

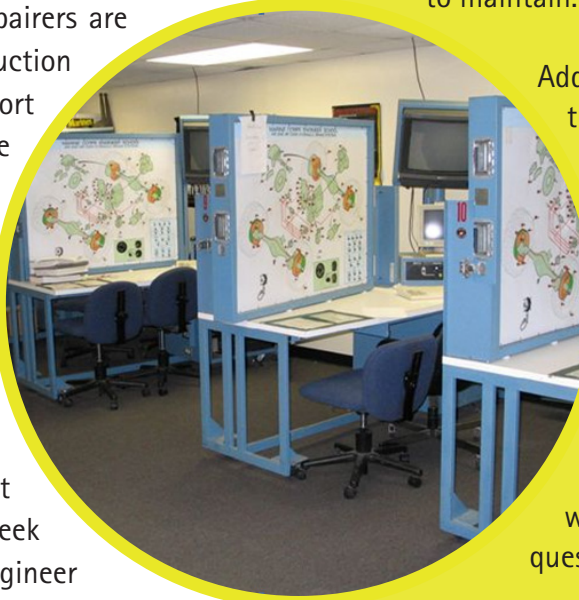
CASE STUDY: IMPROVING TECHNICIAN TRAINING, ACHIEVING DRAMATIC SAVINGS

Five years ago, a US Army school saved \$800,000 when it replaced hard trainers with an NGRAIN 3D simulation solution. Today NGRAIN saves that school \$14 million a year, which the school applies to new training.

BACKGROUND

The US Army includes 234,000 maintainers and can be considered the premier trainer of maintenance technicians worldwide. With today's operational tempo, Army training organizations are under increased pressure to deliver training with restricted budgets, while ensuring soldiers attain the required skill proficiency in a fixed amount of time.

Army Construction Equipment Repairers are responsible for maintaining construction equipment that is used to support ground missions. Duties include troubleshooting, repairing, and overhauling equipment that ranges from machines used for earthmoving, grading, and compaction, to lifting and loading, to water pumping and power bridging. Soldiers aspiring to become Construction Equipment Repairers must take an eight-week course run by the US Army Engineer School at Fort Leonard Wood, Missouri.



CHALLENGE

Five years ago, the Engineer School was facing financial and training challenges. The school's brake system hard trainers, used in the Construction Equipment Repairers course, were 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 hard trainers would cost \$1.3 million, plus an additional \$80,000 per year to maintain.

Additionally, because half of the hard trainers were out of service, students had to work in teams of two or three, increasing the risk of failure for students who learned at slower paces. The high ratio of students to instructors also presented a problem: there was a lack of instant remediation or assistance when students made mistakes or questions arose.

“ They catch on faster. By doing it on a 3D model first, and then going out to train on the piece of equipment, we're finding out that the knowledge they're carrying over is more than it was before. ”

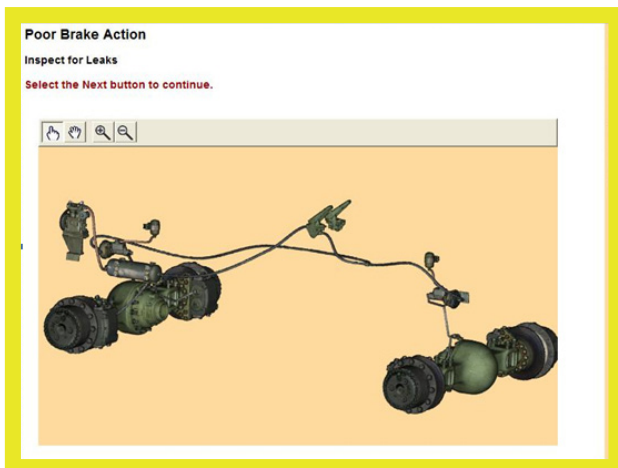
Mr. Cecil Caldwell, Chief
Maintenance Training Division, US Army

CASE STUDY

SOLUTION

Instead of replacing the costly and ineffective hard trainers, the Army implemented NGRAIN's solution for maintenance training, integrating 3D simulations of three different vehicles and their brake systems into computer-based courseware following the Army Training and Doctrine Command instructional design practices. In the courseware, students are presented with troubleshooting scenarios, text from approved technical manuals that are used in the field, and interactive 3D simulations, on which they perform and practice the given task. Students receive real-time automated feedback based on their interactions with the 3D simulation.

"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 and Design Branch Leader, Lifelong Learning Center, US 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."



RESULTS

Five years ago, the Army was able to replace the hard trainers with NGRAIN's interactive 3D solution at a 60 percent cost savings. Since then, the School has recognized a number of learning benefits, which have increased with each new software release by NGRAIN. Soldiers are able to learn faster than before, can access training materials outside of class hours, and are more knowledgeable and time efficient when they move to the shop bays to work with physical brake systems.

Because of this learning acceleration, the School was able to shave 12 hours off the 40-hour brake system training block. With an annual training load of approximately 1,200 students, this one-and-a-half day training time reduction means 1,800 fewer training days, which—at a cost of \$7,900—translates to an over \$14 million savings per year. The school is applying this savings to deliver training for new vehicle technology, including wet brakes maintenance and repair.

"The cost savings potential NGRAIN provides through learning acceleration is exceptional," said Mr. Cecil Caldwell, Chief, Maintenance Training Division, US Army. "In the case of the Construction Equipment Repairers Course, we chose to reallocate the saved training time to a new topic, which we previously had not been able to cover. The result is that our maintainers are better trained than before."

“Over \$14 Million savings per year.”