



Llywodraeth Cymru
Welsh Government



Thematic Review of operational training within the Welsh Fire and Rescue Services

October 2022

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Introduction and background

1. This thematic review of training follows on from the thematic review into the capacity of the three Welsh Fire and Rescue Services (FRS) to undertake additional duties in support of Health and Social Care (Broadening of the role of firefighters).
2. The role of firefighter is highly technical and has evolved significantly over time as the complexities of the built environment have increased. The combination of modern buildings designed to retain heat combined with synthetic based modern building contents with significantly higher heat release rates than their predecessors, result in an increase in ventilation-controlled fires which can be extremely hazardous to firefighters. The breadth of incidents to which firefighters are expected to respond however, now extends well beyond fires and encompasses every aspect of technical rescue and hazardous materials response, all of which are complex disciplines in and of themselves.
3. Acquiring, developing and maintaining core competencies is of fundamental importance to achieving safe systems of work in the operational environment. Skills maintenance training is especially important, not least as the number of incidents has declined in recent years resulting in reduced opportunities for firefighters to apply their skills in real-world scenarios. The volume of incidents may have decreased but the hazards to firefighters certainly have not.
4. The importance of training will therefore be self-evident.
5. Failure to train to a consistent high standard against evidence-based operational guidance compromises the safety of firefighters and the public. This has been a factor in almost every fire-related firefighter fatality in the UK over the last two decades. The Grenfell Tower Inquiry has already concluded that the London Fire Brigade's failure to recognise the hazard of cladding fires and the need to evacuate high-rise buildings when they fail in a fire scenario, most likely contributed to the loss of life in that fire; the Inquiry is very likely to return to this in more detail in its second report expected in 2023. The need to maintain and deliver a consistent, high-quality training regime has to be one of the most important priorities for any FRS.
6. In the previous thematic review, I raised a concern over the amount of time available for skills maintenance training and exercising within the existing station work routines and on the Retained Duty System (RDS). I acknowledged that I could not do justice to the issue within the scope of that review and that such was its importance, I would undertake a standalone review of training immediately on its conclusion.
7. The purpose of this thematic review is therefore to examine the methodology adopted by the Welsh FRSs primarily for determining the allocation of time for training and exercising within station work routines (maintenance of competence against core and additional skill areas) and on the RDS, but to also consider initial skills acquisition and progression (development to competent) training, as all are inextricably linked.
8. This report focuses on the core and additional skills for firefighters and supervisory managers (crew and watch managers – referred to as watch officers in this report). It does not consider the training for and assessment of middle and

strategic manager incident command competencies, nor for specialist roles typically undertaken by middle managers such as Hazardous Materials and Environmental Protection Officer or Tactical Advisor.

9. The eight core skill areas are:

1. Breathing Apparatus (BA)
2. Casualty Care
3. Command and Control (ICS)
4. Hazardous Material
5. Pumps, Ladders, Knots and Lines
6. Road Traffic Collision (RTC)
7. Safe working at height
8. Water Incidents

10. The three FRSs have mapped the core skills against the National Occupational Standards Skills for Justice knowledge and understanding (theoretical) and practical standards.

11. The frequencies for assessment are set using a standard risk assessment methodology. This methodology determines that the more risk critical and complex the activity, the more frequently it should be assessed. All three FRSs use a commercial software programme called pdrPro for their competency recording system. The pdrPro system sets assessment frequencies and links to training packages for the competency area which are typically held on the learnPro Learning Management System, also used by the three FRSs.

12. Watch officers are required to arrange and deliver theoretical and practical training and assessments around the pdrPro frequencies and then record the outcomes. The content of learnPro is predominantly theoretical. The FRS Training and Development Manual provides guidance on practical training and also provides step by step instruction on how to undertake standard practices on pumps, ladders, foam making equipment and for a number of rescue techniques. For practical training not detailed within the FRS Training and Development Manual, watch officers are expected to develop their own scenarios. This may involve firefighters practicing a single control measure tactic or technique or a scenario where multiple control measure tactics or techniques are practiced. The National Occupational Standards for Watch Managers includes the requirement to plan and assess the work of teams and individuals (SFJFRSWM1). However, not all watch officers have received formal training or have formal qualifications in training development, delivery and assessment.

13. Examples of additional skills are water rescue, aerial appliances and National Resilience¹ capabilities such as Urban Search and Rescue (USAR), High Volume Pumps (HVP), Mass Decontamination (MD) and Detection, Identification and Monitoring (DIM).

¹ National assets funded by Welsh Government for significant incidents that are considered beyond the capability of individual FRS to respond to in isolation.

14. In contrast to the arrangements for core skills set out above, the National Resilience capabilities each have their own comprehensive and detailed competency maintenance frameworks which have been developed by the National Resilience Assurance Team (NRAT) in conjunction with practitioners and agreed at the Capability National Working Groups. These competency maintenance frameworks are supported by equally comprehensive theoretical and practical training resources held on the National Resilience portal. As an example, the USAR competency maintenance framework assumes a minimum training time allocation of 192 hours per year based on a time and motion study of firefighters utilising theoretical and practical training materials. A separate competency assurance process for each capability is overseen by the NRAT capability lead officers with reports on outcomes submitted to individual FRSs and the National Resilience Board.

15. The FRSs' water rescue response capability also benefits from a structured approach to training. It is aligned to the DEFRA Flood Rescue Concept of Operations which utilises a team-typing methodology. Each team type has a predetermined set of skills and competencies with a credentialing process that, like the National Resilience capabilities, is also overseen by the NRAT.

16. This report sets out the findings of the review along with a number of recommendations for the three Welsh FRSs to consider. These recommendations are in addition to the two interim recommendations I made on 15 March in correspondence to the three Chief Fire Officers (CFOs) and which are repeated in this report. I explained within the 15 March correspondence that I had identified from the initial desktop review and follow-up interviews, an absence of any incontrovertible methodology to determine time allocation. For this reason, I recommended that the three FRSs undertake an unconstrained analysis of the amount of time required for firefighters to train on and then be assessed against the underpinning knowledge and range of standard practices and techniques that make up the core competency areas. I recommended that the same analysis was also required for additional competency areas such as aerial ladder appliances and more advanced technical rescue skills.

17. Given the importance of the issue, I made the decision that it was not appropriate to delay making these recommendations until the publication of this report.

18. In my correspondence of 15 March, I explained that unconstrained analysis meant an analysis that is driven by establishing the actual time required to allow each firefighter an appropriate opportunity to practice core competencies in addition to being assessed as an individual or as part of a crew in a scenario-based environment. This is as opposed to an analysis driven by the amount of contractual time available on the RDS or through the constraints of the existing shift duty system.

19. South Wales FRS replied by letter to acknowledge my correspondence, but I am not aware of any action having been taken by the three FRSs on my recommendations to date. These two recommendations stand and are repeated in this report as Recommendations 2 (a) and 2 (b).

Executive Summary

20. The primary objective of this review was to examine the methodology adopted by the three Welsh FRSs to determine the allocation of time for skills maintenance training and exercising within station work routines. What emerged from the initial desktop review was that only one FRS had undertaken an analysis of the time required for training and exercising. In response, I issued two interim recommendations which have been set out within the Introduction and background section to this report and are repeated again as substantive Recommendations 2(a) and 2(b).

