



The Library of Congress
Office of the Inspector General



Copyright Office

*Follow-up Review of
Copyright Claims Processing*

Report No. 2001-IT-304
September 2009



UNITED STATES GOVERNMENT

LIBRARY OF CONGRESS

Memorandum

Office of the Inspector General

September 22, 2009

TO: James H. Billington
Librarian of Congress

FROM: Karl W. Schornagel
Inspector General

A handwritten signature in black ink, appearing to read "Karl W. Schornagel".

SUBJECT: Follow-up Review of Copyright Claims Processing

This transmits our report summarizing the results of the Office of the Inspector General's follow-up review of Copyright's processing of claims. The executive summary begins on page *i* and our complete findings and recommendation appear on pages 3 to 11. Copyright's response is briefly summarized in the Executive Summary and after our recommendation. Its complete response is included as an appendix to the report.

Based on the written comments to the draft report, we consider the recommendation resolved. Please provide, within 30 calendar days, an action plan addressing implementation of the recommendation, including the implementation date, in accordance with LCR 211-6, Section 11.A.

We appreciate the cooperation and courtesies extended to our staff during this review.

Cc: Register of Copyrights
Chief Operating Officer

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▶▶ EXECUTIVE SUMMARY

The Library of Congress Office of the Inspector General has completed a follow-up review to a report we issued in September 2008 titled *Conditions in the Processing of Copyright Claims*, report no. 2001-IT-304.

Our previous review identified two factors that were responsible for the considerably long times that the Copyright Office (Copyright) needed to process copyright claims: (1) an unreliable technology—optical character recognition (OCR)—being used to “read” paper applications, and (2) the slow operating response time of eCO, Copyright’s new online registration system. OCR did not reliably read information in claim applications and its flaws yielded an enormous workload increase for Copyright Registration Specialists (Specialists) that included proofing claims and in many cases, manually typing application information into eCO. Since we issued our 2008 report, Copyright has implemented a 2D barcode¹ application system, and established a quality review team to ensure all paper applications, and the small percentage of 2D barcode forms that require manual data entry, are correctly entered into eCO, thereby correcting the data migration errors caused by OCR. The office has also made several changes in eCO’s underlying database settings which have improved the system’s response time.

Copyright’s challenge now is to reduce the claims backlog as efficiently and expeditiously as possible while managing the flow of new claims as they arrive. The following paragraphs summarize significant issues we identified in our follow-up regarding the current functionality of eCO, backlog of claims, claims processing time, and level of service provided to Copyright patrons.

Functionality of eCO—Although Copyright has decreased eCO’s operating response time from sometimes hours to less than 60 seconds since we issued our 2008 report, the office continues to work with the Library’s Information Technology Services directorate to decrease it further. Copyright’s goal is that the system’s delays be under 15 seconds. Copyright is also moving forward with an upgrade to eCO to the latest version of Oracle’s Siebel Customer Relationship Management

¹ A 2D barcode form captures all of the information a user types into a form, enabling Copyright staff to scan the barcode and populate eCO’s records.

(CRM) application. This upgrade is expected to improve eCO's usability. At present, Specialists and patrons find eCO and the public-facing eService component difficult to use.

Backlog of Copyright Claims—The backlog of unprocessed copyright claims has grown from 397,000 to over 500,000 since we issued our 2008 report. Copyright now projects the backlog will peak within the first two quarters of fiscal year 2010. The productivity of Specialists is expected to increase as the Specialists become more accustomed to their new duties and responsibilities and eCO. Additionally, 17 new Specialists have been brought on board and eight more are in the hiring process to help Copyright address the backlog.

Processing Time of Copyright Claims—Before Copyright began using eCO, the office's timeframe for processing claims was approximately three months. However, since the new system was implemented, the processing delays have grown to be unacceptably long, now ranging between about 5 and 20 months. Specialists are required to process an average of 2.5 claims per hour to receive a performance rating at the satisfactory level. That performance requirement was established in October 2008, at the time Copyright faced significant issues involving eCO's implementation.

