Northern Ireland
Fire & Rescue Service

STANDARD OPERATING PROCEDURE NO 34

Railways

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VERSION CONTROL

This document and subsequent amendments will be issued by the Emergency Response Department, Northern Ireland Fire & Rescue Service (NIFRS) Headquarters.

Amendments are detailed as below:

No	Issued	Amendment	Prepared by	Approved by
1	21/11/2013	Initial issue of Standard Operating Procedure (SOP)	Assistant Group Commander (AGC) (Emergency Response)	Group Commander Synnott
2	04/07/2014	Review of SOP - consultation	Project Team	Assistant Chief Fire Officer (ACO) Ashford
3	19/11/2014	Issue of SOP following approval	Project Team	ACO Ashford
4	24/05/2018	Cover sheet - change of Department name to Resilience Department Update to terminology to reflect revised Incident Command guidance. Decision Control Process embedded and relevant Literature section updated.	Station Commander (SC) (Command & Competence), Learning & Development Centre	Group Commander (Resilience)

1 INTRODUCTION

1.1 Scope

This SOP has been developed to contribute to a safe system of work for incidents in proximity to railway lines, alongside railway lines and their associated structures, or involving railway traffic.

1.2 Pre-determined Attendance (PDA)

Incident Type	PDA
Embankment fire	1 Pump.
Fire on train	3 Pumps; 1 Rescue vehicle; Nearest Flexi Duty System (FDS) Officer.
Fire in tunnel or on viaduct	5 Pumps; 1 Rescue vehicle; Specialist Rescue Team (SRT) – Level 3; 1 AGC; 1 Hazmat Officer; 1 Safety Officer.
Train crash	3 Pumps; 1 Rescue vehicle and SRT – Level 3; Nearest FDS Officer.
Train crash in tunnel or on viaduct	5 Pumps; 1 Rescue vehicle; SRT – Level 3; 1 AGC; 1 Hazmat Officer; 1 Safety Officer.

2 SIGNIFICANT HAZARDS AND CONTROL MEASURES

It must be emphasised that all trains **must be stopped** before NIFRS personnel are deployed within the Northern Ireland Railways (NIR) network. This excludes incidents on stations and platforms. Confirm with Regional Control Centre (RCC) that trains have been stopped when the incident is confirmed and NIFRS require to be on NIR network.

Significant Hazards	Control Measures
▪ Crews self-deploying	▪ Detailed briefing to crews. ▪ Confirmation of briefing. ▪ Safe person concept. ▪ Adequate supervision. ▪ Establish a Command Point. ▪ Full accountability on the incident ground. ▪ Instigate appropriate level of Incident Command. ▪ Sectorise and delegate duties to Functional Officers. ▪ Safety Officers nominated and fully briefed. ▪ Appoint a Marshalling Officer to assist with logistics of arriving appliances and crews.
▪ Embankment fires - Access; - Falls from height; - Sloping uneven ground.	▪ All crew members must be briefed on their tasks and understand the overall plan. ▪ Consider a different approach so the line does not need to be crossed. ▪ Working at Height (WAH) – consider use of work restraint. ▪ Minimum number of personnel in the hazardous area.
▪ Incidents on bridges or viaducts - Communication difficulties; - Integrity of structure during or after an incident; - Length of the bridge or viaduct; - Poor visibility; - High winds; - Falls from height; - Limited access and space around the incident site; - Extended hose lines; - Large number of passengers.	▪ Dual entry points. ▪ WAH – consider use of work restraint. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area. ▪ Effective communications. ▪ Ensure the evacuation signal/system is understood by all in attendance. ▪ Adequate lighting of the work area. ▪ Appoint a Safety Officer and fully brief. ▪ All crew members must be briefed on their tasks and understand the overall plan. ▪ Rendezvous Point (RVP) for passengers.

