

Laser Information and Enforcement

FAA

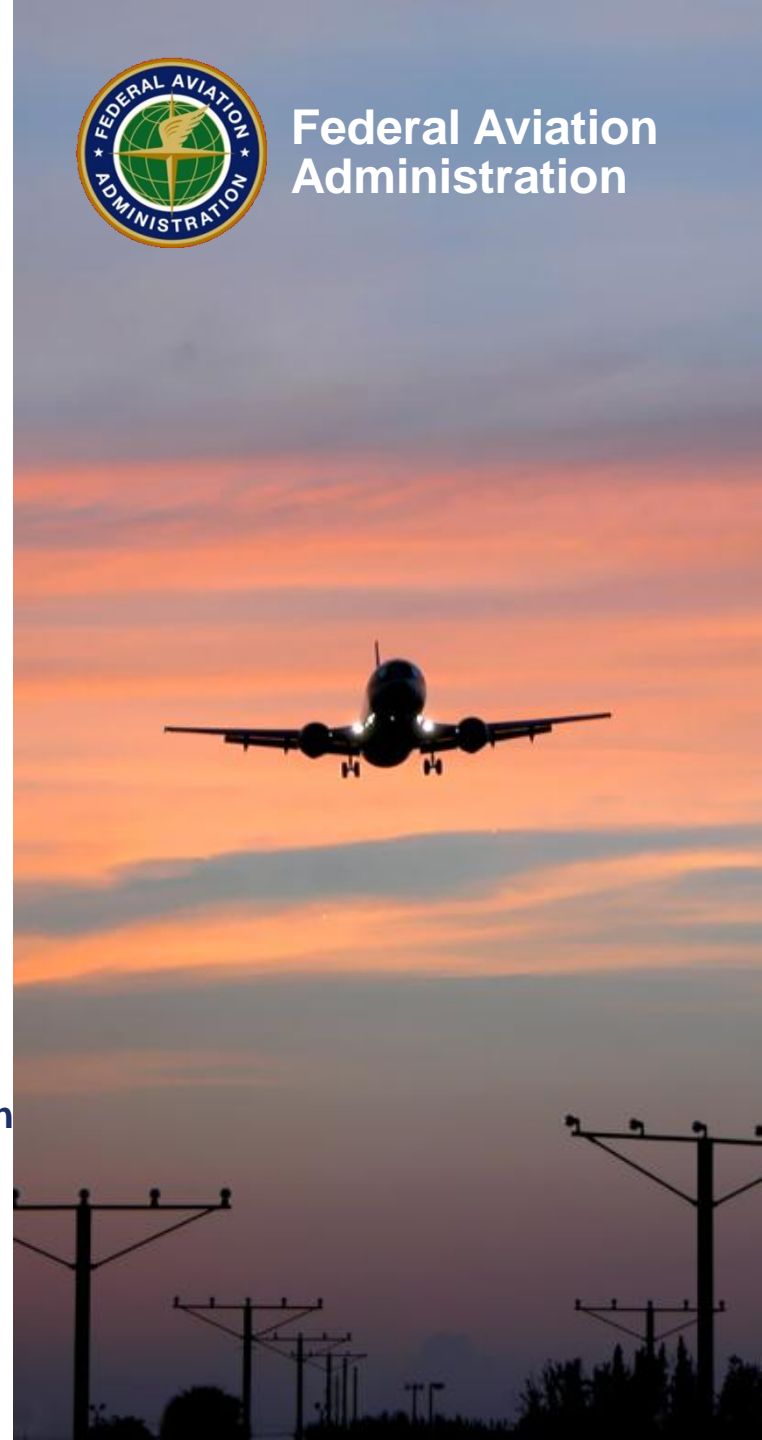
Presented to: **ALPA Laser Conference**

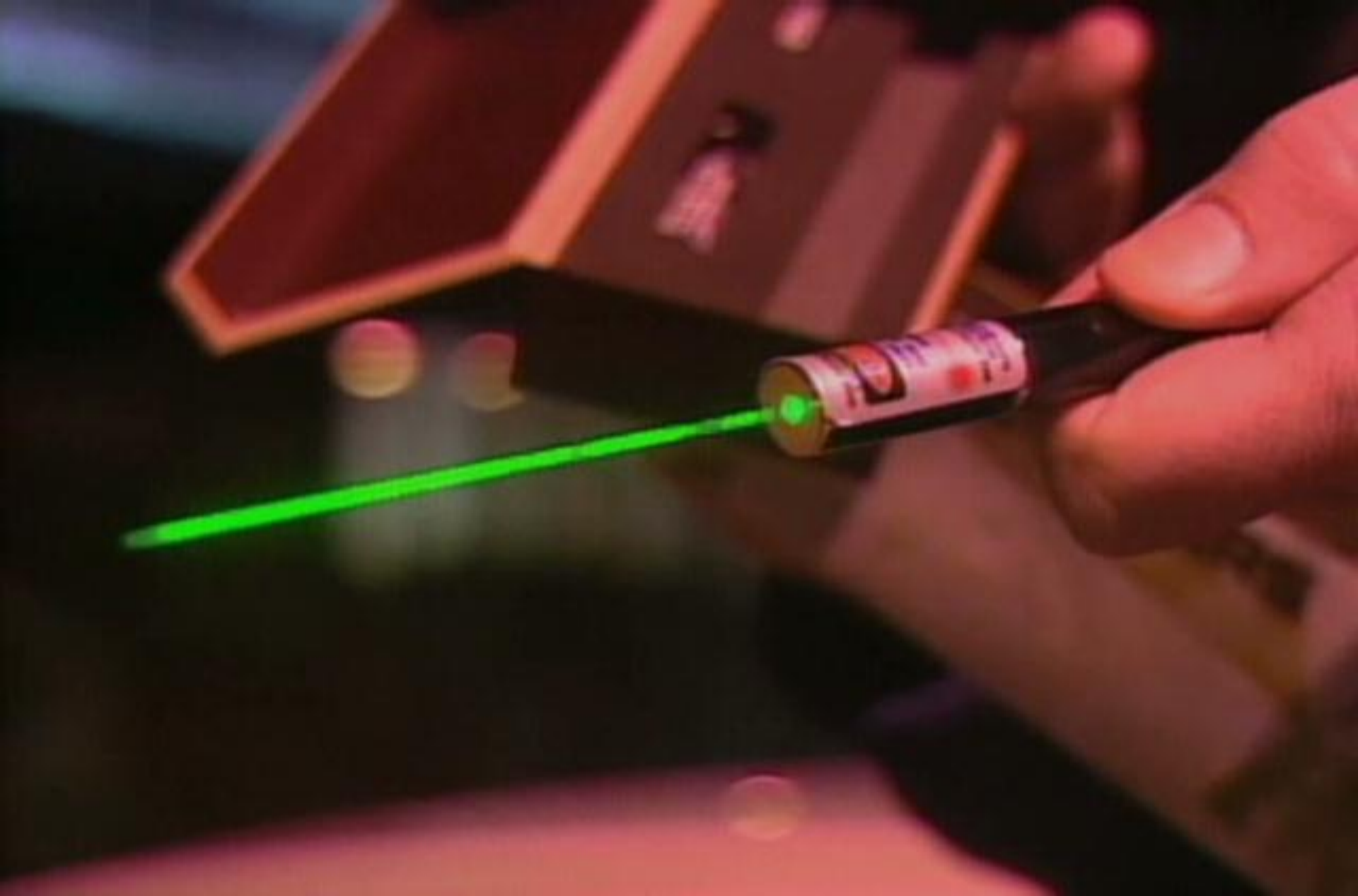
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Flight Standards Service, AFS-400

Date: **October 27, 2011**



Federal Aviation
Administration







Background

- **In late 1995, the FAA received reports of 52 incidents of aircraft illuminations from outdoor laser shows in Las Vegas, of these:**
 - 11 resulted in temporary visual impairment of flight crew members
 - 24 occurred during critical phases of flight
- **At FAA's request, the FDA issued a moratorium, ceasing all outdoor laser activities in the Las Vegas area on December 11, 1995**
 - Government and industry representatives met to develop appropriate guidelines



Laser Pointers – A New Dilemma

- **Handheld laser pointers present a threat to pilots**
- **Can have a range of 85 miles**
- **Can be 8,000 times brighter than the sun**
- **Can cause retinal damage**
- **Green lasers appear up to 35 times brighter than red lasers**



Misconceptions

- **A Laser Pointer:**
 - Is not a significant eye hazard
 - Is not an annoyance
 - Is not a hazard against aircraft, cars, people, etc.
 - Beam seems to end
 - Is thought to hit the aircraft but not the flight crew
 - Does not interfere with pilot's duties
 - Can't be held by a person at the same spot so any exposure is brief
 - That hits an aircraft is a small dot versus something that produces a large glare
 - Event is grossly exaggerated



