

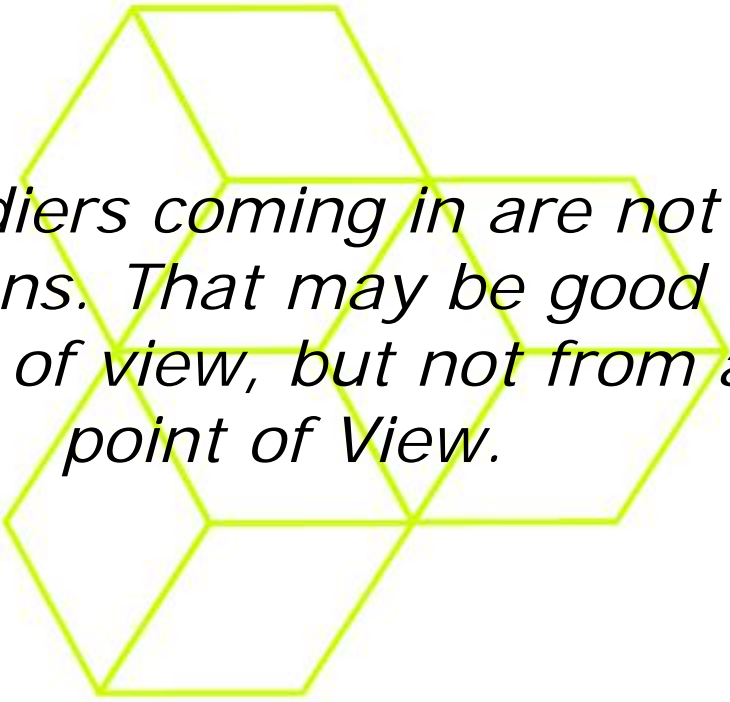
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Transforming Small Arms Maintenance Training Through Virtual Task Trainers

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A graphic consisting of several overlapping hexagons outlined in green, arranged in a honeycomb-like pattern.

Our new soldiers coming in are not familiar with weapons. That may be good from a society point of view, but not from an Army point of View.

*General William S. Wallace,
Commanding General US Army Training
and Doctrine Command*

Agenda

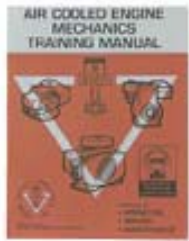
- Environment
- Current Methods of Training
- Virtual Task Trainers
- Case Studies
- Summary

Environmental Factors

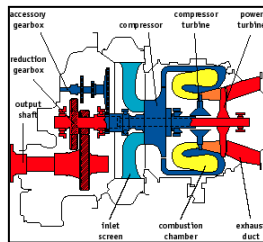
- High Operational Tempo
- Immediate Fielding of Equipment
- Reduced Residency Time
- Soldiers Tasked with New Duties
- Systems & Weapons used in harsh environments beyond their planned retirement



