

MARINE TRAINING SIMULATORS - BACKGROUND

Stewart Technology Associates (STA) is a diverse engineering company with a good professional international reputation in the offshore and marine industries, based in Houston, Texas. The president and owner of STA, Mr. W.P. Stewart, has been involved with Marine Training Simulators for the last twenty years. While running the US office of a British engineering company, W.S. Atkins, Mr. Stewart designed and built the first marine training simulator for ballast control and mooring that utilized a hydraulic tilting table.

Since 1981 Bil Stewart has been involved with Marine Training Simulator design, fabrication, and operation. This involvement began in 1980 when Mr. Stewart first canvassed opinions from the offshore drilling industry as to interest in marine simulator training. The results then were rather negative. An effort was made to team up Atkins with Redifon Simulation, but even a year later the industry showed little interest. It was not until February 1982, when the Ocean Ranger sank off the east coast of Canada, killing all 84 on board, did the industry show interest in simulators for training in stability, ballast control and other marine conditions specific to the offshore industry.

A teaming arrangement was made with Houston Marine Consultants, an established training organization, and Atkins began to run commercial training courses in 1993. Figures 1 and 2 show the original brochures put out by Atkins.

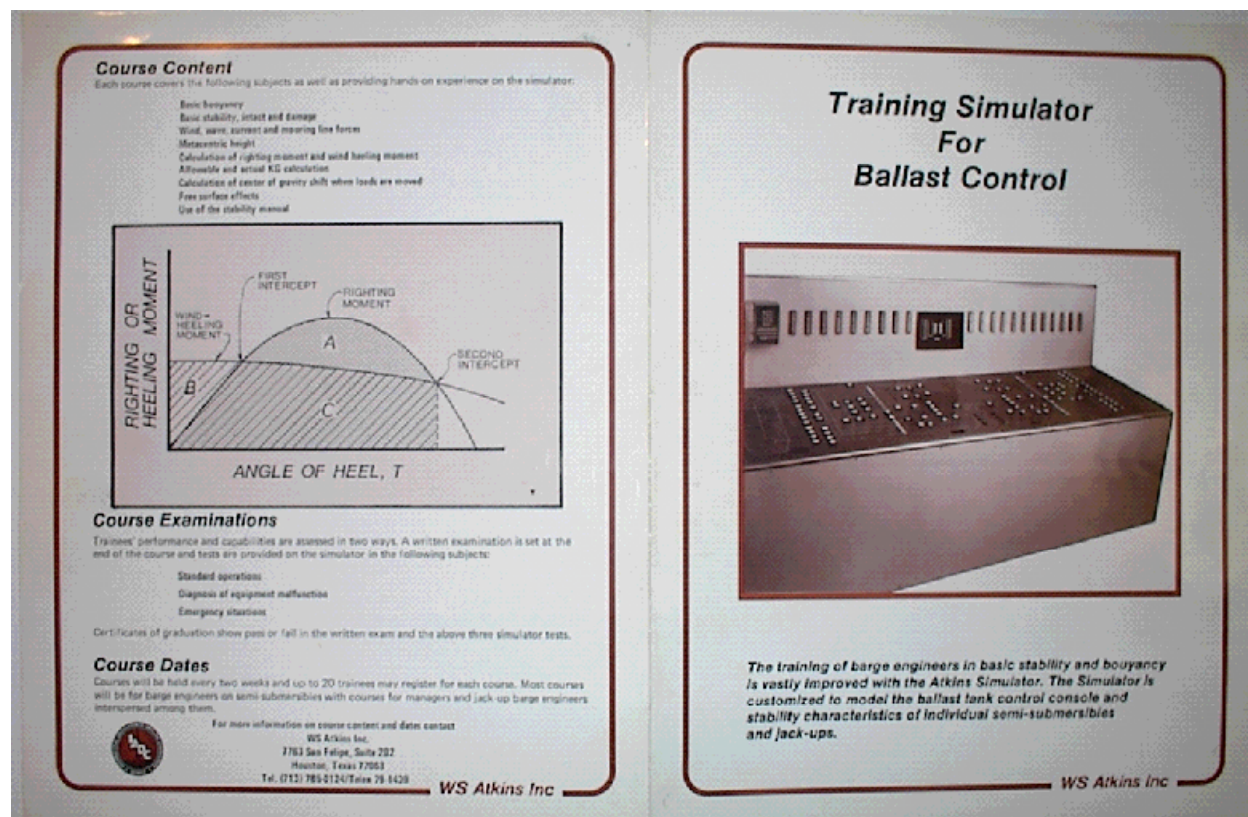


FIGURE 1 – Atkins' 1982 Training Brochure (back and front covers)