21. I caveated these recommendations with a stipulation that any analysis should not be constrained by the contact time available on the RDS or the limitations of the existing shift system. I made this stipulation because I am of the view that the one analysis undertaken to date was done so with the objective of making the case to increase contact time on the RDS from 2 hours to the maximum of 3 hours, as contained within the Grey Book. As commendable as this objective is, it does not, in my view based on previous experience, deliver an outcome that identifies and secures the training and assessment time that is actually needed for skills maintenance.

22. I am not aware of any progress having been made against these recommendations. Until, and unless the FRSs undertake an unconstrained analysis of the actual time required to give firefighters sufficient time to practice on and be meaningfully assessed against all core and additional skill areas, it is not possible to offer a definitive and evidence-based view on whether sufficient training and exercising is being undertaken across the three FRSs on all three duty systems.

23. I personally remain unconvinced that sufficient training time is available to firefighters conditioned to the RDS or shift system.

24. A substantive component of the review was the station visits. I spoke with a number of very conscientious watch officers who clearly devote much time and effort to the training and assessment of the firefighters whom they supervise. In respect of the shift-based watch officers, if they are undertaking training over and above the time allocations established through the Broadening of the role thematic review as was suggested to me on one station visit, then this must be at the expense of risk reduction activity. I can say that with confidence because there is only a finite amount of time available within the constraints of the existing shift system.

25. I observed limited evidence of a consistent and standardised approach to practical training and assessment within or across the three FRSs. Increased standardisation would in my view be of significant assistance to watch officers delivering training and for officers tasked with Operational Assurance.

26. Each FRS utilises the pdrPro competency recording system to implement a risk-based approach to training and assessment. This is linked to the learnPro Learning Management System which consists predominantly of theoretical training packages, some of which have a built-in knowledge and understanding assessment. There are limited practical or scenario-based training resources available to watch officers beyond those detailed within the FRS Training and Development Manual.

27. South Wales FRS has developed comprehensive pdrPro guidance which gives direction around scenario content for the purposes of assessment. This is a good foundation but more explicit guidance alongside a suite of practical training resources is required, to ensure consistent and standardised on-station training and assessment.

28. South Wales FRS BA instructors have also developed a series of short practical training scenarios called micro teaches. Mid and West and North Wales FRSs have developed similar resources. Micro teaches are an excellent resource which should be further developed to provide training resources for all practical control measure tactics, techniques and scenarios.

29. Such resources have the potential for further development and could then be used as the basis for a time and motion study to determine, on the basis of empirical evidence, the amount of time required for training and assessment. This will be of particular benefit for the RDS where contact time is clearly limited.

30. Once the FRSs have this empirical evidence, they can utilise it to prioritise which of the control measure tactics and techniques should be employed by RDS crews, based on the actual time required versus the time available. I acknowledge that there will be control measure tactics and techniques on which RDS crews will not be trained, as there is highly unlikely to be sufficient time available to cover all existing control measure tactics and techniques.

31. This would address the current and, in my view, unrealistic expectation that RDS firefighters can maintain competence across the full range of core and additional skill areas with only 2-3 contact hours each week. It would, however, necessitate a review of FRS strategic risk assessments to determine which control measure tactics and techniques should be prioritised for the RDS, and which control measure tactics and techniques would be undertaken by wholetime firefighters only. I recognise that this would also necessitate reconsideration of the extent of FRS response capability, especially in rural areas currently served only by RDS stations.

32. Despite their best efforts, RDS availability is undoubtedly presenting a significant challenge in two of the three FRSs, as it is across the UK. Geographically, the North and Mid and West Wales FRS population centres are more dispersed than in South Wales FRS, which is better able to take advantage of wholetime firefighter availability to undertake RDS duties, which is a real force multiplier and clearly improves availability. This is no doubt incentivised by what is an innovative salary scheme in operation within South Wales FRS that clearly works well for the Service.

33. The availability issue has implications over and above that of maintaining response cover. The impact of RDS availability on wholetime crews' skills maintenance training was raised as an issue, most notably in North Wales FRS. This is as a result of wholetime crews being sent on short notice standby moves to cover RDS areas, impacting on planned training and risk reduction activity.

34. In my view, there is no realistic solution to the availability challenge beyond increasing the number of wholetime crews for some or all of the 24-hour period each day. This is something that I believe merits serious consideration by the FRSs in Wales and across the UK.

35. A further issue of real concern raised on station visits was that of Compartment Fire Behaviour Training not reflecting the reality faced by firefighters at incidents.

36. The National Operational Guidance that informs Compartment Fire Behaviour Training is based on research that is now nearly thirty years old. The heat release rates of many compartment fires today are well in excess of those thirty years ago. This is compounded by what appears from anecdotal evidence gathered on the station visits to be a default to using high pressure hose reels with low water flows as opposed to main branches with much higher water flows, sometimes in conjunction with tactical ventilation which can significantly increase fire growth and heat release rates. The result is an inability to suppress fully developed fires, placing firefighters and the public in danger and increasing the risk of severe property damage. In my view this must be addressed as a priority.

37. The current review of the National Operational Guidance - Fires and firefighting, and availability of extensive empirical evidence from international research, offers the FRSs an opportunity to revisit their control measure tactics and techniques for compartment fire attack. It will not, however, address the significant challenge of replicating modern fire conditions in existing training facilities without some substantial capital investment.

38. This issue is compounded by the existing locations of Compartment Fire Behaviour Training facilities in two of the FRSs and the excessive travel distances for some crews to reach them. The solution may be to move to a hub and spoke model, however, as noted earlier this will require substantial capital investment and would not be without environmental challenges. There are, however, some low cost and environmentally neutral training prop solutions available to the FRSs which I signpost within this report.

39. I make seven recommendations in this report, which if acted on, I consider would go some way to addressing what I recognise are very significant challenges for the Welsh FRSs and which should not be underestimated.

Recommendation 1: that the three Welsh FRSs establish a means whereby training needs analysis and training delivery are clearly aligned to a regular assessment of hazards, risks and threats in their areas. This should set out the capability deemed necessary to provide an appropriate response to the identified hazards, risks and threats, which should then inform the training needs analysis.

***Recommendation 2 (a):** that the three Welsh FRSs should undertake an unconstrained analysis of the amount of time required for firefighters to train on and then be assessed against the underpinning knowledge and range of standard practices and techniques that make up the core competency areas.

***Recommendation 2 (b):** that the three Welsh FRSs should undertake an unconstrained analysis of the amount of time required for firefighters to train on and then be assessed against the underpinning knowledge and range of standard practices and techniques that make up additional competency areas.

Recommendation 3: the FRSs should use the outcome of the unconstrained analysis of time required for skills maintenance training to prioritise the control measure tactics and techniques from their Operational Risk Assessments that will be utilised by the RDS based on the time available for training.

Recommendation 4: the FRSs should develop micro teaches for every control measure tactic or technique not already included within the FRS Training and Development Manual.

Recommendation 5: that the Welsh FRSs review their control measure tactics for compartment firefighting in light of international research and update their control measure tactics and techniques accordingly.

Recommendation 6: that the Welsh FRSs review their Compartment Fire Behaviour Training syllabus to incorporate any changes to control measure tactics arising from the review advocated in Recommendation 5.

Methodology

40. I wrote to the three CFOs on 10 January advising of my intention to carry out a thematic review of training and requesting that they nominate a single point of contact from their FRS, with whom I could liaise to access policy documentation to inform the review. I also set out within a separate document the methodology I intended to apply to the review along with the rationale. A copy of the methodology document is appended to this report.

