PETER HUGHES, Ph.D., CPA, CIA, CFE, CITP
Director

400 Civic Center Drive West
Building 12, Room 232
Santa Ana, California 92701-4521

(714) 834-5475 Fax: (714) 834-2880

INTERNAL AUDIT DEPARTMENT

Audit No. 2244

March 27, 2003

TO: Honorable Tom Daly, Clerk-Recorder

SUBJECT: Limited Review of Changes to the Cashiering System

We have performed a limited review of changes to the Clerk-Recorder's Cashiering System application as of October 21, 2002. The Cashiering System is point-of-sale based and processes cash receipts from the general public and title companies to record or produce copies of various documents (marriage licenses, birth certificates, fictitious business names, property titles, etc.).

In the spring of 2000, an independent programmer was hired to implement the Cashiering System core elements ("front office"). This enabled the Clerk-Recorder to process cash receipts and generate reports to prepare the daily deposit. While these critical elements were completed, other "back office" elements of the application remained incomplete, including the ability to void transactions, create refunds, and generate other essential financial and edit reports. In December 2000, SouthTech Systems, Inc. (SouthTech) was contracted to complete the Cashiering System.

The primary purpose of our review was to determine whether any of the changes implemented in the November 2, 2002 deployment of the Cashiering System impacted the Clerk-Recorder's internal controls. If the changes impacted internal controls, we reviewed the changes to determine that internal controls were not negatively impacted. Secondarily, we also reviewed general computer controls using an internal control questionnaire, as related to the Cashiering System application and documentation for the testing and deploying phases of the software development lifecycle.

As our review was limited to the changes performed by SouthTech, we did not perform an application review of the Cashiering System in its entirety nor did we review or test the integrity of the data contained therein.

Based on our review, we identified the areas below where internal controls could and should be improved.

1. Programmer Access to Production Datasets

The Cashiering System's Database Administrator has access to production datasets through the use of an SQL edit utility. Two other Information Systems (I/S) Division personnel possess similar access rights.

Production datasets in the Cashiering System are the transaction records created as a result of day-to-day processing performed by the Clerk-Recorder. Accordingly, such data should not be accessible by anyone who administers the database or who performs application programming. An even greater risk is presented when those I/S personnel have a working knowledge of the business operation, as is the case with one of the Clerk-Recorder's I/S staff (the Database Administrator for the Cashiering System).

Allowing I/S personnel access to production datasets could weaken the integrity of the Cashiering System.

Recommendation No. 1: We recommend the Clerk-Recorder restrict all staff of the I/S division's access to production datasets.

Clerk-Recorder Response: Concur/Implemented. The Clerk-Recorder has restricted all IS staff access to production datasets. However, it is necessary to have one IT staff person with access since he/she will support the Cashiering System. This person requires access to the database for support and database backup only.

Internal Audit Comment: We understand the Clerk-Recorder's business need. As such, we encourage them to randomly monitor the activity of the one remaining IT staff with access to production datasets.

2. Local Administrator Rights Granted to Users

While users at the Clerk-Recorder's Office are assigned to work primarily at one workstation, due to backfilling and scheduling of staff, it is common for a user to work at someone else's workstation during the course of normal business.

The Cashiering System was designed to operate on Windows 98 operating system, while the Clerk-Recorder's network runs on the Windows 2000 operating system. Accordingly, a workaround is needed whenever a user, other than the primary user assigned to a workstation, logs on to the Cashiering System at that work station. The workaround selected by the Clerk-Recorder entails granting users the rights of a local administrator. As such, this allows users excessive access to system resources including access to the command line and the ability to install programs.

Recommendation No. 2: We recommend the Clerk-Recorder obtain a software update to make the Cashiering System compliant with the Windows 2000 operating system and eliminate the need to assign users administrative rights.

Clerk-Recorder Response: Concur/In Progress. Implementation on April 1, 2003.

3. Segregation of Duties

The Cashiering System allows the same user to perform certain incompatible transactions usually handled by separate employees:

- An employee who creates a house charge sale wherein an amount is due from a customer, can also apply a subsequent payment to the amount due.
- An employee who creates a sale can also process a refund for the sale without any supervisory approval.
- Level three users are permitted to void (and subsequently undo a void) transactions they originally created, and can also process a refund associated with the void if the original sale was a cash or check transaction.

While the Clerk-Recorder has separated the above duties in practice, the Cashiering System itself will not prevent them from occurring. Inadequate separation of duties weakens the integrity of the Cashiering System and could result in undetectable irregularities.