We question whether the performance requirement for Specialists is up-to-date. The eCO system has been improved and Specialists no longer perform the extra work needed to overcome OCR's flaws. Accordingly, we recommend that Copyright revisit the performance requirement as improvements are made in claims processing and eCO to ensure that it is based on current operating conditions.

Copyright's Customer Service—Copyright's Information Section has been challenged to maintain a high level of service to the public since eCO was implemented. It continues to maintain the same staffing level it had before Copyright began using the new system even though its workload has increased and responsibilities have expanded due to the increasing delays in claims processing. Nevertheless, the section's staff promptly responds to and capably manages the thousands of phone and e-mail inquiries that the section receives every month.

Copyright agreed with our findings and recommendation.

▶▶ BACKGROUND

The Copyright Office (Copyright) administers U.S. copyright law by examining all applications and deposits presented for registration of original and renewal copyright claims (claims), recording legal documents related to copyright ownership, and acquiring copyrighted works for deposit into the collections of the Library of Congress (Library).

Copyright Registration. Copyright is a form of protection provided by the laws of the United States (Title 17, U.S. Code) to the authors of “original works of authorship,” including literary, dramatic, musical, artistic, and certain other intellectual works. Copyright protection exists from the time the work is created in fixed form. No action is required to secure copyright protection. Copyright registration is a legal formality intended to make a public record of the basic facts of a particular copyright.² A copyright registration is effective on the date Copyright receives, in acceptable form, a completed application, a nonrefundable filing fee, and a copy or copies of the work being registered, regardless of how long it takes to process the application.

Reengineering Initiative. In September 2000, Copyright embarked on a reengineering initiative to improve the timeliness of its services, provide Copyright services online, and increase its acquisition of digital works for the Library’s collections. In July 2008, the office fully implemented its new online registration system, eCO, which includes an eService component that allows members of the public to file registrations online. This system captures claim information in electronic form, often accompanied by electronically-submitted material to be copyrighted and electronic payment of the filing fee. In addition, eCO comprises a centralized case management system which Copyright uses to manage its internal processes. Because of the time gap between the dates Copyright implemented eCO for internal processing and the release of eService to the public, a larger than expected volume of paper applications accrued which, coupled with flaws in the technology adopted by Copyright and system issues, resulted in a significant backlog of paper applications.

² United States Copyright Office Circular 1, *Copyright Basics*.

» OBJECTIVES, SCOPE, AND METHODOLOGY

The objective of this review was to identify significant issues that have arisen affecting claims processing since we issued our report titled *Conditions in the Processing of Copyright Claims* in September 2008, report no. 2001-IT-304. We specifically focused on the functionality of eCO, status of the unprocessed claims backlog, time involved for processing claims, and the level of service provided to patrons.

To confirm our understanding of Copyright's registration process, we interviewed and held discussions with the office's management and staff. We also collected and compiled data on the processing time of copyright claims and the number of claims in process from Copyright's management reports for the six-month period ending July 26, 2009.

Additionally, we collected data from Copyright's IT help desk and on-line survey results to identify patrons' concerns and issues regarding eCO.

Finally, we collected information from Copyright's Information Section on the number of patron inquiries that the section received from May 1, 2008 through May 31, 2009 and the number of open/pending inquiries as of May 31, 2009.

Our review covered the period between November 1, 2007 and July 26, 2009.

We conducted this attestation in accordance with generally accepted government auditing standards except that we did not assess the reliability of computer-processed data used in this report. Accordingly, we cannot confirm the accuracy and completeness of the data we collected.

►► FINDINGS AND RECOMMENDATION

Overall, Copyright has made significant progress since our last review. The introduction of the 2D barcode form, the creation of a quality assurance mechanism, the completion of training for Registration Specialists (Specialists) who transitioned to the new system, and the improvements in eCO's response time have all contributed to what appears to be a more-or-less stabilized backlog. The issues we identify in this report will result in enhancements to the process, rather than major changes. We commend Copyright for already strongly addressing all of the findings in our 2008 report.

I. Functionality of eCO

Copyright has worked diligently to improve eCO's stability and performance since the office began using this new system. It has made several modifications to eCO in response to change requests from the user community, applied patches to the system when they were needed, and implemented several changes in eCO's underlying database settings which have improved the system's response time.

