



### Neil G. Siegel V.P. & General Manager, Tactical Systems TRW Systems & Information Technology Group

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*As vice president and general manager of TRW's Tactical Systems division in Carson, CA, Neil Siegel has helped TRW become the world leader in "battlefield digitization"—the use of information technology to improve the effectiveness of land combat forces.*

*The centerpiece of the U.S. Army's battlefield digitization initiative is the Force XXI Battle Command Brigade-and-Below (FBCB2) program—a five-year, \$282 million contract awarded to TRW in 1995. Siegel served as program manager for FBCB2 pioneering the use of computers, navigation and communications devices in Army combat vehicles that allow commanders to identify the location and activities of their soldiers and enemy forces on the battlefield in real-time.*

*A three-time winner of the TRW Chairman's Award for Innovation, Siegel is also a patent holder and has been honored by the U.S. Army by his induction into the Order of Saint Barbara.*

*Siegel, who holds bachelor's and master's degrees in mathematics from the University of Southern California, was interviewed by Executive Editor Gregory Slabodkin.*

**Q: What is the mission of TRW's Tactical Systems business unit?**

**A:** We use information technology to improve the effectiveness of U.S. armed

forces. We're part of TRW's Systems & Information Technology Group that has sales in excess of \$3 billion per year. The Army is the Tactical Systems division's biggest single customer but we do work for the other military services as well.

**Q: What is your personal vision for Tactical Systems?**

**A:** I came up through the ranks at TRW with a technical background. So I'm really focused on technical excellence in using technology in very innovative ways to make breakthroughs for our customers. The real challenge that we face is continuing to provide products that meet my standard of technical excellence in the face of ever-tighter schedules.

**Q: Speaking of tight schedules, how is the FBCB2 program going?**

**A:** As you know, we're the prime contractor for FBCB2 hardware and software. FBCB2 passed its milestone I and II thresholds last year. In August 1998, we conducted a Limited User Test (LUT)—which is the first formal test of the system—and it worked really well. OPTEC said the system shows a lot of warfighting potential and soldiers really liked it. We're moving forward towards the rest of the formal test program. There will be another LUT next year and the initial operational test and evaluation will follow the year after that. In parallel with that, the Army plans to field the First Digitized Division by December 2000.

The FBCB2 version that was brought to the Task Force XXI Advanced Warfighting Experiment (AWE) at the National Training Center (NTC), Fort Irwin, CA, in March 1997 was an experimental version of the system. The Army experimented in a real force-on-force

warfighting environment at the NTC to learn about what it is they really wanted from battlefield digitization.

Based on interviews with hundreds of soldiers and commander at the AWE, as well as instrumented data, we came up with a list of things that the Army liked and disliked about the experimental version of FBCB2. We also created a list of things that Army personnel realized with hindsight that they wanted to see in digitization.

Subsequently, we built the "real" version of FBCB2 and took it to the LUT in August 1998, where we got very high marks for incorporating the lessons learned at the Task Force XXI AWE. The results of the LUT were spectacularly successful.

**Q: How has the FBCB2 "Applique" computer been improved?**

**A:** The one issue that got raised out of the LUT in August 1998 was the reliability of FBCB2 hardware. We built a brand new computer for the LUT that incorporated new technologies, including a true sunlight-readable display, that answered the lessons learned at the March 1997 AWE. Army officials really liked the prototype computer except that its reliability wasn't as good as it needed to be for production. So the Army gave us a few months to address the reliability problem and come up with some pre-production units.

In the spring of 1999, we took these units, built by Phoenix Group Inc. (PGI), to the Electronic Proving Ground at Fort Huachuca, AZ, and ran them through some rigorous reliability tests to calculate the mean time between failure. The results were fantastic. We got improvements of four to five times over what the prototype computers registered, and well above the thresholds established by the Army for success. ★