Methods of Hard Skills Training



Text



Multimedia



Interactive 3D Simulations



Hard Trainers



Live Equipment

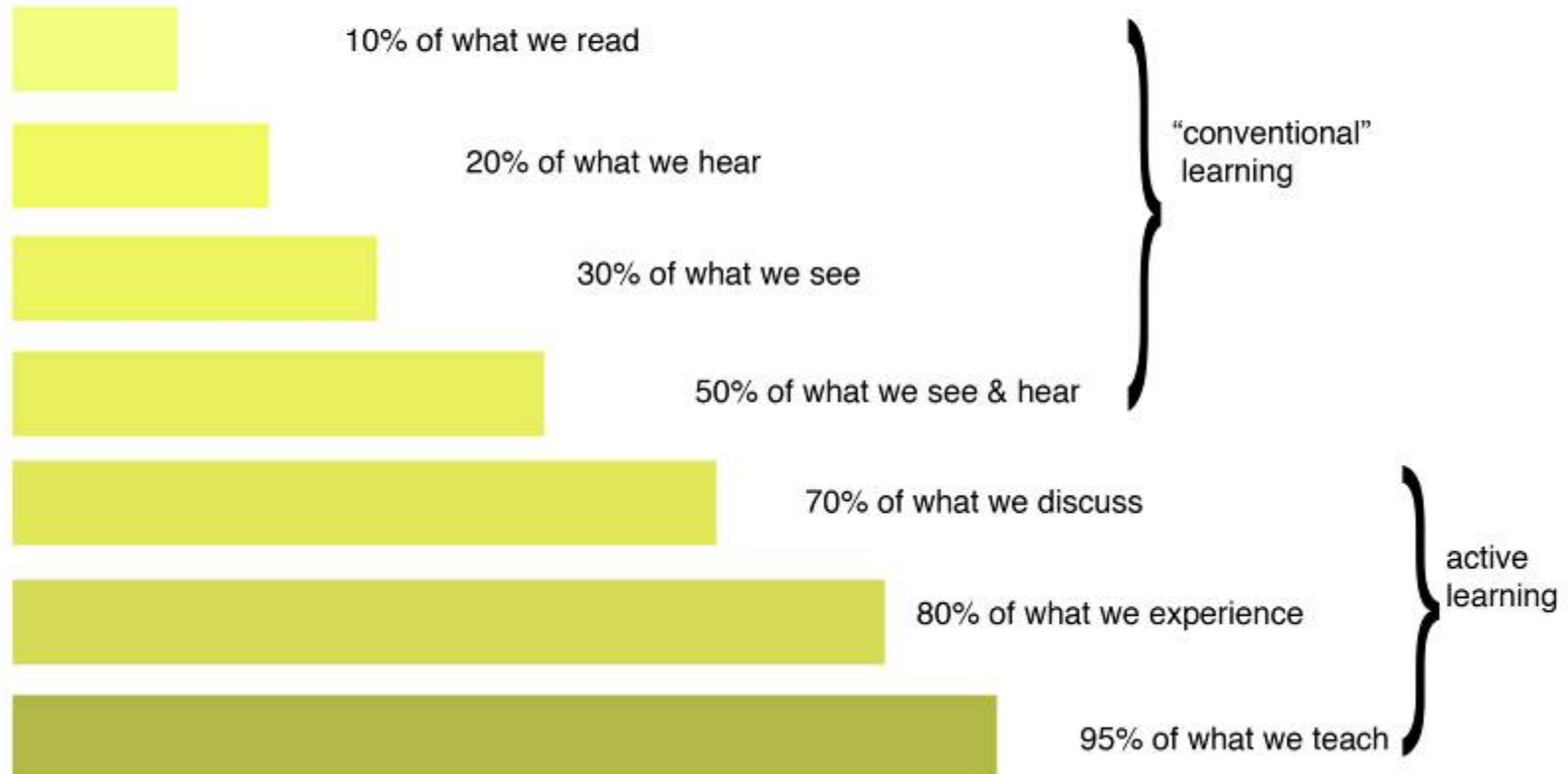
- ✓ Low cost
- ✓ Easy to create and update
- ✓ Anytime, anywhere access
- ✗ Low learning effectiveness

- ✓ Low cost
- ✓ Easy to create and update
- ✓ Anytime, anywhere access
- ✓ High learning effectiveness

- ✗ High cost
- ✗ Difficult to create and update
- ✗ Limited access
- ✓ High learning effectiveness

