



UNITED STATES GOVERNMENT

LIBRARY OF CONGRESS

Memorandum

Office of the Inspector General

TO: James H. Billington
Librarian of Congress

September 3, 2008

FROM: Karl W. Schornagel
Inspector General

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

SUBJECT: Conditions in the Processing of Copyright Claims

The Office of the Inspector General (OIG) has just completed a limited review of Copyright's processing of copyright claims (claims) under "eCO," the new electronic Copyright system. eCO was implemented as a result of the reengineering initiative Copyright embarked on in 2000 and fully implemented in July of 2008.

Our review of claims processing under eCO identified two conditions that need immediate attention to ensure the Library of Congress's (Library) strategic goals of increasing the Library's collections and providing quality efficient products and services are not compromised. Specifically,

- the processing time for most claims has risen to over nine months, and
- approximately 397,000 claims are in a steadily increasing backlog.

We attribute Copyright's current conditions to a flawed premise in the eCO implementation and overly optimistic assumptions about the adoption of electronic filing by Copyright customers. More detailed information on these conditions is provided in the attached report.

This steadily increasing backlog will have a serious impact on the U.S. copyright system by delaying the registration of copyright claims, negatively impact the Library's ability to provide researchers with current materials in a timely manner, and present the Library with a growing space and security of collections issue.

We urge Copyright to immediately increase the number of Copyright Registration Specialists and enhance the incentives offered to the public to increase electronic filings.

We will continue to monitor the progress of eCO and periodically report to your office on its current performance.

cc: Register of Copyrights
Chief Operating Officer

Limited Review of the Copyright Claims Backlog Issue August 2008

Background

The Copyright Office (Copyright) administers U.S. copyright law by registering copyright claims (claims) to copyright, recording legal documents relating to copyright ownership, and acquiring copyrighted works for deposit into the collections of the Library of Congress (Library). In September 2000, Copyright embarked on an effort to reengineer its public services to improve timeliness of Copyright services, provide Copyright services online, and increase acquisition of digital works for the Library's collections.

In July 2008, Copyright fully implemented its new online registration system, eCO. The system is intended to capture claim information in an electronic form, often accompanied by an electronic submission of the material to be copyrighted, along with electronic payment of the copyright fee. In theory, this system should reduce processing times and greatly improve Copyright efficiency and service to the public. We commend Copyright for making a concerted effort to bring its operations into the 21st century. We believe Copyright is proceeding along the correct path; its former paper-based system with a variety of loosely linked computerized databases was untenable in the long run. Further, there is a clear need for publicly available electronic Copyright registration information.

Overall, eCO has achieved its objectives to provide more efficient and expeditious Copyright services online. Claims submitted electronically via eCO are being processed faster than under the old manual claims process. Unfortunately, eCO has experienced some major implementation issues that are significantly detracting from its overall success. These issues are the result of two fairly fundamental flaws: the first was the choice of optical character recognition (OCR) as the technology of choice, and the second, Copyright's overly optimistic assumptions about the public's adoption of electronic claim filings.

As the public increasingly embraces electronic filing, the OCR issue will become less significant, and eventually disappear, for all intents and purposes. It, in combination with several other lesser factors has, however, created a major (almost 400,000 and rising) claims backlog.

The Optical Character Recognition Process and its Flaws

Copyright management chose, at the inception of the eCO project, the OCR process as its technology of choice. The theory behind OCR is that as a typed document is scanned by a computer, the printed letters and numbers are recognized by the OCR process and converted into digital letters and numbers which populate a database. In practice, OCR

is, and has been, fraught with errors and mis-recognized characters. Furthermore, OCR is practically incapable of recognizing human handwriting with any degree of reliability. Copyright was attempting to reduce the need for human intervention in the claims registration process when it chose OCR as a method for computer-reading incoming claim applications. This should, in turn, have reduced claims processing time.

