

# Office of the Auditor General

## Performance Audit Report

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### **Office of Aeronautics**

#### Michigan Department of Transportation

December 2023

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The auditor general shall conduct post audits of financial transactions and accounts of the state and of all branches, departments, offices, boards, commissions, agencies, authorities and institutions of the state established by this constitution or by law, and performance post audits thereof.

The auditor general may make investigations pertinent to the conduct of audits.

*Article IV, Section 53 of the Michigan Constitution*

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# OAG

Office of the Auditor General

## Report Summary

### *Performance Audit*

### *Office of Aeronautics (OA)*

### *Michigan Department of Transportation (MDOT)*

**Report Number:**  
**591-0190-22**

**Released:**  
**December 2023**

OA's mission is to develop and preserve a safe, high-quality Statewide air transportation system. It is divided into two sections: the Aviation Services Section and the Airport Planning and Development Section. The Aviation Services Section is responsible for licensing, inspecting, and/or registering airports, flight schools, aircraft, and aircraft dealers. OA expended \$199.7 million and \$244.5 million during fiscal years 2022 and 2023, respectively, and had 43 employees as of March 17, 2023.

Audit Objective			Conclusion
Objective 1: To assess the effectiveness of OA oversight of the public-use facilities, hospital heliports and helistops, flight schools, and aircraft registrations.			Not effective
Findings Related to This Audit Objective	Material Condition	Reportable Condition	Agency Preliminary Response
Discrepancies between the inspection summaries and inspection checklists in 5 (45%) of 11 public-use facility inspections we reviewed resulted in OA issuing 4 (80%) full operating licenses instead of provisional licenses. Also, 4 (15%) of 26 aircraft reviewed were not registered at the time of the flight school inspections ( <a href="#">Finding 1</a> ).	X		Agrees
Six (67%) of 9 flight schools reviewed and 13 public-use facilities operated without submitting a license application during calendar year 2023. Also, 8 (20%) of 40 public-use facility license applications reviewed were not obtained or retained for calendar years 2022 and 2023 ( <a href="#">Finding 2</a> ).	X		Agrees
Licensing standards were not met for 8 (40%) of 20 hospital heliports and helistops reviewed and 37 (38%) of 98 hospital heliports or helistops had not been inspected within the past 3 years ( <a href="#">Finding 3</a> ).	X		Agrees
Triennial inspections were not conducted for 10 (5%) of 212 and were overdue for 34 (17%) of the remaining 202 public-use facilities. Also, triennial inspections were not conducted for 8 (12%) of 66 and were overdue for 11 (19%) of the 58 remaining flight schools ( <a href="#">Finding 4</a> ).	X		Agrees

<b>Findings Related to This Audit Objective (Continued)</b>	<b>Material Condition</b>	<b>Reportable Condition</b>	<b>Agency Preliminary Response</b>
OA took 1 to 253 days after application submission to process the reviewed registrations for 40 aircraft ( <u>Finding 5</u> ).		X	Agrees
<b>Observations Related to This Audit Objective</b>	<b>Material Condition</b>	<b>Reportable Condition</b>	<b>Agency Preliminary Response</b>
Michigan had the third highest number of aircraft registrations and third lowest in fees collected among seven Midwestern states. Fees have not been revised since 1945 ( <u>Observation 1</u> ).	Not applicable for observations.		

<b>Audit Objective</b>			<b>Conclusion</b>
Objective 2: To assess the effectiveness of selected Aviation System Manager access controls.			Moderately effective
<b>Findings Related to This Audit Objective</b>	<b>Material Condition</b>	<b>Reportable Condition</b>	<b>Agency Preliminary Response</b>
Deficiencies existed related to approving users and removing inactive users and limiting access to the principle of least privilege over the Aviation System Manager, the database used to manage aircraft registrations ( <u>Finding 6</u> ).		X	Agrees

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Auditor General

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# OAG

Office of the Auditor General

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**Doug A. Ringler, CPA, CIA**  
Auditor General

December 28, 2023

Michael D. Hayes, Chair  
State Transportation Commission  
and  
Kelly Burris, Chair  
Michigan Aeronautics Commission  
and  
Bradley C. Wieferich, PE, Director  
Michigan Department of Transportation  
Murray D. Van Wagoner Building  
Lansing, Michigan

Chair Hayes, Chair Burris, and Director Wieferich:

This is our performance audit report on the Office of Aeronautics, Michigan Department of Transportation.

We organize our findings and observations by audit objective. Your agency provided preliminary responses to the recommendations at the end of our fieldwork. The *Michigan Compiled Laws* and administrative procedures require an audited agency to develop a plan to comply with the recommendations and to submit it to the State Budget Office upon completion of an audit. Within 30 days of receipt, the Office of Internal Audit Services, State Budget Office, is required to review the plan and either accept the plan as final or contact the agency to take additional steps to finalize the plan.

We appreciate the courtesy and cooperation extended to us during this audit.

Sincerely,

Doug Ringler  
Auditor General



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# AUDIT OBJECTIVES, CONCLUSIONS, FINDINGS, AND OBSERVATIONS

# OVERSIGHT OF PUBLIC-USE FACILITIES, HOSPITAL HELIPORTS AND HELISTOPS, FLIGHT SCHOOLS, AND AIRCRAFT REGISTRATIONS

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## BACKGROUND

The Office of Aeronautics (OA) administers the Aeronautics Code of Michigan (Public Act 327 of 1945), which requires licensing of airports, hospital heliports\*, hospital helistops\*, seaplane bases (water runways), and flight schools along with registrations for aircraft within Michigan.