Learning Theory

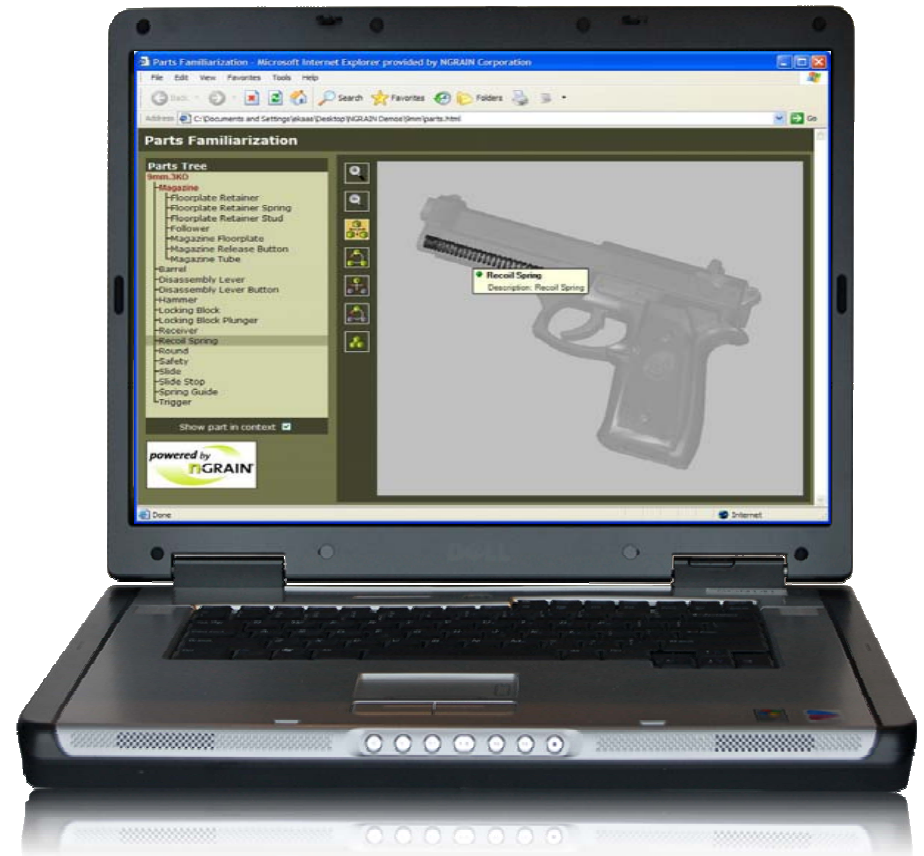
Memory and Learning



Source: Airbus / Journal for Civil Aviation Training (Issue 1 / 2006)

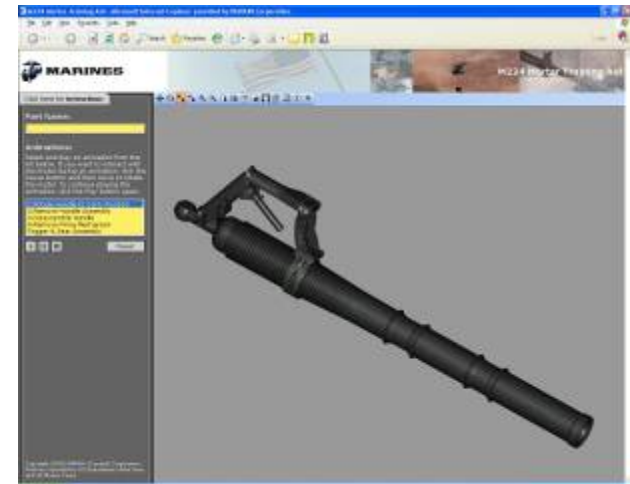
Virtual Task Trainer

- Virtual 3D equipment simulations to:
 - *Familiarize*
 - *Acquire*
 - *Practice*
 - *Test and Validate*
- **ROI: Train 60% Faster**

