

# Legislative Analysis

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## **PROHIBIT AIMING LASER AT OR TOWARD AIRCRAFT**

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<http://www.house.mi.gov/hfa>

**House Bill 4063 as enrolled**  
**Public Act 29 of 2017**  
**Sponsor: Rep. Laura Cox**

Analysis available at  
<http://www.legislature.mi.gov>

**House Bill 4064 as enrolled**  
**Public Act 30 of 2017**  
**Sponsor: Rep. Tom Barrett**

**House Committee: Law and Justice**  
**Senate Committee: Judiciary**  
**Complete to 7-25-17**

***BRIEF SUMMARY:*** House Bill 4063 prohibits the act of intentionally aiming a laser or other directed energy device at an aircraft or into the path of an aircraft or a moving train, makes the act a five-year felony, provides exceptions, and defines "directed energy device."

House Bill 4064 places a corresponding provision within the sentencing guidelines.

The bills take effect August 7, 2017.

***FISCAL IMPACT:*** House Bill 4063 would have fiscal implications for the state correctional system and local courts as discussed in the ***Fiscal Information*** section below.

### ***THE APPARENT PROBLEM:***

Over the past few years, aircraft across the country have experienced laser strikes from laser pointers while taking off or landing. According to media reports, dozens of laser strikes on planes at Detroit Metro Airport have been recorded recently by the Federal Aviation Agency (FAA). Airports around the state have also reported similar incidents. In February of this year, a green laser light was pointed at a helicopter belonging to the Oakland County Sheriff's Department while the helicopter was assisting in a search operation. Also that month, the Michigan State Police reported that one of their helicopters and three commercial airliners were lit up by lasers on the same night.

Most often, the lasers are used off airport property but are directed at planes while in protected airspace. Beams from high powered laser pointers are able to travel thousands of feet and if they hit a cockpit window can fill the cockpit with green light. If the beam hits a pilot's eye or eyes, the pilot can experience blurred vision or a temporary blindness referred to as "flash blindness" (similar to being in a dark room and having a flash bulb go off). Some pilots have experienced minor burns to the eyes. The flash blindness and/or blurring can last a matter of minutes or hours, and some pilots have needed several days

for their vision to return to normal. If severe enough, a pilot's eyesight could be permanently impacted.

Landings and take-offs are the most critical stages of flight, and pilots need to be their most focused. However, a pilot suffering from flash blindness or blurred vision cannot read the controls or the landing/take-off checklists used by pilots to ensure proper procedures are followed, or see out the windows to see what is before the aircraft. Obviously, the safety of the passengers and the aircraft are compromised if pilots cannot see at such a crucial stage of flight.

Because of the danger posed to the safety of aircraft passengers and crews, the federal government makes it a crime to point a laser at aircraft or in the pathway of an aircraft (maximum of five years in prison and/or up to a \$250,000 fine); a person could also be subject to a federal civil penalty for interfering with a crewmember of an aircraft (up to a \$25,000 fine). But, there is no state penalty at this time or federal penalty for targeting a moving train.

Many believe that Michigan should, like at least 17 other states, adopt its own prohibition and penalty for pointing lasers at aircraft. According to law enforcement, Michigan officers can only arrest someone pointing a laser at aircraft if there is probable cause that a separate criminal offense under state or local law has been violated, such as if the person had been drinking (e.g., disorderly conduct). The laser pointer can be confiscated and a report turned over to the FBI, but there is no guarantee that the FBI will launch an investigation or prosecution. If the state had its own law against pointing lasers or other potentially dangerous devices at aircraft or moving trains, offenders could be prosecuted whether or not federal authorities chose to be involved.

### ***THE CONTENT OF THE BILLS:***

Specifically, **House Bill 4063** adds a section to the Michigan Penal Code to prohibit a person from intentionally aiming a beam of directed energy emitted from a *directed energy device* at an aircraft or into the path of an aircraft or a moving train. "*Directed energy device*" is defined to mean any device that emits highly focused energy and is capable of transferring that energy to a target to damage or interfere with its operation. The term includes, but is not limited to, the following forms of energy:

- Electromagnetic radiation, including radio frequency, microwave, lasers, and masers (similar to lasers, but using microwaves instead of optical light).
- Particles with mass, in particle-beam weapons and devices.
- Sound, in sonic waves and devices.

#### Exceptions

The bill does not apply to any of the following:

- Individuals authorized in the conduct of research and development or flight test operations conducted by an aircraft manufacturer, the Federal Aviation

Administration (FAA), or any other person authorized by the FAA to conduct such research or tests.

- Members of the US Department of Defense (DOD) or the US Department of Homeland Security (DHS) when acting in an official capacity for the purpose of research, development, operations, testing, or training.
- A person using a laser emergency signaling device to send an emergency distress signal.