The Aviation Services Section maintains responsibility for inspecting and licensing flight schools, hospital heliports, and airports, allowing for important safety oversight of these facilities and ensuring adherence to federal and State safety standards. This Section also handles aircraft registration, airport manager testing, and airport directory creation.

The purpose of licensing a public-use facility\* (facility), hospital heliport and helistop, and flight school is to ensure the facility meets all requirements set forth for licensing. Inspections are conducted to determine if licensing, safety, and regulatory standards are met. OA is responsible for conducting triennial inspections for facilities and flight schools.

OA processed 4,698 aircraft registrations during calendar year 2022 and 4,150 through April 20, 2023. As of March 2023, OA was responsible for inspecting 212 facilities, 98 hospital heliports and helistops, and 66 flight schools.

## AUDIT OBJECTIVE

To assess the effectiveness\* of OA oversight of the public-use facilities, hospital heliports and helistops, flight schools, and aircraft registrations.

## CONCLUSION

Not effective.

## FACTORS IMPACTING CONCLUSION

- Material conditions\* related to improving controls over facility, flight school, and hospital heliport and helistop licensing and inspections and inspection timeliness (Findings 1 through 4).
- Reportable condition\* related to improving processing of aircraft registrations (Finding 5).
- OA collected payments for 40 sampled facility licenses.
- 50 (98%) of 51 airport managers reviewed were appropriately licensed.

\* See glossary at end of report for definition.

- At least one flight instructor was listed on the flight school application, and flight schools were operating from a licensed airport.
- OA sent aircraft registration applications in a timely manner.
- OA accurately assessed aircraft registration fees for 39 (98%) of 40 sampled aircraft.
- 39 (98%) of 40 sampled aircraft were registered with the Federal Aviation Administration\* (FAA).

*\* See glossary at end of report for definition.*

## FINDING 1

### Inspection documentation needs improvement.

Discrepancies were noted between the inspection summaries and inspection checklists for 5 (45%) of 11 facilities sampled.

5 (63%) of 8 flight schools had insufficient inspections.

OA needs to improve the completeness and accuracy of its documentation and adherence to processes and procedures for public-use facility (facility) and flight school inspections. These licensing requirements help ensure safe operating conditions and compliance with the Michigan Aeronautics Commission General Rules and the *Michigan Compiled Laws (MCL)*.

An inspection includes a checklist containing licensing requirements a facility must have in place to receive a license and a summary where inspectors can document licensing discrepancies, comments, and/or recommendations. Based on the site conditions, the inspector will issue either a full operating license or a provisional license\*. Provisional licenses are issued when the facility has met some, but not all, licensing requirements. Upon reinspection, if the facility meets the requirements, OA will grant a full operating license (see Exhibit 1).

Some of the requirements for flight school inspections include confirming aircraft registrations with the Commission, verifying flight instructor certifications, and verifying security program implementation.

We reviewed 11 facility inspection reports and randomly selected and reviewed 8 flight school inspection reports and noted:

- a. 5 (45%) of 11 facility inspections had discrepancies between the inspection summaries and inspection checklists. For example, items such as improper runway markings, unrecognizable wind cones, and insufficient clearance over property lines were noted as "met" on the checklist, while the summary document noted inspection issues.

Specifically, for 4 (80%) of the inspections, the inspector indicated the facility met licensing requirements while also indicating licensing deficiencies in the inspection summary. For the same facilities, OA issued a full operating license when they did not meet the requirements. Instead, the facilities should have been issued a provisional license.

- b. 5 (63%) of the 8 flight schools had insufficient inspections:
  - (1) 1 (13%) flight school was denied a license because of unmet requirements during an inspection; however, the flight school continued to operate.
  - (2) 1 (13%) inspection report did not contain sufficient information about the resolution of unmet requirements.
  - (3) 2 (25%) inspection reports inaccurately noted aircraft were registered with the Commission. Our

\* See glossary at end of report for definition.

review of the aircraft registrations validated 4 (15%) of 26 aircraft reviewed during the inspection were not registered.

(4) 3 (38%) inspections did not confirm a written agreement was in place between the licensed airport and the operating flight school.

(5) 1 (13%) inspection was conducted over the phone and not on site, as required by the Michigan Department of Transportation (MDOT) guidance.

c. 1 flight school was not inspected until 462 days after the initial license application. OA approved the license before performing an inspection, which is against MDOT guidance.

OA indicated staff attrition, internal prioritization of limited staffing resources to the most safety-critical inspections, and a lack of a sufficient inspection process hindered its ability to ensure all facility and flight schools were sufficiently inspected.

We consider this finding to be a material condition based on the significance of the exception rates identified, OA's inability to support that all facilities and schools it inspected met licensing requirements, and the potential for unsafe operating conditions to exist at the facilities and schools.

## **RECOMMENDATION**

We recommend OA improve the completeness and accuracy of its documentation and adherence to the processes and procedures for facility and flight school inspections.

## **AGENCY PRELIMINARY RESPONSE**

MDOT provided us with the following response:

*MDOT agrees with the recommendation. MDOT has implemented staffing adjustments to fill positions that were vacant during the audit period. Training for individuals in those positions is currently underway. In addition, procedural documentation is being updated with expected completion by April 2024.*

## FINDING 2

### Licensing processes need improvement.

OA needs to establish sufficient internal control\* over the flight school and public-use facility (facility) licensing processes.

Public Act 327 of 1945 requires airports and facilities to annually renew licenses and the registrations of aircraft used by flight schools. MDOT guidance also requires OA to receive and file commercial operating agreements, issue late notices, and assess late renewal fees to flight schools.