Notwithstanding the actions that Copyright has taken, technical issues continue to hamper eCO's usability. In our review, we found that

- eCO's operating response time remains slow despite Copyright's action to decrease it, and
- Copyright's Specialists and patrons continue to find eCO difficult to use.

a. Response Time of eCO

Copyright has made several changes in eCO's database settings which have reduced the system's operating response time from sometimes hours to less than 60 seconds.³ Nonetheless, eCO's operating response time remains slow. As a result, the efficiency with which Specialists process claims is

³ The extremely slow response times were often mistakenly referred to by Copyright's specialists as "crashes." However, the system's slow response time is not the result of eCO crashing. A system crash is a sudden failure of a program or operating system, and not a delay in processing.

adversely affected and, partly due to this, additional unprocessed claims are accumulating in the backlog. Copyright is working with the Library's Information Technology Services directorate to identify ways to decrease eCO's response time. Its goal is to reduce delays to less than 15 seconds.

b. Usability of eCO

Specialists continue to find eCO difficult to use despite changes Copyright has made to improve the system's functionality. Specialists must navigate through multiple screens in the system to review and process a claim. Coupling this design flaw with eCO's periodically slow system response times makes claims processing inordinately long.

In general, Copyright's patrons also find eService difficult to use. Feedback they provided to the office in May 2009 regarding the usability of the system during the online registration process indicated that most patrons found eService was not user-friendly and experienced difficulties in uploading their work to the system.⁴

Copyright recognizes that eCO is difficult to use and plans an upgrade for the system to the latest version of Oracle's Siebel Customer Relationship Management (CRM) application to address that issue.⁵ Copyright is expecting the upgrade to improve the way system information is organized and displayed for Specialists and copyright filers. It also expects the upgrade to improve the system's reporting and auditing capabilities and provide an Adobe fill-in form to replace the series of separate application screens in eService that some filers find difficult or cumbersome to navigate.

II. Copyright Backlog

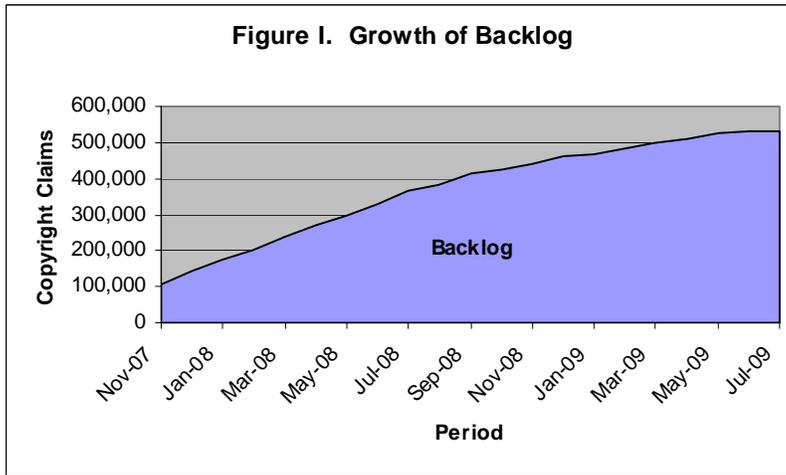
a. Copyright Backlog Rate of Growth

The number of unprocessed claims has grown substantially since Copyright began using eCO and as of July 26, 2009, the

⁴ In May 2009, Copyright received 274 comments from the public via its website regarding the public's experience with eService during the claims registration process. Our review of those comments indicated that 239 (87%) of the 274 comments related to usability.

⁵ The terms "Adobe," "Oracle," and "Siebel" are registered trademarks.