#### Penalty

A violation is a felony punishable by imprisonment for not more than five years and/or a fine of not more than \$10,000.

**House Bill 4064** amends the sentencing guidelines portion of the Code of Criminal Procedure to specify that aiming a beam of directed energy emitted from a directed energy device at or into the path of an aircraft or a moving train is a Class E felony against the public safety with a statutory maximum term of imprisonment of five years.

#### ***FISCAL INFORMATION:***

House Bill 4063 would have an indeterminate fiscal impact on the state's correctional system and on local court systems. Information is not available on the number of persons that might be convicted under the provisions of the bill, but new felony convictions would result in increased costs related to state prisons and state probation supervision. In fiscal year 2016, the average cost of prison incarceration in a state facility was roughly \$36,000 per prisoner, a figure that includes various fixed administrative and operational costs. State costs for parole and felony probation supervision averaged about \$3,500 per supervised offender in the same year. The fiscal impact on local court systems would depend on how the provisions of the bill affected caseloads and related administrative costs. Any increase in penal fine revenues would increase funding for local libraries, which are the constitutionally-designated recipients of those revenues.

House Bill 4064 amends sentencing guidelines and does not have a direct fiscal impact on the state or on local units of government.

#### ***ARGUMENTS:***

##### ***For:***

Green light lasers, even ones made to aid in presentations, are powerful enough to send beams that reach the height of aircraft, especially if the aircraft are in the process of taking off or landing. The lasers can be particularly dangerous to helicopters due to the lower altitude at which they fly. The light from these devices can engulf and fill the entire cockpit, thus interfering with a pilot's ability to read instruments or to see outside of the aircraft. A pilot cannot just close his or her eyes until the light dissipates and thus is more susceptible to longer term impairment or even blindness.

As stated earlier, though there is a federal prohibition and penalty, the FBI and federal prosecutors do not investigate or prosecute every case turned over to them by state or local law enforcement agencies. Once the legislation is enacted, a person could be charged under the new state law or the federal law should the federal authorities decide to proceed, or could be charged under both.

In light of the danger posed when a pilot cannot see to operate a craft safely, the bills provide an appropriate penalty for violations and perhaps effectively deter intentional attacks on aircraft. If the bills increase public awareness of the danger these devices pose, an added benefit may be to reduce unintentional occurrences such as holiday displays that inadvertently focus the direction of the lights upwards at angles that can strike passing planes or educate those who are unaware the beam from even a pen laser can reach a cockpit.

A Senate amendment to the bills applies the prohibition and penalties to targeting the pathway of moving trains in addition to aircraft. A laser pen attack can affect the vision of operators of freight, passenger, and commuter trains similarly to pilots. Unlike pilots, however, who typically have a co-pilot, there is usually only one person driving a train. If a driver sustains a hit to the eyes, the temporary blindness can cause the person to miss a signal, an upcoming curve, or debris on the track—thus increasing the risk of a crash, derailment, or other event that can result in injuries to riders and crew, as well as property damage.

***Against:***

Some concerns have been raised that the definition of what would constitute a "directed energy device" is too broad and encompasses technology that is not widely available or available at all. Though masers and some other devices using beams of directed energy such as sonic devices exist, they mainly are used in limited applications by law enforcement, the military, or in medical or scientific research. Other states and the federal government have limited the prohibition to lasers. The bills should be similarly restricted to what is commonly available, easily understood as violating the prohibition, and able to be successfully prosecuted.

***Response:***

Directed energy devices, commonly viewed as an umbrella term that relates to production of a beam of concentrated electromagnetic energy or atomic or subatomic particles, are viewed by some as being the weapons of the future. It is true that, unlike the federal law, the bills prohibit a broader range of potentially dangerous devices by using the term "directed energy device" rather than just "laser." However, a quick Internet search uncovers videos and other "how-to" guides to build your own devices using sound and lasers such as a sound gun or a 40-watt laser shotgun. Whether homemade devices are powerful enough today to disrupt a plane's navigation or blind a pilot or train operator, it may be prudent to include such devices now rather than find technology is advancing faster than expected.

Further, it is not uncommon for adjustments to statutory language to be made as technology progresses or in response to how courts interpret new statutes. For instance, at least one

overseas company has been experimenting with mounting lasers over the wheels on trains to burn off fallen leaves that have blown onto the tracks before the wheels can compress the leaves into a slippery Teflon-like substance that interferes with traction. Should this technology become viable, the language may be need to be tweaked if the bills' prohibitions are deemed to prohibit the use of such technology, even inadvertently, because the laser would be focused and directed "into the path" of the moving train. For now, however, the bills target conduct that is reasonably foreseeable and that could result in harm to the public safety.

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■ This analysis was prepared by nonpartisan House Fiscal Agency staff for use by House members in their deliberations, and does not constitute an official statement of legislative intent.