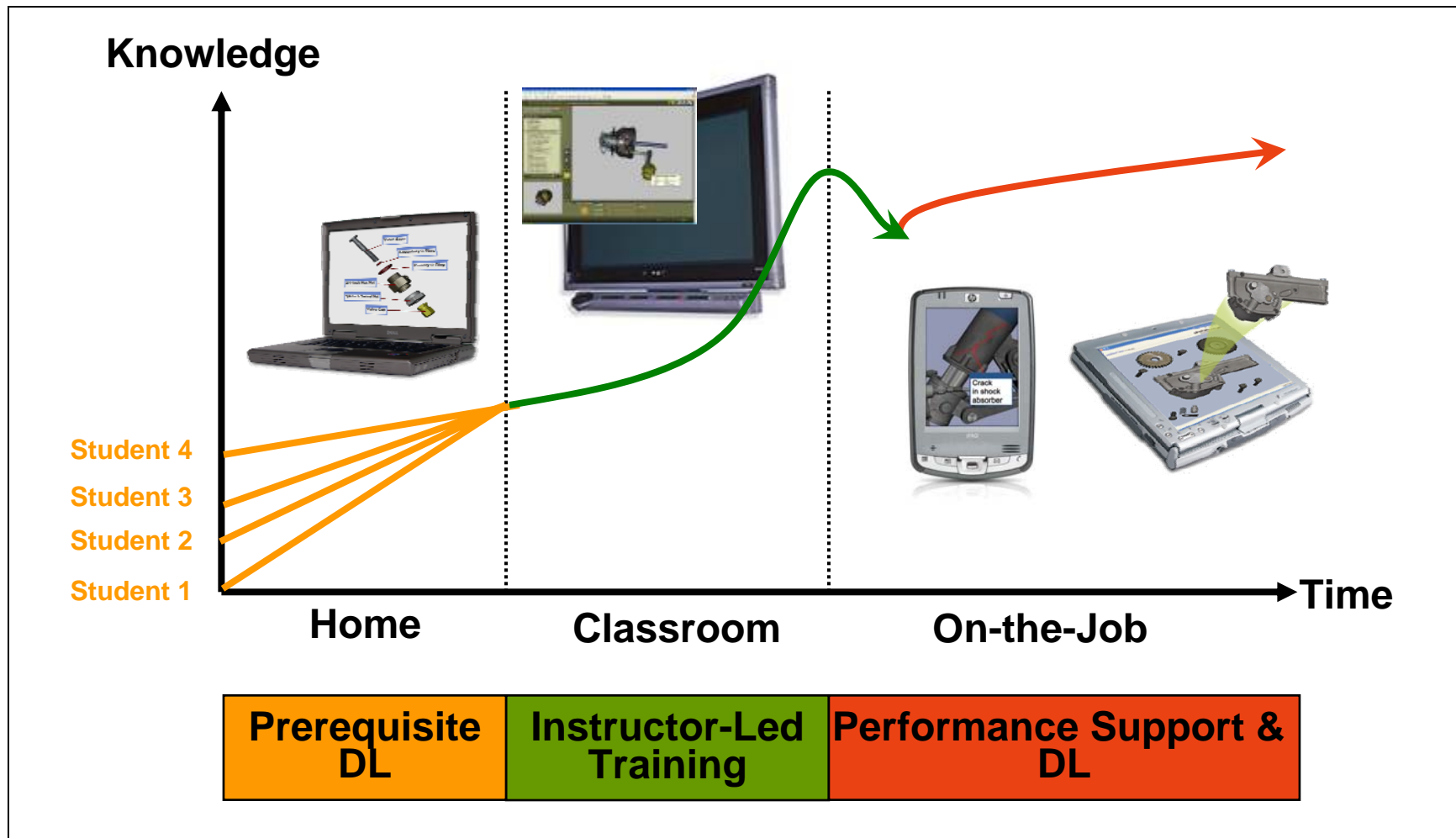


Benefits of Virtual Task Trainers

- ✓ Let students learn from their mistakes, **safely**
- ✓ Let training take place **without the expense** of equipment
- ✓ Train **more efficiently**
- ✓ **Reduce wear and tear** on equipment
- ✓ Enable **task-based, on-the-job training**

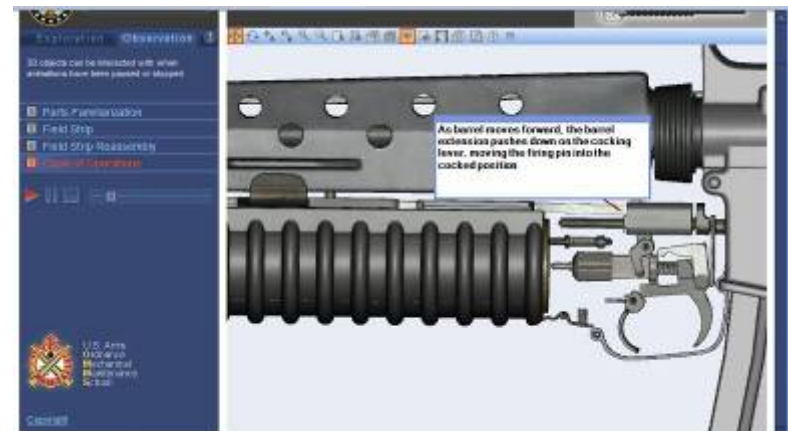
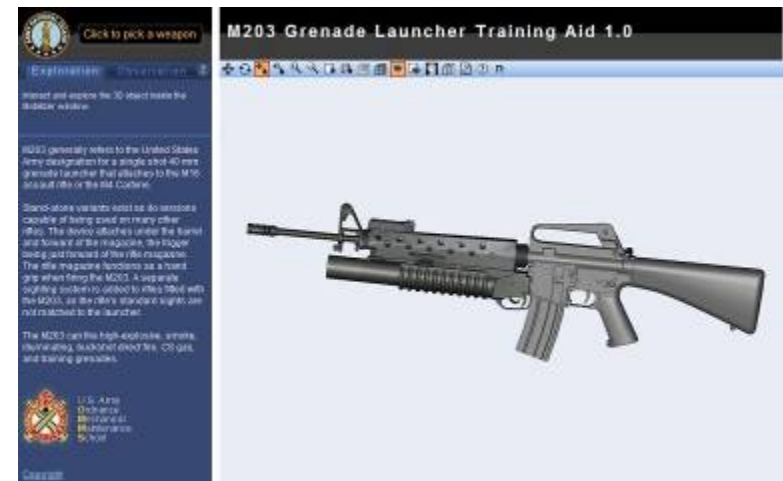


