CBP Complied with Facial Recognition Policies to Identify International Travelers at Airports

Homeland Security

July 5, 2022

MEMORANDUM FOR: The Honorable Chris Magnus
Commissioner
U.S. Customs and Border Protection

FROM: Joseph V. Cuffari, Ph.D.
Inspector General

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SUBJECT: *CBP Complied with Facial Recognition Policies
to Identify International Travelers at Airports*

Attached for your information is our final report, *CBP Complied with Facial Recognition Policies to Identify International Travelers at Airports.* The report identified no actions U.S. Customs and Border Protection needed to take to enhance the program's overall effectiveness, and we offered no recommendations.

Consistent with our responsibility under the *Inspector General Act,* we will provide copies of our report to congressional committees with oversight and appropriation responsibility over the Department of Homeland Security. We will post the report on our website for public dissemination.

Please call me with any questions, or your staff may contact Bruce Miller, Deputy Inspector General for Audits, at (202) 981-6000.

Why We Did This Audit

Simplified Arrival is an enhanced international arrival process that uses facial biometrics to automate the manual document checks required for admission into the United States. CBP's facial biometric technology system helps officers detect travelers who attempt to use fraudulent identification to enter the United States. We conducted this audit to determine whether CBP complied with its policies and procedures when resolving facial biometric discrepancies flagged by the system.

What We Recommend

We made no recommendations.

What We Found

U.S. Customs and Border Protection (CBP) officers are responsible for verifying the identities of international travelers attempting to enter the United States. Since 2017, CBP has implemented its facial biometric entry program at 238 U.S. international airports. From May 2019 to September 2021, CBP used facial biometric technology deployed at airports to process 51.1 million travelers entering the United States.

We analyzed 100 percent of the encounter data for the 51.1 million travelers and found CBP complied with its policies and procedures for resolving facial biometric discrepancies. Specifically, between May 2019 and September 2021, CBP officers referred approximately 23,000 travelers aged 14 years and older to secondary inspection for further verification, as required, when photographs taken of the travelers did not match the photos in their travel documentation.

To further strengthen its facial biometric procedures, CBP recently implemented system controls to remove CBP officers' ability to override facial mismatches for travelers 14 years and older; enforce mandatory referrals to secondary inspection when the system flags travelers 14 years and older as having a facial mismatch; and alert CBP supervisors when a facial mismatch is flagged.

Using facial biometrics, CBP identified 39 impostors attempting entry into the United States through airports between May 2019 and September 2021. Six of the imposters had prior criminal records, and three were accepted for criminal prosecution.

CBP Response

CBP waived its right to provide management comments.

Background

U.S. Customs and Border Protection (CBP) officers are responsible for verifying the identities of international travelers[1] attempting entry into the United States. Since 2017, CBP implemented its facial biometric program at 238 air ports of entry (airports)[2] to promote effectiveness and efficiency in its identity verification process. From May 2019 to September 2021, CBP used this technology to process 51.1 million travelers entering the United States.

Simplified Arrival, CBP's enhanced international arrival process, uses facial biometrics at airports as one of many tools to verify travelers' identities. To begin this process, CBP uses flight manifest data and a facial comparison system, the Traveler Verification Service (TVS), to build a gallery of traveler photos collected from passports, visas, and other Department of Homeland Security encounters.

The facial recognition matching process is initiated when the CBP officer takes a traveler's photo at the airport. TVS first compares the "live" photo of the traveler to the photos in the gallery, a step CBP refers to as the one-to-many (or 1:N) matching process. If the photos match, the CBP officer proceeds to determine whether the traveler may enter the United States.

If no match to the gallery is found, the officer scans the traveler's document to access the traveler's digital photo,[3] if available. TVS then compares the traveler's live photo to the photo in the document, a step known as the 1:1 matching process.[4] If the result is a match, the CBP officer proceeds with the traveler's admissibility interview. A facial mismatch for a traveler aged 14 years or older[5] indicates a facial biometric discrepancy that requires resolution, as a facial mismatch indicates a heightened risk that the traveler may be an impostor. In such cases, the CBP officer refers the traveler to

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[1] International travelers include all U.S. citizens, lawful permanent residents, and foreign nationals.

[2] In this report, the term "air port of entry" refers to airports where CBP officers verify travelers' identities and determine their admissibility to the United States pursuant to U.S. immigration laws.