41. The first part of the review looks at what drives the FRSs' training policy and specifically what, if any, periodic strategic assessment of risk is undertaken to determine FRSs' capabilities from which the training need arises. As an example, the FRSs in England are required to identify and assess all fire and rescue related risks and then put in place arrangements to prevent and mitigate against such risks through, amongst other actions, developing appropriate capabilities. It follows that once the required capabilities are identified a training needs analysis should be undertaken as an integral component of that capability development.

42. The second part of the review looks at the process of skills acquisition (Phase 1), skills development (Phase 2 – development to competent through the achievement of the diploma apprenticeship or equivalent) and skills maintenance (Phase 3). The skills maintenance element of the report contains the most substantive content as it is the primary focus of the review.

43. The final part of the review looks at the mechanisms in place to give assurance that on-station training contributes effectively to ensuring firefighters are adequately trained to safely deal with all foreseeable risks.

44. I, along with the Assistant Adviser, first undertook a desktop review of the comprehensive evidence submissions from the three FRSs. We then conducted a series of follow-up interviews with the lead officers for training. It was after these follow up interviews, that I wrote to the CFOs with the two interim recommendations set out earlier in this report. We then moved to the fieldwork element of the review.

45. Our fieldwork consisted of the following station visits:

Wholetime Shift System* * 2 x 9 hour day shifts, followed by 2 x 15 hour night shifts, followed by 4 days off	Wholetime Day Crewing* * 4 x day shifts with each day shift immediately followed by a retained cover period, followed by 4 days off	RDS* * on call firefighters providing up to 120 hours per week cover responding to incidents, and who typically live within a 5 minute radius of a station
Neath	Aberystwyth	Rhayader
Ely	Colwyn Bay	Treorchy
New Inn		Flint
Rhyl		

46. The stations were selected by the FRSs to include the shift, day crewing and RDS. As South Wales do not operate the day crewing duty system, we visited two shift crewed stations and one RDS crewed station. The visits involved a discussion with the on-duty crew around all aspects of training, but with a particular focus on practical training undertaken on station. Whilst the discussions covered a broad range of skill areas ranging from technical rescue to incident command, I ensured consistency by always asking questions specific to tactical firefighting, BA and Compartment Fire Behaviour Training. I was accompanied on all visits, with the exception of Rhyl, by either the Assistant Adviser or at least one member of the Welsh Government Fire Services Branch.

47. We concluded the review with final interviews with lead officers from the Training and Operational Assurance functions within each FRS, primarily to confirm the accuracy of the evidence we had gathered.

Strategic assessment of risk to inform capability development

48. Unlike the English version, the extant Welsh Fire and Rescue National Framework does not explicitly require the FRSs to identify and assess all fire and rescue related risk and then put in place arrangements to prevent and mitigate against such risks through, amongst other actions, developing appropriate capabilities. This is, however, under consideration for inclusion in the next iteration of the Framework, due to be published in 2023. In any event, the three Welsh FRSs (along with the English FRSs) already have statutory duties in this regard under section 7 of the Fire and Rescue Services Act 2004.

49. Typically, FRSs in England will produce a Community Risk Management Plan (CRMP) which sets out in detail how they will meet this requirement.

50. The National Fire Chiefs Council has a Community Risk Management workstream with the objective of developing an evidence-based digital toolkit for assessing UK FRS related risk and vulnerability to improve the safety, health, well-being and economic prosperity of communities. It is intended that the toolkit will provide a consistent approach to the development of CRMPs within the English FRSs. National Operational Guidance also contains 'Corporate guidance for operational activity' which is provided for all UK FRSs.

51. A CRMP is a good starting point for an FRS to set out the findings of their strategic risk assessment along with the strategic control measures they intend to employ to mitigate the identified risks. One of the significant strategic control measures, alongside prevention and protection activity, is the FRSs response capability. This capability gives rise to a substantial training need, which should be determined through a periodic training needs analysis.

52. All three Welsh FRSs produce Medium Term Strategic Plans and an Annual Improvement Plan or equivalent. Any strategic plan or statement for an FRS should be grounded in, and reflect, the current and likely future hazards, risks and threats in its area. It should inform the acquisition and deployment of resources, and the development and maintenance of firefighters' skills and capabilities through training.

53. The North and South Wales FRS's Strategic Plans contain training related objectives but there is no specific commitment to develop a strategic CRMP. South Wales FRS has developed Community Risk Management Plans for each station as part of their annual business planning cycle but have not produced a service-wide CRMP as there is no requirement for them to do so.

54. The Mid and West Wales FRS's Annual Business Improvement Plan 2022/23 contains a commitment to develop a CRMP, with work now well underway to develop a methodology with a focus on the response capability.

55. The proposed methodology considers Assets (stations, appliances, infrastructure), Provision (what is the capability to be delivered) and People (skills, knowledge and competence required to deliver the desired provision).

56. In order to meet their responsibility under Regulation 3 of the Management of Health and Safety at Work Regulations to produce suitable and sufficient risk assessments, the FRSs should use the hazard and risk control statements with National Operational Guidance, to inform their local Operational Risk Assessments for all reasonably foreseeable incident types. Operational Risk Assessments can typically take the form of a Standard Operational Procedure and should provide information on hazards and detail the control measure tactics and techniques that will be employed by firefighters to safely resolve the incident type in question. The extent of these control measure tactics and techniques ultimately determines the capability that form the FRSs' response provision.

57. Regulation 5 of the Management of Health and Safety at Work Regulations places responsibilities on the FRSs for the effective planning, organisation, control, monitoring and review of preventative and protective measures including in this context their Operational Risk Assessments/Standard Operational Procedures determined as necessary to meet the identified risk.

58. In my view the Assets, Provision and People framework provides a sound basis on which the FRS can develop an appropriate understanding of risk and to plan for and organise the safe systems of work required to address them, whether or not that is advanced as a CRMP, with the Provision and People strands directly informing the training needs analysis. The methodology adopted by Mid and West Wales FRS also represents a sound framework against which to consider the response capability.

59. The monitoring and review aspect of the Regulation 5 responsibility is considered later on in this report.

Recommendation 1: that the three Welsh FRSs establish a means whereby training needs analysis and training delivery are clearly aligned to a regular assessment of hazards, risks and threats in their areas. This should set out the capability deemed necessary to provide an appropriate response to the identified hazards, risks and threats which should then inform the training needs analysis.

Initial Training (Phase 1)

60. The three Welsh FRSs have worked in partnership with Skills for Justice to develop an all-Wales diploma apprenticeship program for firefighters delivered through colleges across the three FRS areas. Each FRS has entered into a work-based learning provider sub-contractor agreement with their local college, which allows them to draw funding from the Welsh Government apprenticeship levy.

61. As the legacy qualification NVQ Level 3 Operations in the Community is no longer supported by Skills for Justice, the all-Wales model is now being adopted by the English FRSs.

62. For RDS firefighters in development, a new Skills for Justice custom certificate has been developed by Mid and West Wales FRS which remains aligned to the National Occupational Standards.

63. This bespoke qualification has been created to ease the administrative burden on the RDS firefighters in development and their watch officers and to address the issue of the previous qualification no longer being supported by Skills for Justice.

