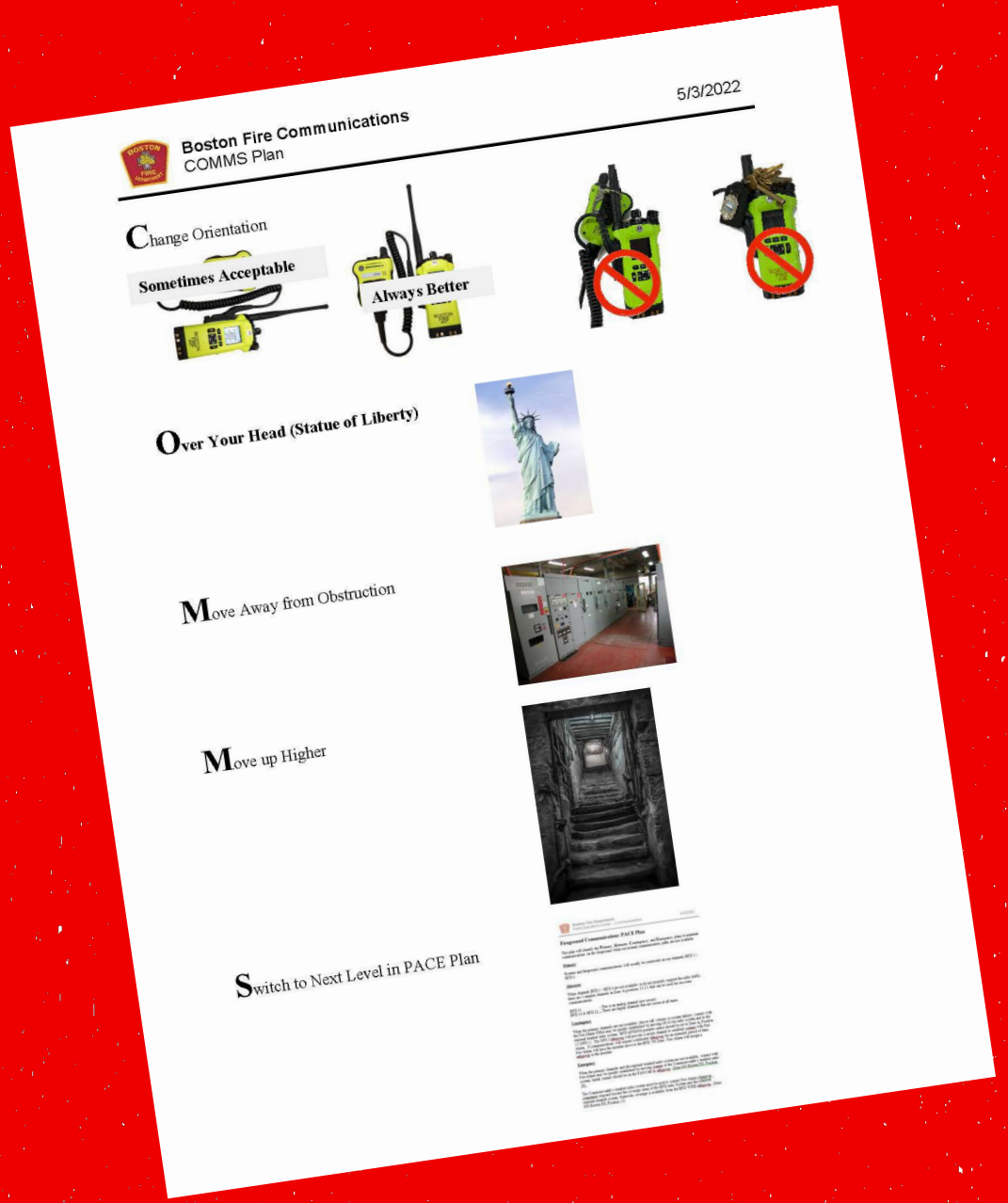
TRAINING

WHY DO WE TRAIN

- Training for the muscle memory to combat stress
- Preparing for the Incident
  - Pre-planning, Policies and Procedures, Company Drills
- Prevent the Injury or Death
  - LODDs, Near Misses and Close Calls

COMMS PLAN

- **C**hange Orientation
- **O**ver Your Head
- **M**ove Away From Obstruction
- **S**witch to Next Level in PACE Plan