We reviewed flight school data from January 1, 2022 through March 27, 2023 and facility data from January 1, 2022 through May 3, 2023 to determine the number of flight school applications and licensed facilities. Also, based on a year-over-year comparison of OA's flight school lists, we identified 36 schools which did not submit a license application from one year to the next. These schools may have operated without OA's knowledge because it did not have a mechanism in place to check the schools' licensing status. We reviewed 11 flight schools with an application, 9 flight schools without an application, and 40 facility licenses. We noted OA did not:

6 (67%) of 9 flight schools were operating without a license.

- a. Track, monitor, and ensure flight schools met all licensing criteria for 6 (55%) of 11 flight schools reviewed. Specifically, OA did not ensure all aircraft were registered for 4 (36%) of 11 flight schools. Also, OA did not receive and maintain written commercial operating agreements for 5 (45%) of 11 flight schools.
- b. Validate if 9 (25%) of 36 flight schools which did not submit a current license application were operational. Our research indicated 6 (67%) flight schools were operating as a flight school and therefore should have been required to apply for a license.
- c. License 2 (18%) flight schools with submitted applications. OA did not perform timely inspection or follow up on unresolved license requirements which prevented license issuance.
- d. Maintain accurate flight school data. We compared OA's 2022 and 2023 flight school lists and identified 14 flight schools not included in the 2023 list. As of April 10, 2023, 1 (7%) of 14 flight schools were operational and should have been licensed. Also, we identified an additional flight school which should have been licensed.
- e. Require seaplane bases and facilities awaiting conversion to private-use airports to apply for licensure:

Calendar Year	Facilities Requiring Licensure	Facilities With No Application and No License
2022	230	12
2023	227	13

\* See glossary at end of report for definition.

f. Track and monitor application and licensing information for facilities. Specifically, OA did not:

- Obtain or retain 8 (20%) of 40 applications for facilities requiring licensure. MDOT's Records Retention and Disposal Schedule requires OA to retain airport license records for 20 years.
- Issue valid licenses for 2 (5%) of 40 facilities at the beginning of the calendar year.

MDOT should consider comparing the OA licensee listing with the FAA listing of facilities to identify those which should be licensed under State requirements.

OA indicated federal aircraft registration system malfunctions, prioritization of staff time to safety-critical inspections, staff attrition, hiring slowdowns, and the need to train new employees impacted OA's ability to fully address internal control.

We consider this finding to be a material condition based on the significance of the exception rates identified, OA's inability to support that all flight schools met the requirements to be licensed, and the potential for unsafe operating conditions to exist at flight schools and facilities.

## **RECOMMENDATION**

We recommend OA establish sufficient internal control over flight school and facility licensing processes.

## **AGENCY PRELIMINARY RESPONSE**

MDOT provided us with the following response:

*MDOT agrees with the recommendation. MDOT has implemented staffing adjustments to fill positions that were vacant during the audit period. Training for individuals in those positions is currently underway. In addition, procedural documentation is being updated with expected completion by April 2024.*

## FINDING 3

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### Hospital heliport and helistop process improvements needed.

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OA needs to improve its hospital heliport and helistop license and inspection processes to help ensure compliance with *MCL* and Michigan Aeronautics Commission General Rules (*Michigan Administrative Code R 259.201 - 259.401*).

The purpose of hospital heliport and helistop inspections is to identify discrepancies with State licensing standards, conform to FAA standards for hospital heliports, and determine if the hospital helicopter landing area should be licensed as a hospital heliport or helistop.

Inspection documents for hospital heliports and helistops contain a checklist with licensing requirements derived from the *Michigan Administrative Code R 259.247*. Some of the requirements on the checklist are to ensure appropriate lighting, a safety region for final approach and take off areas which meet State licensing requirements, and the hospital heliport or helistop is reserved solely for air ambulance use or other hospital-related functions (see Exhibit 2).

OA does not have a policy or procedure detailing how often inspections for hospital heliports and helistops need to be conducted or how long records need to be maintained. However, *MCL* Section 259.86(3) requires hospital heliports and helistops to renew their licenses annually. Completing an inspection is the best way to ensure licensees continue to meet the license requirements. Similar inspections for facilities and flight schools are required to be conducted every 3 years and facility records are required to be maintained for 20 years.

Our review of hospital heliport and helistop inspections and licenses noted:

- a. 2 (22%) of 9 inspection reports had:
  - (1) Uncorrected licensing discrepancies for items such as approach and departure paths and landing markings.
  - (2) Follow-up inspections that were not completed or documented to validate licensee compliance with previous noncompliance with license requirements.
  - (3) Unrevoked licenses when the inspection reports indicated noncompliance with requirements.
- b. 37 hospital heliports and helistops had either an outdated inspection or no inspection as of March 20, 2023.



Inspections for 37 hospital heliports or helistops had not been completed within the past 3 years.

Our review disclosed 4 (4%) of 98 never had an inspection and 33 (35%) of 94 of the remaining inspections had not been inspected in the past 3 years:

Time Since Last Inspection	Number of Hospital Heliports and Helistops	Total
3 years to less than 4 years	14	38%
4 years to less than 5 years	3	8%
5 years to less than 6 years	12	32%
6 years to less than 7 years	3	8%
7 years to less than 8 years	0	0%
8 years to less than 9 years	0	0%
9 years to less than 10 years	1	3%
No inspection date	4	11%
Total	37	100%

8 (40%) of 20 hospital heliports and helistops were licensed when requirements were not met.