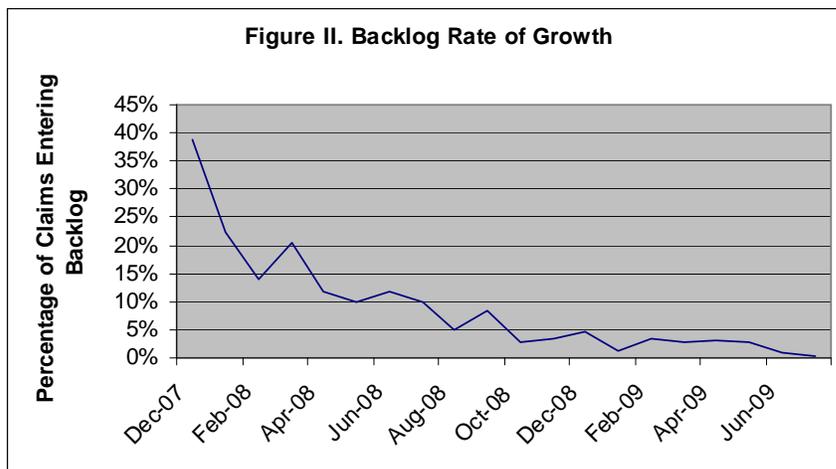
backlog had reached approximately 533,000 claims. Figure I shows the growth of the claims backlog from November 30, 2007 through July 26, 2009.



Most of the backlogged claims are paper applications accumulated during the time gap in which Copyright began using eCO to process claims and the date that eService was released to the public. Copyright’s reliance on optical character recognition (OCR) to “read” and convert data from paper

claims into the eCO system and technical flaws in eCO are major factors that are responsible for the backlog’s current size.⁶

As discussed in Section I, *Functionality of eCO*, Copyright has made and continues to seek improvements in eCO’s performance and the actions it has taken to date have considerably decreased the growth of claims accumulating in the backlog. Figure II shows the growth rates of unprocessed



claims accumulating in the backlog by month from November 2007 through July 2009.

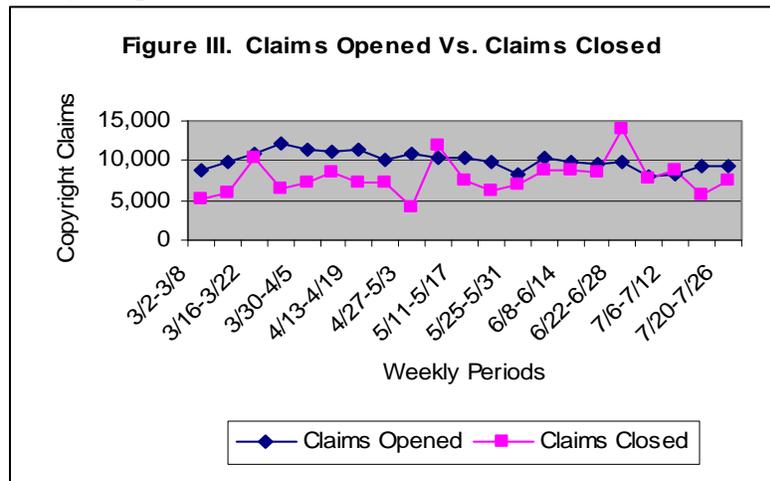
Despite Copyright’s efforts, the number of claims that the office receives on a weekly basis continues to exceed the number of claims processed.

As a result, the size of the backlog will continue to grow. For the week ending July 26, 2009, Copyright received 9,311 claims and processed 7,403. The difference – 1,908 claims – became part of the backlog.

⁶ We discussed the major contributing factors of the backlog in our September 2008 report titled, *Conditions in the Processing of Copyright Claims*.

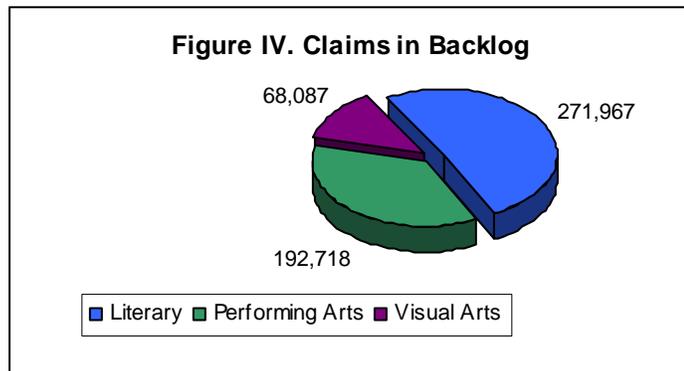
Figure III shows the differences between the number of claims received and completely processed during the period March 2009 through July 2009.

