
Office of Inspector General
Audit Report

**Report on Privacy Concerns
For Web Visitors**

Department of Transportation

Report Number: FI-2001-006

Date Issued: November 3, 2000





Memorandum

**U.S. Department of
Transportation**

Office of the Secretary
of Transportation

Office of Inspector General

Subject: **ACTION:** Report on Privacy Concerns
for Web Visitors, DOT
FI-2001-006

Date: November 3, 2000

From: **Kenneth M. Mead**
Inspector General

Reply To

Attn Of:

To: Heads of Operating Administrations
Director, Bureau of Transportation Statistics
Director, Transportation Administrative Service Center
Chair, Surface Transportation Board
Chief Information Officer, DOT

This report is the third in a series on our audit of the Department of Transportation (DOT) headquarters telecommunications network security. The first two reports¹ in the series recommended corrective actions concerning personnel security for employees of the Federal Government and contractors, network security over Internet users and insiders, and enhanced web security.

As part of our review of web security, we also checked on whether an individual's privacy is protected when visiting DOT's web sites. We focused our review on controls over the use of cookies--one of the principal technologies used to collect information from, and about, web visitors. The term "cookie" has been used in the computer science field for years². In the Internet world, it represents a mechanism used on web sites to collect information by placing small bits of software on web users' computers. Our audit objective was to determine whether DOT was in compliance with the Office of Management and Budget (OMB) and departmental policies on use of cookies.

¹Interim Report on DOT Computer Security, Report Number: FI-2000-108, July 13, 2000.
Headquarters Computer Network Security, Report Number: FI-2000-124, September 25, 2000.

²In the computer science field, cookie is used to describe an opaque piece of data held by an intermediary (DOT Web Links Newsletter, October 27, 2000).

RESULTS IN BRIEF

The Office of Inspector General (OIG) first reported improper use of cookies on DOT's web sites in August 2000. In a September hearing before Congress, we reported that DOT was in the process of addressing our findings. However, a followup review in October disclosed a lack of progress, and the use of cookies without the required approval of the Secretary. We also found: (1) Operating Administrations incorrectly reported on their use of cookies; (2) thousands of web pages needed to be checked; (3) Operating Administrations had not searched for use of cookies on all DOT web pages; and (4) use of cookies by two Operating Administrations was inadvertently created on DOT web sites.

After issuance of the Deputy Secretary's directive on October 25, 2000, DOT Operating Administrations are now making a concerted effort to correct improper use of cookies. As instructed by the Deputy Secretary, DOT Operating Administrations are responsible for certifying 100 percent compliance with OMB and DOT polices. To reinforce the Deputy Secretary's directive, the OIG will make spot checks after certification of compliance has been filed with the DOT Chief Information Officer.

BACKGROUND

Web sites are powerful tools for the Federal Government to improve the quality of its services. However, until people are confident that their privacy is protected, they will not use the services provided on Government sites. Both OMB and DOT have issued guidance to ensure proper use of cookies³.

There are two types of cookies--"persistent cookies" and "session cookies." Persistent cookies track information over time or across web sites. They remain stored on visitor computers until the specified expiration date, and can be used to collect individual browsing information, such as the visitor's areas of interest.

OMB requires agencies, when using persistent cookies, to: (1) post clear notices advising visitors of their usage; (2) display privacy statements explaining how the collected information is used; and (3) have a compelling need to gather the data on web sites and obtain the approval by the head of the agency. Session cookies are used only during a single browsing session and do not collect information in ways that raise privacy concerns. Accordingly, use of session cookies is exempted from OMB requirements.

³OMB memorandum (M-99-18), "Privacy Policies on Federal Web Sites," June 2, 1999.
OMB memorandum (M-00-13), "Privacy Policies and Data Collection on Federal Web Sites," June 22, 2000.
DOT Internet Policy, Chapter 14-4 of DOT H 1350.2, July 5, 2000 (under revision).

SCOPE AND METHODOLOGY

DOT has about 235 public web sites that are accessed through the DOT Home Page by millions of Internet users. Each site contains a home page, multiple web pages, and data files. There are over 200,000 web pages and data files on DOT's public web sites. Cookies could be embedded on any home page or web page.

We used an optional feature offered by the Microsoft browser to identify the use of cookies on DOT web sites. Our review was limited to home pages because they are the most frequently visited ones. A total of 58 home pages were not included in our examination because their web sites were out-of-service during our review.

The audit was conducted in accordance with Government Auditing Standards prescribed by the Comptroller General of the United States. Audit work was performed between August and October 2000 at DOT, the Federal Aviation Administration, and U.S. Coast Guard Headquarters in Washington, D.C.