- c. Our review of 20 hospital heliports and helistops requiring a license noted OA licensed 8 (40%) of 20 hospital heliports and helistops when they did not meet licensing requirements. Specifically, OA did not:
  - (1) Ensure 8 (40%) inspection reports identified compliance with all licensing requirements.
  - (2) Follow up when noncompliance was identified for 5 (25%) hospital heliports and helistops.
  - (3) License 2 (10%) hospital heliports and helistops for the correct classification. For example, a hospital heliport license was issued when the completed inspection report indicated it met licensing requirements for a hospital helistop.
  - (4) Maintain supporting documentation for 1 (5%) hospital helistop to dismiss noncompliance with licensing requirements noted in the inspection report.
  - (5) Ensure 1 (50%) of 2 hospital heliport managers took and passed the manager exam with a 70% or higher score before issuing the license.
- d. OA did not obtain or retain 7 (35%) of 20 applications for hospital heliports and helistops requiring licensure.
- e. OA did not maintain a hospital heliport and helistop listing with relevant application and license information by calendar year, such as the date an application is received and when a license is issued.

OA indicated staff and facility manager attrition, hiring, and training hindered OA's ability to fully address internal control.

We consider this finding to be a material condition based on the significance of the exception rates identified, OA's inability to support all hospital heliports and helistops met licensing requirements, and the potential for unsafe operating conditions to exist at the hospital heliports and helistops.

**RECOMMENDATION**

We recommend OA improve hospital heliports and helistops license and inspection processes.

**AGENCY  
PRELIMINARY  
RESPONSE**

MDOT provided us with the following response:

*MDOT agrees with the recommendation. MDOT has implemented staffing adjustments to fill positions that were vacant during the audit period. Training for individuals in those positions is currently underway. In addition, procedural documentation is being updated with expected completion by April 2024.*

## FINDING 4

### Timeliness of public-use facility and flight school inspections needs improvement.

OA needs to improve the timeliness of triennial inspections to help ensure safe operating conditions and compliance with FAA requirements and Michigan Aeronautics Commission General Rules.

MDOT guidance requires OA to inspect all general aviation facilities\* (which includes public-use facilities) and flight schools at least every three years. Also, FAA requires annual to triennial inspections of general aviation facilities.

We reviewed inspection requirements and last inspection dates and noted:

- a. Facility inspections include looking for conditions with the potential to present a hazard to safe operating conditions and reporting those results to all responsible parties, including the airport operator. In addition, inspection results noting the existence of unsafe conditions are made available to the flying public in the airport or facility directory until rectified.

As of March 23, 2023, OA was responsible for inspecting 212 facilities on a triennial basis. Our review noted 10 (5%) of 212 never had an inspection and 34 (17%) of 202 of the remaining facility inspections were overdue 40 to 1,007 days:

44 facilities had not been inspected within the last 3 years.

Time Since Last Inspection	Facilities	Total
3 years to less than 4 years	23	52%
4 years to less than 5 years	10	23%
5 years to less than 6 years	1	2%
No inspection date	10	23%
Total	44	100%

- b. Flight school inspections include reviewing compliance with State laws, reviewing the written training curriculum, verifying flight instructor certifications, and verifying a security program is implemented.

As of March 27, 2023, OA was responsible for inspecting 66 flight schools on a triennial basis. Our review noted 8 (12%) of 66 had no inspection date and 11 (19%) of the

\* See glossary at end of report for definition.

58 remaining flight schools were overdue ranging from 23 to 731 days:

19 flight schools had not been inspected within the last 3 years.

Time Since Last Inspection	Flight Schools	Total
3 years to less than 4 years	7	37%
4 years to less than 5 years	3	16%
5 years to less than 6 years	1	5%
No inspection date	8	42%
Total	19	100%

OA indicated staff attrition, hiring, training, staff prioritization, and location of the facilities and flight schools hindered its ability to complete all inspections triennially. In addition, OA informed us every effort is made to maintain awareness of every newly established flight school; however, it is challenging for OA to be immediately aware of any new flight school established.

We consider this finding to be a material condition based on the significance of the exception rates identified, the length of time inspections were overdue, and the potential for unsafe operating conditions to exist at the facilities and flight schools.

## RECOMMENDATION

We recommend OA improve the timeliness of all triennial inspections.

## AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

*MDOT agrees with the recommendation. MDOT has implemented staffing adjustments to fill positions that were vacant during the audit period. Training for individuals in those positions is currently underway. In addition, procedural documentation is being updated with expected completion by April 2024.*

## FINDING 5

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### Aircraft registration process needs improvement.

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OA needs to improve its procedures to ensure aircraft registrations are processed in a timely manner and registration payment documentation is sufficiently maintained to ensure compliance with the *MCL*.

*MCL* Section 259.76 requires owners to register aircraft annually with the Michigan Aeronautics Commission and pay a registration fee of 1 cent per pound of either maximum gross weight or maximum takeoff weight, whichever is greater, on or before December 31 of the applicable registration period. A one-month payment grace period ends on January 31, after which late fees will accrue. Sound business practice would dictate aircraft registration payments and registration certifications be processed in a timely manner to ensure aircraft owners adhere to the *MCL*. In addition, MDOT is required to retain aircraft registration documents for 3 years.

We reviewed 40 aircraft registrations and noted OA did not:

- a. Maintain payment documentation for 10 (25%) aircraft registrations. OA reported certifications were initiated to be sent up to 253 days after payments were processed.
- b. Process timely aircraft registrations for the 30 registrations where payment documentation was maintained. Specifically:
  - (1) Processing a certification when payment was received took between 12 and 119 days. The average time between receiving the payment and sending the certification was 33 days.
  - (2) Four (13%) payments received as of December 31, 2021 or 2022 did not have certifications approved and initiated to be sent until after the January 31 grace period, ranging from 6 to 71 days.

OA indicated limitations with the system which maintains aircraft registration data, Aviation System Manager\* (ASM), and the vacancy of the position primarily responsible for overseeing aircraft registration affected overall processing and documentation management.