64. Wholetime firefighters undertake a 13-week initial course in South Wales FRS and a 14-week initial course in Mid and West Wales and North Wales FRSs including apprenticeship enrolment and covering acquisition of the following core skills:

- Foundation firefighting
- BA initial course including tactical ventilation techniques²
- Fire trauma initial (clinical governance through Welsh Ambulance Service Trust)
- RTC initial course including winch operation
- HAZMAT initial
- Water first responder (Type D/E)
- Bariatric rescue (not all FRSs)
- Level 1 safe working at height
- Marine firefighting (theoretical input)
- Health and safety principles

65. Wholetime Firefighters also receive input on the following areas:

- Manual handling
- Violence against women
- Domestic Abuse and Sexual Violence Group 1 and 2
- Legislative requirements of the Welsh Language Act

66. Dyslexia and neurodiversity screening is included during initial training and supported alongside a fitness training programme. Any additional skills such as swift water rescue technician, rescue boat operator, aerial appliance operator etc, are

² Wholetime Firefighters in development are classified as Breathing Apparatus development wearers until they have successfully completed a formal Breathing Apparatus re-assessment which are undertaken within 24 months of the initial course. The development classification imposes certain restrictions on the duties they can perform

acquired when the firefighters in development are posted to stations that host the capability.

67. Initial skills acquisition training for RDS firefighters in development is delivered using a modular approach to reflect the contractual differences with their wholetime counterparts.

68. Across the three FRSs, RDS firefighters in development will attend the following initial acquisition courses either on weekdays or across the weekend:

- Initial foundation firefighting skills
- BA wearer³
- RTC
- IEC initial

69. After each stage the RDS firefighter in development returns to duty at their home station fulfilling roles with restricted capability as appropriate. Each FRS has its own criteria with regard to at what stage within this process the RDS firefighter in development, can be classed as an effective resource to maintain appliance availability.

South Wales FRS RDS initial acquisition training

70. The South Wales FRS RDS initial acquisition training program consists of 2 modules.

- Module 1 is a 10-day foundation firefighting skills course run Monday–Friday over two consecutive weeks. Module 2 is a 10 day BA wearer course also run Monday–Friday over two consecutive weeks.

Positive pressure ventilation input is included in the initial BA course and extends to positive pressure attack. Firefighters in development are also trained in the use of BA Entry Control Boards (BAECB) as Entry Control Operatives (ECO).

- On completion of module 1, firefighters in development undertake skills development on station and through attendance at the following additional courses over the 24-month period:
 - RTC - 4 days over 2 weekends
 - Trauma – 2 days
 - Water rescue (Type D/E)

³ RDS Firefighters in development in M&W and SWFRS are also classified as Breathing Apparatus development wearers until they have successfully completed a formal Breathing Apparatus re-assessment which are undertaken within 24 months of the initial course. The development classification imposes certain restrictions on the duties they can perform

Mid and West Wales FRS RDS initial acquisition training

71. Historically RDS firefighters in development have completed three 'operational/practical' units of the Skills for Justice Awards Level 3 – NVQ Diploma in Emergency Fire Services Operations in the Community (Unit D 6014078, Unit H 6014079 and Unit Y 6014077).

72. The most recent cohort of firefighters in development has seen delegates transition to a new Skills for Justice custom certificate created by Mid and West Wales FRS which remains aligned to the National Occupational Standards.

73. The Mid and West Wales FRS RDS initial acquisition training consists of two modules which are completed over 17 days, usually staggered over one month.

- Module 1 is a 13-day foundation firefighting skills course consisting of 1 x 3 days (Friday-Sunday) and 2 x 5 days (Monday-Friday).
- Module 2 is a 4 Day RTC course (Friday-Monday).
- A BA course will be undertaken within 12 months of completing initial training.
- A Trauma course is undertaken outside of initial training course and usually within 12 months of completion of initial training.

North Wales FRS RDS initial acquisition training

74. The North Wales FRS RDS initial acquisition training program consists of three modules.

- Module 1 is a 6-day foundation firefighting skills course run Sunday–Friday.
- Module 2 is a 10-day BA wearer course run Monday–Friday over two consecutive weeks. This course is residential and includes evening commitments to provide longer training contact time. On completion of the BA course, wearers are deemed competent and no restriction to capability is applied.
- Module 3 is currently a 3-day RTC course, however from September 2022 this is being extended to four days.

75. Any station specific skills are acquired on station aligned to the normal training delivery programme.

Development to competent (Phase 2)

76. For wholetime firefighters the 13/14-week initial training course is followed by a 24-month period within which the firefighter is expected to move from development to competent and thus achieve the diploma apprenticeship.

77. There are milestones set at six monthly intervals over the 24 months. Successful completion of each milestone is essential to completing the diploma apprenticeship.

South Wales FRS

78. Wholetime firefighters in development undertake quarterly assessments to complete the diploma apprenticeship.

79. RDS firefighters in development undertake the following six monthly thematic assessments;

6-month assessment	-	Core Skills
12-month assessment	-	Core Skills
18-month assessment	-	RTC
24-month assessment	-	BA

80. Successful completion of the respective assessments by assessors enables the firefighter in development to be deemed competent and achieve the diploma award.

Mid and West Wales FRS

81. Mid and West Wales FRS set milestones at six monthly intervals over the 24-month period for wholetime and RDS firefighters in development.

6-month assessment –	1-day, progress of practical firefighting skills including theoretical knowledge test.
12-month assessment –	1-day, progress of practical firefighting skills including theoretical knowledge test.
18-month assessment –	1day, progress of practical firefighting skills including theoretical knowledge test.
24-month assessment -	2-days, outstanding elements of Skills For Justice units 2-6 completed, final practical and theoretical assessments prior to being deemed competent in role.

82. Progress against the 6–24 month development programme is measured against National Occupational Standards.

83. On successful completion wholetime firefighters in development will attain the diploma apprenticeship whereas RDS firefighters in development will attain the Skills for Justice custom certificate. The assessment process is overseen from initial acquisition through to demonstration of competence by qualified instructors within the Training Delivery Department.

North Wales FRS

84. For wholetime firefighters, milestones are set at six monthly intervals over the 24-month period. Successful completion of each milestone is essential to completing the diploma apprenticeship.

85. RDS firefighters in development undertake six monthly assessments to progress to competent status.

86. All new wholetime firefighters undertaking apprenticeship programmes are subject to continual assessment, unlike English counterpart programmes that have 'end-point assessment' arrangements. North Wales FRS works in partnership with its local training provider to ensure that the development programme not only meets the requirements of the apprenticeship framework, but the administration of the programme meets strict Estyn inspection requirements. North Wales FRS is subject to external quality assurance from SFJ EQA's and also Estyn Inspectors. Wholetime firefighters meet with the lead internal assessor at least every six weeks.

87. Former RDS firefighters who are employed as wholetime firefighters follow the same development pathway as their apprentice counterparts, and whilst they are not enrolled with the local education provider, they are registered through the North Wales FRS' Skills for Justice accredited centre for the diploma qualification. Progress against the qualification is supported through the accredited centre and local assessor network.

88. RDS firefighters follow a bespoke development programme that targets specific activities to be undertaken that lead to the achievement of the knowledge and understanding aspects of the firefighter role map (excluding driving). In addition to evidence submissions RDS firefighters are subject to station-based assessments at 6, 12 and 18 month periods. These assessments are stepped in complexity and cover a broad range of practical skills and knowledge requirements of the firefighter role.