OUT OF RANGE *(TRUNKED RADIO SYSTEMS)*

Not connected to the system

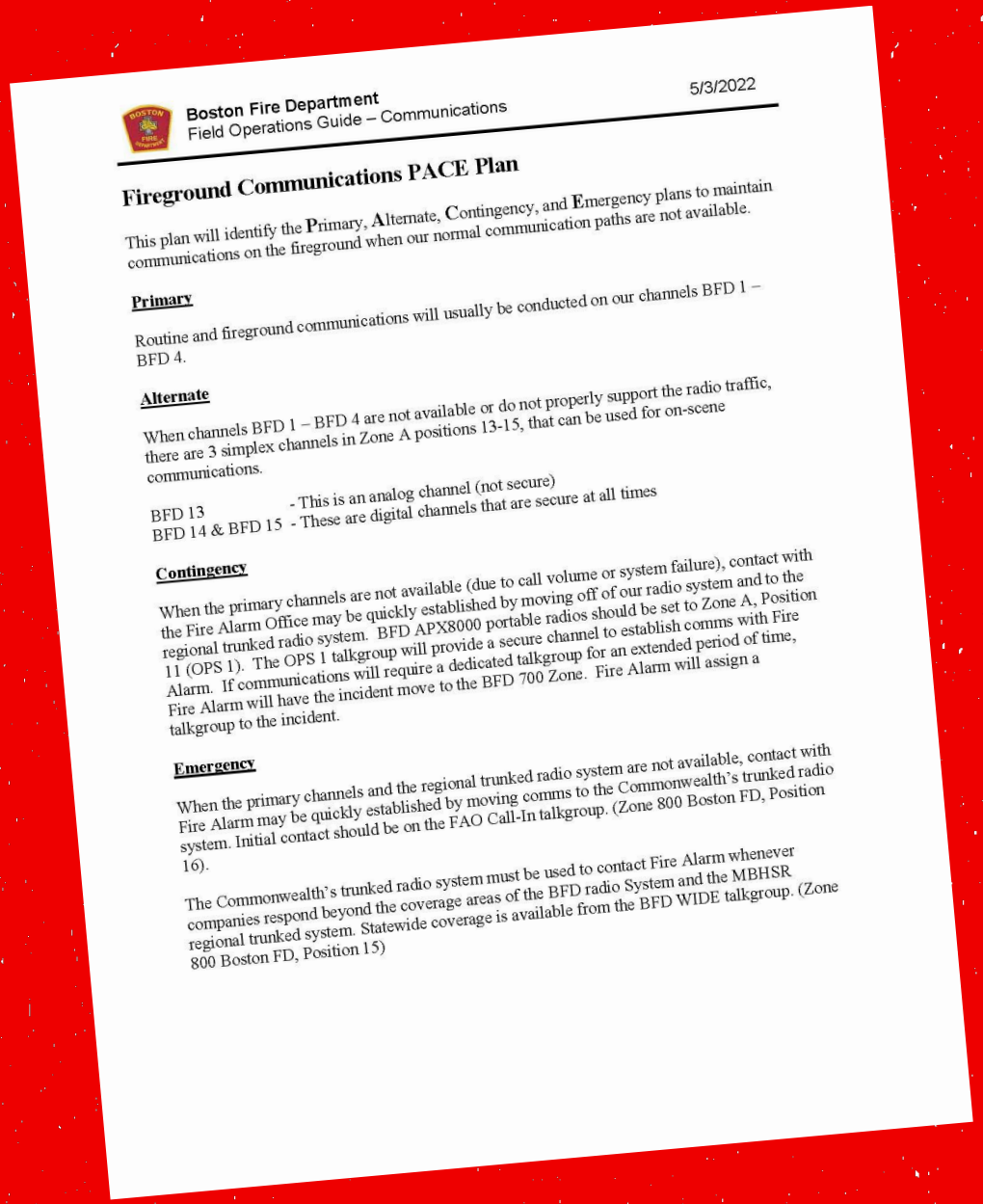
Common reasons include:

- Buildings
- Distance
- Topography
- Etc.

PACE PLAN

A plan to restore communications on the fire ground when normal communication paths are not available

- **P**rimary
- **A**lternate
- **C**ontingency
- **E**mergency



Boston Fire Department
Field Operations Guide – Communications
5/3/2022

Fireground Communications PACE Plan

This plan will identify the **P**rimary, **A**lternate, **C**ontingency, and **E**mergency plans to maintain communications on the fireground when our normal communication paths are not available.