## RECOMMENDATION

We recommend OA improve its procedures for processing aircraft registration payments and certifications.

## AGENCY PRELIMINARY RESPONSE

MDOT provided us with the following response:

*MDOT agrees with the recommendation. MDOT has implemented staffing adjustments to fill positions that were vacant*

\* See glossary at end of report for definition.

*during the audit period. Training for individuals in those positions is currently underway. MDOT has also engaged the applicable entities involved in payment processing to ensure the pertinent coordination and information sharing is occurring. In addition, procedural documentation is being updated with expected completion by April 2024.*

## OBSERVATION 1

### **Michigan's aircraft registration fees third lowest among seven Midwestern states.**

Michigan's annual aircraft registration fee was established under Public Act 327 of 1945 at \$.01 per pound of the aircraft. The Act indicates the registration fee is in lieu of all general or local property taxes on the aircraft and requires all aircraft tied down, moored, hangered, or based within the State to be registered annually.

We obtained aircraft registration, fee structure, and revenue collection data for Michigan and six other Midwestern states for fiscal year 2022. Although the seven states utilized different fee structures, Michigan's fee structure resulted in having the third lowest average registration fee while having the third highest number of registered aircraft:

Aircraft Registration Fees by Midwestern State for Fiscal Year 2022

State	Fee Structure Method	Average Fee*	Number Registered	Revenue Collected
Illinois	\$20.00 flat fee every two years, prorated.	\$ 20.00	4,004	\$ 80,060
South Dakota	\$12.50 to \$300 fee based on gross takeoff weight and aircraft age, annually.	\$ 42.92	1,338	\$ 57,424
<b>Michigan</b>	<b>\$.01 per pound of the aircraft, annually.</b>	<b>\$ 67.43</b>	<b>4,745</b>	<b>\$ 319,964</b>
Ohio	\$15.00 per seat, annually.	\$ 72.71	5,171	\$ 375,975
North Dakota	\$15.00 to \$3,000 fee based on gross weight, annually.	\$ 97.81	1,764	\$ 172,543
Wisconsin	\$30.00 to \$3,125 fee based on airplane weight, annually.	\$110.23	5,867	\$ 646,741
Minnesota	\$100 for aircraft under \$500,000 MSRP* and up to \$75,000 for aircraft over \$40,000,000 MSRP, annually.	\$810.33	4,243	\$3,438,242

\* Based on revenue collected and number of registered aircraft.

\* See glossary at end of report for definition.

## SELECTED ACCESS CONTROLS

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### BACKGROUND

Access controls\* limit or detect inappropriate access to computer resources, thereby protecting the resources from unauthorized modification, loss, and disclosure. For access controls to be effective, they should be properly authorized, implemented, and maintained.

OA uses Aviation System Manager (ASM) to document and monitor aircraft registrations. We identified 25 users who had access to ASM between October 1, 2021 and May 17, 2023.

### AUDIT OBJECTIVE

To assess the effectiveness of selected ASM access controls.

### CONCLUSION

Moderately effective.

### FACTORS IMPACTING CONCLUSION

- Reportable condition related to the need for changes to access controls.

\* See glossary at end of report for definition.



## FINDING 6

### **Improvements needed to ASM user access controls.**

OA should improve user access controls over ASM. Inappropriate user access increases the risk of unauthorized access, use, and modification of ASM data.

State of Michigan Technical Standard 1340.00.020.01 requires user access to be formally approved, based on the principle of least privilege\*, and automatically disabled by the system after 60 days of inactivity. Also, the Standard requires OA to maintain documentation to support the initial request for access and the removal of access when no longer required.

OA primarily uses ASM to document data related to aircraft registration. We identified 25 users with access to ASM at some point from October 1, 2021 to May 17, 2023. Our review of OA's oversight of access and security controls over ASM disclosed OA had not:

- a. Initiated user access approval and documentation until February 2023.
- b. Granted access based on the principle of least privilege. We noted 3 (60%) of 5 users had access not required for their job responsibilities, including administrative roles.
- c. Ensured ASM automatically disabled inactive users. Also, OA did not have a process to identify inactive users. Three user accounts remained inactive for a period ranging from 61 to 463 days.
- d. Disabled 1 (20%) of 5 users not requiring access.

OA indicated system limitations prevented the monitoring of inactive users.

## RECOMMENDATION

We recommend OA improve its user access controls over ASM.

### **AGENCY PRELIMINARY RESPONSE**

MDOT provided us with the following response:

*MDOT agrees with the recommendation. MDOT is engaged with ASM's software vendor to decrease risk associated with the unauthorized access, use, and modification of ASM. Expected completion is April 2024.*

\* See glossary at end of report for definition.

## SUPPLEMENTAL INFORMATION

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UNAUDITED  
Exhibit 1

OFFICE OF AERONAUTICS  
Michigan Department of Transportation  
Airport Inspection Summary and Checklist

**Department of Transportation - Office of Aeronautics**  
2700 Port Lansing Rd. Lansing, MI 48906-2160  
**2023 Airport Inspection Summary**

City		Airport	
Inspected Date		Loc-ID	
Manager			
Met with manager	___ Yes    ___ No    ___ Met with		
e-mail			

General Comments:

Discrepancies and items that may require your attention:

___ A NOTAM should be issue for item(s) above:	Call Flight Service at 877-487-6867
--	-------------------------------------

This facility    meets    does not meet the requirements for:    Unimproved    Basic    General Utility    Heliport

*This exhibit continued on next page.*

**259.244 General utility airports.**

Rule 244. (1) A general utility airport shall meet all of the following requirements:

(a)	Have an airport manager licensed by the commission.	
(b)	Contain a runway that has a 1,800-foot landing length in each direction from a clear approach slope of 20 to 1. Unpaved runways shall have a minimum width of 100 feet. Paved runways shall have a minimum width of 40 feet.	
(c)	Maintain a state primary surface for each runway clear of all obstructions. The state primary surface shall be not less than 250 feet wide.	
(d)	Maintain a state approach surface for each runway end that extends outward and upward from the end of the state primary surface for a distance of 5,000 feet. The shape of the approach surface is a trapezoid that has a width of 250 feet at the end of the primary surface and expands uniformly to a width of 1,250 feet. The state approach surface extends for a horizontal distance of 5,000 feet at a slope of 20 to 1, including 15 feet of clearance over roads, 17 feet of clearance over interstate highways, 23 feet of clearance over railroads, and 25 feet of clearance over property lines. The state approach surface begins at the runway end for unpaved runways. If an object penetrates the state approach surface, the landing threshold shall be displaced to a point where a clear 20 to 1 approach slope can be maintained.	
(e)	Contain a permanent monument located on the centerline at or beyond each end of the runway.	
(f)	Maintain a clearly marked automobile parking area.	
(g)	Maintain a clearly marked entrance from a public road.	
(h)	Paved runways shall have centerline marking and runway numbering conforming to the published standards of the federal aviation administration.	
(i)	Unpaved runways marked in accordance with commission standards.	
(j)	Any crosswind runways shall meet minimum requirements for a basic utility runway.	
(k)	Maintain a lighted wind cone.	
(l)	Runway lighting shall be available from sunset to sunrise daily. Lighting configuration shall conform to federal aviation administration standard color and layout in accordance with FAA Advisory Circular 150/5340-24, dated September 3, 1975, which is adopted by reference in these rules.	
(m)	Airports that have right traffic patterns shall have a segmented circle that has traffic pattern indicators.	
(2)	A general utility airport shall provide all of the following services:	
(a)	An administration building or terminal building that has sanitary facilities available to the public.	
(b)	Adequate means to deter unauthorized or inadvertent access to the aircraft operations area.	
(c)	A telephone that is available to the public 24 hours daily on the airport and has the telephone's location clearly indicated.	
(d)	A formally adopted emergency service plan prepared by the airport owner.	
(e)	Airport rules and regulations that are adopted by the airport owner and available to the public.	
(f)	Itinerant aircraft parking and tie-downs, including adequate ropes and chains or their equivalent.	

Source: OA provided the 2023 Airport Inspection Summary and Checklist.

OFFICE OF AERONAUTICS  
Michigan Department of Transportation

Hospital Heliport and Helistop Inspection Summary Letter

Assoc. City \_\_\_\_\_ Hospital \_\_\_\_\_ LOC ID  

**Inspection Summary Letter - Hospital Heliports/Helistops**

**HOSPITAL HELIPORT**

- ☐ The hospital heliport is reserved solely for air ambulance use or other hospital-related functions.
- ☐ The hospital heliport has a licensed airport manager, appointed by the hospital heliport owner or operator, licensed by the commission within 90 days after his/ her appointment.
- ☐ The hospital heliport has a final approach and takeoff area, the minimum dimensions of which are at least 1.5 times the overall length of the largest helicopter authorized to use the hospital heliport.
- ☐ The final approach and takeoff area is positioned to provide a minimum safety region of at least 10 ft or 1/3 of the rotor length of the largest helicopter that will land at the site, measured from the edge of the final approach and takeoff area to the obstacle nearest that area.
- ☐ The hospital heliport has at least 1 approach or takeoff path that is aligned as nearly as possible with the dominant winds, but that may deviate from that alignment to avoid objects or noise-sensitive areas or use airspace above public lands.
- ☐ The hospital heliport is capable of being secured to prohibit the inadvertent or unauthorized entry of persons or vehicles.
- ☐ If the heliport is at ground level, the operational heliport areas are fenced or marked with caution signs to prohibit the inadvertent or unauthorized entry of persons or vehicles.
- ☐ Signs indicating a heliport are located on the heliport's perimeter.
- ☐ The touchdown and liftoff area is a paved hard surface.
- ☐ The hospital has a lighted wind direction indicator.
- ☐ Suitable lighting is provided at the hospital heliport's perimeter for night operations and that lighting, at a minimum, includes lights at each corner of the final approach and takeoff area.
- ☐ Identification markings are present at the hospital heliport site that conform to Federal Aviation Administration standards for hospital heliports.

**HOSPITAL HELISTOP**

- ☐ The hospital helistop has a person responsible for the daily operation of the hospital helistop, appointed by the owner or operator of the hospital helistop who, as determined by the owner or operator, meets the minimum standards established by the commission.
- ☐ Within 90 days after appointing a responsible person who is in charge of the daily operation of the hospital helistop, the owner or operator of the hospital helistop must provide the commission in writing with the name of the responsible person who is in charge of the daily operation of the hospital helistop and identify the manner in which the commission may contact that responsible person in the event of an emergency.
- ☐ The hospital helistop is reserved solely for air ambulance use or other hospital-related functions.
- ☐ The hospital helistop has at least 1 suitable helicopter approach path that is identified and free of obstacles.
- ☐ The hospital helistop has a wind direction indicator.
- ☐ The hospital helistop has appropriate permanent or temporary lighting available for night operations.
- ☐ The hospital helistop has adequate security to prevent bystanders from approaching a helicopter as it lands or departs.
- ☐ A pilot of a helicopter landing at a hospital helistop or heliport must receive prior permission to land at the hospital helistop or heliport from the hospital heliport manager or a responsible person.

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Inspector Notes: \_\_\_\_\_  
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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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Refer to FAA Advisory Circular 150/5390-2D for recommended design standards.