Maintenance of competence (Phase 3)

89. The following substantive issues were identified from the desktop review, follow-up interviews and station visits:

- i. Analysis of the amount of time required by firefighters for training
- ii. Insufficient time available for the amount of training required
- iii. The balance between theoretical and practical training
- iv. No standardised or consistent approach to practical training
- v. Travel distances to Service training venues
- vi. Compartment Fire Behaviour Training
- vii. Impact of RDS availability on wholetime training
- viii. Reliance on wholetime to support RDS

i) Analysis of the amount of time required by firefighters for training

90. My correspondence of 15 March recommended that the three FRSs undertake an unconstrained analysis of the amount of time required by firefighters to maintain all core and additional competency requirements. Until, and unless that is completed, it is not possible to definitively state whether sufficient time is allocated to training for the RDS or within the existing day crewing or shift work routines.

91. Only one of the FRSs has undertaken an analysis of the amount of time required for training, which they have determined to be 98 hours per year. In my view the objective of this analysis was to support the case to move from two hours per RDS drill night to three hours. Whilst this is an entirely commendable objective, I am of the view that the outcome of the analysis would not stand up to scrutiny.

92. The professional opinion of the FRSs' subject matter experts was used to ascertain the 98 hour figure. The analysis acknowledges that the 98 hours is calculated on the basis of simultaneous activity and takes no account of "different training delivery styles or the natural delays, encountered with human interactions". It also acknowledges that the analysis does not extend to the additional skill areas highlighted previously and that these give rise to an additional training demand. An example of simultaneous activity in this context is a scenario that encompasses multiple competency areas to be undertaken by one or more crews, such as a well-developed compartment fire with persons requiring rescue. An example of a natural delay might be training that is interrupted by visits to the station or a fire call. There is no explicit reference in the report setting out the findings of the analysis in respect of time allocated to debriefing and any professional discussions relating to the assessment.

93. Having undertaken the same analysis in the past it is my view that whilst simultaneous activity undoubtedly offers a training and assessment opportunity, it has some significant limitations. By its very nature it encompasses multiple competencies which are very difficult to robustly assess in isolation, particularly if there is only one assessor and multiple participants, which will often be the case with on-station training. Also, by its very nature it involves a crew of firefighters, therefore, each firefighter can

only demonstrate competency in the task they are undertaking at a given point in time, and not in the tasks that others are undertaking.

94. This means that in practice to facilitate a meaningful assessment of each individual firefighter across several competency areas, the scenario has to be repeated on multiple occasions, thus significantly extending the actual time required. This time is extended further when debriefing and assessment feedback and reflection is taken into account.

95. South Wales FRS has produced a comprehensive pdrPro guidance note which contains the explicit stipulation that risk critical training should be “carried out at multiple times in quarterly phased training to cover all watch members”. I make further comment on this guidance note under the heading ‘No standardised or consistent approach to practical training’, but I consider it to be a sound piece of guidance that, if supported with comprehensive practical training resources as described further on in this section, would be very effective.

Recommendation 2 (a): that the three Welsh FRSs should undertake an unconstrained analysis of the amount of time required for firefighters to train on and then be assessed against the underpinning knowledge and range of standard practices and techniques that make up the core competency areas.

Recommendation 2 (b): that the three Welsh FRSs should undertake an unconstrained analysis of the amount of time required for firefighters to train on and then be assessed against the underpinning knowledge and range of standard practices and techniques that make up additional competency areas.

ii) Insufficient time available for the amount of training required

96. This issue was raised directly or alluded to several times on the station visits, predominantly, but not exclusively, in respect of the RDS.

97. Observations included “there being a much greater training demand now compared to when I first joined” which was repeated several times and across all duty systems. A number of comments were also made around the additional training demand arising from special appliance and water rescue skills maintenance.

98. It was also observed that the position is compounded when additional training demand is added outside of core training, such as updates to Standard Operational Procedures or training requirements for firefighters in development.

99. As stated previously until the outcome of an unconstrained analysis is known, it is not possible to take a definitive position. That said, there are a number of conclusions that I believe can reasonably be drawn at this juncture.

100. Under the existing contractual arrangements in effect within Wales, firefighters conditioned to the RDS have an allocation of 2-3 hours per week for skills maintenance training and assessment. This is supplemented in each FRS by additional hours for training and exercising. As an example, South Wales FRS allocate up to an additional

16 hours per firefighter for RDS training each year. RDS firefighters also attend periodic refresher training courses for specific risk critical competency areas such as BA.

101. All three FRSs are proactive in ensuring that the time allocated to RDS training is maximised. The levels of support from shift and day crewing colleagues are commendable, most notably where an RDS pump is located on or adjacent to a shift or day crewed station. Examples of such support are setting up practical training scenarios and integrating the RDS crew into multi pump exercises.

102. The returns from the FRSs to the Broadening of the role thematic review indicated that firefighters conditioned to the day crewing system have an allocation of up to 13 hours per tour of duty for skills maintenance training and assessment and firefighters conditioned to the shift system have an allocation of up to 6 hours per tour of duty. The extent of the variation between duty systems is significant, some 11 hours between RDS and day crewing. As the core firefighter role is currently the same across all duty systems, it cannot be that all of the allocations are sufficient.

103. What I can state with confidence is that if, as was suggested during one of the shift station visits, crews do undertake training and exercising in excess of that set out within the Broadening of the role thematic review analysis, then it has to be at the expense of risk reduction activity such as home safety visits and gathering site-specific risk information.

104. I say that, as the constraints of the existing shift system are such that there is only a finite amount of time available. Of the 36 hours available from the contractual 42 within the existing shift system work routine (accounting for 6 hours of statutory meal breaks), only 18 hours (50%) are available for training, exercising or risk reduction with the remainder being allocated to rest periods or private study. Therefore, if crews undertake more training and exercising, they have less time available for risk reduction activity. The same applies to day crewing although the impact is likely to be less acute as there is more time available overall.

105. In respect of the RDS, a simple benchmarking exercise with the time allocated within secondary contracts for the Wales USAR capability starkly highlights the issue.

106. Wales' USAR technicians are paid for an additional 192 hours training within their secondary contract. This figure was determined through a time and motion study undertaken by the NRAT USAR capability, when developing the competency maintenance framework.

107. The breadth of the eight firefighting core skill areas is greater than that covered by the USAR competency maintenance framework, yet in one FRS the former has been allocated 98 hours and the latter 192 hours. This simply does not stand up to scrutiny.

iii) The balance between theoretical and practical training

108. On several of the station visits the amount of theoretical training relative to practical training was raised, the point being that there was too much theoretical training which was at the expense of practical training as the available time was limited. The relevance of the theoretical content was also raised on two of the RDS station visits. One specific example was in respect of high-rise firefighting input when there were no high-rise buildings on or anywhere near the station area.

109. After reflecting on these observations, I am of the view that this issue encapsulates the challenge of attempting to train RDS firefighters across the full range of control measure tactics and techniques within a finite, and limited amount of contact time.

110. As stated previously, in order to meet their responsibilities under Regulation 3 of the Management of Health and Safety at Work Regulations, the FRSs should use the hazard and risk control statements within National Operational Guidance to inform their local Operational Risk Assessment for all reasonably foreseeable incident types. The Operational Risk Assessment should detail the control measure tactics and techniques to be employed to resolve the incident. These control measure tactics and techniques should form the basis of initial acquisition and then ongoing maintenance training.

