



STATE OF NORTH CAROLINA

AUDIT OF THE INFORMATION SYSTEMS

GENERAL CONTROLS

CARTERET COMMUNITY COLLEGE

OCTOBER 2007

OFFICE OF THE STATE AUDITOR

LESLIE MERRITT, JR., CPA, CFP

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State Auditor

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AUDITOR'S TRANSMITTAL

The Honorable Michael F. Easley, Governor
Members of the North Carolina General Assembly
The Board of Directors of Carteret Community College
Dr. Joseph T. Barwick, President

Ladies and Gentlemen:

We have completed our audit of Carteret Community College. This audit was conducted during the period from August 2, 2007, through September 6, 2007. The audit was conducted in accordance with *Government Auditing Standards* and *Information Systems Audit Standards*.

The primary objective of this audit was to evaluate information systems (IS) general controls at Carteret Community College. The scope of our IS general controls audit included general security, access controls, systems software, physical security, and disaster recovery. Other IS general control topics were reviewed as considered necessary.

This report contains an executive summary and audit results which detail the areas where Carteret Community College has performed satisfactorily relevant to our audit scope, where improvements should be made, and where further study is necessary.

We wish to express our appreciation to the staff of Carteret Community College for the courtesy, cooperation and assistance provided to us during this audit.

North Carolina General Statutes require the State Auditor to make audit reports available to the public. Copies of audit reports issued by the Office of the State Auditor may be obtained through one of the options listed in the back of this report.

Respectfully submitted,

A handwritten signature in cursive script that reads "Leslie W. Merritt, Jr.".

Leslie Merritt, Jr., CPA, CFP
State Auditor

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EXECUTIVE SUMMARY

We conducted an Information Systems (IS) audit at the Carteret Community College from August 2, 2007, through September 6, 2007. The primary objective of this audit was to evaluate the IS general controls in place during that period. Based on our objective, we report the following conclusions:

General security involves the establishment of a reasonable security program that addresses the general security of information resources. Carteret Community College has established a reasonable security program that addresses the general security of information resources. *We did not identify any significant weaknesses in general security during our audit.*

The **access control** environment consists of access control software and information security policies and procedures. We found several weaknesses in access controls. Due to the sensitive nature of the conditions found in these weaknesses, we have conveyed these findings to management in a separate letter pursuant to the provision of North Carolina G.S. 147-64.6(c)(18).

Systems software is the collection of programs that drive the computer. The selection of systems software should be properly approved and the software should be maintained by the computer center. *We did not identify any significant weaknesses in systems software during our audit.*

Physical security primarily involves the inspection of the agency's computer center for the controls that should reasonably secure the operations of the computer center from foreseeable and preventable threats from fire, water, electrical problems, and vandalism. *We did not identify any significant weaknesses in the physical security.*

A complete **disaster recovery** plan that is tested periodically is necessary to enable Carteret Community College to recover from an extended business interruption due to the destruction of the computer center or other Carteret Community College assets. *We did not identify any significant weaknesses in the Disaster Recovery.*

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AUDIT OBJECTIVES, SCOPE, AND METHODOLOGY

OBJECTIVES

Under the *North Carolina General Statutes* 147-64.6, the State Auditor is responsible for examining and evaluating the adequacy of operating and administrative procedures and practices, systems of accounting, and other elements of State agencies. IS general control audits are examinations of controls which effect the overall organization and operation of the IS function. This IS audit was designed to ascertain the effectiveness of general controls at Carteret Community College.

SCOPE

General controls govern the operation and management of computer processing activities. The scope of our IS general controls audit was to review general security issues, access controls, systems software, physical security, and disaster recovery which directly affect Carteret Community College's computing operations. Other IS general control topics were reviewed as considered necessary.