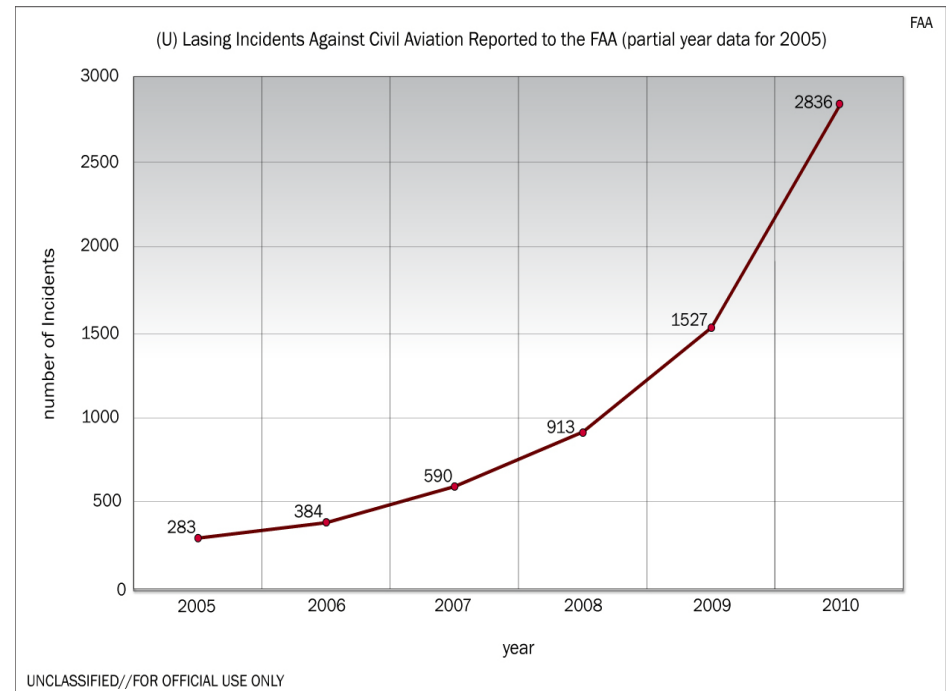
Unauthorized Illumination Events



Laser Incidents

- **Top Three Laser Events by Metro Area thru October 20, 2011:**

1. Phoenix 96
2. Philadelphia 95
3. Chicago 83



- **2,795 laser events year to date**
 - An average of 66 per week
 - 535 additional events vs. same date last year
- **2,836 laser events in 2010**
 - An average of 54 per week

Summary of Laser Events

- **Approximately 70% of laser incidents:**
 - Are below 10,000 ft AGL
 - Occur between 7-11 pm
- **Fewest laser incidents occur during May, June, and July**
- **Laser incidents are a global problem**
- **Laser incidents significantly affect low-flying LEO, Military, and EMS aircraft that can result in actual eye injuries and/or temporary visual effects**



U.S. Government

- **Department of Commerce** – responsible for the production and import of lasers
- **Food & Drug Administration** – has regulatory authority over laser light shows
 - FDA's Center for Devices & Radiological Health (CDRH) regulates manufacture, packaging, labeling, and import of radiation-emitting electronic products; including laser pointers. [FDA/CDRH: 21 CFR 1040.10/11](#) (*Food and Drugs; Performance for Light-Emitting Products; Laser Products and Specific Purpose Laser Products*)
- **FAA** – assists in the civil enforcement process of suspected individuals

Selected State and Local Laws

Website:

laserpointersafety.com

LaserPointerSafety.com
A comprehensive resource, for safe and responsible laser pointer usage.

Home
News ▶
Sentences for laser offenses
NEVER aim at aircraft
Don't aim at head & eyes
Tips for outdoor use
Safe outdoor laser shows
Fast facts for media
FAQ - General questions
FAQ for doubters
Aviation hazard facts, video
Perspectives & opinions ▶
Laser pico projectors
If you are hit by a laser
To report an incident
To find incident reports
How to reduce incidents ▶
Laser pointer laws ▶
Links
Files and downloads
About
Site map (list of all pages)

U.S. national, state and local laws

The following are some laws and regulations relating to laser pointers. This is not a comprehensive list, and it does not cover all laser-related laws (such as laws in Arizona, Texas, New York and elsewhere for the registration of laser equipment and/or laser show operators).

This list is intended to provide a starting point for additional research, and to illustrate how legislators attempt to define various terms and regulate various actions.

Please feel free to email us with any additional laws for this list. Also, [this 1999 paper](#) and [this 1999 story](#) may have some useful, if dated, information.