ANALYSES AND RESULTS

Controls Over Use of Cookies Are Weak

In August 2000, we examined home pages on 177 web sites⁴ to determine whether use of cookies, if any, was in compliance with OMB and DOT guidance. DOT guidance required posting of cookies usage notices and privacy statement disclosures regardless of type of cookies. We found 22 home pages used cookies to collect information, 11 of which used persistent cookies. While no user-identifiable information was collected, we found: 22 home pages did not post clear notices advising visitors of the use of cookies; and 16 home pages did not display privacy statements explaining how the collected information was used.

In September 2000, the Inspector General testified before the House Committee on Science on DOT's computer security⁵. In the testimony, we reported that use of cookies on nine home pages was discontinued after we brought the issue to management's attention. DOT agreed to enhance usage notices and privacy statement disclosures for the remaining 13 home pages—6 with session cookies and 7 with persistent cookies.

⁴A total of 58 web sites were out-of-service during our review. Therefore, use of cookies, if any, on these home pages could not be identified.

⁵Computer Security within the U.S. Department of Transportation, Report Number: CC-2000-359, September 27, 2000.

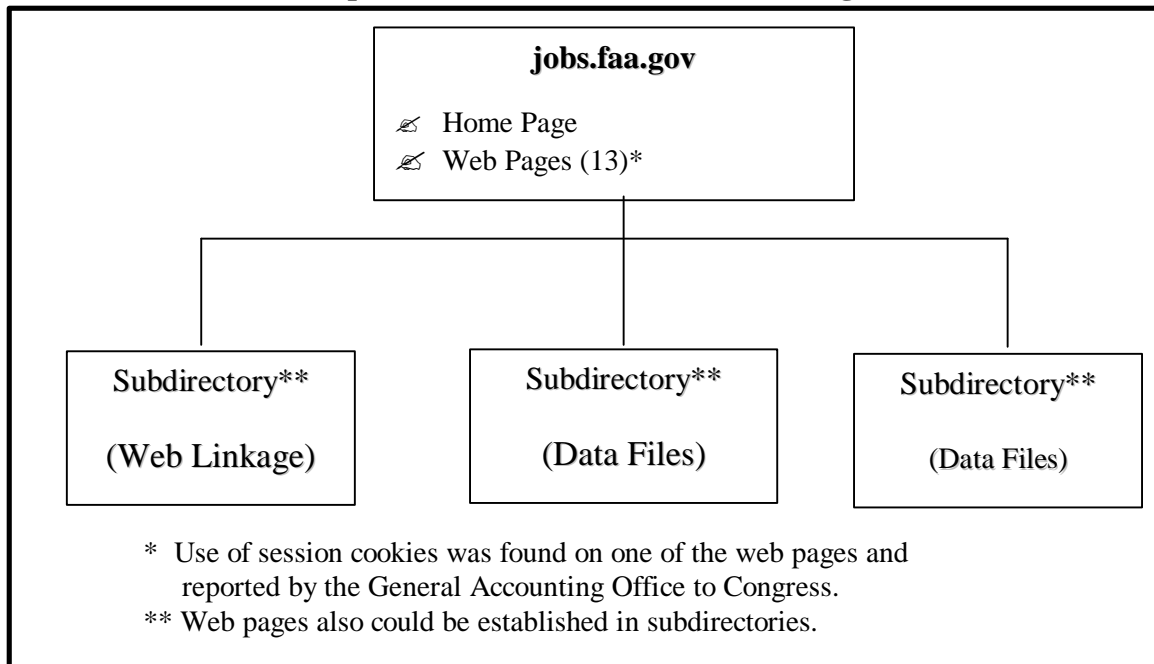
Our followup review on October 23 showed that notices and privacy statement disclosures concerning use of cookies still were lacking at most of these sites--11 sites missing usage notices and 8 sites missing privacy statements (see Exhibit A). In addition, none of the web sites using persistent cookies was approved by the Secretary. One Operating Administration erroneously reported that it had corrected all improper use of cookies identified by OIG. Two Operating Administrations incorrectly reported no cookie usage to the DOT Chief Information Officer.

Much Remains to be done to Ensure Proper Use of Cookies

On October 25, 2000, the Deputy Secretary issued a directive requiring DOT Operating Administrations to certify that use of cookies on all existing web sites is in compliance with OMB and DOT policy by November 7, 2000.

While DOT is now making a concerted effort to correct the inappropriate use of cookies, much remains to be done. DOT's public web sites have over 200,000 web pages and data files⁶ (see Exhibit B). Use of cookies could be embedded on any web page. As illustrated in the table below, a FAA web site has a home page and 13 web pages. While the home page did not use cookies, one of the web pages did.

