nGRAIN®

CASE STUDY

UNITED STATES ARMY CUTS COURSEWARE DEVELOPMENT COSTS BY 60%

PROJECT	NGRAIN®-ENABLED COURSEWARE FOR BRAKES SYSTEMS
CLIENT	UNITED STATES ARMY
KEY OBJECTIVES	▶ PROVIDE COST-SAVING ALTERNATIVE TO SIMULATOR ACQUISITION ▶ AVOID SIMULATOR MAINTENANCE COSTS ▶ INCREASE STUDENT ACCESS TO TRAINING

BACKGROUND

The United States Army maintains the largest fleet of vehicles in the world and can be considered both the premier trainer of maintenance personnel worldwide and a leading adopter of emerging training technologies. In order to maintain operational readiness and ensure mission success the Army must respond quickly to meet new and changing training demands from the field.

Replacing aging simulators would have cost USD $1.3-million.

CHALLENGE

An Army school, responsible for training 1,200 technicians a year, was facing both a financial and training challenge with one of its classes. The school's brakes simulator — a hard trainer that consisted of a "brakes board" connected to a computer showing videos — was antiquated and in a state of disrepair, with eight of the 16 systems out-of-service at any given time. According to government estimates, replacement of the brakes simulator would cost $1.3-million, plus an additional $80,000 per year to maintain it.

Additionally, because fifty percent of the simulators were out of service, students had to work on the simulators in teams of two or three, which increased the risk of failure for students learning at a slower pace.

The high ratio of students-to-instructors also presented a problem — a lack of instant remediation or assistance when students made mistakes or questions arose.

"NGRAIN offers a new way to reduce training costs, while also accelerating maintenance training. NGRAIN 3D virtual equipment enables task-based training to be rapidly produced and delivered in response to mission needs."

Mr. Larry Helms
Director, Lifelong Learning Center, U.S. Army

SOLUTION

Instead of replacing the costly and ineffective brakes board simulator, the Army evaluated emerging technologies for alternative solutions and ultimately selected NGRAIN maintenance training solutions, which enables the rapid development and delivery of 3D virtual equipment.

"The NGRAIN 3D brakes simulations provide a learning experience that is superior to the old brake simulators," said Ms. Nancy Santiago, M. Ed., Instructional Analysis & Design Branch Leader, Lifelong Learning Center, U.S. Army. "Students can freely explore the brakes at their own pace, as well as watch procedures, perform maintenance tasks, and receive instant feedback when they make mistakes."

IMPLEMENTATION

NGRAIN quickly created highly accurate and detailed 3KO® (3D Knowledge Objects™) of three types of brake systems. Army Instructional Designers and Course Instructors then used NGRAIN Producer® to enrich the 3KOs with animations, hyperlinks to reference materials, assembly and disassembly tasks, and parts information. The resulting interactive 3KOs were then inserted into PowerPoint slides and a computer-based course, which was developed by Army staff.

"The NGRAIN software was extremely easy to learn and use, and to incorporate into lessons," said SSG Sean Cooley, 577th Engineer Battalion, U.S. Army. "With the software, I can quickly create procedural animations and specify critical tasks. Using the NGRAIN 3D Brakes in the classroom is a powerful instructional aid."

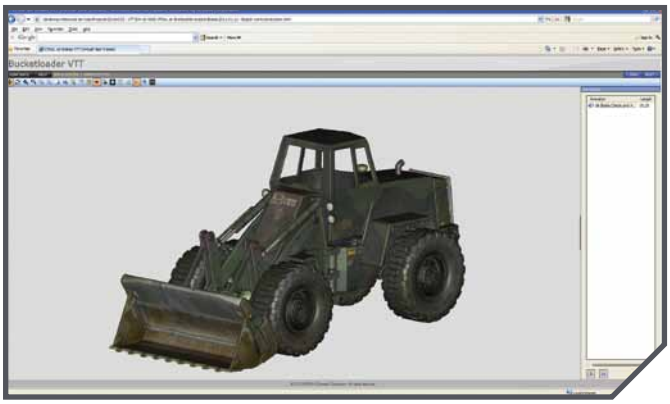
RESULTS

The Army was able to replace the brakes board simulators with NGRAIN's interactive 3D training solution at a 60 percent cost savings. Replacing the brakes simulators would have cost USD$1.3-million. Instead, implementing courseware with NGRAIN-based interactive 3KOs saved the Army an estimated $800,000.

The complete project, including NGRAIN deliverables included:

- Disposal of the antiquated simulators
- NGRAIN-developed 3KOs of brake systems
- Development of a complete computer-based course that extended beyond the 3D component
- Purchase of NGRAIN Producer software
- Outfitting the classroom with PCs

In addition to delivering significant cost savings, NGRAIN makes it possible for students to access virtual hands-on training anywhere, anytime, allowing them to practice procedures even when outside of class hours. Students are able to learn faster as they receive real-time automated feedback on mistakes from the NGRAIN training solution. Instructors also have the option to track student performance on critical tasks, by taking advantage of the NGRAIN software's capability to report all student interactions with the virtual equipment.



NGRAIN interactive 3D training helps US Army maintain world's largest fleet of vehicles