Significant Hazards	Control Measures
▪ Incidents in tunnels - Communication difficulties; - Integrity of tunnel structure during or after an incident; - Length of the tunnel; - The uncertainty of the location of the incident; - Poor visibility and ventilation; - Water run-off in the tunnel carrying flammable liquids; - High temperatures within tunnels, etc; - Limited access and space around the incident site; - Extended hose lines; - Fumes from petrol/diesel driven equipment; - Large number of passengers; - Limited working duration on Breathing Apparatus (BA) Teams.	▪ Request a Hazmat Officer. ▪ Dual entry points. ▪ Availability of safety refuges inside tunnel. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area. ▪ Effective communications. ▪ Ensure the evacuation signal/system is understood by all in attendance. ▪ Adequate lighting of the work area. ▪ Appoint a Safety Officer and fully brief. ▪ All crew members must be briefed on their tasks and understand the overall plan. ▪ Airshafts may allow consideration of Forward Control Points. ▪ Consider use of forced ventilation. This will obviously be of limited use. ▪ RVPs for passengers. ▪ Gas monitors.
▪ Fuel - Diesel tanks	▪ Request a Hazmat Officer. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area. ▪ Use defensive firefighting tactics if no life risk is involved. ▪ Minimum number of personnel in the hazardous area. ▪ Use of BA and foam jets on fuel fires. ▪ If there is no bund, identify any possible fire-spread from the direction of the running fuel fire – remove hazards. ▪ Ensure appropriate siting of appliances and equipment. Appliances should not be sited in the path of a running fuel fire.

Significant Hazards	Control Measures
▪ Detonators - Dangerous if involved in fire - projectile hazard; - One container of 12 detonators may be stowed in the driver's cab in the locomotive. These detonators may be left in situ by the driver in the event of a fire.	▪ Request a Hazmat Officer. ▪ Seek advice from a NIR official. ▪ Consider use of ground monitors. ▪ Establish a minimum Exclusion Zone of at least 30 m if detonator storage area is involved in fire. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area.
▪ Remote location of incident - Increased attendance times for resources in rural locations; - Difficult access, fences, etc; - Restricted safe working areas; - Moving equipment some distance over rough terrain; - Fatigue of personnel; - Poor lighting conditions; - Manual handling issues.	▪ Consult PDA to determine resources and approach. ▪ Confirm estimated time of arrival of on-coming resources with the RCC. ▪ Early resource evaluation. ▪ WAH – consider use of work restraint. ▪ Mobilise 4 x 4 vehicles for access. ▪ Consider use of the SRT Bob Cat and/or Railway Buggy. ▪ Consider use of NIR resources. ▪ Correct manual handling techniques. ▪ Monitor crews for fatigue. ▪ Provide additional lighting units. ▪ Choose access points. ▪ Appoint a Safety Officer and fully brief. ▪ Appoint a Marshalling Officer to assist with logistics of arriving appliances and crews.
▪ Animals/livestock - Kicks, head butts, bites, crushing and impaling; - Bio-hazards.	▪ Request the owner to move livestock into a controlled area. ▪ Request assistance from NIR. ▪ Minimum number of personnel in the hazardous area. ▪ Mobilise Farm Animal Handling Awareness Officer/Animal Rescue Team. ▪ For animal welfare advice, request RCC to contact Department of Agricultural and Rural Development. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area. ▪ Appropriate decontamination if required.

Significant Hazards	Control Measures
▪ Working in or near tracks - Moving rail stock; - Bi-directional running of trains; - Difficult under-foot conditions; - Track extremely slippery when wet; - Foot entrapment due to activation of points. ▪ *Air Turbulence* - Danger of low pressure area up to 2 m adjacent to moving train; - Personnel may be drawn in and struck by train.	▪ **No NIFRS personnel are permitted within NIR boundaries until all trains have been confirmed as stopped.** This excludes working on railway platforms. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area. ▪ Appoint and fully brief a Safety Officer. ▪ Careful positioning of vehicles to minimise crossing of track. ▪ Personal Protective Equipment (PPE). ▪ Close liaison with NIR. ▪ Location of points should be identified, marked with cone and pointed out to NIFRS Safety Officer. ▪ Suitable lighting should be deployed.
▪ Working at Height (WAH) - Bridges and viaducts; - Sloping and tree-covered railway embankments.	▪ Enforce robust cordons to ensure minimum personnel are in the danger area. ▪ Avoid WAH where possible. ▪ Consider mobilising the SRT. ▪ The Incident Commander (IC) should consult with the SRT to develop a Tactical Plan. ▪ Only competent personnel are to use WAH equipment. ▪ Appoint and fully brief a Safety Officer.

