



Military 2D/3D Grade Control Training Simulator

2D / 3D Grade Control Training Simulator allows US Army Heavy Equipment Operators in ESC, ECC and BEB Units to train on 2D / 3D Grade Control in the classroom without stepping foot on a machine. SST Brady A. Miller, Horizontal Construction Supervisor, B Co, 6th BEB (A) – “The 2D/3D Grade Control system is a game changer. Coupled with the simulator, we were able to train with a standard that increased operator proficiency by becoming more familiar with the control panel and machine joystick controls. The operators were also able to see in depth project specifications through a design created by the 12T survey team. It allowed an innate understanding that created an overall thorough strategy for project completion and design.”



軍事 2D/3D 坡度控制訓練模擬器

翻譯 郭修華上尉

2D/3D 坡度控制訓練模擬器可使隸屬於工兵支援連、建築工兵連及旅工兵營等單位之重型機具操作手，無須站上機具即可於教室中進行 2D/3D 坡度控制訓練

資深技術監控雇員布雷迪 A. 米勒做為第六旅工兵營工二連的工兵機械督導員說：「2D/3D 坡度控制訓練模擬器顛覆了以往的訓練模式，有了這項模擬器我們的訓練可藉由使操作手更加熟悉操縱面板及操縱桿進而提升其操作熟練度，操作手也能透過專長代碼 12T 的測量小組的設計深入了解專案項目規範，這使得操作手能對專案有先天的理解，從而為專案的完成與設計創造一個全面又徹底策略。」

Recently fielded 2D /3D Grade Control Equipment to ESC, ECC and BEB Units.

The 2D / 3D Grade Control simulator is a Mission Driven grade control simulator for accelerated and cost-effective training of Army Heavy Equipment Operators with recently fielded 2D /3D Grade Control equipment received at many ESC, ECC, and BEB Units. The simulator enables Training Schools to deliver 2D / 3D Grade Control System training in a safe and realistic environment that resembles the machine cab environment without using valuable machine time and fuel on the construction site while reducing soldiers' exposure to hazardous risk. The simulator system not only trains soldiers to become technically proficient but also boosts their critical thinking skills. On average this training tool saves up to eight hours of machine operation time per student.

The 2D / 3D Grade Control Mission driven simulator features fully interactive joysticks, control panel emulator, and site simulator allowing Army operators of all experience levels to become 2D /3D grade control efficient. Units benefit from having skilled operators that can get to grade faster with less re-work.

Initially the equipment operator begins by practicing the exercises in the Field Reference Guide using the control panel emulator. The control panel can be viewed on the laptop or moved to a smaller 14' second monitor. Each system includes a 15' HDMI cable for connecting to a larger, remote monitor. To begin, the student selects a machine type and a jobsite from several pre-loaded sites and can begin using the simulator section of the system.

The system also allows changing views

近期 2D/3D 坡度控制裝備被配發到工兵支援連、建築工兵連及旅工兵營等單位。

2D/3D 坡度控制訓練模擬器是個任務導向的模擬器，用以加速及最佳效益化的針對剛被配發 2D/3D 坡度控制裝備的工兵支援連、建築工兵連及旅工兵營等單位的重型機械操作手們進行訓練。這項模擬器使得訓部中心能夠在一個安全且擬真的環境下提供 2D/3D 坡度控制系統訓練，而無須耗費寶貴的機械工時及燃料在工地進行訓練，同時也降低了士兵們暴露在危安顧慮下的風險。這項模擬系統不只訓練士兵成為技術精通的熟手也同時提高他們的批判性思維能力。這項訓練器平均可為每個學生省下八小時的機械操作工時。

這項任務導向的 2D/3D 坡度控制訓練模擬器具有互動式操縱桿、操縱面板模擬器和現場環境模擬器，使得全陸軍的操作手無論操作熟練度如何都能高效地進行 2D/3D 坡度控制。單位可得益於擁有這些能夠減少反覆作業、更快完成整地的熟手。

操作手起初於操作面板模擬器練習《現場參考指南》中的習題，操作面板可顯示於筆記型電腦或投影到較小的 14 吋外接顯示器上。每具系統皆附一條可連接至更大的遠端螢幕的 15 英尺 HDMI 線材。起先，學生挑選機具類型並從預先設定好的幾種工作環境中擇一，再開始進行系統的模擬操作。

such as inside the cab, outside the machine, and different positions on the model/site. The 2D /3D Grade Control simulator helps operators become familiar with 3D design models and interact with the control panel just as they would in a machine cab on a real mission. The system allows an operator to load a real project into the 2D / 3D grade control simulator. With realistic virtual graphics, users can see their actual jobsite and the machine operation working together.

Mr. Ron DeHays, Enterprise Account Manager, Trimble Government Solutions, Grade Control Products. With Trimble for 21 years selling, training, and supporting Trimble Grade Control Products for the Commercial Sector and for the last 4 years selling and supporting our Soldiers in all Military Branches.

此系統亦可更改視角，例如駕駛艙內部、機具外部及現場模組的不同位置。2D/3D 坡度控制訓練模擬器可幫助操作手熟悉 3D 設計模型，並使其如同置身機具駕駛艙中實際執行任務般地與控制面板進行互動。此系統也可將真實的專案項目上傳到 2D/3D 坡度控制訓練模擬器中。透過這些擬真的虛擬圖像，使用者可以看到他們實際的作業場地及機具操作共同運作。

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