



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Explosives Education in Finland – Ammunition Safety Course

Dr Irmeli Tuukkanen
Finnish Defence Forces Materiel Command



© Finnish Defence Forces Materiel Command



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Finnish Defence Forces Materiel Command

- Military unit subordinate to the Defence Staff
- Headquarters in Tampere - Employees over 300
- 13 Depots, the Electronics Centre, the Test Firing Centre
- Total of 2 300 Employees
- The Annual Budget is approx 650 million euros



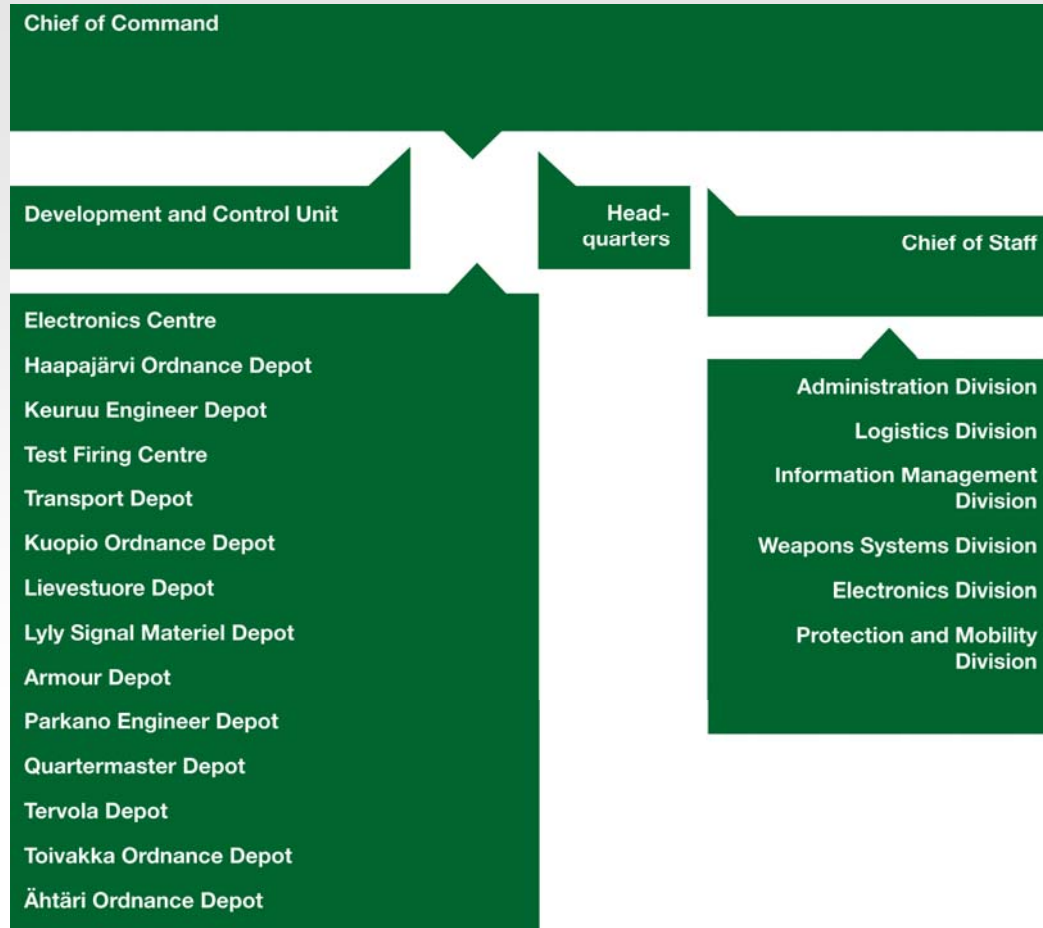
© Finnish Defence Forces Materiel Command



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Finnish Defence Forces Materiel Command

- Responsible for Wartime Readiness



© Finnish Defence Forces Materiel Command



EUEXPERT Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Finnish Defence Forces Materiel Command