Significant Hazards	Control Measures
▪ Confined spaces - Serious injury to any person at work arising from a fire or explosion; - The loss of consciousness or asphyxiation of any person at work arising from gas, fume, vapour or the lack of oxygen; - The drowning of any person at work arising from an increase in the level of liquid; - The presence of flammable or oxygen-enriched atmospheres; - Falls from height.	▪ IC to gather all Risk Critical Information (RCI) about the incident to assist in identifying significant hazards. ▪ Prioritise work (self-rescue; the rescue and safety of fellow team members; rescue of the casualty). ▪ Full briefing to crews on actions required. ▪ Restrict numbers of personnel in the confined space to minimum necessary to operate safely. ▪ Appropriate level of BA. ▪ Nominate a Safety Officer and fully brief where necessary. ▪ WAH – consider use of work restraint. ▪ Instigate appropriate level of IC. ▪ Make-up for SRT. ▪ Establish a Command Point. ▪ Use of covering jet. ▪ Illuminate the Entry Point during darkness/poor light. ▪ Entry Point must be continually supervised. ▪ Consider use of Positive Pressure Ventilation (PPV) fans. ▪ Frequent rotation of crews and BA Teams. ▪ Sectorise and delegate duties to Functional Officers. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area.
▪ Breach of cordon by members of the public or evacuating passengers, resulting in injury to civilians or Fire Service personnel	▪ Enforce robust cordons to ensure minimum personnel are in the danger area. ▪ Any personnel working under NIFRS instruction within the Inner Cordon must be escorted by a Firefighter at all times. ▪ Request Police Service of Northern Ireland (PSNI) to maintain an Outer Cordon. ▪ Controlled evacuation of passengers by train crew. ▪ Consider progressive horizontal evacuation from one compartment to another.

Significant Hazards	Control Measures
▪ Environmental risk due to run-off from firefighting	▪ Request a Hazmat Officer. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area. ▪ The IC must identify any nearby open water sources that may be affected. ▪ Consider mobilising Level 2 (additional equipment carried by Whitla and Crescent Link Hazmat vehicles) and/or 3 (joint NIFRS/Department of the Environment – Northern Ireland Environment Agency (NIEA) response) pollution resources. ▪ Inform NIEA, if necessary. ▪ Use of Environmental Response kit.
▪ Hazmat - contamination	▪ Request a Hazmat Officer. ▪ PPE - BA/gas tight suits. ▪ Chemdata. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area. ▪ Minimal personnel in the Hazard Zone. ▪ The IC is to liaise with a Hazmat Officer to determine appropriate decontamination requirements (if any). ▪ Fire kit must be decontaminated as per Hazmat Officer's instructions.
▪ Machinery - Entrapment; - Compressed gases; - Fire.	▪ Isolate power supply. ▪ Identify any entrapment hazards. ▪ All crew members must be briefed on their tasks and understand the overall plan. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area. ▪ If fire is involved, use BA and jets. ▪ Consider mobilising the SRT for entrapment.

Significant Hazards	Control Measures
▪ Fires in locomotives and rolling stock	▪ Close liaison with NIR. ▪ Ensure engine has been switched off and all batteries isolated. Be aware - isolating power may secure the carriage doors in the closed position. ▪ Isolate any liquefied petroleum gas and power on carriages. ▪ All crew members must be briefed on their tasks and understand the overall plan. ▪ Restrict numbers of personnel to the minimum necessary to operate safely. ▪ Appropriate level of BA. ▪ Use of covering jet. ▪ Use of short extension ladders for additional access and egress. ▪ Illuminate the Entry Point during darkness/poor light. ▪ Enforce robust cordons to ensure minimum personnel are in the danger area. ▪ Nominate a Safety Officer and fully brief where necessary. ▪ Avoid WAH where possible. ▪ Consider use of PPV fans. ▪ Consider progressive horizontal evacuation from one compartment to another.
▪ Injury to casualty due to inappropriate casualty handling; ▪ Bodily fluids from casualty.	▪ PPE to include medical gloves and eye protection. ▪ Safe approach to the casualty. ▪ Make early contact with the casualty. ▪ Casualty centred rescue. ▪ Space creation for extrication.

3 OPERATIONAL CONSIDERATIONS

3.1 EN ROUTE

Immediate Considerations

- Consider hazards likely to be present at the site from the mobilising information.
- Consult Operational Aide-Mémoire.
- Brief the crew and allocate initial roles.
- Confirm if an Operational Risk Card is available on the Mobile Data Terminal, or carried on the appliance.
- Careful approach.
- Access.
- Safe appliance positioning.

Think through the phases of Managing Incidents

- Decision Making Model

Situation:

- Incident information;
- Resource information;
- Risk information.

Plan:

- Objectives;
- Tactical priorities;
- Operational tactics.

Action:

- Communicate;
- Control.

Decision Controls:

Why?
Expectation?
Benefit -vs- risk?

Active Monitoring

- Consider Tactics

    - Initial actions;
    - Brief crews;
    - Life risk/no life risk;
    - Continually re-evaluate;
    - Complete rescues;
    - Extinguish fire;
    - Handover;
    - De-brief.