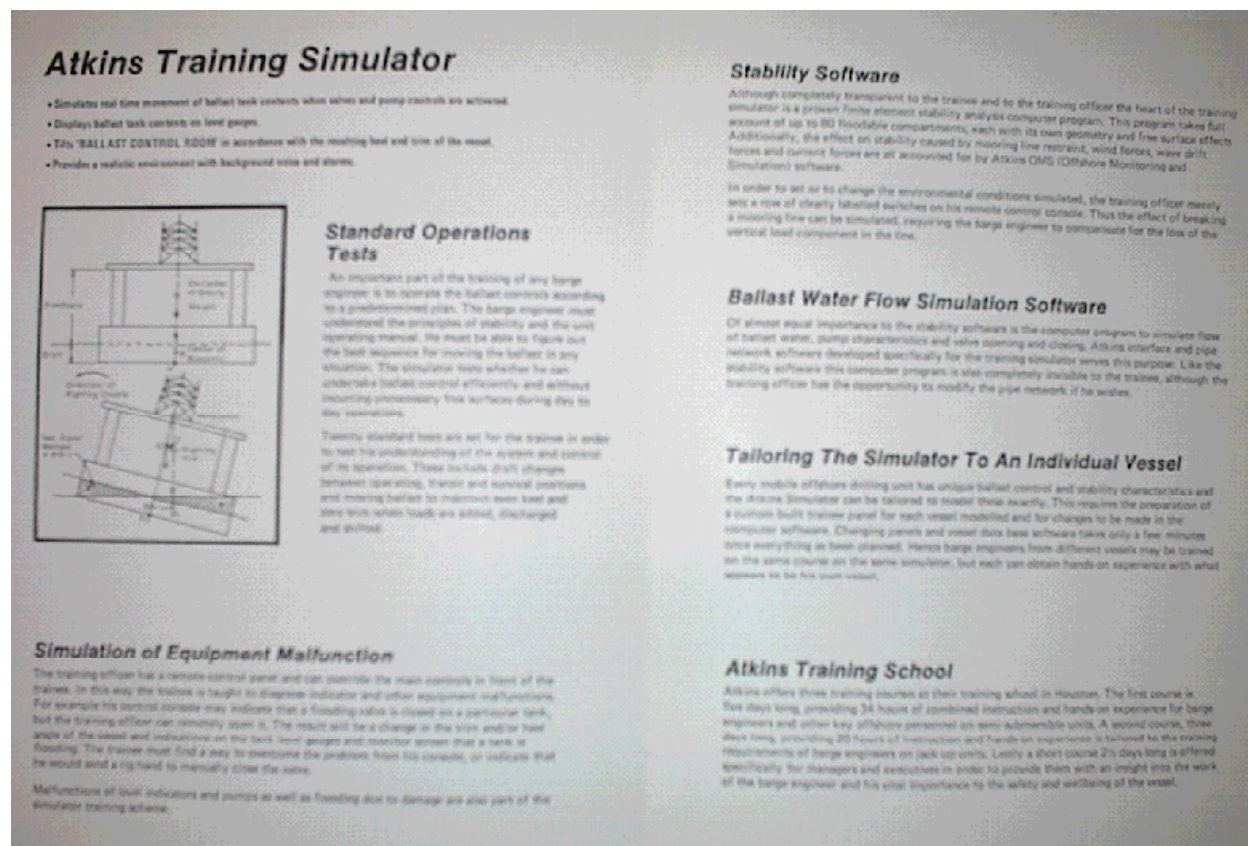


FIGURE 2 – Atkins' 1982 Training Brochure (inside pages)

When, in 1983, Mr. Stewart joined DNV as Vice President, in Houston, Atkins agreed to sell the "nearly finished" simulator to DNV, where development was completed under Mr. Stewart's control again, and a special training center room was prepared. A pit in the floor of the room in the Veritas Technology Center was made. An enclosure was made on top of the tilt-table and closed circuit TV was installed with intercoms and telephones for instructor/trainee communications within the simulator "worm hole", as we affectionately called it. The setup is illustrated in Figure 3, taken from the DNV brochure produced by Mr. Stewart in 1983/84.

The arrangement with Houston Marine was continued at DNV and more than 1000 personnel received training over the next 10 or 12 years.