In theory, this process should have worked well; the typed claims should have been read by the OCR process into a database and forwarded for assessment to Copyright Registration Specialists (Specialists). In reality, the system created an enormous increase in workload for Copyright personnel. Because of the high error rate inherent in the OCR process, Copyright was forced to devote significant resources to proofing the electronic version of the claim, in order to ensure that the submitted information matched the captured information, and in many cases, manually typing information from the application into the system (a process collectively called “tagging”). This, along with several other system problems (none of which were particularly severe), caused the current backlog.

Claims Processing Times Now Exceed Nine Months

Under eCO, the procedures for processing paper claims are long and arduous. The processing time for the majority of claims received by Copyright is over nine months and in some instances a year. Prior to the implementation of eCO, the average processing time was 85 days.¹

Copyright anticipated that the majority of the public would submit applications, deposits, and fees electronically through eCO. Most, however, continue to submit paper claims: approximately 65 percent of the claims received by Copyright are paper. These paper filings must be manually proofed or keyed into eCO (“tagging”).

The tagging process has significant quality control issues. There are currently 40 contractors and 14 support assistants that perform “tagging.” These individuals are tasked with keying in all the data from the paper application into eCO. During the keying of the data, significant errors are made by these individuals that flow down to the Specialist. As a result, Specialists are left with the task of correcting the data entered before moving on to their responsibilities. This additional task placed on Specialists significantly hinders their ability to perform their primary responsibilities in an efficient and timely manner.

One of management’s solutions to address the inefficiencies in tagging is the hiring of 17 problem resolution specialists. These 17 specialists would be tasked with reviewing and correcting tagged claims before the claims are forwarded to the Specialists.

The second solution is to eliminate the tagging process by utilizing Adobe’s 2-D barcode technology. Copyright has already implemented 2-D barcodes in the application forms

¹ In fiscal year 2005 and 2006, the average processing times were 82 and 87 days, respectively.

on Copyright's website. The 2-D barcode captures all the data keyed in the on-line application. Once the application is complete and submitted, Copyright systems read the barcode and the information on the application is automatically transmitted into eCO. This process eliminates "tagging."

In addition to these solutions, management is working on reducing the number of paper claims by requiring specific groups and individuals to file their claims electronically. Electronic claims require less effort and processing time than paper claims. Claims and deposits submitted electronically currently take about one month to process, and require far less manipulation by human operators than paper filings.

The actions that Copyright management has taken and the ideas it is considering to address the volume of paper claims are commendable. However, because paper claims require more resources to process, they must be kept to a minimum.

Recommendation 1: Copyright management should enhance incentives offered to the public to reduce the volume of paper claims that are submitted for processing and to stop the growth of the backlog of claims.

Claims Backlog

There are approximately 397,000 claims in backlog – and this number is steadily growing. This backlog of claims has inundated Copyright and is impeding the initiatives of other service units. The backlogged application packages are currently being stored in several locations throughout the Library's Madison building. If the backlog continues to grow, Copyright will require additional space. This will be a challenge for Facility Services as vacant space is nonexistent. Another challenge for Facility Services will be finding a location that is secure. Some of the claims in storage have not been opened and still contain payments. These unopened claims are susceptible to theft and therefore must be housed in a secure area.

Prior to the implementation of eCO, Copyright registered on average 526,313 claims a year.² Since October of 2007, Copyright has closed only 122,949 claims under the new process. We attribute the current backlog partially to the low number of claims being processed by Specialists.

Low Processing Levels. Specialists are processing a significantly low number of claims. On average, Specialists are processing 1.7 claims per hour in eCO.³ Copyright attributes these low processing levels to the transition Specialists have had to make from the old paper process to the new automated process and to learning how to perform these new processes in an entirely new system. Copyright also acknowledges that eCO still has

² In fiscal year 2005 and 2006, Copyright registered 531,720 and 520,906 claims, respectively.

³ We calculated the average number of claims processed per hour by Visual Arts, Motion Picture, and Performing Arts.

some IT problems that are impeding the processing of claims. Management is actively working on resolving these issues.

To encourage faster processing of claims management has changed the satisfactory performance standards to require Specialists to process, at a minimum, 2.5 claims per hour. Management is also optimistic that processing speeds will increase as Specialist's experiences with eCO grow and IT problems are resolved. We agree with management's assertions. However, we do not believe processing levels with the current staffing levels will be sufficient to simultaneously process incoming claims and reduce the number of claims in the backlog.

