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## NPS Aces Second Annual DoD Cyber Defense Exercise

by Barbara Honegger

All the National Security Agency's Trojan horses and all the Air Force and Army's infowarriors couldn't break through the cyber walls erected by the Naval Postgraduate School's ace "Blue" Team, which received the highest score in the Inter-Service Academy Cyber Defense Exercise (CDE) for the second year in a row.

Over four days in April, the National Security Agency, Air Force Information Warfare Aggressor Squadron, and Army Land Information Warfare Activity attempted an Internet-based cyber coup against teams from NPS and all five U.S. military service academies defending identically configured Cyber Defense Networks. Thanks to the rigorous preventive security focus of the NPS Center for INFOSEC Studies and Research (see sidebar), which oversaw the competition at the Navy's corporate university, the "coup" failed miserably.

"The 'Reds' *never* penetrated our firewall, they were unable to brute force any of our passwords, and we lost *no* points due to *any* successful attack exploits," said NPS Cyber Exercise project manager and lecturer in computer science J.D. Fulp in a letter congratulating his 30-member team of half military officers and half civilians enrolled under the National Science Foundation's Cyber Service Corps scholarship program. "We frustrated some of the best professional hackers and crackers in the world, which means that our collective educational efforts are paying clear and unequivocal dividends."

For three weeks before the start of the purely defensive exercise, NPS's team "hardened" its 12-computer, all-COTS (Commercial Off-the-Shelf) network by applying "patches", removing unnecessary services and access privileges, backing up all data, and preparing strong passwords – like Fulp's favorite **M!@g#+6!2002**.

"These exercises are an extremely valuable and exciting 'live' learning experience for our students, in which they get to go up against true national-level professionals," said CISR Director Prof. Cynthia Irvine. "We're especially grateful to DoD's Public Key Infrastructure (PKI) Program Office, headed by Mr. Michael Green, for sponsoring the exercise again this year, and we look forward to participating in many more

in the future.”

Unlike the service academy students for whom the Cyber Defense Exercise is a course capstone, all of the NPS students participated on a purely volunteer basis.

“I’m really proud of everyone who took part, especially as this wasn’t tied to any specific course,” Fulp said. “Each of our NPS students devoted significant personal time and effort through individual initiative. The student team leader, Capt. Allen Harper, USMC, who also took part last year, deserves a lot of credit for our repeat success. As long as NPS continues to generate graduates of this caliber, the nation will benefit immensely.”

“So much of Internet security can’t be taught in the classroom -- you just have to *do* it,” said Harper. “And that’s the main benefit of this kind of competition. It’s all ‘hands on’ and you get to teach yourself a lot.”

“We came a long way from last year,” Harper added. “In 2001 we ‘winged’ it. This year we were a lot more organized and did a lot more advance planning, and it showed. We centralized planning, decentralized execution, and held coordination sessions to share what we’d each learned and compare notes.”

Plus, it’s a lot of fun. On the first day of the exercise, for example, “Red” Team attackers pulled what the NPS students came to call the “Pizza Hoax.” “They sent us a message: ‘We own your network.! Better order pizza. It will be a late night.’”

“We had programs that let us watch as the ‘Red’ Team tried to hack into our system,” said NPS civilian student Lien Nguyen, who set up the LINUX operating system and downloaded security patches for the exercise. “You could see it all happening in real time, which was fascinating. This exercise was really valuable. I made the right decision to come to NPS.”

Although the NPS “Blue” Team scored the highest number of points, the 2002 official winner – which must come from one of the undergraduate academies – was West Point’s Army Cadets. The Naval Postgraduate School is a graduate level university.

In addition to the Army Cadets, the other participating “Blue” teams were from the U.S. Naval Academy, the U.S. Air Force Academy, the U.S. Merchant Marine Academy, and the U.S. Coast Guard Academy. Mr. Wayne Schepens, P.E. led West Point’s Blue Team. Carnegie Mellon University Software Engineering Institute personnel served as “White” Team referees and “Blue” network external users, validating the availability of services on each Blue Team network to determine competition points.

Just for the record, the NPS team password [M!@g#+6!2002](#) stands for “Monterey (the site of the Naval Postgraduate School campus) !s @ great #lace +o 6e !n 2002.”

## **About CSIR**

For over a decade, the NPS Center for Information Systems Security (INFOSEC) Studies and Research (CISR), under whose umbrella the NPS team participates in DoD cyber defense exercises, has set the standard of excellence for DoD, Dept. of the Navy, and U.S. federal government computer security and information assurance research and education. Today, the Center is the world’s foremost provider of military research and education in information assurance, defensive information warfare, and computer and network security. Two years ago, NSA’s Information Systems Security Organization (ISSO) officially named NPS one of only 23 “Centers of Academic Excellence in Information Assurance Education” in the country. NPS is also one of only four U.S. universities whose courses are dual-certified by both NSA and DoD’s National Security Telecommunications and Information Systems Security Committee (NSTISSC) as meeting the highly rigorous National Training Standard for Information Systems Security Professionals.

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