Copyright projects that the claims backlog will peak between the first and second quarters of fiscal year 2010. Its projection is based on fiscal 2009 performance figures and the assumptions that (1) productivity will increase as a result of improvements made in eCO, and (2) Specialists will become more acclimated with eCO and devote more time to processing claims. We agree with Copyright’s projection and, in Section III, *Processing Time of Copyright Claims*, discuss actions the office needs to take to begin to reduce the backlog as quickly as possible.



b. Registration and Recordation Program

Copyright distributes claims submitted by filers among its Literary, Performing Arts, and Visual Arts Divisions. Together, these three divisions make up the Registration and Recordation Program (RRP). Among the three, the Literary Division receives the most claims on a weekly basis and, with approximately 272,000 claims in the backlog as of July 26, 2009, has the largest number of unprocessed claims. The Visual Arts Division and the Motion Picture Section of the Performing Arts Division have already begun to reduce the number of claims in their backlogs. Figure IV shows the make-up of Copyright’s backlog of claims.



In Section III, *Processing Time of Copyright Claims*, we provide information on the productivity levels of each of the RRP divisions.

III. Processing Time of Copyright Claims

Processing times for copyright claims have reached high levels. Depending on the registration method that filers use, current processing times range from approximately 5 to 20 months. The time needed for Copyright to process a single application varies greatly, depending on the amount of material that the office receives and the filing method that the application filer uses.

a. Registration Filing Methods

Four methods are available to register a claim with Copyright: (1) registering online via eService using an electronic copy of work, (2) registering online via eService using a hard copy of work, (3) registering via mail with a 2D barcode fill-in form, and (4) registering via mail using paper forms.

The first method is the most expedient because those claims are processed in approximately five months. Appendix A, *Flowchart of each of the Copyright Filing Methods* shows the processing steps a claim goes through under each of the four registration methods. As depicted in the flowchart, claims registered via eService with an electronic copy of the work bypass the required arduous steps that eService claims with hard copy deposits, 2D barcode, and paper claims (i.e., methods 2, 3, and 4 listed above) must go through before they reach a Specialist, such as manual sorting and scanning by Copyright's Receipt, Analysis, and Control Division.

Moreover, claims submitted via mail and express courier also go through an irradiation process, which not only delays mail delivery, but significantly, causes damage to some materials mailed in.⁷ Where damage to a deposit copy is such that it cannot be read, played back or otherwise examined by a Specialist, the applicant is instructed to submit a replacement copy, which increases the processing time for the claim considerably.

⁷ Irradiation is the method used by the United States Postal Service and Pitney Bowes, the Library's contract vendor for processing bulk mail, to decontaminate mail. Irradiation makes use of high-energy electron sources (radiation) to destroy biological agents. This process damages incoming mail items, including items intended for the Library's collections.

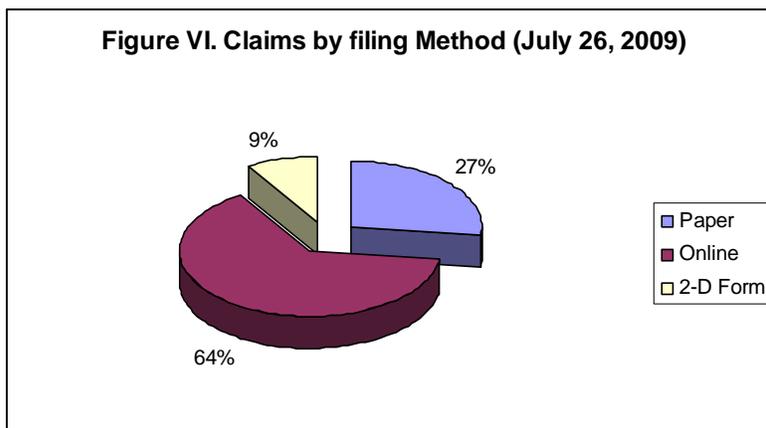
Current processing times by registration method are listed in Figure V. Since we issued our 2008 report, Copyright has introduced a new fee schedule that keeps the filing fee for eService claims below the filing fees for paper applications and 2D barcode forms.