Copyright currently has 106 Specialists and 10 vacant Specialist positions. We determined that even a full staffing level of 116 Specialists would be insufficient to manage the approximately 598,000 claims a year Copyright has historically received.⁴ Therefore, the backlog would continue to grow.

We calculated that 106 and 116 Specialists processing at a minimum of 2.5 claims per hour would register approximately 482,300 and 527,800 claims a year, respectively. Figure I shows the disparity between the number of claims received annually by Copyright and the number of claims processed annually by both 106 and 116 Specialists meeting the minimum performance standard of 2.5 claims per hours.

Figure I: No. of Claims Processed Annually by 106 and 116 Specialists Assuming 2.5 Claims are Processed per Hour

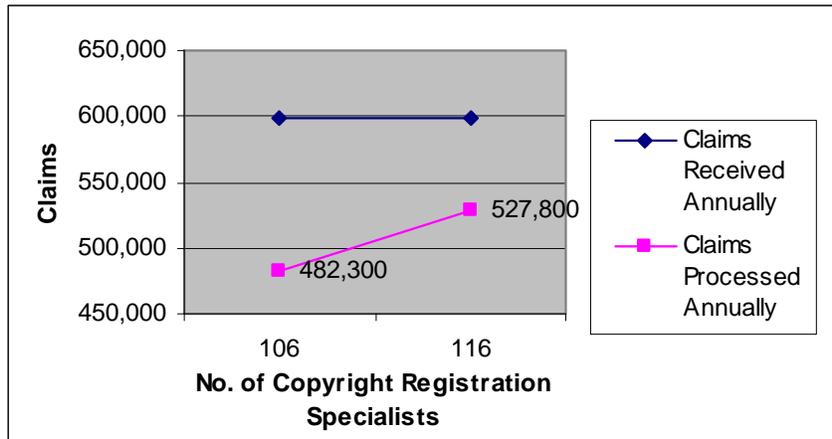


Figure I clearly shows that the staffing level of Specialists needs to be increased. However, the size of the needed increase is currently not clear because it depends on the volume of paper claims that Copyright receives. A smaller staffing increase will be needed if the public submits more of their claims electronically instead of in paper form because electronic claims take substantially less time to process.

⁴ In fiscal year 2005 and 2006, Copyright received 600,535 and 594,125 claims, respectively.

Notwithstanding the uncertainty regarding its needed size, actions are promptly needed to address Copyright's Specialist staffing level, particularly in view of the growing backlog of unprocessed claims. In our view, the office should quickly fill the 10 vacant Specialist positions. Additionally, Copyright should expeditiously determine the Specialist staffing level it should maintain over the next few years to simultaneously process incoming claims and eliminate the backlog, and seek the staffing resources it needs to operate at that level.

Recommendation 2: Copyright management should promptly fill the office's 10 vacant Specialist positions to process copyright claims.

Recommendation 3: Copyright management should promptly determine the Specialist staffing level it should maintain over the next few years to simultaneously process incoming claims and eliminate the backlog of unprocessed claims, and seek the staffing resources it needs to operate at that level. Copyright should explore vehicles such as "Not-to-Exceed" (NTE) term-limited positions that would expire after a certain amount of time so as not to fill excess positions. As electronic claims increase, the need for human operators will decrease.

Conclusion

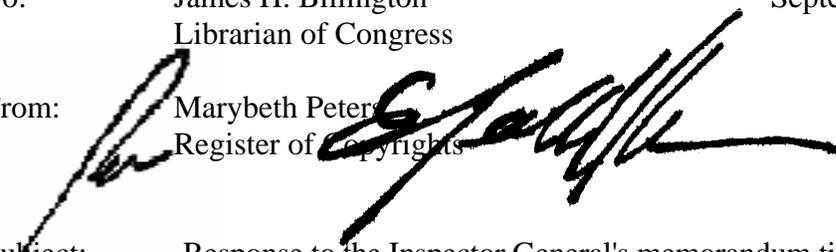
This report has focused on conditions that may negatively affect the Library's reputation if immediate action is not taken to increase the processing time of claims and reduce the number of claims in the backlog. We recognize that the public's use of eCO has been increasing. This will positively impact the overall processing average time since the electronic filings do not require manual re-keying of information. However, the increased use will not be sufficient in the near future to resolve the current backlog of claims.