This facility ☐ meets ☐ does not meet State licensing requirements for:

- ☐ Hospital Heliport
- ☐ Hospital Helistop

Inspector \_\_\_\_\_  
Date \_\_\_\_\_

*This exhibit continued on next page.*

**MDOT Aeronautics Heliport Inspection Form**   

City	Facility	Date	Phone	Insp. By
<div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> <p>N</p> <p>0</p> <p>SCALE IN FEET</p> </div> <div style="flex-grow: 1;"> </div> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px; width: fit-content;"> <p>Elevation: _____ ' MSL</p> <p>Latitude: _____ ° _____ ' _____ "</p> <p>Longitude: _____ ° _____ ' _____ "</p> </div>				

Source: OA provided the Hospital Heliport and Helistop Inspection Summary Letter.

## AGENCY DESCRIPTION

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MDOT was organized under *MCL* Sections 16.450 - 16.458 (sections of the Executive Organization Act of 1965). MDOT is governed by the State Transportation Commission, which is made up of six members who are appointed by the Governor with the advice and consent of the Senate. The State Transportation Commission is responsible for establishing policies. MDOT is managed by a director who is appointed by the Governor and responsible for administering MDOT and implementing the policies established by the State Transportation Commission. MDOT's mission\* is serving and connecting people, communities, and the economy through transportation.

The Michigan Aeronautics Commission is responsible for the general supervision of all aeronautics in the State and, in doing so, is empowered to make rules and regulations governing all airports, flight schools, and other aeronautical activities. OA operates under the Michigan Aeronautics Commission, established under Public Act 327 of 1945 (*MCL* Sections 259.1 - 259.208).

OA's mission is to develop and preserve a safe, high-quality Statewide air transportation system. OA conducts inspections for flight schools, hospital heliports, and airports and licenses and/or registers airports, flight schools, aircraft, and aircraft dealers. Inspections allow for important safety oversight of these facilities and ensure adherence to federal and State safety standards. OA provides pilot safety and educational outreach to encourage pilots to remain current and up to date on the latest safety information.

OA expended \$199.7 million and \$244.5 million for fiscal years 2022 and 2023, respectively. As of March 17, 2023, OA had 43 employees.

\* See glossary at end of report for definition.

## AUDIT SCOPE, METHODOLOGY, AND OTHER INFORMATION

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### AUDIT SCOPE

To examine the operations, records, and processes related to OA. We conducted this performance audit\* in accordance with 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 on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

As part of the audit, we considered the five components of internal control (control environment, risk assessment, control activities, information and communication, and monitoring activities) relative to the audit objectives and determined all components were significant.

### PERIOD

Our audit procedures, which included a preliminary survey, audit fieldwork, report preparation, analysis of agency responses, and quality assurance, generally covered October 1, 2021 through May 31, 2023.

### METHODOLOGY

We conducted a preliminary survey to gain an understanding of OA to formulate a basis for establishing our audit objectives and defining our audit scope and methodology. During our preliminary survey, we:

- Interviewed OA management and staff to obtain an understanding of their roles and responsibilities.
- Reviewed applicable federal orders and State laws, rules, regulations, policies, and procedures related to OA requirements and processes.
- Reviewed Michigan Aeronautics Commission meeting minutes.
- Obtained an understanding of OA's key processes and internal control significant to potential audit objectives.
- Analyzed OA expenditure and revenue data from October 1, 2021 through March 31, 2023.
- Observed facility, flight school, and hospital heliport inspections to gain an understanding of OA inspection processes.

\* See glossary at end of report for definition.

## OBJECTIVE 1

To assess the effectiveness of OA oversight of the public-use facilities, hospital heliports and helistops, flight schools, and aircraft registrations.

To accomplish this objective, we:

- Analyzed facility inspection data as of March 23, 2023 to determine whether facility inspections were conducted in a timely manner.
- Reviewed triennial inspection documentation for 11 of 107 facilities inspected by OA from October 1, 2021 through March 23, 2023 to determine whether:
  - OA appropriately licensed facilities based on completed inspection reports.
  - OA appropriately completed inspection checklists.
  - Facilities had a manager licensed by the Michigan Aeronautics Commission.
- Reviewed documentation for 40 of 457 facility license applications as of May 3, 2023 for calendar years 2022 and 2023 to determine whether the application was retained and complete, payment was received, and the airport manager was licensed.
- Compared OA's January 1, 2022 through May 3, 2023 licensed facility lists with FAA's facility lists to determine whether all required facilities were licensed.
- Analyzed hospital heliport and helistop inspection data as of March 20, 2023 to determine if hospital heliport and helistop inspections were conducted in a timely manner.
- Analyzed flight school inspection data as of March 27, 2023 to determine whether flight school inspections were conducted in a timely manner.
- Reviewed documentation for 20 of 198 hospital heliports and helistops as of March 20, 2023 to determine whether an application was submitted, licensing requirements were met according to the completed inspection report, follow-up was conducted, and the hospital heliport manager was properly licensed.
- Reviewed documentation for 9 of 46 hospital heliports and helistops inspected by OA from October 1, 2021 through March 20, 2023 to determine whether OA appropriately licensed hospital heliports and helistops based on completed inspection reports.



- Reviewed documentation for 11 of 105 flight schools as of March 27, 2023 to determine whether all aircraft were registered, at least one flight instructor was certified, a written commercial operating agreement was received and filed, applicable licensing fees were received, late renewal notices and late fees were charged when applicable, and licenses were appropriately issued.
- We researched 9 of 36 flight schools which did not submit calendar year 2022 or 2023 license applications as of March 27, 2023 to determine whether they were operational and should have been licensed.
- Reviewed inspection documentation for 8 of 29 flight schools inspected by OA from October 1, 2021 through March 27, 2023 to determine whether OA appropriately completed inspection checklists.
- Reviewed documentation for 40 aircraft registrations of 4,698 for calendar year 2022 and 4,150 through April 20, 2023 to determine whether OA maintained payment documentation, assessed an accurate fee, and processed payments and certifications sufficiently and in a timely manner.