[3] Some passports contain an electronic chip with the same information that is printed on the passport's data page. The United States requires that the e-chip contain a digital photograph of the holder.

[4] According to CBP officials, there are reasons a 1:1 match may not be possible. For example, members of the military traveling on a state-issued ID and Government orders do not have an e-chip document to scan. Even for travelers who have e-chip documents, scans are not always successful due to document damage.

[5] If the traveler is 13 or younger, CBP officers may, at their discretion, override the facial mismatch or refer the traveler to secondary inspection.

secondary inspection for additional identity verification to ensure the traveler is not an impostor. See Appendix A for a flowchart showing the Simplified Arrival process.

We conducted this audit to determine to what extent CBP adheres to its policies and procedures for resolving facial biometric discrepancies for verifying the identity of international travelers entering the United States at airports.

Results of Audit

CBP Adhered to Its Policies and Procedures for Resolving Facial Biometric Discrepancies

CBP complied with its policies and procedures for resolving facial biometric discrepancies of international travelers entering the United States through airports.[6] Between May 2019 and September 2021, CBP officers referred approximately 23,000 travelers aged 14 and older to secondary inspection, as required, after facial mismatches were identified.

CBP has taken several steps to strengthen the effectiveness of its facial biometrics process at airports. For example, CBP's Operational Field-Testing Division (OFTD) conducted covert testing from November 2018 to August 2019 to determine whether CBP officers complied with procedures when processing travelers using facial biometrics.[7] OFTD found that although CBP officers had a high compliance rate, the officers did not always identify the testers posing as impostors.

As a result of OFTD's covert testing, CBP issued specific guidance[8] on processing facial mismatches. The updated guidance requires CBP officers to initiate the 1:1 matching process when TVS finds no match for a traveler aged 14 or older. If the 1:1 process results in a facial mismatch, the CBP officer must refer the traveler to secondary inspection. For secondary inspection, the guidance reminds CBP officers that they must complete "thorough inspection procedures" and adds the requirement to obtain supervisory approval before releasing travelers with facial mismatches.

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[6] CBP memorandums titled *Primary Processing of Travelers Using Facial Recognition*, June 21, 2018, and *Proper Processing Steps for Mismatches Using Facial Recognition*, April 26, 2019, as well as CBP's *Simplified Arrival Air Officer Training*, 2021, and *Simplified Arrival Air User Guide*, May 2019 and November 2021 versions.

[7] *FY19 Imposter Document Detection Assessments Comprehensive Report,* November 2018–August 2019.

[8] CBP memorandum titled *Proper Processing Steps for Mismatches Using Facial Recognition,* April 26, 2019.

CBP also strengthened its facial biometrics procedures by implementing the following system controls:

- removing officers' ability to override facial mismatches for travelers 14 years and older;
- enforcing mandatory referrals to secondary inspection when the system flags travelers 14 years and older as having a facial mismatch; and
- alerting CBP supervisors when a facial mismatch is flagged.

According to CBP, facial biometric technology has dramatically improved CBP's ability to detect impostors when compared to human detection. Using facial biometrics, CBP identified 39 impostors attempting entry into the United States through airports from May 2019 to September 2021. See Appendix B for a list of the outcomes of these encounters. Figure 1 provides an example where facial biometrics identified a facial mismatch that enabled CBP to quickly identify a subject attempting to present his brother's valid U.S. passport.

Figure 1. Facial Mismatch Determined by CBP to Be an Impostor

Source: CBP Simplified Arrival Air Officer Training, 2021

Because CBP is adhering to its facial biometrics policies and procedures, we are not making any recommendations as a result of this audit.

Management Comments and OIG Analysis

CBP waived its right to provide management comments. CBP provided technical comments on June 17, 2022, and we incorporated the comments into this report where appropriate.

Objective, Scope, and Methodology

The Department of Homeland Security Office of Inspector General was established by the *Homeland Security Act of 2002* (Public Law 107−296) by amendment to the *Inspector General Act of 1978*.

We conducted this audit to determine to what extent CBP adheres to policies and procedures for resolving facial biometric discrepancies when confirming a traveler's identity at airports.

To achieve our objective, we obtained, reviewed, and analyzed key CBP documentation, including policies and procedures and risk assessments related to traveler identification verification at airports.