Recommendation No. 3: We recommend the Clerk-Recorder obtain a software update that prevents:

a) the same employee from applying payments to a sale/receivable they created,
b) the same employee from issuing a refund on a sale they created, and
c) allowing the same user who created a void transaction to subsequently approve/process it.

Clerk-Recorder Response: Concur/In Progress. Implementation on April 15, 2003.

4. Void and Refund Audit Trails

We noted the following instances where audit trails in the Cashiering System were not adequate:

- The Daily Void Report does not identify which employee originated the sale and which supervisor (level three user) approved/processed the void transaction.
- There is no history or audit trail of "undo void" transactions, including the original void.
- When a house charge transaction is voided on the same day it was created, neither transaction (the original sale or void) appears on the Daily Tender Report.
- The Daily Tender Report and Recap Report do not indicate counts of voids and refunds issued by employee.

Recommendation No. 4: We recommend the Clerk-Recorder modify the following key reports:

a) The Daily Void Report should identify the employee and supervisor processing each void transaction, as well as report all "undo voids" and the related voids.
b) The Daily Tender Report should document all void activity for house charge transactions voided the same day.
c) The Daily Tender Report and Recap Report should list the number of voids and refunds for the day.

Clerk-Recorder Response: Concur/In Progress. Implementation on May 1, 2003.

5. Void Reviews

We noted that a supervisory employee who has the ability to create voids, also reviews the Daily Void Report. Failure to have proper audit trails that are reviewed by an independent person could result in undetectable irregularities.

Recommendation No. 5: We recommend that the Clerk-Recorder transfer responsibility for reviewing and approving the Daily Void Report to a supervisory employee who cannot create a void.

Clerk-Recorder Response: Concur/In Progress. Implementation on April 15, 2003.

6. Inadequate Testing Documentation

Testing of the software changes was not adequately documented by the Clerk-Recorder. We noted the following items:

- Test plans – describing objectives and requirements, testing schedules, staffing, and resources were not documented; moreover, security was only informally tested.
- Test designs – describing data to be input and expected output were not documented.
- Test procedures – describing test execution procedures, equipment preparation (identification of the testing environment and conditions on the day of testing), and detailed test procedures were not documented.
- Test results – including a classification of problem severity and a summarization of testing results with a comparison to original project requirements were not documented; Test Case Checklists were incomplete.
- A release log of updates received from SouthTech was not maintained.

Failure to properly document the testing process could impede any recourse proceedings against the vendor for faulty software and increase the risk of accepting programming errors.

Recommendation No. 6: We recommend the Clerk-Recorder more thoroughly document their testing process, including creating and maintaining a release log of all updates received from the vendor.

Clerk-Recorder Response: Concur/Implemented.

7. User Reference and Support Materials

User reference and I/T support manuals for the Cashiering System were not developed. The only documentation provided by SouthTech was limited to basic set-up and installation instructions. Additionally, the Cashiering System contract did not stipulate the contractor was to provide documentation of any kind as a deliverable.

Failure to properly provide adequate user reference and support materials could hinder employee training, system functionality, and future upgrades.

Recommendation No. 7A: We recommend the Clerk-Recorder develop user reference and I/T support manuals for the Cashiering System.

Clerk-Recorder Response: Concur/In Progress. Implementation on June 1, 2003.

Recommendation No. 7B: We recommend the Clerk-Recorder create a requirement in their software development life cycle that requires application documentation for the user and I/T support during any software development or upgrade project, whether developed in-house or by third-party contractors.

Clerk-Recorder Response: Concur/Implemented.

8. System Development Procedures

The Clerk-Recorder's System Development Guideline does not address all areas of the system development lifecycle (SDLC), namely the following:

- Project planning including: selection of a SDLC model, draft configuration management plan, work breakdown structure (WBS), and project schedule.
- Project development including: construction of the application module and unit testing.
- Project testing including: integration, systems, and user acceptance testing.

Additionally, the System Development Guideline did not have the documented approval by management. Failure to properly document development guidelines could result in the omission of critical steps in the development process. There are resources (Software Engineering Excellence Guidelines developed by ACS) on the County's intranet that the Clerk-Recorder should review and consider incorporating into its System Development guidelines

Recommendation No. 8: We recommend the Clerk-Recorder amend their System Development Guidelines to include all areas of the system development lifecycle including project planning, development, and testing.

Clerk-Recorder Response: Concur/Implemented.