- Officer-in-Charge Considerations

    - Focus on safety throughout;
    - Direct operations by standing back;
    - Liaise with other agencies.

3.2 IN ATTENDANCE

Initial Actions

- Make contact with the caller or gain information from persons on site.
- Obtain RCI, hazards, etc, from the Mobile Data System (MODAS).
- Confirm the nature of the incident.
- Identify the hazards present.
- Consider the additional resources required.
- Develop a Tactical Plan.
- Extinguish fire or carry out rescues.
- Consider environmental impacts.
- Decontaminate personnel, appliances and equipment.

Informative Message

- Send an early informative message, stating nature of the incident, Tactical Mode and make-up as appropriate.

Brief Crews

- Brief crews on the priorities and plan, hazards and control measures.

Rescues

- Carry out time-critical rescues and firefighting priorities.

Informative Messages

- Send a Tactical Mode update and informative message every 20 minutes or whenever risk to personnel changes.

Complete Rescues

- Treat casualties.

Environmental Considerations

- The IC must identify any nearby open water sources that may be affected.
- Consider mobilising Level 2 (additional equipment carried by Whitla and Crescent Link Hazmat vehicles) and/or 3 (joint NIFRS/Department of the Environment – Northern Ireland Environment Agency response) pollution resources.
- Inform NIEA if necessary.
- Use of Environmental Response kit.
- Consider use of farm plant to divert run-off into a temporary lagoon.

Handover

- To occupier, PSNI or other agency.
- If not present, make every effort to secure the premises.
- If it is not possible to secure the premises, request the RCC to inform the PSNI and make contemporaneous notes to that effect.

3.3 POST-INCIDENT

Critical Incident De-brief

- An officer will carry this out where appropriate.

De-brief

- Carry out a Hot De-brief.
- Identify training needs.
- Carry out and feedback as appropriate.

Equipment Issues

- Replenish items used.
- Submit defects.
- Source replacement equipment via District.

Incident Recording Form (IRF)

- Complete IRF within 21 days.

Accidents or Near Misses

- Accidents are to be fully investigated and reported as per normal procedures.
- Near misses are to be reported as per normal procedures.

Decontamination of Personnel and Fire Kit

- Standard procedures are to be followed.

4 PRE-INCIDENT PREPARATION

4.1 Relevant Literature

This SOP is supported by the following SOPs and Training Notes, which are available from the Global Folder at G:\Document Management System:

- Transport 01 - Railway Incidents;
- Hazmat 03 - Hazardous Materials;
- Operational 01 – Incident Command;
- Operational 04 - Special Service Calls;
- Operational 05 - Specialist Rescue Calls;
- Fire Science 09 - Ventilation;
- RTC 10 - Hydraulic Rescue Equipment;
- Operational 11 - Working at Height;
- General 11 - Manual Handling;
- SOP 4 - Water Rescue;
- SOP 6 - Generic Hazmat Incidents;
- SOP 6A - Decontamination/Washdown;
- SOP 6B - Pollution Emergencies;
- SOP 8 - Firefighter Emergencies;
- SOP 22 - Large Animal Rescues;
- SOP 26 - Confined Space;
- SOP 27 - Working at Height;
- SOP 40 - Rescue of Trapped Persons.

4.2 Training

Depending upon the Station Risk Profile, training should be carried out in accordance with the Area Training Planner, to prepare in advance for incidents on railway infrastructure. Training scenarios should be based upon the significant hazards as detailed within this SOP.

All training must be recorded on the Tracking & Training database to provide an effective audit trail.

4.3 Pre-planning

To assist in providing safe systems of work, personnel should carry out pre-planning activities as follows:

- Gain knowledge of the station ground, water supplies, access points, hazards present.

- Gain knowledge of the additional resources that can be called on to assist.

- Consider utilising the SOP 12 (Operational Intelligence) process for railway infrastructure with significant hazards to assess the overall risk posed by the site.

- Assess the need for exercises on railway premises (stations/ platforms/sidings).

- Carry out familiarisation visits to railway premises to establish:

  - operational plans/maps;
  - safe access/egress points;
  - emergency RVPs;
  - water supplies;
  - marker numbers - on bridges, tunnels, signal posts and mile; marker posts - alongside all lines;
  - road names - where these cross or run close to the line;
  - geographical features - river crossings, cuttings, embankments or level crossings - cordons and crowd control;
  - grid references;
  - casualty evacuation points.

- Complete regular exercises on railway incidents.