Example of the Use of Cookies on Web Pages



⁶ Separate statistics of web pages and data files are not available.

Because DOT is not aware of any automated tools that can be used to systematically identify all use of cookies, each web page has to be manually accessed and examined. This is a labor-intensive process. Until all web pages have been checked, DOT cannot be assured that its use of cookies is in compliance with OMB and DOT policies.

Weak Configuration Management over Web Sites Remains a Major Concern

While DOT Operating Administrations are checking existing web sites, better controls need to be established to ensure future web sites are properly configured (setup) for the use of cookies. In our computer network security report issued on September 25, we reported weak configuration management over DOT web sites and recommended corrective actions.

We found two DOT Operating Administrations did not realize persistent cookies were being used on their web sites. After further research, they concluded that these persistent cookies were inadvertently created as a result of improper software configuration⁷ on their web sites.

In response to our September 25 report, the DOT Chief Information Officer agreed to develop a checklist by January 2001 for use in performing self-certification of web sites prior to use. The certification will require concurrence by someone in management above the system owners before the system is placed in service. To ensure that new web sites are not placed in service without proper review and approval for the use of cookies, the DOT Chief Information Officer needs to accelerate the development and release of the checklist concerning use of cookies.

RECOMMENDATIONS

We recommend that the DOT Chief Information Officer:

1. Require Operating Administrations to disable use of persistent cookies identified on their web sites, including the ones they intend to justify for continued use, until the Secretary's approval has been obtained. The OMB guidance requires personal approval by the head of the agency. The DOT Internet policy and the directive from the Deputy Secretary on October 25, 2000, made it clear that the use of persistent cookies on DOT web sites must be approved by the Secretary.

⁷An optional function ("SiteServerLogging") provided by Microsoft's Internet management software was inadvertently activated.

2. Require Operating Administrations to check all web pages for potential use of cookies, and report the total number of web pages checked before certifying compliance.
3. Accelerate the development and release of the web configuration checklist concerning the use and approval of cookies.

MANAGEMENT RESPONSE

A draft of this report was provided to the DOT Deputy Chief Information Officer on November 2, 2000. He agreed with the recommendations.

ACTION REQUIRED

In accordance with DOT Order 8000.1C, we would appreciate receiving your written comments within 15 days. If you concur with our findings and recommendations, please state specific action taken or planned for each recommendation and provide target dates for completion. If you do not concur, please provide your rationale. You may provide alternative courses of action that you believe would resolve the issues presented in this report.

We appreciate the courtesies and cooperation of DOT representatives. If you have questions concerning this report, please call me at (202) 366-1959, or my Acting Deputy, Todd J. Zinser at (202) 366-6767.

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Use of Cookies within DOT as of October 23, 2000

Organization	Home Pages Checked	Use of Cookies Found	Type of Cookies	Notice of Usage?	Privacy Statement Disclosed?
Federal Aviation Administration	73	fast.faa.gov www.hf.faa.gov rms.faa.gov sowgen.faa.gov atpay.faa.gov	Persistent Persistent Persistent Persistent Session	No Yes Yes No No	No No No No No
Maritime Administration	1	www.marad.dot.gov	Persistent	No	Yes
National Highway Traffic Safety Administration	4	www.nhtsa.dot.gov www-nrd.nhtsa.dot.gov	Persistent Persistent	No No	Yes Yes
Federal Highway Administration	28	pcb.volpe.dot.gov	Session	No	No
Federal Railroad Administration	2	safetydata.fra.dot.gov	Session	No	No
Transportation Administrative Service Center	19	isddc.dot.gov	Session	No	Yes
U.S. Coast Guard	11	psix.uscg.mil www.uscgboating.org	Session Session	No No	No Yes
Others	39	None	N/A	N/A	N/A
Total	177	13			

DOT Web Pages and Data Files

<u>Operating Administration</u>	<u>Number of Web Pages and Files</u>
Federal Aviation Administration	59,881
Maritime Administration	1,232
National Highway Traffic Safety Adm.	4,918
Federal Highway Administration	33,737
Federal Railroad Administration	1,275
Transportation Adm. Service Center	9,512
U.S. Coast Guard	40,522
Bureau of Transportation Statistics	18,123
Federal Motor Carrier Safety Adm.	1,288
Federal Transit Administration	6,879
Office of Inspector General	615
Office of the Secretary	8,245
Research and Special Programs Adm.	8,436
Surface Transportation Board	6,817
Others	380
Total	201,860

Source: The Bureau of Transportation Statistics, DOTBOT--the search engine--Status Report as of October 26, 2000.