Registration Method	Processing Time
(1) Online with electronic copy of work	5 months
(2) Online with hard copy of work	8 months
(3) 2D barcode fill-in form submitted via mail	20 months
(4) Paper forms submitted via mail	20 months

Effective August 1, 2009, Copyright’s filing fees for some services increased to cover the costs of those services. The fee increase for paper filings—from \$45 to \$65—is the most significant because processing such claims requires several arduous steps.

When we issued our September 2008 report, approximately 65% of submitted claims were paper filings; as shown in Figure VI, that percentage has now declined to 27%.

As of July 26, 2009, the make-up of claims submitted to Copyright reveals more than 60% of them were electronically filed. This is a very positive development because the increase in electronic claim filings took place well before the date that the fee increases took effect.



b. Registration Specialists’ Productivity

Copyright now has 119 Specialists on board, which is 13 more than it had in August 2008. The majority of Specialists each process at least 2.5 claims per hour, which is the number of claims a Specialist must process on an hourly basis to receive a satisfactory performance rating. However, there are a number of Specialists who are performing significantly below the satisfactory level.⁸

Currently, all of the Specialists who are performing below the satisfactory level are in the Literary Division and their performance is reflected through a significant number of

⁸ Under Copyright’s new business process, examiners and cataloger’s job functions were combined. Some aspects of the former cataloger’s job function are automated in the reengineered process.

claims accumulating in the backlog of unprocessed literary claims. As indicated in Section II above, the Literary Division receives the most copyright claims on a weekly basis and the majority of the unprocessed claims in Copyright's backlog are literary works.

Copyright has offered Specialists the opportunity for reassignment to problem resolution specialist positions. As problem resolution specialists, they would be required to perform quality control reviews as part of the tagging process. Accordingly, they would review claims keyed into Captiva,⁹ and therefore relieve Specialists of the responsibility of verifying the information in eCO from paper applications.

c. Registration Specialists' Performance Requirements

Specialists are required to process an average of 2.5 claims per hour to receive a "satisfactory" performance rating. Copyright established that performance requirement in October of 2008 when the office was facing significant issues involving eCO's implementation. In August 2008, Specialists were processing 1.8 claims per hour in eCO on average. Since then, the process has been improved and Specialists no longer perform many time-consuming clerical tasks which had reduced the time that Specialists had available for processing claims.

Overall production is the function of several factors, including productivity rate (which is heavily impacted by the percentage of online filings) and capacity, or time available to process claims.

As of July 26, 2009, Specialists process on average 2.5 claims per hour. Improvements to the process and the increasing rate of online filings resulted in a 41% increase in productivity (from 1.8 to 2.5 claims per hour). Given the potential for further enhancements to the system and the continually increasing percentage of online filings, Copyright management believes that further improvements in the productivity rate are possible.

⁹ Captiva is a document scanner software that provides scanning, image enhancement, and optical character recognition (OCR). Copyright acquired the software to reduce manual keying and speed the process of data entry, thus automating the processing of paper copyright applications claims.

Because of training commitments and other factors, Specialists spend only about 61% of their day processing claims at present. Copyright projects that decreasing training commitments and increased proficiency with eCO will result in a 23% increase in available time to process claims over the next seven months, enabling Specialists to spend about 75% of their day processing claims and only 25% on other tasks.

Notwithstanding a 23% increase in capacity, Copyright will realize only a small decline in the backlog (figure VII) at the current productivity level of 2.5 claims per hour. In order to make substantial inroads into the backlog, the productivity rate of Specialists will have to increase beyond 2.5 claims per hour.

Recommendation

Given continued improvements in the factors which affect the productivity rate – process and system improvements and increasing online filing rates, we recommend that the Copyright Office periodically reevaluate operating conditions and adjust the Specialists’ performance requirement accordingly.