111. It is highly unlikely that any FRSs anywhere in the UK will be able to deliver an outcome whereby there is the same amount of time allocated for RDS training as there currently is for that of their wholetime counterparts. Whilst South Wales FRS provide for up to an additional 16 hours per year to be utilised for training, Mid and West Wales FRS has agreed an additional hour on drill nights and RDS firefighters across the three FRSs attend periodic centrally delivered refresher training courses, this still falls well short of the time available for training and exercising on the day crewing and shift systems when averaged out over a year.

112. That being so, and in my view, the only realistic option open to the FRSs is to take what could be described as a layered or tiered approach to their response capability. This could only be done on the conclusion of the unconstrained analysis as previously recommended, as only then would the FRSs have a training and assessment time value available for each control measure tactic and technique.

113. The FRSs would need to identify the control measure tactics and techniques from their Operational Risk Assessments that they consider necessary to deliver an initial response capability across the range of likely incident types in any given station area, up to the amount of time available for training on their RDS. It is these prioritised control measure tactics and techniques that would form the basis of the RDS initial and ongoing skills maintenance training programme. In a firefighting context, for a structure fire this might extend to exterior attack followed by an initial interior attack that did not include deep penetration searches, or the use of extended duration BA or guidelines simply because there would not be enough time available to RDS firefighters to maintain competence in those control measure tactics. In an RTC

scenario it might extend to door/roof removal and dashboard roll/lift for space creation/extrication techniques.

114. For the avoidance of doubt the control measure tactics and techniques utilised by the RDS would be identical to that utilised by wholetime firefighters. The additional training time available for wholetime firefighters would be utilised to develop competence in control measure tactics and techniques additional to those used in the initial response capability by the RDS. In discussions with the HSE it has been confirmed that this approach, if based on the robust assessment of risk to firefighters, would meet the responsibilities of the Fire and Rescue Authorities (FRAs) under Health and Safety legislation.

Recommendation 3: the FRSs should use the outcome of the unconstrained analysis of time required for skills maintenance training to prioritise the control measure tactics and techniques from their Operational Risk Assessments that will be utilised by the RDS based on the time available for training.

iv) No standardised or consistent approach to practical training

115. The pdrPro competency recording system in each of the three FRSs is aligned to the eight core skill areas that make up the National Occupational Standards. The National Occupational Standards Skills for Justice knowledge and understanding and practical standards consist of individual performance criteria prefixed with either a 'K' (knowledge and understanding) or a 'P' (practical).

116. An example of the knowledge and understanding standards is as follows:

Knowledge and understanding

- K1 the anatomy and physiology of respiration in relation to the use of breathing apparatus*
- K2 the effects of exertion in relation to consumption of air and the use of breathing apparatus*
- K3 how the breathing apparatus set manages inspired and expired air*
- K4 the capabilities and limitations of the breathing apparatus set*
- K5 the operating features of:*
 - K5.1 the breathing apparatus set*
 - K5.2 ancillary equipment*
 - K5.3 communications equipment*
 - K5.4 breathing apparatus entry control recording equipment*
- K6 the testing and checks apply to the breathing apparatus set and its ancillary equipment*
- K7 the role and responsibilities of breathing apparatus control operative*
- K8 breathing apparatus control systems and their application*
- K9 principles of firefighting and fire behaviour in:*
 - K9.1 compartment fires*
 - K9.2 structural fires*

117. An example of the practical standards is as follows:

Work in risk areas at operational incidents requiring breathing apparatus

P6 navigate within the risk area with the team

P7 maintain communication on progress and status with the team, other teams, incident commander and breathing apparatus entry control

P8 carry out designated response duties within risk area:

P8.1 apply cooling in compartments adjacent to a fire compartment

P8.2 apply containment and extinguishing within the fire compartment

P8.3 use approved methods to search for fire and casualties

P9 monitor own breathing apparatus pressure gauge to determine own withdrawal time

P10 withdraw from the risk area and checkout through the breathing apparatus entry control with the team

118. The knowledge and understanding elements of the standards are covered off to a substantial extent through learnPro theoretical training packages and through reference to Standard Operational Procedures and National Operational Guidance Foundation Guidance for Breathing Apparatus and Incident Command.

119. Not all of the practical standards are specific and some, such as the example above, can be subject to a wide degree of interpretation. As an example, P8.1, P8.2 and P8.3 cover a number of control measure tactics and techniques.

120. What was evident on the station visits was the different interpretations and approaches to practical scenario development from individual watch officers. This is not a criticism of those officers, but on the nine visits I observed multiple different approaches which results in a lack of standardisation within and across the FRSs. I have previously made the observation that whilst the requirement to plan and assess activities falls within the National Occupation Standards for Crew and Watch Managers, not all watch officers are qualified in, or have, a training and assessment background.

121. In my view there is a compelling need to provide the best possible resources to watch officers to assist them in the delivery of standardised and consistent on- station training and assessment. Linked to that, there also needs to be a means of providing assurance to principal officers that high-quality training is being continually delivered in a consistent way across the FRSs, and for them to be held to account for that.

122. The South Wales FRS pdrPro guidance note gives a broad outline of the types of activity to be undertaken on practical training scenarios. This is a good starting point, but it needs to be linked to practical training resources similar to those provided for knowledge and understanding on the learnPro platform, to be fully effective.

123. There are FRSs in England who have produced as a training and assessment aid, standardised and consistent get to work procedures for every item of equipment on their fire appliances, based on the standard practices detailed within the FRS Training and Development Manual. We saw evidence of something very similar to this on one station visit in Mid and West Wales, although we were advised that the

resource dated back to the legacy divisional structure and is no longer in use. None the less it appeared to be an excellent resource for firefighters and watch officers alike.

124. South Wales FRS BA instructors have introduced the principle of micro teaches which they have filmed and placed on the Service's intranet, as a learning resource. I am aware that similar resources have been developed in Mid and West and North Wales FRSs. In my view, this takes the training aids referenced previously to the next level. Essentially the micro teach is a best practice demonstration of a control measure tactic or technique filmed as a step-by-step precursor to a practical on-station training session. This is an excellent product which should be extended to cover the full range of control measure tactics that are not currently detailed as a standard practice or technique within the Training and Development Manual.

125. Crews would watch what should be a best practice demonstration of a control measure tactic or technique and then practice it as part of a structured training session, which the watch officer could then assess. This would serve as an excellent training and assessment aid for watch officers and middle managers alike, which would ensure a level of consistency and standardisation in how control measure tactics and techniques are applied.

126. The development of micro teaches should not be too onerous as lesson plans and learning outcomes should already exist for initial skills acquisition training. There are also very similar excellent international resources freely available on the internet which the FRSs could utilise⁴.

127. Micro teaches, alongside standard practices and techniques could also be subject to a time and motion study which would give an empirical basis to determining the amount of time required for competency maintenance training.

Recommendation 4: the FRSs should develop micro teaches for every control measure tactic or technique not already included within the FRS Training and Development Manual.

This is something that should be done on an all-Wales basis to avoid duplication of effort and to maximise standardisation, consistency and interoperability.

v) Travel distances to the Service training venues

128. This issue was raised on several occasions in Mid and West and North Wales FRSs, although it was not raised as an issue in South Wales FRS.