We also interviewed DHS officials from the Office of Biometric Identity Management and CBP officials from the following program offices: Office of Field Operations, Office of Information and Technology, Privacy and Diversity Office, Office of Policy, Office of Chief Counsel, Office of Trade – Regulations and Rulings, OFTD, the Operational & Enterprise Analytics division, and the Admissibility and Passenger Programs division. Additionally, we interviewed CBP officers while observing operations at the Boston, MA international airport.

We analyzed 100 percent of the encounter data for 51.1 million travelers entering the United States who were processed using facial biometrics at airports between May 2019 and September 2021. Specifically, we analyzed primary encounter and secondary inspection data to determine whether recorded biometric discrepancies were resolved in accordance with established policies and procedures.

We analyzed the sequence of biometric processing for travelers, which progresses from the 1:N (gallery) matching to the 1:1 (document) matching, both at an aggregate level and by select travelers. We first determined the number of 1:N no-matches and then compared that number against the number of instances the 1:1 matching process was initiated. We next determined the number of 1:1 mismatches, comparing these records to secondary inspection data. We judgmentally selected travelers to verify the records were consistent between the primary and secondary datasets. We also compared data trends and patterns to expected outcomes, such as the progression of facial recognition processes or system control updates. Additionally, we reviewed textual data, including system-generated text and officer comments, to identify data anomalies or patterns.

We tested the reliability of the primary encounter and secondary inspection data during survey and fieldwork. We obtained technical assistance from the OIG Office of Innovations' Data Analytics and Support group to coordinate with CBP's Office of Information and Technology, and we obtained an extract of pertinent CBP data for our audit. We then performed various data analyses, conducted interviews with CBP subject matter experts to confirm our understanding of key data attributes, observed live demonstrations of select data queries, and confirmed secondary referrals on a test basis. Overall, we determined that the primary encounter data was sufficiently reliable to support our audit conclusions.

Our analysis focused on data records for air entry encounters between May 2019 and September 2021. We did not conduct real-time testing of CBP's primary and secondary inspection procedures for travelers entering the United States through air ports of entry. As a result, our analysis does not account for any travelers who may have used a fraudulent identification document that may not have been flagged as a facial mismatch. Additionally, it does not account for any travelers where a facial mismatch was identified but the secondary inspection process may not have properly identified the traveler as an impostor. We did not analyze air exit data because the Biometric Exit program does not currently maintain data on facial biometric discrepancies.

We assessed internal controls related to CBP's compliance with its policies and procedures for resolving facial biometric discrepancies at airports and did not identify internal control deficiencies related to our audit objective.

We conducted this performance audit between June 2021 and March 2022 pursuant to the *Inspector General Act of 1978, as amended,* and according to generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based upon our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based upon our audit objectives.

The Office of Audit's major contributors to this report are Shelley Howes, Director; Bradley Mosher, Audit Manager; Melissa Brown, Auditor-in-Charge; Michael Brunelle, Program Analyst; Jacklyn Pham, Auditor; Hope Wright, Auditor; Susan Parrott, Communications Analyst; Johnson Joseph, Lead Data Analyst; Azriel Krongauz, Program Analyst; and Mitch Chaine, Independent Referencer.