Our samples were randomly selected to eliminate bias and enable us to project the results to the respective populations.

## **OBJECTIVE 2**

To assess the effectiveness of selected ASM access controls.

To accomplish this objective, we:

- Reviewed 5 of 25 identified users with access to ASM at some point between October 1, 2021 through May 17, 2023 to determine whether appropriate access controls were implemented for granting user access to ASM.
- Reviewed all 25 identified users with access to ASM at some point between October 1, 2021 through May 17, 2023 to determine whether users were automatically disabled by ASM after 60 days of inactivity.
- Reviewed 5 of 25 identified users with access to ASM at some point between October 1, 2021 through May 17, 2023 to determine whether the principle of least privilege was applied.

Our samples were randomly selected to eliminate bias and enable us to project the results to the entire population.

## **CONCLUSIONS**

We base our conclusions on our audit efforts and any resulting material conditions or reportable conditions.

When selecting activities or programs for audit, we direct our efforts based on risk and opportunities to improve State government operations. Consequently, we prepare our performance audit reports on an exception basis.

## **AGENCY RESPONSES**

Our audit report contains 6 findings and 6 corresponding recommendations. MDOT's preliminary response indicates it agrees with the recommendations.

The agency preliminary response following each recommendation in our report was taken from the agency's written comments and oral discussion at the end of our fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and the State of Michigan Financial Management Guide (Part VII, Chapter 4, Section 100) require an audited agency to develop a plan to comply with the recommendations and to submit it to the State Budget Office upon completion of an audit. Within 30 days of receipt, the Office of Internal Audit Services, State Budget Office, is required to review the plan and either accept the plan as final or contact the agency to take additional steps to finalize the plan.

## GLOSSARY OF ABBREVIATIONS AND TERMS

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<b>access controls</b>	Controls that protect data from unauthorized modification, loss, or disclosure by restricting access and detecting inappropriate access attempts.
<b>auditor's comments to agency preliminary response</b>	Comments the OAG includes in an audit report to comply with <i>Government Auditing Standards</i> . Auditors are required to evaluate the validity of the audited entity's response when it is inconsistent or in conflict with the findings, conclusions, or recommendations. If the auditors disagree with the response, they should explain in the report their reasons for disagreement.
<b>Aviation System Manager (ASM)</b>	The database used to manage aircraft registration.
<b>effectiveness</b>	Success in achieving mission and goals.
<b>Federal Aviation Administration (FAA)</b>	The regulator of all the nation's civil aviation activities.
<b>general aviation facility</b>	A public-use airport that does not have scheduled service or has scheduled service with less than 2,500 passenger boardings each year. Special types of facilities such as seaplane bases and heliports are included.
<b>hospital heliport</b>	A facility limited to serving helicopters engaged in air ambulance or other hospital-related functions.
<b>hospital helistop</b>	A minimally developed facility for the boarding and discharging of helicopter crew and passengers and the loading and unloading of helicopter cargo solely for an air ambulance or other hospital-related functions.
<b>internal control</b>	The plan, policies, methods, and procedures adopted by management to meet its mission, strategic plan, goals, and objectives. Internal control includes the processes for planning, organizing, directing, and controlling program operations. It also includes the systems for measuring, reporting, and monitoring program performance. Internal control serves as a defense in safeguarding assets and in preventing and detecting errors; fraud; violations of laws, regulations, and provisions of contracts and grant agreements; or abuse.

<b>material condition</b>	A matter that, in the auditor's judgment, is more severe than a reportable condition and could impair the ability of management to operate a program in an effective and efficient manner and/or could adversely affect the judgment of an interested person concerning the effectiveness and efficiency of the program. Our assessment of materiality is in relation to the respective audit objective.
<b>MCL</b>	<i>Michigan Compiled Laws.</i>
<b>MDOT</b>	Michigan Department of Transportation.
<b>mission</b>	The main purpose of a program or an entity or the reason the program or the entity was established.
<b>MSRP</b>	manufacturer's suggested retail price.
<b>OA</b>	Office of Aeronautics.
<b>observation</b>	A commentary highlighting certain details or events that may be of interest to users of the report. An observation may not include all of the attributes (condition, effect, criteria, cause, and recommendation) presented in an audit finding.
<b>performance audit</b>	An audit that provides findings or conclusions based on an evaluation of sufficient, appropriate evidence against criteria. Performance audits provide objective analysis to assist management and those charged with governance and oversight in using the information to improve program performance and operations, reduce costs, facilitate decision-making by parties with responsibility to oversee or initiate corrective action, and contribute to public accountability.
<b>principle of least privilege</b>	The practice of limiting access to the minimal level that will allow normal functioning. Applied to employees, the principle of least privilege translates to giving people the lowest level of user access rights they can have and still do their jobs. The principle is also applied to things other than people, including programs and processes.
<b>provisional license</b>	A temporary license issued when not all licensing criteria are met but the deficiency is not severe enough to deny licensure.

<b>public-use facility (facility)</b>	An airport, landing field, or other aeronautical facility that is available for use by the general public without prior approval of the owner or operator.
<b>reportable condition</b>	A matter that, in the auditor's judgment, is less severe than a material condition and falls within any of the following categories: a deficiency in internal control; noncompliance with provisions of laws, regulations, contracts, or grant agreements; opportunities to improve programs and operations; or fraud.







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