

Association



Affiliated With INTERNATIONAL ASSOCIATION OF FIREFIGHTERS CANADIAN LABOUR CONGRESS

207 Manor Court, Sherwood Park, Alberta, T8A 0S8

Health and Safety Committee Information Sheet AFRRCS Radio System

Introduction

This document contains information and education on the Alberta First Responders Radio Communications System (AFRRCS). This document is not created to be prescriptive or a policy but an aid for Locals to in order to help understand and select radios for the health and safety of all of our members. Like most documents, the field of Health and Safety is continually evolving due to the science and research. What we do know is that communication in the fire service is critical to the safety of our members on any emergency scene.

Background

Clarity and readability of radio communications is always critical in any hazard zone operations for the safety of our members. Issues in these two areas may arise because some departments are using a VHF (very high frequency) radio system instead of a UHF (ultra high frequency) radio system. VHF radio systems are designed so the radio signal can travel a very long way in distance but do not have the ability to penetrate certain buildings, which may be better for a rural type fire department. UHF radio systems are designed to have penetration power but may not be able to travel the same long distance. The AFRRCS radio system is a UHF trunked radio system that allows radio communication to be sent through a network and distributed to any repeaters in Alberta. With that being said, theoretically, a radio that is being used in Fort McMurray would be able to transmit to a radio in Calgary if they have the same registered talk group.

Radio System Overview

The Alberta First Responders Radio Communications System (AFRRCS) is a two-way radio network for first responders in municipal, provincial and First Nations agencies across the province. The Alberta government is funding the network's construction, operation and maintenance, and it became operational on July 1, 2016

Public safety agencies using AFRRCS include:

- first responders, such as police, fire and ambulance services
- secondary responders, such as public works and public transit

Agencies using AFRRCS are able to:

- fully coordinate joint responses to emergency scenes
- improve and integrate radio communication among first responders from different agencies
- reduce the cost of radio system infrastructure
- use robust, resilient radio technology in day-to-day operations



Association



Affiliated With INTERNATIONAL ASSOCIATION OF FIREFIGHTERS CANADIAN LABOUR CONGRESS

207 Manor Court, Sherwood Park, Alberta, T8A 0S8

Health and Safety Committee Information Sheet AFRRCS Radio System

It is important to understand that the radio system and radio's themselves are not a big change from previous systems. As firefighters, the operation of the system should be very similar, if not the same, as current systems that we use.

The AFRRCS radio system is a digital P25 system, with P25 being an international standard for public safety radio system interoperability, allowing for different brands and models of radios to work seamlessly with each other on the same system. The difference between a digital and analog system is that by using a digital system it allows for better coverage, transmission clarity and better battery life for the end user. In addition, digital systems do not pick up as much static or voice distortion at the end of a coverage area or somewhere there may be interference versus an analog system. Digital systems also allows for options such as, but limited to, emergency button, or radio aliasing (allow you to see which radio is transmitting), or iCall (private radio-to-radio calling).

Coverage

It is up to individual organizations to complete their own independent system coverage testing. By doing this you are able to identify potential pitfalls and limitations from different types of topography and buildings that firefighters may be operating in. Moreover, by identifying areas that the system may not work in, this lets firefighters know where we may need to use a simplex channel instead of a duplex channel (radio- radio versus radio-repeater-radio respectively)

Portable Radio Selection

Only the radios on the permitted radio list are allowed to be used on AFRRCS. This regularly updated list contains all the P25-compliant radios that AFRRCS has successfully tested for:

- delivering seamless operation
- meeting first responders' basic communication and safety requirements

The permitted radio list can be found here: <u>https://open.alberta.ca/publications/permitted-radio-list</u>

There are many radios on this above list but it is recommended that each local conduct their own testing, based on their needs, to select specific features that they need or feel are important.

Non-Field Testing:



Association



Affiliated With INTERNATIONAL ASSOCIATION OF FIREFIGHTERS CANADIAN LABOUR CONGRESS

207 Manor Court, Sherwood Park, Alberta, T8A 0S8

Health and Safety Committee Information Sheet AFRRCS Radio System

Some specific features that any department purchasing AFRRCS radios should include, but not be limited to:

- Performance
 - o Transmission clarity
 - Noise cancelling
 - Operation of portable and remote speaker microphone (RSM) with gloves
- Ergonomics
 - Control knobs on both portable and RSM
 - $\circ \quad \text{Emergency alert button} \\$
 - Size/shape/weight
- Features
 - o GPS
 - o Bluetooth
 - Screen locations
 - Scan Functions
 - Encryption
- Battery
 - Size/weight/capacity
- Ratings/Certifications
 - o Thermal class rating on portable, RSM, and most importantly RSM cord
 - Operating temperatures
 - IP Standards and Mil Spec ratings

Field Testing:

The following is a list of recommended field tests that each department conduct before selecting a radio:

- Mayday in SCBA radio antenna up
- Mayday Radio underneath Firefighter
- Mayday activation with PASS alarm
- Working in SCBA in basement/parkade concrete
- Working in SCBA in high-rise building
- Working in SCBA in a metal commercial building
- Firefighter operating near ventilation fan
- Firefighter operating radio into wind
- Firefighter operating chainsaw or ventilation saw



Association



Affiliated With INTERNATIONAL ASSOCIATION OF FIREFIGHTERS CANADIAN LABOUR CONGRESS

207 Manor Court, Sherwood Park, Alberta, T8A 0S8

Health and Safety Committee Information Sheet AFRRCS Radio System

- Engine operator at pump panel with truck running on high idle
- Radio freeze transmissions (
- Speaking away from the microphone
- Soak radio with water and foam
- Working Building Fire Alarms

The scoring system for the field tests should include readability, signal strength, and critical fails.

Development of Policies and Procedures

It is understood that with the implementation of any new piece of equipment their needs to be very specific training, policies, and procedures developed. This would include, but not be limited to, emergency radio communications, such as maydays and crews in threating conditions, and compliance with the recommendations set forth in NFPA 1221 and 1802.

<u>Summary</u>

If you have any comments or questions please do not hesitate to contact the AFFA OHS Committee.

Alberta Fire Fighters Association Standing Occupational Health and Safety Committee Jason Curry- Chair Kris Adams Stephen Belich Codey McIntyre