- Management of Military Equipment Capability



- Management of the Technical Life-Cycle of Ammunition and Military Equipment

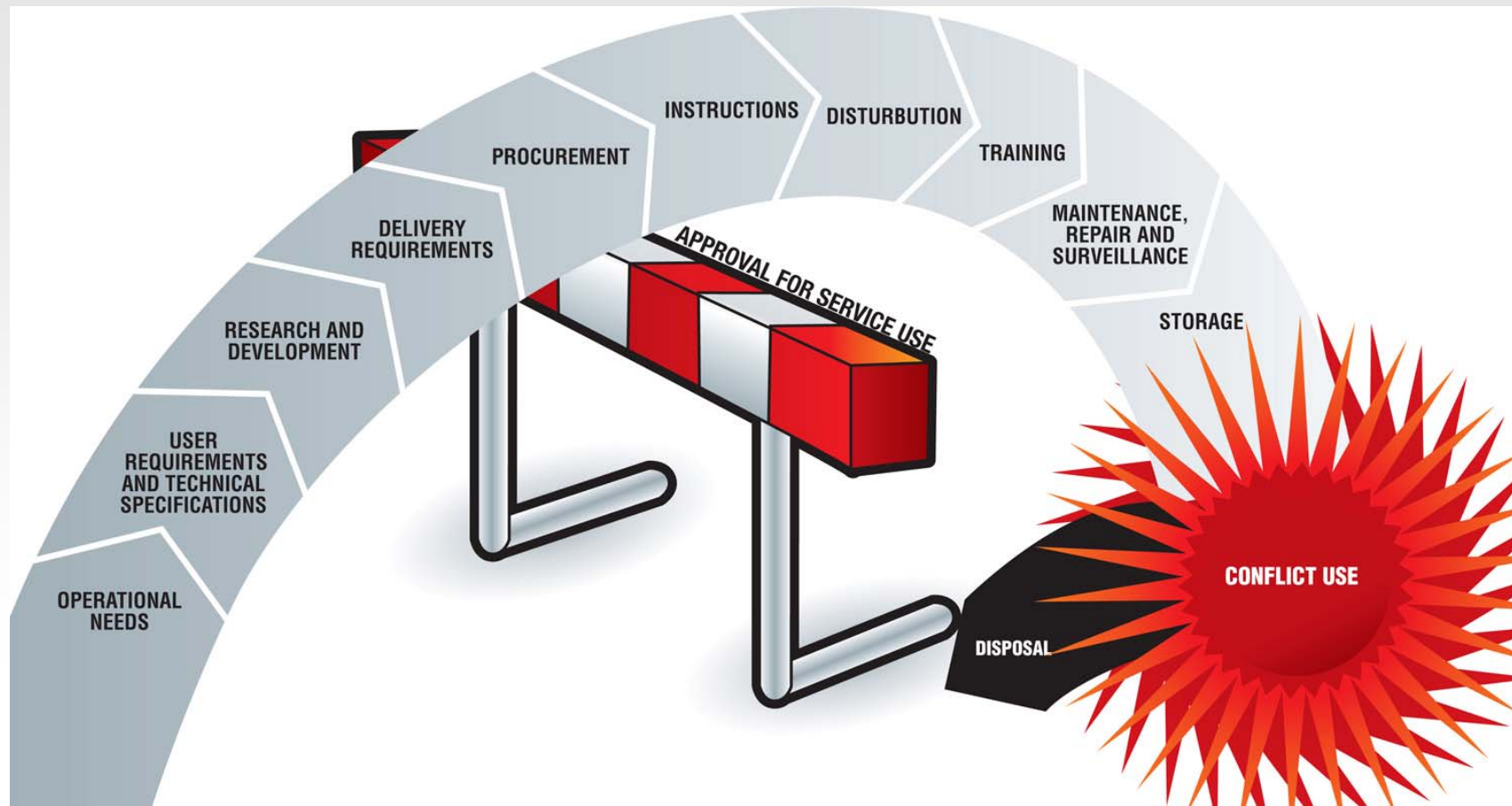


© Finnish Defence Forces Materiel Command



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Finnish Defence Forces Materiel Command



© Finnish Defence Forces Materiel Command



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Introduction

Support the Process "Management of Military Equipment Capability"

- The course covers

- Whole Technical Life Cycle of Munitions
 - Design
 - Evaluation
 - Procurement
 - Surveillance
 - Disposal

- Course emphasis is on

- Regulations
- Instructions
- Risk Management
- Safety



© Finnish Defence Forces Materiel Command



Introduction



Requirements based on:

- Regulations for Occupational Safety
- Regulations for the Safe Handling and Use of Dangerous Substances and Explosive Ordnance
- Regulations for the Transportation of Dangerous Goods



International Agreements

- "Protocol on Explosive Remnants of Conflict"



Instruction Issued by Defence Command

- "Command and the Administrative Systems of Finnish Defence Forces"

Instruction Issued by Defence Command

- "Risk Management in Finnish Defence Forces"





EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Introduction

Aims of the Course:

Support the Process "Management of Military Equipment Capability"

- Support Acquisition of Ammunition
- Ensure Safety Planning of Ammunition Production
- Explain Methodologies of Military Testing
- Harmonize Methodologies of Acquisition between Each Service
- Support the Development of Capability of NATO-Interoperability according to International Procedures
- Develop Procedures and Encourage Attitude to Prevent Accidents/Incidents



© Finnish Defence Forces Materiel Command



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Introduction

Aims of the Course (cont):

Provide Basic Information to Improve and Update Skills and Knowledge of Employees

- Develop the Competence and Skills of Employees in Ammunition and Ammunition Safety Field
- Update the Knowledge of Teachers of Military School Staff
- Educate a Proactive and Responsible Attitude towards the Risks, which are associated with Ammunition and Activities related to Ammunition
- Educate and Instill a Positive Attitude to obey Norms and Rules of Military Culture
- Present Military Procedures and Policy to Civilian Partners