129. Given the geography this is not surprising. The locations of the Mid and West and North Wales FRS's training academies at Earlswood and Dolgellau are a legacy of the FRSs mergers in 1996. Whilst Earlswood is in close proximity to the larger population centres (and therefore wholtime crewed fire stations) of Swansea, Neath, Port Talbot and Llanelli, it is some considerable distance away from stations in Powys and Ceredigion. Dolgellau is a considerable distance from all of the large population centres in North Wales.

⁴ <https://training.fsri.org/>

130. There are various training facilities on stations across the three FRSs. These range from standard training towers to buildings with changeable internal layouts and within which cosmetic smoke can be used for BA training. The significant issue is the location of Compartment Fire Behaviour Training and other live fire facilities.

131. Addressing this issue is undoubtedly a challenge which may require substantial capital investment. I consider this in more detail in the following section, but a hub and spoke approach with a central training location supported by satellite locations combining existing facilities with the development of new live fire training facilities, would appear to be the most appropriate solution.

vi) Compartment Fire Behaviour Training

132. This observation that Compartment Fire Behaviour Training does not reflect real-life fire conditions, was made by firefighters across the three duty systems.

133. Compartment Fire Behaviour Training in the UK FRSs is widely believed to have originated as a result of enforcement notices issued by the HSE to Gwent Fire Brigade (now South Wales FRS), following the deaths of two firefighters at a fire at 14 Zephaniah Way in Blaina on 1 February 1996. Whilst the enforcement action taken by the HSE may have influenced the development of Compartment Fire Behaviour Training, its origins predate Blaina to research commissioned by the Home Office in 1994 (FRDG report 5/1994: A survey of backdraught – main report⁵ and FRDG report 6/1994: A survey of fire ventilation⁶). It was these reports that largely informed the content of Manual of Firemanship (A Supplement): The Behaviour of Fire – Compartment Fires, first published in 1995 and Manual of Firemanship (A Supplement): The Behaviour of Fire – Tactical Ventilation of Buildings and Structures, first published in 1996. Both supplements were subsequently consolidated into the HMFSI Fire Service Manual; Compartment Fires and Tactical Ventilation published in 1997. The extant National Operational Guidance - 'Fires and firefighting' is still based to an extent on the 1997 Manual.

134. Compartment Fire Behaviour Training is typically undertaken in a single ISO container or in multiple containers, where a real fire is located within the container(s) and firefighters practice advancing through the container(s) utilising gas cooling techniques (predominantly pulsing using a spray pattern to cool the combustible gases which accumulate towards the top of the compartment and radiate heat down). The fire loading will typically be a number of pallets stacked on top of each other or quantities of wood placed within a crib with fibre boards suspended by chains to simulate wall and ceiling materials. The heat release rate will be that associated with a typical kitchen fire and may not exceed 1.5 megawatts (MW).

135. The heat release rate of a modern 3-seater sofa or double bed can be up to 5MW which is well in excess of that generated during Compartment Fire Behaviour Training, currently. It is unsurprising therefore that firefighters attending fully

⁵ [A Survey of Backdraught \(ukfrs.com\)](http://ukfrs.com)

⁶ [A Survey of Fire Ventilation \(ukfrs.com\)](http://ukfrs.com)

developed living room or bedroom fires are reporting experiencing conditions significantly different from those they have experienced during training. One firefighter commented that the training bore no relation to reality, while another compared it to a driving test which had to be passed, but which did not give adequate experience of real-world conditions.

136. This will be compounded by what was reported widely during the station visits as a “default” to using high pressure hose reels (as opposed to main branches) for initial attack as the available flow rate (around 100 litres per minute) falls well short of what is required to suppress a fire of such intensity, especially when deploying a pulsing technique for gas cooling.

137. This, and the anecdotes relayed over tactical ventilation and in particular positive pressure attack (forced ventilation of a compartment within which a fire is located as a deliberate tactic) are a real cause for concern to me, not least because I made a recommendation relating to tactical flow rates within the 2020 Grenfell Tower Inquiry Recommendations Thematic Review⁷.

138. Such tactics have been shown to be positively dangerous when not accompanied by a simultaneous and substantial water attack or when in the instance of positive pressure attack, the outlet vent is not larger in size than the inlet vent.

139. Employing these tactics can cause the rapid and significant development of a ventilation-controlled fire and create a flow path that can prove fatal to firefighters, as with the fire at Shirley Towers in Southampton in 2010 and other incidents around the world. I am concerned that these tactics appear still to be widespread and are not being identified through operational assurance processes⁸.

140. In defence of the three Welsh FRSs, the underlying issue here is with the content of the extant National Operational Guidance - Fires and firefighting. As stated previously the content of the guidance is still largely based on the HMFSI Fire Service Manual; Compartment Fires and Tactical Ventilation published in 1997 and based on research undertaken some 28 years ago at the time of writing.

141. Building materials and contents have changed significantly since the research on which the legacy Fire Service Manual is based and involve far greater quantities of synthetic materials and greater levels of insulation in the interests of energy efficiency. International research has demonstrated that the heat release rates from synthetic materials are significantly greater than for legacy materials. International research has also demonstrated that the gas cooling techniques advocated within the extant UK National Operational Guidance are less effective and more difficult to achieve than traditional firefighting tactics, such as straight stream water mapping. Critically, FRSs in the United States have moved away from the ventilation techniques advocated within the guidance as research has called in to question their safety and effectiveness.

⁷ [Chief Fire and Rescue Adviser thematic review: learning from Grenfell Tower Inquiry recommendations | GOV.WALES](#)

⁸ My concern does not extend to post fire ventilation which appears to be well understood and used appropriately based on the discussion held on station visits

142. A consultation over the content of National Operational Guidance - Fires and firefighting, has recently concluded so there is the opportunity for the guidance to be updated in light of the international research and the publication of NFPA 1700 Guide to structural firefighting (the United States equivalent of Fires and firefighting) which should then result in a review of firefighting tactics across the UK FRSs.

143. In any event, the findings of the international research are available to the three Welsh FRSs and has been shared with them. The FRSs should therefore take cognisance of this research when considering the appropriateness of their existing control measure tactics and any related training.

144. It may prove difficult to achieve the conditions which would be comparable to a fully developed compartment fire within the existing Compartment Fire Behaviour Training facilities, not least because of the environmental challenges associated with burning synthetic materials.

145. Significant capital investment is very likely to be required to develop new Compartment Fire Behaviour Training facilities whereby real-world conditions can be replicated and which can allow for appropriately control exposure for firefighters to employ evidence-based control measure tactics in such conditions.

146. There is, however, some excellent information and guidance freely available on the internet on the construction of low-cost training props for water mapping skills development and maintenance⁹, without the requirement for live fires.

Recommendation 5: that the Welsh FRSs review their control measure tactics and techniques for compartment firefighting in light of international research and update their control measure tactics and techniques accordingly.

Recommendation 6: that the Welsh FRSs review their Compartment Fire Behaviour Training syllabus to incorporate any changes to control measure tactics arising from the review advocated in Recommendation 6.

vii) Impact of RDS availability on wholetime training

147. This issue was raised a number of times by day crewing and shift firefighters in Mid and West and North Wales FRSs, who observed that they were regularly being sent on short notice standby moves at the beginning of a shift to cover RDS stations, when they had training planned at their home station. This was not raised as an issue in South Wales FRS.