METHODOLOGY

We audited policies and procedures, interviewed key administrators and other personnel, examined system configurations, toured the computer facility, tested on-line system controls, reviewed appropriate technical literature, reviewed computer generated reports, and used security evaluation software in our audit of general controls. We conducted our audit in accordance with the standards applicable to performance audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States and *Information Systems Audit Standards* issued by the Information Systems Audit and Control Association.

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BACKGROUND INFORMATION

Carteret Community College is a leader in improving the quality of life for all citizens of Carteret County, and Eastern North Carolina by offering high-quality education, training, enrichment, and support to all who need and value these services. Carteret Community College, located at 3505 Arendell Street, Morehead City, North Carolina, was founded in 1962. Carteret Community College received accreditation from the Southern Association of Colleges and Schools to award associates degrees, diplomas, and certificates. The College was most recently re-accredited by the Southern Association of Colleges and Schools in December 1999. Carteret Community College offers up-to-date vocational technological training and features programs that prepare students for the skills they need in the fast-paced information age, where computers and the Internet are changing the way business is conducted.

At Carteret Community College, the Information Technology (IT) department provides a total source, single point resource for computer support in accordance with the mission of Carteret Community College. The IT department is organizationally structured in the Administrative Services Division of the College. The IT department consists of three Directors and three support staff employees. The Director of Administrative Computing Services is also the UNIX Systems Administrator and he has an Assistant UNIX Systems Administrator that reports to him. The Director of Software Solutions and Web Development is the College Webmaster and is responsible for software, database, and web design and development. The Director of Network Technologies has a Senior Information Technology Specialist and an Information Technology Specialist who report to him. All of the Directors report to the Vice President of Administrative Services who reports to the President of the College. The IT department is designed to provide administrative and instructional support for the College to allow for the most effective, efficient, and economical utilization of computer systems while at the same time providing protection of equipment and data.

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AUDIT RESULTS

The following audit results reflect the areas where Carteret Community College has performed satisfactorily and where recommendations have been made for improvement.

GENERAL SECURITY ISSUES

General security issues involve the maintenance of a sound security management structure. A sound security management structure should include a method of classifying and establishing ownership of resources, proper segregation of duties, a security organization and resources, policies regarding access to the computer systems and a security education program. Carteret Community College has established a reasonable security program that addresses the general security of information resources. *Our audit did not identify any significant weaknesses in general security.*

ACCESS CONTROLS

The most important information security safeguard that Carteret Community College has is its access controls. The access controls environment consists of Carteret Community College's access control software and information security policies and procedures. An individual or a group with responsibility for security administration should develop information security policies, perform account administration functions and establish procedures to monitor and report any security violations. We noted a number of weaknesses in access controls. Due to the sensitive nature of the conditions found in the weaknesses, we have conveyed these findings to management in a separate letter pursuant to the provision of North Carolina G.S. 147-64.6(c)(18).

SYSTEMS SOFTWARE

Systems software is the collection of programs that the computer center uses to run the computer and support the application systems. This software includes the operating system, utility programs, compilers, database management systems and other programs. The systems programmers have responsibility for the installation and testing of upgrades to the system software when received. Systems software changes should be properly documented and approved. *Our audit did not identify any significant weaknesses in system software.*

PHYSICAL SECURITY

Controls over physical security are designed to protect a computer center from service interruptions resulting from fire, water, electrical problems, vandalism, and other causes. Carteret Community College's physical security controls ensure that the computer service center is reasonably secure from foreseeable and preventable threats to its physical continuity. *Our audit did not identify any significant weaknesses in physical security.*

AUDIT RESULTS (CONCLUDED)

DISASTER RECOVERY

Disasters such as fire and flood can destroy a computer service center and leave its users without computer processing support. Without computer processing, Carteret Community College would grind to a halt. To reduce this risk, computer service centers develop business continuity plans. Business continuity procedures should be tested periodically to ensure the recoverability of the data center. *Our audit did not identify any significant weaknesses in Disaster Recovery.*

ORDERING INFORMATION

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