



**Explosives & Search  
Competence**

Developing skills in the explosives  
munitions and search sector

# EXPLOSIVES EDUCATION IN THE UK

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# AIM

To explain how the UK came to  
the current state of explosives  
education and training and the  
development of the National  
Occupational Standards



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## The Bad Old Days

Who needs risk assessments – they are  
a waste of time

Isn't it 'macho' to work with explosives!  
(statement not a question)

'On the job' training (and assessment) is  
all you need.



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# Education or Training

**Education:**

To provide knowledge that can be applied widely within a subject area.

**Training:**

To provide knowledge and skills that can be applied to a specific task or occupation.



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## Risk - Explosives

- Risk = Likelihood x Consequence
- To assess the Risks we need to consider
  - Are explosive incidents likely?
  - What are their consequences?



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# Concerns Within Explosives Industry (Including MoD)

Over the last 20 years a serious decline in the breadth & depth of expertise & competence

- Pyrotechnic companies: Was 7 now 4
- RO staff: Was 19000 now 5000
- Closure of 2 Gov. research establishments:PERME and RARDE(Woolwich)
- Intake 1960's and 1970's: Retiring or retired
- Explosives workers: 1990 (441,000)1997 (300,000)

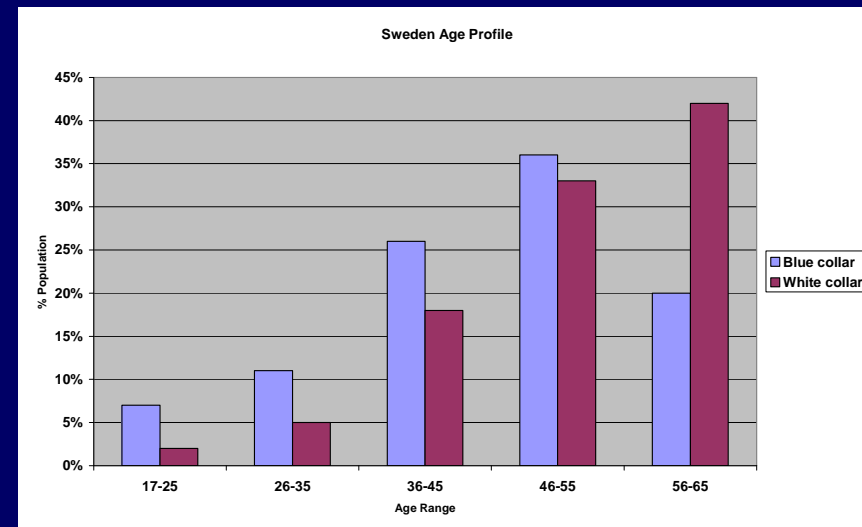


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# European Explosives/Munitions Business

- Consolidation/Mergers
- Contraction
- Privatisation
- Recruitment
- Age Distribution



- Needs Competent People



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# People - Competence

- Critical to Explosives Safety
- Essential for Business Competitiveness
- Vital in fight against terrorism
- Needed to clean up the planet
- But!
  - Loss of Expertise
  - Hitherto, absence of Standards of Competence
  - Barriers to movement of personnel
  - Patchy training provision
  - Few recognised qualifications
- It's a global problem



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# Explosives Occupational Standards Development

## SSB:

- comprises all major stakeholders inc employers, professional bodies, educators
- mapped the industry in terms of structure, needs and prospects;
- developed NOS
- designed qualifications
- developed guidance materials



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# National Occupational Standards (NOS)

- Statements of the skills, knowledge and understanding needed in employment
- Define the outcomes of competent performance.
- Developed by employers & other key stakeholders



# UK Standards Development



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- UK Experience
  - MOD-DOSG Functional Competencies developed 1996-2001
  - National Occupational Standards for Search & Clearance Operatives 2003
- March 04 formed Standards Setting Body (SSB) for All Explosives Occupations in UK
- SSB undertook Occupational Analysis
  - Survey of all explosives jobs in UK
  - 13 roles
  - Civil and military
- Followed by Functional Analysis
  - Breakdown of jobs performed
  - > 400 Units of Competence Proposed
- Occupational Standards agreed May 05
- 24 Vocational Qualifications launched May 06
- Assessment regime being established
- UK well on way to having a comprehensive framework of standards, qualifications and training provision for all explosives workers



# Recent Developments



2008:

- Additional NOS and VQs in explosives safety management
- Additional NOS and VQ designs for the use of explosives in entertainment
- New-style VQs in the transport of explosives
- New-style VQs in the management of safety on defence ranges
  
- Government introduces Qualifications and Credit Framework (QCF)



# Explosives Occupations – Key Roles



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<b>Key Role</b>	<b>Description</b>
<b>1</b>	<b>Research and develop explosive substances and articles</b>
<b>2</b>	<b>Develop and manage explosives safety</b>
<b>3</b>	<b>Test and evaluate explosive substances and articles in field trials</b>
<b>4</b>	<b>Manufacture explosive substances and articles</b>
<b>5</b>	<b>Maintain and repair explosive substances and articles</b>
<b>6</b>	<b>Procure explosive substances and articles</b>
<b>7</b>	<b>Store and move explosive substances and articles</b>
<b>8</b>	<b>Transport explosive substances and articles</b>
<b>9</b>	<b>Manage explosives facilities</b>
<b>10</b>	<b>Prepare and use explosive substances and articles for engineering and entertainment purposes</b>
<b>11</b>	<b>Dispose of explosive substances and articles</b>
<b>12</b>	<b>Enable the public and armed services to continue their regular activities in peace and war by controlling and removing munition threats</b>
<b>13</b>	<b>Support the explosive substances and articles function</b>



# NVQ

NVQs are competence-based qualifications achievable in the workplace which describe what someone can do in a given occupational area



# QCF



## QCF background :

- Existing (old) system too complex
- Lack of understanding current qualifications
- Learning needed in bite sizes
- Similar issues for Scots, Welsh & NI
- More inclusive framework needed
- More flexibility needed



# QCF



- Units of Assessment (competence/knowledge)
- Level
- Credit values
- Rules of Combination
- Awards, Certificates & Diplomas
- Can be employer-designed



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# Explosives Qualifications

NOS provide:

- the basis for QCFs
- a possible basis for foundation and other degrees
- a basis for career pathway mapping
- support for HR processes
- routes to professional accreditation





# Summary of current UK explosives training & education

- 5 Universities - only one offering degree-level qualifications
- 31 NVQs mapped - only 8 offered
- 6-8 QCFs mapped & offered
- many CGI and industry- or employer-specific courses accredited but not against NOS



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## WHERE NEXT?

- **Seek funding for DOES**
- **HSQ undergo OFQUAL accreditation**
- **Map existing 31 NVQs to QCFs**
- **seek training providers and QCF assessment centres**
- **Demonstrate professional registration routes available through IExpE link with SEE**



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# Summary

- Ageing workforce esp at senior level
- Increasing regulation and risk of litigation
- Public perceptions damaged by incidents
- International treaty and commercial obligations
- National Occupational Standards
- NVQs -> QCFs
- Professional Registration
- EUExCert - EUExNet



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# Questions