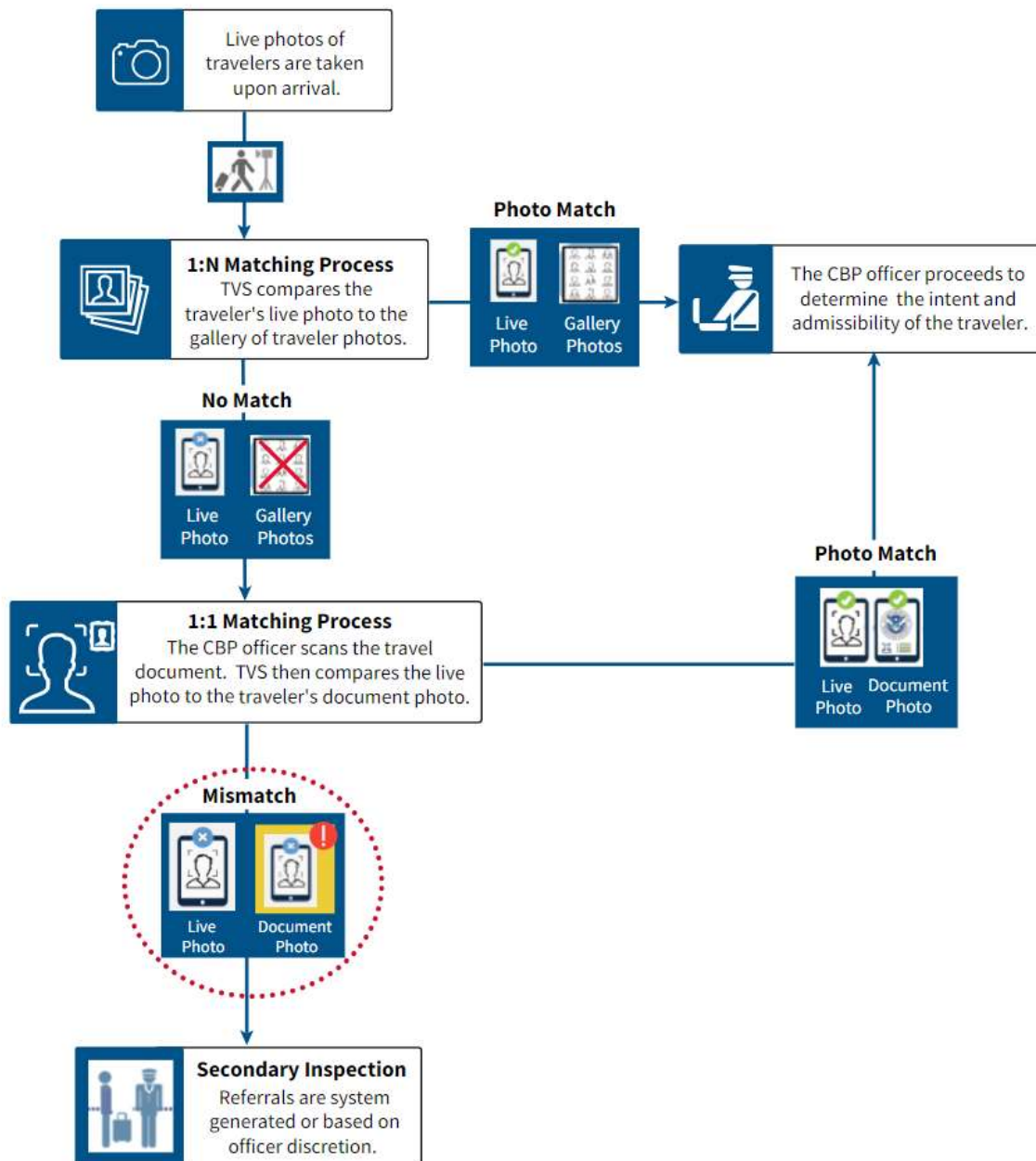## Appendix A
Simplified Arrival Process

This flowchart provides an overview of the Simplified Arrival process. Our audit focused on CBP officers' resolution of a traveler's facial mismatch.

Source: DHS OIG, based on analysis of CBP data

Appendix B
Impostors Identified by CBP at Airports

Using facial biometrics, CBP identified 39 impostors attempting entry into the United States through airports from May 2019 to September 2021.[9] According to CBP, once these individuals were apprehended, their initial CBP disposition depended on multiple factors, such as previous apprehensions, current immigration status, and the immigration status claimed as an impostor.