Primary

Routine and fireground communications will usually be conducted on our channels BFD 1 – BFD 4.

Alternate

When channels BFD 1 – BFD 4 are not available or do not properly support the radio traffic, there are 3 simplex channels in Zone A positions 13-15, that can be used for on-scene communications.

BFD 13 - This is an analog channel (not secure)
BFD 14 & BFD 15 - These are digital channels that are secure at all times

Contingency

When the primary channels are not available (due to call volume or system failure), contact with the Fire Alarm Office may be quickly established by moving off of our radio system and to the regional trunked radio system. BFD APX8000 portable radios should be set to Zone A, Position 11 (OPS 1). The OPS 1 talkgroup will provide a secure channel to establish comms with Fire Alarm. If communications will require a dedicated talkgroup for an extended period of time, Fire Alarm will have the incident move to the BFD 700 Zone. Fire Alarm will assign a talkgroup to the incident.

Emergency

When the primary channels and the regional trunked radio system are not available, contact with Fire Alarm may be quickly established by moving comms to the Commonwealth's trunked radio system. Initial contact should be on the FAO Call-In talkgroup. (Zone 800 Boston FD, Position 16).

The Commonwealth's trunked radio system must be used to contact Fire Alarm whenever companies respond beyond the coverage areas of the BFD radio System and the MBHSR regional trunked system. Statewide coverage is available from the BFD WIDE talkgroup. (Zone 800 Boston FD, Position 15)

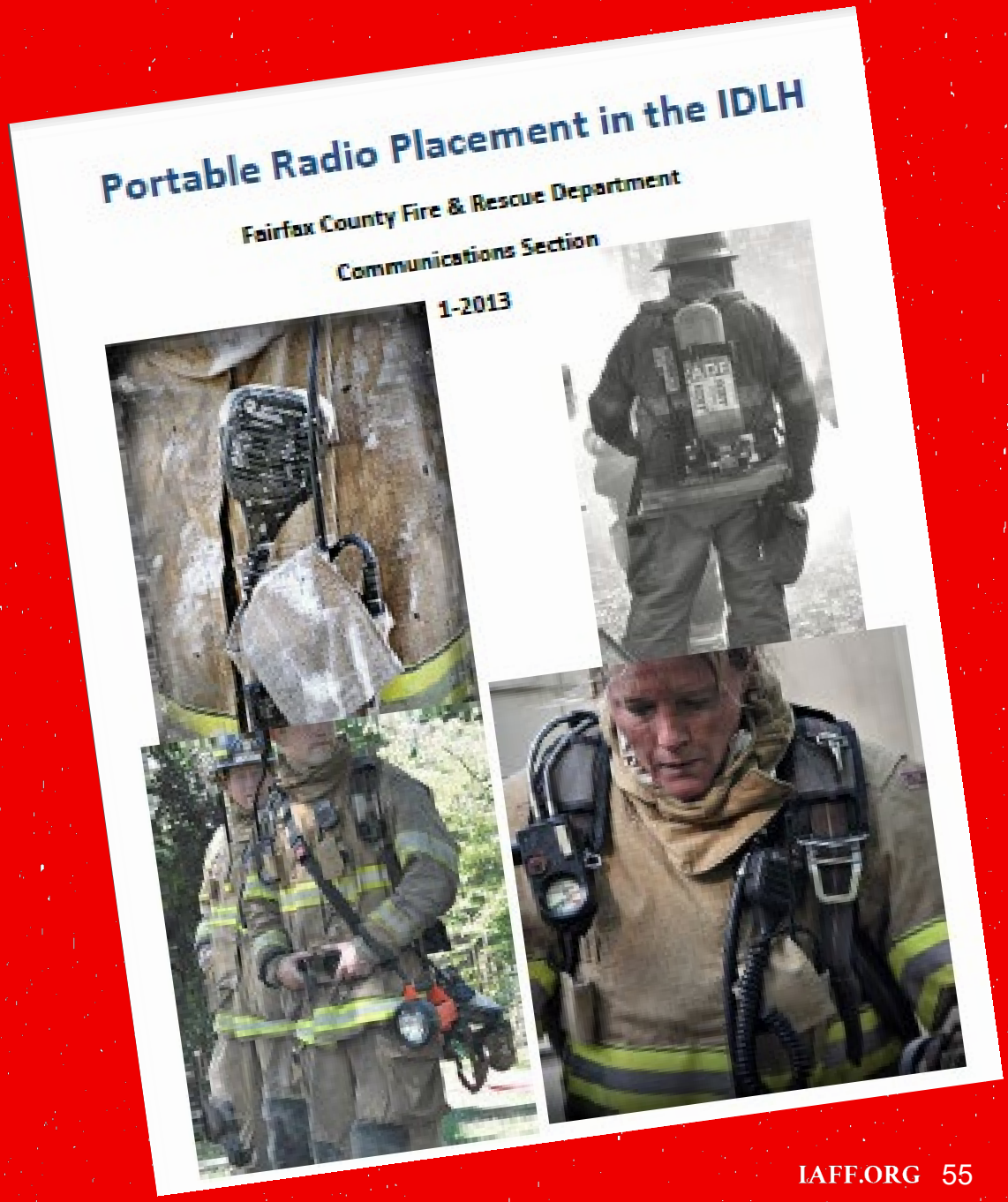
PROTECT YOUR RADIO!