Supporting the Lifelong Learning Continuum



Weapons Virtual Task Trainer for the US Army National Guard

- **Challenge:**
 - Difficult for instructors to demonstrate assembly and disassembly procedures
- **Objective:**
 - Improve classroom and self-paced study of individual arms
- **Results:**
 - Increased knowledge of maintenance and assembly/disassembly procedures of small arms



ARNG Weapons Training Aid 1.0

M240 Machine Gun



[explore weapon](#) | [view animations](#)

M249 Squad Automatic Weapon



[explore weapon](#) | [view animations](#)

M240B Machine Gun



[explore weapon](#) | [view animations](#)

M2 Machine Gun



[explore weapon](#) | [view animations](#)



nGRAIN[®]

M107 Sniper Rifle



[explore weapon](#) | [view animations](#)

M203 Grenade Launcher



[explore weapon](#) | [view animations](#)

M590 Shotgun



[explore weapon](#) | [view animations](#)

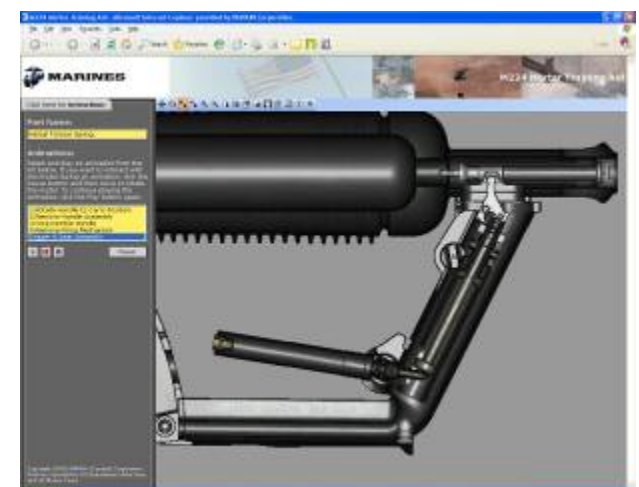
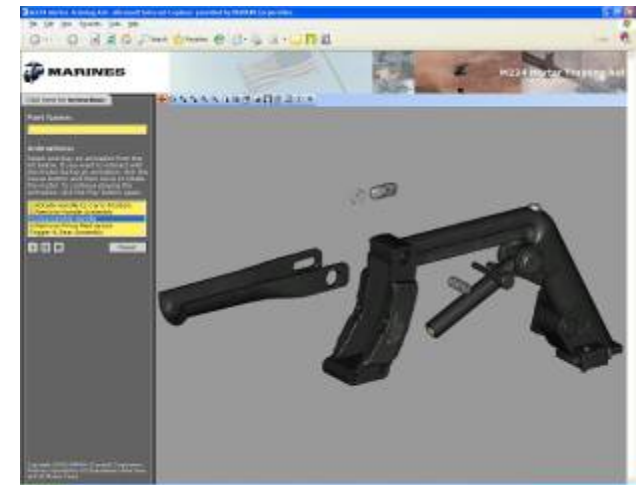
MK19 Grenade Launcher



[explore weapon](#) | [view animations](#)

M224 Mortar Virtual Task Trainer for the US Marine Corps

- **Challenge:**
 - Inability for “dummy” weapon trainers to show operation of internal parts
 - High breakage rates
- **Objective:**
 - Effectively train students on equipment internals and interactions
 - Reduce breakage and associated costs
- **Results:**
 - Improved training, including internals
 - Reduced equipment replacement costs



Summary

- Virtual task trainers offer numerous benefits:
 - Lets training take place even if there is no equipment available
 - More effective for task-based learning objectives
 - Operationally deployable
 - Very suitable for training on internal components

Thank You. Questions?

- For more information:
 - Email Troy Welch: twelch@ngrain.com
 - Go to www.ngrain.com for case studies