Copyright management must act quickly in order to preserve the integrity of the U.S. Copyright system.



MEMORANDUM

To: James H. Billington
Librarian of Congress
September 5, 2008

From: Marybeth Peters
Register of Copyrights


Subject: Response to the Inspector General's memorandum titled "Conditions in the Processing of Copyright Claims"

Below is a summary of our response to the Inspector General's memo dated September 3, 2008. I appreciate his effort to review our business processes and provide recommendations for improvements, and I also appreciate the compliments he included throughout the memo. Attached are additional explanatory materials.

Historical Context:

- The use of an Optical Character Recognition System (OCR) was always an intermediary step for use during the implementation period;
- The times for processing Copyright Claims are: one month for electronically filed with electronic deposits; four months for electronically filed awaiting a hard copy deposit and nine months for traditional paper claims. Prior to reengineering a claim was completed in six to eight months; and,
- Complete retraining of the registration staff in both a new system and new duties.

Recent Operational Improvements not included in the Report:

- March 2008 implementation of a paper input quality assurance program; and,
- May 2008 transferred fee-related issues out of Registration.

Inspector General Recommendations:

- Provide Incentives to File Electronically—Since July 1, 2008 eService, the online Copyright filing process, has grown from 15% to over 40% of our weekly receipts. We expect this trend to continue; reducing our paper input.

- Hire more Registration Specialists—Since June 2008 we have been working with Human Resources to post an announcement for at least 10 new Registration Specialists and concurrently creating an applicant register.
- Maintain Registration Specialists staffing levels and use flexibilities such as Not-to-Exceed appointments—Not-to-exceed appointments are not a solution. Training a Registration Specialist takes over a year's time and our goal is to build an experienced staff that will remain with us for a long time. eService will not reduce the demand for Registration Specialists.

Finally, suggesting the Office is jeopardizing the integrity of the U.S. Copyright system, which is mainly defined by the copyright law and judicial decision, does not reflect the Office's role. The Office is part of that system, of which the registration of copyright claims is an important component of its responsibility. Reengineering was intended to: improve the registration process for applicants; to encourage the deposit of online works; and to make available to the public record concerning the ownership of copyrighted works as expeditiously as possible. The facts show eCO is well on its way to achieving these goals.

Explanatory Material

Further Refining the Inspector General's Limited Review of the Copyright Claims Backlog Issue

The Inspector General attributes the current backlog of claims in various stages of processing to "a flawed premise in the eCO implementation and overly optimistic assumptions about the adoption of electronic filing by Copyright customers." I believe that there are historical factors that may have not been incorporated into his review process.

The Inspector General sums up the "flawed premise" by stating that "Copyright management chose...the OCR (optical character recognition) process as its technology of choice.". The eCO system was developed, as required by Congress, using a commercial off-the-shelf (COTS) product. After due selection, a case management system called Siebel was selected. Siebel itself serves as the front end application that sits atop an Oracle database. There are numerous software packages appended to Siebel that carry out various functions, one of which is a Captiva application that provides for data migration ("tagging") using OCR technology. The Captiva software is used to automate the process of moving data from scanned paper applications into electronic records in the Siebel system so that registrations filed on paper applications can be processed electronically. The Office was well aware of OCR limitations including the fact that OCR would not work on hand-written paper applications, which traditionally constituted 45 percent of applications received. When hand-written paper applications are received, technicians in the Copyright Office must key the data directly into Siebel. This is actually an improvement over the pre-reengineering process in which Copyright Office staff keyed data from every application received into several discrete IT systems.