These portable radios assigned sustained significant heat damage to the radio body and the portable microphones.

These radios were carried in leather holders and straps that were worn **<u>over the PPE</u>**.

The cord for this portable microphone melted completely causing the wires to fuse together and transmitting an open carrier on the tactical talk group disrupting radio communications.

Protecting the Portable Radio in the IDLH



Protecting the Portable Radio in the IDLH

Fire Fighter Fatality Investigation and Prevention Program

Safety & Health Advisory

Portable Radio Placement during Interior Firefighting

Portable radios and accessories may fail after exposure to high temperatures, resulting in the loss of communications and jeopardizing firefighters' safety.

On May 30, 2024, a 33-year-old firefighter responded to a box alarm assignment reporting a one-story single-family structure fire. Upon arrival, a working fire was declared, and the firefighter received reports from the family of trapped occupants inside the structure. Two firefighters made entry into the structure ahead of the attack line to conduct search and rescue. Rapidly changing fire conditions caused both firefighters to withdraw from the structure. One firefighter was able to escape while the second firefighter became disoriented inside the structure when a flashover occurred. The second firefighter was able to self-rescue out of a kitchen window and sustained catastrophic injuries. The portable radio being worn in a radio pocket with the remote speaker microphone (RSM) cable wrapped around the firefighter's collar became thermally assaulted. This caused the radio to unintentionally transmit which rendered the channel useless for fireground communications. Extensive thermal damage was noted to both the portable radio and RSM.

Portable radios serve as an essential safety device allowing each firefighter to immediately report, or be notified of, changing conditions and emergencies that can affect their survival. As such, it is critical that firefighters understand the conditions these devices may fail in and how to protect them.

Photo courtesy of NIOSH

WHAT FIREFIGHTERS CAN DO:

- ☐ Acknowledge that portable radios are an essential piece of safety equipment and are the vital lifeline for firefighter survival during emergency operations such as interior firefighting
- ☐ Recognize that portable radios and accessories may fail after exposure to high temperatures and result in loss of communications
- ☐ Understand the requirements for portable radios in NFPA 1802 and the testing by the National Institute of Standards and Technology (NIST) which led its development
- ☐ Employ protection for both new and older radios and cables with personal protective equipment (PPE) and radio straps
- ☐ Include portable radio strap use and proper placement in standard operating procedures, guidelines, and training

QUESTIONS & ANSWERS on page 2

PORTABLE RADIO PLACEMENT IN THE IDLH

In radio pocket

PORTABLE RADIO PLACEMENT IN THE IDLH

RSM over chest flap, below neck flap to extender

NIOSH SAFETY ADVISORY

When a LODD report identifies a specific problem that could have drastically changed the outcome of an incident, NIOSH will also publish a Safety Advisory.


NIOSH FIRE FIGHTER FATALITY INVESTIGATION AND PREVENTION PROGRAM

SAFETY ADVISORY

The Importance of Understanding and Training on the Portable Radio Emergency Alert Button (EAB) during a Mayday.