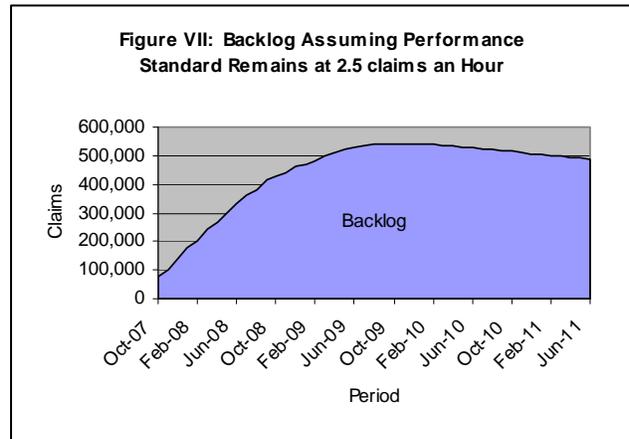
Management Response

Management agreed with and intends to act on the recommendation.

IV. Copyright’s Customer Service

The commitment of Copyright’s Information Section staff to continue to provide exceptional customer service is worthy of recognition. Staff members of the section respond to telephone and mail inquiries from the public regarding the copyright law, registration procedures, and copyright records. They also provide assistance to Copyright’s visitors. The section has 13 employees who answer approximately 9,000 telephone calls and 4,000 e-mails monthly.

The section has been challenged to maintain a high level of service to the public since eCO was implemented. It continues to maintain the same staffing level it had before Copyright began using the new system even though its workload has



increased and responsibilities have expanded. Although eCO's implementation has increased the Information Section's work-related responsibilities, the new system has improved the quality of assistance that section staff provides to copyright filers. Prior to the implementation of eCO, Copyright had limited ability to track copyright claims that were in-process. With the introduction of eCO, the tracking of copyright claims has improved dramatically. Accordingly, Information Section staff can now provide copyright filers up-to-date status information on their claims.

The electronic records of some claims that were keyed into eCO during the system's first few months of operation contain errors which can prevent Information Section staff from finding those claims in the system.¹⁰ For example, if a claim has an error in its title or in the name of the author, a section staff member will have to conduct alternative searches in eCO for that claim. If not found, staff members must then use other methods to research inquiries. Copyright management informed us that a large proportion of paper claims in the backlog have errors of this type, preventing the Information Section staff from expeditiously answering status inquiries.

¹⁰ In March of 2008 Copyright implemented the quality assurance program to ensure all paper claims were correctly entered into eCO, thereby mitigating the errors introduced by the OCR process for new claims. By that time, however, the backlog had grown to approximately 240,000 claims.

» CONCLUSION

Copyright fully recognized that its ability to effectively conduct business in the future heavily depended on a modern automated system for its registration and recordation processes. To its credit, the office redesigned its registration process and developed a new online registration system—eCO—to increase its efficiency and improve its service to the public.

In general, eCO's objectives to process claims more efficiently and expeditiously have been achieved. Claims submitted electronically are usually processed faster and bypass the arduous steps that paper claims must go through. In addition, the online system makes easily accessible to the public much more information on copyrights than previously possible. Unfortunately, some major issues affected eCO's implementation early on.

The progress that has been made since our September 2008 report is encouraging. We expect that Copyright will continue to refine its systems and processes and soon begin decreasing the accumulated backlog.

Major Contributors to This Report:

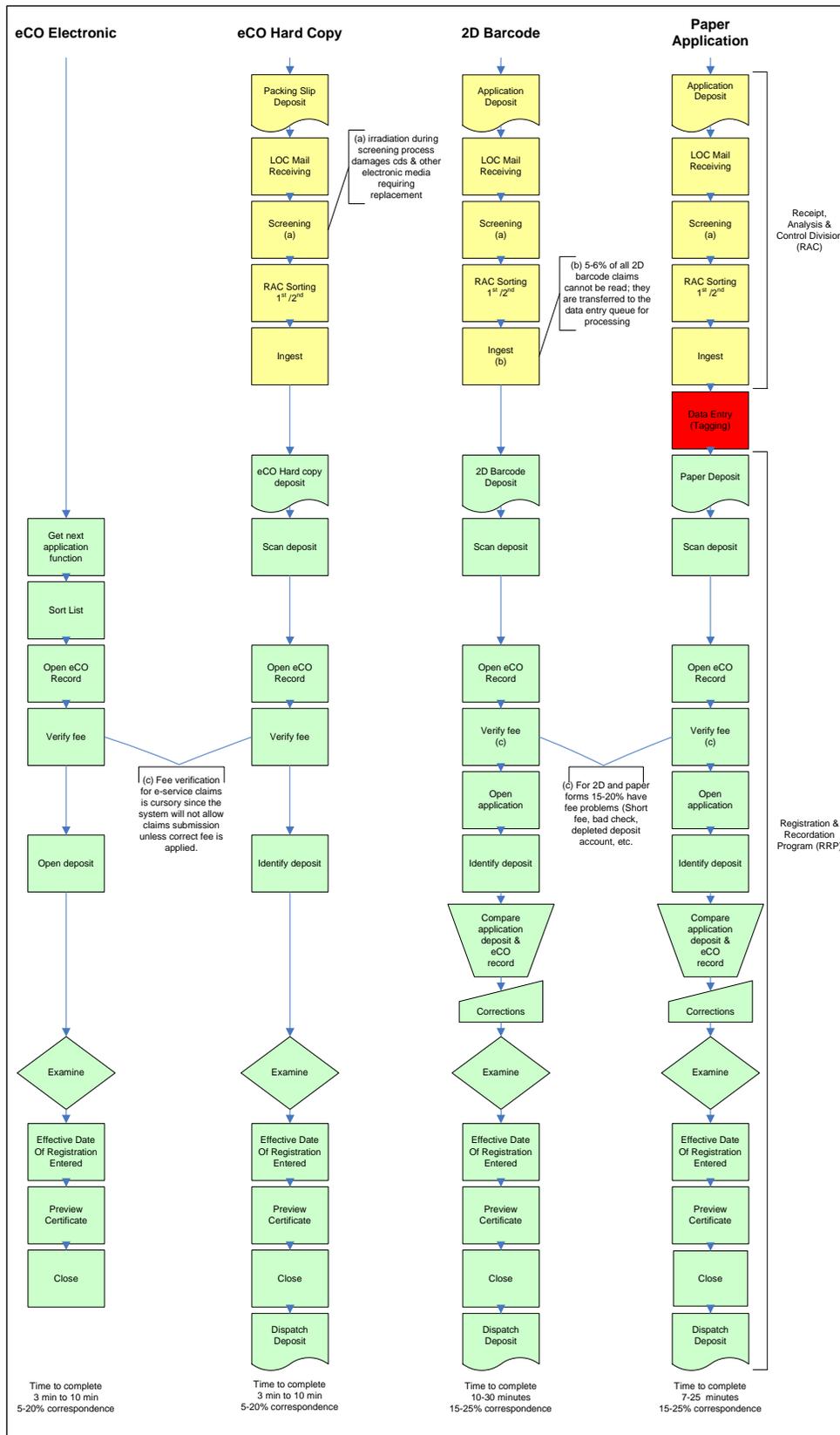
Nicholas Christopher, Assistant Inspector General for Audits

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APPENDIX A: FLOWCHART: COPYRIGHT FILING METHODS



▶▶ APPENDIX B: MANAGEMENT RESPONSE**Copyright**

United States Copyright Office • Library of Congress • 101 Independence Avenue SE • Washington, DC 20559 • (202) 707-8350

Memorandum

TO: Nicholas Christopher
Assistant Inspector General for Audits

DATE: September 21, 2009

FROM: Elizabeth R. Scheffler
Chief Operating Officer

SUBJECT: Copyright Office response to IG report, *Follow-up Review of Copyright Claims Processing*

The Copyright Office appreciates the efforts of Office of Inspector General (OIG) staff in examining our current operating conditions and developing recommendations for improvement, and we thank the Inspector General for giving us the opportunity to review and comment on this report prior to its release. From our perspective this report is a largely accurate depiction of current conditions, and we agree with and intend to act on the report's recommendation. For the record, we offered several observations and suggestions in a separate document. We would be happy to discuss our observations and suggestions with you at your request.