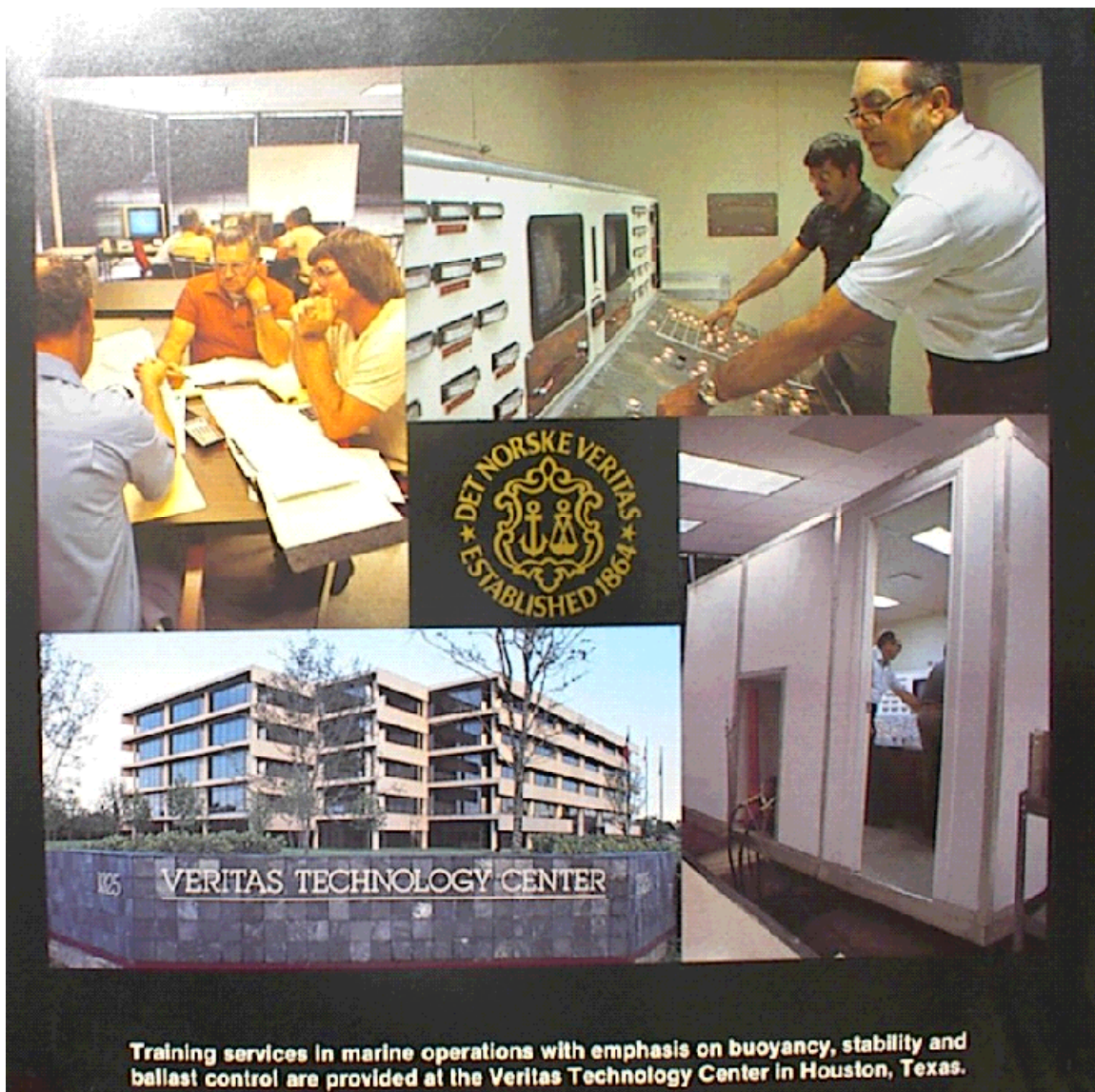


FIGURE 3 – Front Page of DNV Brochure Developed for Commercial Training Courses

The right-hand upper and lower photos in Figure 3 show the inside and outside of the simulator control room, mounted on the original tilt-table set into a pit in the floor of the Veritas Technology Center. The trainees inside are shown on closed circuit TV.

In 1986 Mr. Stewart left DNV and formed STA, leaving in place the arrangement that he would continue to service and support the simulator. In 1987 DNV commissioned STA to produce the world's first jack-up simulator. This was designed to be run on a PC and to drive the same tilt-table at DNV. A set of panels with the jack-up controls mounted over the semi-submersible ballast control panel and a single switch changed control from the semi to the jack-up computer.

This first jack-up simulator built by STA is in operation today and is used with the same software developed by STA beginning in 1987. This same software is also the basis of the jack-up simulator in the Aberdeen Technical College.

The STA software, JUSIM, runs the only two jack-up simulators in the world.

Gulf Coast Electric have a web site www.gcee.com, where the STA simulator is briefly described. Figure 5 is a picture showing the jack-up simulator panel, taken from that web site.



.FIGURE 5 – STA Jack-Up Simulator in GCE

Figure 6 shows the simulator room and one of the original Hydraulic ball-screw jacks can be seen in the foreground.



FIGURE 6 – STA Simulator at GCE, Louisiana, Door open, floor level, red screw jack.

When GCEE purchased the simulator from DNV, passing through the hands of the University of Southwestern Louisiana, they also acquired the STA software and hardware for the STA Liftboat Simulator.

Liftboats generally use hydraulic motors for moving their legs, compared to most jack-ups using electrical drive systems. The STA Liftboat simulator has a panel that covers the jack-up panel kW meters and displays hydraulic pressures. Some other additional features are also included.



FIGURE 7 – Another View of STA Jack-Up Simulator in Louisiana, 2001