RECOMMENDATIONS

The National Institute for Occupational Safety and Health (NIOSH) Fire Fighter Fatality Investigation and Prevention Program (FFFIPP) recommends fire departments and municipalities ensure all firefighters and dispatchers:

- Understand what the EAB is and how it functions when activated
- Know the specific EAB functions present on their portable radio and their communication system capabilities
- Know that the EAB prioritizes transmissions for the portable radio when activated
- Are proficient in Mayday standard operating procedures, guidelines, and training that involve the EAB function

EAB (orange buttons) on a radio and remote speaker microphone. Photo by Chief Barakey, Suffolk VA Fire & Rescue.

QUESTIONS & ANSWERS on page 2

FFFIPP INVESTIGATION

On August 11, 2021, a captain responded to a fire in a large residential structure in Maryland. While extinguishing the fire, he fell through the first floor into the basement. The captain initially survived and transmitted numerous times on his portable radio. A review of radio rejection logs from the captain's portable radio indicated his transmissions were rejected 17 times by other transmissions on the fire ground. He did not activate his EAB button on his portable radio prior to calling his Mayday, nor was he prompted to do so by command or dispatch. Crews worked to rescue the captain from the first floor and basement level. The rapid intervention team located and removed the captain from the basement; however, he had exhausted his breathing air and was unconscious. The captain was in cardiac arrest when he was removed and received advanced life support measures at the scene. He was flown to a hospital trauma center where he was pronounced dead.

CDC Centers for Disease Control and Prevention · NIOSH National Institute for Occupational Safety and Health · U.S. Fire Administration Working for a fire-safe America

1

EMERGENCY ACTIVATION

1. To initiate an alarm, press and hold the Emergency Activation (EA) button.
2. DO NOT turn the rotary knob once the EA button has been activated. Turning the knob will activate an emergency on every channel the knob is turned to.
3. To cancel an alarm, press and hold the EA button until you hear a continuous exit tone.

Acknowledged by Console

Unacknowledged

Emergency
(EA)

1 sec. Alarm
3 sec. Reset

U.S. Fire Administration
Working for a fire-safe America

4 “C”s of COMMUNICATION

The 4-Cs Communication Model is prescribed for use in radio communications.

1. Connect — Sender and Receiver voice engagement.
2. Convey — Delivery of order or information.
3. Clarify — Copy back of order or information.
4. Confirm — Provide feedback to receiver that their understanding is correct.

RSM BEST PRACTICES

Place the RSM against the voice emitter (left side) and shift to a 30-degree angle away from the of the SCBA mask.

Talk in a loud controlled voice into the RSM.

The Closer to the voice port, the better.

IN-MASK COMMUNICATIONS

Eliminate Ambient Noises

Unobstructed voice communications

THANK YOU!
ANY QUESTIONS?

JOSEPH BROOKS

Radio Supervisor | bfdradio@gmail.com

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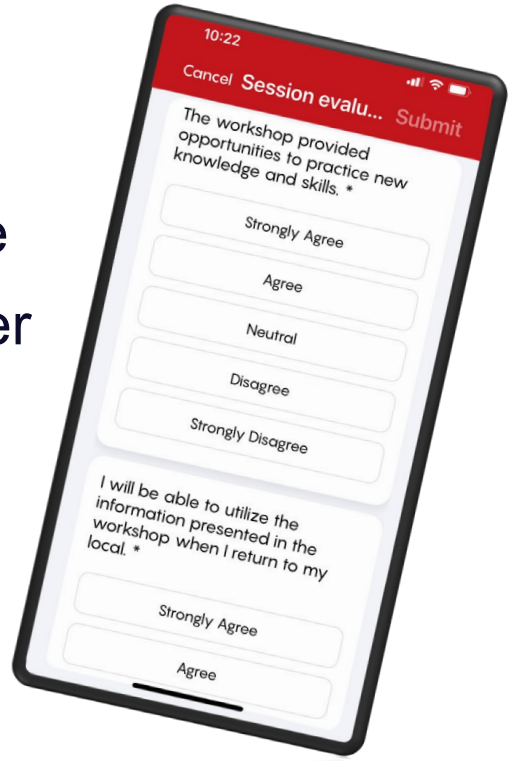
  3. Tap "Sessions" and tap on the workshops you attended
  4. Tap "Evaluation" and complete the evaluation
  5. Tap "Submit"



For the event's overall evaluation, follow steps 1 and 2, then tap "Event Evaluation" located in the event's Dashboard.