Date of Encounter	Airport of Attempted Entry	Initial CBP Disposition of Impostor	Prior Criminal Record	Criminal Prosecution Initially Accepted
9/26/2020	Hartsfield-Jackson Atlanta International Airport	Admitted Entry - Notice to Appear (to a Federal immigration judge)	No	No
10/6/2020	Washington Dulles International Airport	Denied Entry - Expedited Removal	No	No
10/13/2020	Hartsfield-Jackson Atlanta International Airport	Admitted Entry - U.S. Citizen	No	No
10/17/2020	Hartsfield-Jackson Atlanta International Airport	Denied Entry - Expedited Removal	No	No
10/22/2020	Hartsfield-Jackson Atlanta International Airport	Denied Entry - Expedited Removal	No	No
12/10/2020	Hartsfield-Jackson Atlanta International Airport	Admitted Entry - U.S. Citizen	No	No
12/17/2020	Chicago O'Hare International Airport	Denied Entry - Expedited Removal	No	No
12/25/2020	Dallas-Fort Worth International Airport	Denied Entry - Expedited Removal	No	No
12/28/2020	Washington Dulles International Airport	Admitted Entry - U.S. Citizen	Yes	Yes
1/7/2021	Hartsfield-Jackson Atlanta International Airport	Denied Entry - Expedited Removal	No	No
1/12/2021	John F. Kennedy International Airport	Denied Entry - Expedited Removal	No	No
2/10/2021	John F. Kennedy International Airport	Denied Entry - Expedited Removal	No	No
2/14/2021	Toronto Pearson International Airport	Denied Entry - Withdrew Application for Admission	No	No

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[9] From May 2019 to September 2021, CBP used facial biometric technology deployed at airports to process 51.1 million travelers entering the United States.

Date of Encounter	Airport of Attempted Entry	Initial CBP Disposition of Impostor	Prior Criminal Record	Criminal Prosecution Initially Accepted
2/23/2021	Newark International Airport	Denied Entry - Expedited Removal	No	No
2/27/2021	Dallas-Fort Worth International Airport	Denied Entry - Expedited Removal	No	No
2/28/2021	Dallas-Fort Worth International Airport	Admitted Entry - U.S. Citizen	No	No
3/6/2021	Washington Dulles International Airport	Denied Entry - Expedited Removal	No	Yes
3/7/2021	George Bush Intercontinental Airport	Denied Entry - Expedited Removal	No	No
3/17/2021	Chicago O'Hare International Airport	Admitted Entry - U.S. Citizen	Yes	No
3/29/2021	Los Angeles International Airport	Denied Entry - Expedited Removal	No	No
4/5/2021	Washington Dulles International Airport	Denied Entry - Expedited Removal	No	No
4/5/2021	Washington Dulles International Airport	Denied Entry - Expedited Removal	No	No
4/6/2021	Hartsfield-Jackson Atlanta International Airport	Admitted Entry - U.S. Citizen	Yes	No
4/20/2021	Hartsfield-Jackson Atlanta International Airport	Admitted Entry - U.S. Citizen	No	No
4/23/2021	Miami International Airport	Denied Entry - Expedited Removal	No	No
4/30/2021	Hartsfield-Jackson Atlanta International Airport	Denied Entry - Expedited Removal	No	No
5/13/2021	Baltimore/Washington International Thurgood Marshal Airport	Admitted Entry - U.S. Citizen	Yes	No
5/19/2021	Hartsfield-Jackson Atlanta International Airport	Denied Entry - Expedited Removal	Yes	No
5/19/2021	Fort Lauderdale International Airport	Admitted Entry - U.S. Citizen	No	Yes
5/23/2021	Vancouver International Airport	Denied Entry - Withdrew Application for Admission	No	No
6/11/2021	Dallas-Fort Worth International Airport	Admitted Entry - U.S. Citizen	No	No
6/29/2021	Hartsfield-Jackson Atlanta International Airport	Admitted Entry - U.S. Citizen	No	No
7/17/2021	John F. Kennedy International Airport	Admitted Entry - U.S. Citizen	Yes	No

Date of Encounter	Airport of Attempted Entry	Initial CBP Disposition of Impostor	Prior Criminal Record	Criminal Prosecution Initially Accepted
7/22/2021	Hartsfield-Jackson Atlanta International Airport	Admitted Entry - U.S. Citizen	No	No
8/9/2021	Miami International Airport	Denied Entry - Visa Waiver Refusal (removal type specific to Visa Waiver Program applicants)	No	No
8/9/2021	Miami International Airport	Denied Entry - Visa Waiver Refusal (removal type specific to Visa Waiver Program applicants)	No	No
8/11/2021	Hartsfield-Jackson Atlanta International Airport	Admitted Entry - U.S. Citizen	No	No
8/15/2021	John F. Kennedy International Airport	Admitted Entry - U.S. Citizen	No	No
9/19/2021	John F. Kennedy International Airport	Admitted Entry - Notice to Appear (to a Federal immigration judge)	No	No

Source: DHS OIG, based on CBP data

Appendix C
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