It is important to note that the use of OCR to assist with data migration was and is intended strictly for the transition period that is now drawing to a close. As the volume of paper claims falls, the use of OCR will diminish and eventually become a small portion of our business. In fact, the backlog of claims awaiting tagging has fallen from a high of over 30,000 to less than 1,000 and 20 of the 40 contractors hired to perform the tagging function have been dismissed. The other 20 are being trained to perform other duties.

The Inspector General's assertion that the Office was overly confident that remitters would embrace eCO does not reflect the most current information. After eCO was released to the general public through the Copyright Office website on July 1, 2008, we immediately jumped to 30 percent e-service submissions for all claims received the first week, and the percentage of e-service claims received each week is now approaching 50 percent after just two months. This percentage is more than double the initial target of 15 percent we hoped to hit by the end of the fiscal year.

Following standard practice from July 2007 through June 2008 we operated eCO under a limited-participation beta test prior to widespread release, and the weekly volume of

claims received during the twelve months of the test was, as expected, relatively modest. Although introducing the system under a beta test necessarily resulted in an extended period in which a high volume of paper claims were received, we felt that testing system performance and function was essential as was the need to give staff sufficient time to learn how to use the new system.

The Inspector General notes a 9-month processing time frame. While this is true of paper claims, web claims are processed much more quickly. Web claims with electronic deposit copy, about 60 percent of the total web claims, take no more than one month to process: web claims with physical deposit, the remaining 40 percent, take up to four months. In the week ending August 31, nearly half of claims received were web claims. A one to four month timeframe compares very favorably with the pre-reengineering six to eight month from claim receipt to issuing a certificate. The nine-month delay is consistent with the ten month 2000-2001 backlog.

The Inspector General did not take into account the significant change in duties that many Copyright Office staff has undergone, particularly the Registration Specialists. The first operational year, beginning in August 2007, required the existing staff to learn new tasks and concurrently a new IT system. We chose not to hire significant numbers of new Registration Specialists while our training resources were focused on getting our existing specialists fully trained.

The analysis of production on pages 4-5 should be updated to reflect current filing trends. The use of 2005 and 2006 averages does not reflect the current filing trends found in 2007/ 2008 when total claimed averaged closer to 550,000 rather than the 2005/2006 average of 598,000 claims. Under our current volumes, and a fully trained, fully staffed Registration office should be able to complete its workload in a reasonable timeframe. The Copyright Office agrees that a 2.5 per hour is a minimum standard, allowing the Office to keep up with the incoming receipts. It is also consistent with our recently negotiated agreement with the Guild. However, in the past two months, we have seen average per hour productivity rise from 1.5 to 2.0 in the registration divisions. We are hopeful that further system enhancements currently under development will improve productivity.

Office initiatives to improve productivity

The Inspector General notes several initiatives that the Office is engaged in to increase productivity in the Registration and Recordation Program, yet we are engaged in many others that were not mentioned.

- As noted in the memo, we created a new Problem Resolution Specialist. The Problem Resolution Specialists will make corrections to tagged claims, as noted in the memo, but will also be responsible for processing routine claims to copyright, editing registration records, and assisting Registration Specialists with claims that have insufficient fees and other problems. While the Inspector General's memorandum

states 17, after a careful analysis of the workload, we have decided to hire an initial six.

- The memo also referenced a new application form (Form CO) which uses Adobe 2-D barcode technology. Form CO is completed online by the applicant and then a printed copy of the form along with payment via check and a copy (ies) of the work being registered are mailed to the Copyright Office. In-processing staff simply scan the Form CO and the data entered into the form, which is captured within the 2-D barcodes, migrates to an electronic record in Siebel without any keying. This eliminates using the OCR process.
- In March we began a quality assurance program for the tagging function. Since then tagged claims have undergone a quality review and corrections are made before the claim is forwarded to the registration queue where it will be reviewed by a Registration Specialist. A team of tagging QA specialists have also begun pulling claims tagged prior to March out of the registration queue, making corrections, and then returning the claims to the registration queue. These actions will reduce the amount of time Registration Specialists spend editing tagged claims so that they can focus on their primary tasks.
- Claims with fee problems (typically paper claims accompanied by insufficient fees called "short fees") are being routed to the Accounts Section where technicians engage remitters in correspondence. When replies with the correct fees are received, the claims are then forwarded to the registration queue. Since the beginning of the fiscal year, the queue of fee problems dealt with by Registration Specialists has been reduced by 81 percent. This action relieves Registration Specialists of an administrative burden and will enable them to be more productive. Importantly, eCO filers pay for services with a check/debit card or Copyright Deposit Account, so short fees will diminish as the volume of paper claims diminishes.