© Finnish Defence Forces Materiel Command



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Description of the Course

Three two days Modules:

Part I

”Basic Knowledge
of Explosives and
Ammunition”

Part II

”Legislation and
Instructions on
Explosives and
Ammunition Safety”

Part III

”Risk Management
on Ammunition
Safety and Safety
Planning of
Ammunition
Manufacture”



© Finnish Defence Forces Materiel Command



Target Group

Individuals with Responsibilities:

	Part I	Part II	Part III
Setting Technical Requirements for Ammunition	x	x	x
Acquisition of Ammunition	x	x	
Development and Maintenance of Instructions on Ammunition and Ammunition Safety	x	x	x
Supply of International Troops		x	x
Teaching in Military Schools	x	x	x
Ammunition Manufacture	x	x	x
Demilitarisation and Clearance of Ammunition		x	x
Testing and Research of Explosives and Ammunition	x	x	x





EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Part I "Basic Knowledge of Explosives and Ammunition"

- Definitions and Terminology on Ammunition and Ammunition Safety
- Fundamental Knowledge of Energetic Materials and Their Properties
- Essential Knowledge of Ammunition and Ammunition Components
- Information of Key Factors Connected to Management of Materiel Capabilities
- Ammunition Safety
- Detail Examples of Previous Accident
- Provide Information on Abnormal Functioning of Ammunition



© Finnish Defence Forces Materiel Command



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Part II "Legislation and Instruction on Explosives and Ammunition Safety"

- **Hierarchy of the Laws and Instructions**

- **Civil Regulations for Explosives and Ammunition**
 - Regulations for 1) Explosives, 2) Occupational Safety, 3) Transport of Dangerous Goods, 4) Environmental Protection, 5) Classification and Import of Ammunition and 6) Packaging of Ammunition for Transportation

- **Military Regulations for Explosives and Ammunition**
 - Regulations for 1) Ammunition Safety, 2) Storage of Ammunition, 3) Explosives and Ammunition, 4) Planning, Control, Conduct and Safety for Firing Practices and 5) Protection and Rescue
 - Instruction on Approval for Service Use and Qualification of Explosives
 - Standardisation (Explosives Area in General)



© Finnish Defence Forces Materiel Command



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Part III "Risk Management on Ammunition Safety and Safety Planning of Ammunition Manufacture"

- **Authorized Methodologies Connected to Risk Management and Ammunition Manufacture**
 - Application Procedure of Licences/Permissions and Technical Safety Assessment
 - Principal Content of Technical Safety Assessment
 - Required Details for Rescue Plans
 - Details Necessary for Working Instructions and Reports
- **Authorized Methodologies Connected to Ammunition Logistics**
 - Transportation Procedures for Ammunition
 - Field Storage of Ammunition
- **Methodologies and Tools on Risk Analysis and Management**
 - Risk Management at FDFMC
 - Risk Assessment in Ammunition Manufacturing Plans
 - Risk Assessment during Transportation, Manufacture and Use (Safety and Suitability for Service)
- **Accidents and Near Miss - Cases**
- **Dealing with Inquires from Public or Press after an Accident**



© Finnish Defence Forces Materiel Command



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Development of Course

- Course Develops Continuously from Needs of Assignments from Defence Command
- Course Includes Requirements that Originate from International Co-operations
- Course Receives Increased Input from International Collaboration
- FDF Guidance on Procurement of Ammunition by Each Service has led to Increased Use of International Methodologies and Standards – Particularly STANAGs and AOPs
- Internationally-Recognized Documents has been used when Appropriate in the Acquisition of Munitions



© Finnish Defence Forces Materiel Command



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Summary

- Course has allowed those working in the Explosives Sector to Increase their Knowledge in many Aspects of Ammunition Safety and Risk Assessment
- Course has received excellent Feedback from Attendees which
 - Diverse Backgrounds
 - Different Levels of Experience and Knowledge
- At National Level there is a Requirement which is not Presently Available to Provide Education on Ammunition Safety across a Broader Spectrum for Other Employees
 - Specific Training linked to Certain Jobs – e.g. Ammunition Storage and Maintenance
- Need to Identify Requirements in Different Explosives Sectors so that Appropriate Training can be Provided



© Finnish Defence Forces Materiel Command



EUExcert Symposium on Education & Training in Explosives,
13th – 15th June 2007, Defence Academy, Shrivenham, UK

Summary (cont)

- In Order to Strengthen the Materiel Capabilities, it is FDF Policy that Each Service and Military Authorities
 - Improve their Interactions
 - Harmonize their Acquisition Procedures and
 - Coordinate their Procurement Activities
- Use of "Common Language" and Harmonized Procedures for Procurement, Maintenance, Demilitarisation, Testing and Safety has Potential to Increase Efficiency and Safety in Each Service
 - the Army
 - the Navy
 - the Air Force



© Finnish Defence Forces Materiel Command