9. I/S Policies and Procedures

Policies and procedures for the Clerk-Recorder's I/S Division did not address physical security issues and the software/hardware acquisition life cycle.

The Clerk-Recorder operates a data center that houses application servers. The Clerk-Recorder's current security policy was only sent to managers and supervisors, and does not address physical security issues such as who is allowed access to the data center, how to manage the CCD surveillance system, and how to monitor environmental controls. Additionally, there are no documented procedures for the purchase, maintenance, and disposition of hardware and software.

Failure to properly document policies and procedures could result in unauthorized access to department information assets and inefficient use of I/T infrastructure.

Recommendation No. 9A: We recommend the Clerk-Recorder amend their Security Policy to include physical security and distribute it to all personnel.

Clerk-Recorder Response: Concur/Implemented.

Recommendation No. 9B: We recommend the Clerk-Recorder document policies and procedures for the purchase, maintenance, and disposition of hardware and software.

Clerk-Recorder Response: Concur/In Progress. Implementation on June 1, 2003.

10. Automatic Workstation Lock-Out

Workstations are not automatically set to lockout the user when no activity occurs over a set amount of time. Failure to enable automatic workstation lockout by the operating system could result in unauthorized access to department information resources.

Recommendation No. 10: We recommend the Clerk-Recorder enable the Windows operating system screen saver with password protection and set it for a reasonable time period for all user workstations.

Clerk-Recorder Response: Concur/Implemented.

11. Multiple Log-Ons by One User

The Cashiering System permits multiple log-ons by the same user at the same workstation or at a different workstation. Multiple log-ons unnecessarily increase the use of system resources and increase the risk of processing errors.

Recommendation No. 11: We recommend the Clerk-Recorder prevent multiple logons by the same user.

Clerk-Recorder Response: Concur/In Progress. Implementation on June 1, 2003.

We appreciate the courtesy and cooperation extended to us by the personnel at the Clerk-Recorder. If you have any questions regarding our limited review, please call me, Eli Littner, Deputy Audit Director, at (714) 834-5899, or Autumn McKinney, Audit Manager, at (714) 834-6106.

Dr. Peter Hughes, CPA
Director of Internal Audit

Attachment – Clerk-Recorder Response

Distribution Pursuant to Audit Oversight Committee Procedure No. 1:
Members, Board of Supervisors
Members, Audit Oversight Committee
James D. Ruth, Interim County Executive Officer
Renee Ramirez, Assistant Clerk-Recorder
Susie Sullivan, Information Systems Manager, Clerk -Recorder
Lyn Cole, Chief Financial Officer, Clerk-Recorder
Foreman, Grand Jury
Darlene J. Bloom, Clerk of the Board of Supervisors

Management Response

TOM DALY
CLERK-RECORDER

ORANGE COUNTY
HALL OF RECORDS AND FINANCE
12 CIVIC CENTER PLAZA, ROOM 101, P.O. BOX 238, SANTA ANA, CALIFORNIA 92702-0238
PHONE (714) 834-2248 FAX (714) 834-2675

DATE: March 26, 2003

TO: Dr. Peter Hughes, CPA, Director, Internal Audit

FROM: Tom Daly, Orange County Clerk-Recorder Tom Daly

SUBJECT: Department Control Review

Attached are responses to the findings and recommendations of your audit of the internal controls of the Clerk-Recorder's Office.

We concur with your recommendations with the exception of a portion of recommendation No. 1.

I would like to take this opportunity to thank you and your staff for the time and effort spent reviewing are controls. It was of great benefit to the department, county and citizens of Orange County.

I would like to thank each member of the audit team for being so constructive in helping us improve our operations.

If you have any further questions, or if I can be of further assistance, please contact me at (714) 834-2222 or by email @ tom.daly@ocgov.com.

Thank you.

RECEIVED
INTERNAL AUDIT DEPARTMENT
2003 MAR 26 PM 3:46

cc:

Renee Ramirez, Assistant Clerk-Recorder
Lyn Cole, Chief Financial Officer
Susie Sullivan, IS Manager

1. Programmer Access to Production Datasets

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   Recommendation No. 1: We recommend the Clerk-Recorder restrict all staff of the I/S division's access to production datasets.

   Clerk-Recorder Response:
   Concur and have implemented.
   The Clerk-Recorder has restricted all IS staff access to production datasets. However, it is necessary to have one IT staff person with access since he/she will support the Cashiering System. This person requires access to the database for support and database backup only.

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   Clerk-Recorder Response:
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Clerk-Recorder Response:
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Clerk-Recorder Response:
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