The Inspector General's Recommendations

The Inspector General noted three recommendations in his memo including (1) provide incentives to remitters to reduce the volume of paper claims received; (2) hire more registration specialists; and (3) maintain Registration Specialists staffing levels and use flexibilities such as not-to-exceed appointments to supplement the staffing effort.

(1) Provide Incentives to File Electronically - The advantages of filing claims using our online registration system (electronic Copyright Office or eCO) are as follows:

- Lower filing fee of \$35 for a basic claim (for online filings only)
- Fastest processing time
- Online status tracking
- Secure payment by credit or debit card, electronic check, or Copyright Office deposit account
- The ability to upload certain categories of deposits directly into eCO as electronic files

We proactively tout these advantages to remitters in a number of ways including posting information on the Copyright Office website; via NewsNet, a free electronic newsletter; through mailings to individual remitters and deposit account holders; and during presentations to various interest groups. Many of the interest groups we communicate with then encourage their constituents to embrace online registration as well.

One of the strongest incentives for individual remitters to file electronically is the lower registration fee. We recently completed a cost analysis that confirmed the expected efficiency gains of processing claims electronically. As a result of that analysis I plan to recommend a new fee schedule that will maintain the current rates for basic claims filed via eCO and using the 2-D barcode Form CO while providing for a fee increase for claims filed on paper forms. The cost differential will provide further incentive to file electronically.

We are also in the process of driving remitters to eCO by requiring Copyright Deposit Account prepaid fee (DA) holders to file electronically. Since DA holders submit approximately 35% of all claims received annually, requiring those submissions to come via eCO are expected to decrease the volume of paper claims to fewer than 40% of all claims received.

(2) Hire more Registration Specialists – Since June 2008 we have been working with the Library's Human Resources Services to post a continuous and open vacancy announcement for the position of Registration Specialists. An initial cadre of 9-13 Registration Specialists will be brought on board as quickly as possible. Importantly, this method of posting a vacancy announcement will ensure a steady stream of pre-qualified candidates for the Registration Specialist position to give the Office maximum flexibility to address staffing needs in the coming months and years. This flexibility will be critical as our resource needs shift from the Receipt, Analysis and Control Division (where the mail sort, in-processing of paper claims, and check batch processing functions occur) to the Registration and Recordation Program as the number of paper claims and payments by check received decreases. Of course, hiring of additional Registration Specialists is incumbent upon available FTEs and sufficient Congressional authorization to financially support them.

It must be noted that the Copyright Office identified fee problems and tagging errors as two of the biggest impediments to productivity by Registration Specialists. These have been significantly mitigated as described above.

(3) Maintain Registration Specialists staffing levels and use flexibilities such as Not-to-Exceed appointments – First, I do not support the Inspector General's assertion that the advent of electronic filing will reduce the number of "human operators" in Registration. As our paper filings reduce, we will correspondingly transfer our staffing complement to more needed activities, of which Registration is first and foremost.

In addition, I do not believe that using NTE appointments to fill Registration Specialists positions is advisable for two reasons. First, we will only be able to attract the best and

brightest candidates by offering permanent positions. Second, the time frame for a new Registration Specialist to achieve independence is one year or more, which makes NTE appointments impractical.

Conclusion

The U.S. copyright system is the law, the Copyright Office, the courts, etc. and all that goes with it. Registration with the Copyright Office is one piece of the system. We are working hard to enhance the registration system. The overall copyright system's integrity is well served by the Copyright Office; the registration system has been improved and will continue to be improved to better serve owners and users of copyrighted works.

I am pleased that I have an opportunity to present you and the Library of Congress with a comprehensive evaluation of our current operations.

Cc: J. Jenkins

K. Schornagel