148. When questioned further, the firefighters raised the issue of extended travel times impacting on the actual time available at the standby station and also the lack of training facilities at the standby station. These are all legitimate points, and whilst crews can undertake some practical training when on a standby move, this will undoubtedly be limited dependent on the time and facilities available. It would appear

⁹ [Hose Stream Mechanics | UL's FSRI – Fire Safety Research Institute](#)

that this has a significant detrimental impact on wholetime firefighter training in at least one of the FRS.

149. Whilst improving RDS availability is the obvious solution, I recognise that this is a multifaceted issue and one that FRSs across the UK have struggled with over many years. The only viable alternative as I see it, is to increase the number of wholetime crewed appliances. It is only by doing so that appliance availability can be guaranteed.

150. If or how the FRSs elected to do so would be a matter for them, but any decision would have to be informed by their strategic risk assessment. In the simplest of terms, if a number of strategically located RDS pumps were converted to wholetime crewing, either at certain times of the day or for the full 24-hour period, then not only is fire and rescue cover maintained, but additional capacity is created to support risk critical training and exercising or risk reduction activity.

viii) Reliance on Wholetime Firefighters to support RDS

151. Each of the FRSs now has wholetime firefighters undertaking secondary RDS contracts, with South Wales FRS having in excess of a third of wholetime firefighters also providing RDS cover. This has many advantages not least in terms of training and maintenance of competence.

152. There is an issue however, which is not directly related to training but needs to be raised none the less.

153. In order to manage fatigue and risk implications, wholetime firefighters conditioned to the shift system who also undertake RDS duties should do so on second and third rota days, that is the second and third days clear from duty on the four on, four off system. For example, if a wholetime firefighter finished their last night shift at 0900 on Monday morning, they should not commence RDS cover until 0900 on Tuesday morning, in order to give them 24 hours clear from duty. They should also conclude their RDS cover at 0900 on Thursday morning as their next wholetime shift would commence at 0900 on Friday morning, again giving them 24 hours clear before their next duty. The North Wales FRS wholetime/RDS policy expressly sets out this stipulation. It is also a position which is supported by the Fire Brigades Union.

154. If RDS cover is provided outside of these times, then the FRSs should ensure appropriate control measures are in place to mitigate against any fatigue and risk issues.

155. It would be remiss of me not to commend all three FRSs for their efforts in supporting all aspects of the RDS. I observed countless examples of good practice, some of which I have mentioned previously in this report. It should be acknowledged that the RDS is not only a source of regular income but is also a mechanism by which individuals can develop a range of skills that significantly improve their employability prospects, often in socially deprived areas with high levels of unemployment. This is particularly true with the South Wales FRS salary scheme.

156. It would also be remiss of me not to commend the RDS firefighters themselves. Membership of the RDS is undoubtedly, and rightly, a great source of pride for the RDS firefighters I met. Their commitment is outstanding and deserves the highest praise and recognition.

Assessment of on-station training

South Wales FRS

- On-station training is assessed by and inputted into pdrPro by watch officers.
- Station-based station managers oversee daily activity including training with additional oversight provided by group managers with responsibility for the Local Authority area within which the stations are located.
- A Service-wide station audit programme is undertaken by the Operational Assurance and Audit Team. These audits consider all aspects of performance including training and assessment.

Mid and West Wales FRS

- On-station training is assessed by and inputted into pdrPro by watch officers.
- Each cluster of three stations has a dedicated station manager who is responsible for quality assurance of station-based training through the operational monitoring protocol. This is undertaken by direct observation of training sessions and scrutiny of pdrPro records.
- Annual divisional audits are undertaken by divisional management teams who visit stations to scrutinise records and to observe training activities including drills and station exercises.
- The People Development Department or Training Delivery oversee the assessment process for firefighters in development or for the purposes of re-certification at pre-determined frequencies.

North Wales FRS

- On-station training is assessed by and inputted into pdrPro by watch officers.
- As of April 2022, North Wales FRS has restructured into three geographic areas. Each area has dedicated station managers whose roles are operational assurance and training. These station managers undertake assurance of station-based training activities and audit station records.

- Each station also has a designated station support manager. These are specialist watch, station or group managers. who have roles in the assessment of training activities on station.
- An annual audit is undertaken by the designated station or group manager and identifies personnel out of date with required competency assessment renewal frequencies, through interrogation of pdrPro. They also plan and implement station-based audits where all station-based documents are reviewed, and station-based training is observed.
- Station managers from the risk and resilience function plan multi pump exercises which are also assessed.

Comment

157. There is no issue with the extent of the assessment process across the three FRSs which is multi layered and all encompassing. The issue as I see it arises from the previously identified lack of standardisation around practical training scenarios which would be substantively addressed through the adoption of Recommendations 4–6.

158. This highlights the importance of practical training resources for control measure tactics and techniques that do not feature within the Training and Development Manual. Such training resources would also serve as an assessment aid as they provide a visual representation to the assessor of the competent undertaking of the control measure tactic or technique, thus removing as much subjectivity from the process as possible.

159. This standardisation of best practice would give principal officers assurance that crews were undertaking quality training against a clearly defined assessment criterion. Provided that the FRSs' operational assurance mechanisms and horizon scanning processes remain robust and best practice is continually identified and adopted into operational guidance, principal officers and the FRAs can be confident that they are doing all they can to ensure the health, safety and welfare of their employees.

Acknowledgements

160. My thanks to the lead officers from the three FRSs, Assistant Chief Fire Officer Richie Prendergast and Area Manager Garry Davies from South Wales FRS, Area Manager Justin Lewis from Mid and West Wales FRS and Assistant Chief Fire Officer Stuart Millington from North Wales FRS, for their support to this review. My thanks also to the lead officers nominated to support us with initial evidence analysis and follow-up interviews.

161. My thanks to the officials from the Welsh Government Fire Team, Karin Phillips, Steve Pomeroy, Kerry Citric, Lisa Walters, Cerys Myers, Steff Herdman and David Davies, who supported me on the station visits.

162. Finally, my thanks to the firefighters and watch officers on all of the station visits. The level of engagement was first class as was the standard of your contribution. You are all a credit to your FRSs and your profession.

Recommendations

Recommendation 1: that the 3 Welsh FRSs establish a means whereby training needs analysis and training delivery are clearly aligned to a regular assessment of hazards, risks and threats in their areas. This should set out the capability deemed necessary to provide an appropriate response to the identified hazards, risks and threats which should then inform the training needs analysis.

***Recommendation 2 (a):** that the 3 Welsh FRSs should undertake an unconstrained analysis of the amount of time required for firefighters to train on and then be assessed against the underpinning knowledge and range of standard practices and techniques that make up the core competency areas.

***Recommendation 2 (b):** that the 3 Welsh FRSs should undertake an unconstrained analysis of the amount of time required for firefighters to train on and then be assessed against the underpinning knowledge and range of standard practices and techniques that make up additional competency areas.

Recommendation 3: the FRSs should use the outcome of the unconstrained analysis of time required for skills maintenance training to prioritise the control measure tactics and techniques from their Operational Risk Assessments that will be utilised by the RDS based on the time available for training.

Recommendation 4: the FRSs should develop micro teaches for every control measure tactic or technique not already included within the FRS Training and Development Manual.

Recommendation 5: that the Welsh FRSs review their control measure tactics for compartment firefighting in light of international research and update their control measure tactics and techniques accordingly.

Recommendation 6: that the Welsh FRSs review their Compartment Fire Behaviour Training syllabus to incorporate any changes to control measure tactics arising from the review advocated in Recommendation 5.