NATIONAL LAWS

- U.S. FDA/CDRH: 21 CFR 1040.10/11
- U.S. (proposed 2005-2011): Securing Aircraft Cockpits Against Lasers Act
- U.S. (proposed by LPS): LaserPointerSafety.com's "Protecting Pilots Against Lasers Act"

STATE AND LOCAL LAWS

- ARIZONA: Aiming a laser pointer at a peace officer
- ARKANSAS: Law enforcement; minors
- CALIFORNIA: Laser regulations
- FLORIDA: Law enforcement and illuminating vehicles
- ILLINOIS, statewide (proposed as of Feb. 2011): Criminalize discharge into cockpits
- ILLINOIS, statewide: General requirements
- ILLINOIS, county of Champaign: Possession and use
- ILLINOIS, village of Westchester: City bans possession by minors
- INDIANA: Laser pointer laws
- LOUISIANA, city of Baton Rouge
- MARYLAND, town of Ocean City (2010): Ban and

Arizona	Aiming a laser pointer at a peace officer
Arkansas	Law enforcement; minors
California	Laser regulations
Florida	Law enforcement and illuminating vehicles
Illinois	Statewide: General requirements
Illinois	County of Champaign: Possession and use
Illinois	Village of Westchester: City bans possession by minors
Louisiana	City of Baton Rouge
Maryland	Town of Ocean City: Harassment prohibited
Michigan	City of Dearborn: Unlawful to Harass
Minnesota	Crime to aim laser into cockpit
New York	New York City: Laser pointer regulations
Oregon	"Unlawful directing" of a laser pointer
Tennessee	Aiming a laser pointer at a law enforcement officer or similar
Texas	Law enforcement and aircraft illumination
Utah	Unlawful use of a laser pointer
Virginia	City of Virginia Beach: Misdemeanor to aim into eyes
**	Several more states have laws against laser pointers



Legal Interpretation of 14 CFR Part 91.11

- Released June 1, 2011


www.faa.gov/news/media/Laser%20Memorandum%20Final%20060111.pdf

- Part 91.11 presently states "no person may assault, threaten, intimidate, or interfere with a crewmember in the performance of the crewmember's duties aboard an aircraft being operated"



FAA Advisory Circular (AC) 70-2

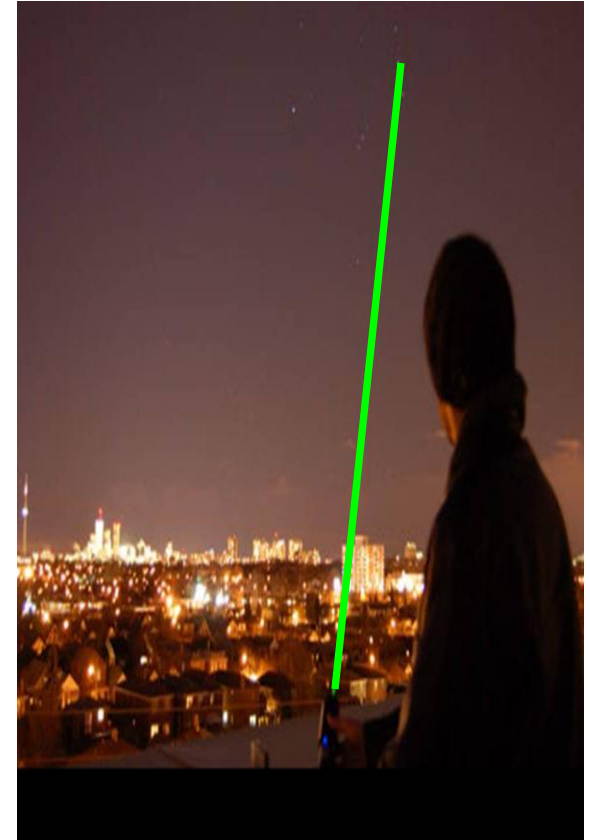
- Provides guidance to aircrews on the reporting of laser illumination incidents and recommended mitigation actions to be taken in order to ensure continued safe and orderly flight operations
- AC includes Laser Beam Exposure questionnaire

		U.S. Department of Transportation		Advisory Circular	
Federal Aviation Administration					
Subject: Reporting of Laser Illumination of Aircraft		Date: January 11, 2005	AC No: 70-2		
		Initiated by: ATO-R System Operations Security		Change:	
1. PURPOSE					
a. This Advisory Circular (AC) provides information to the aviation community, particularly air crews, operating within the National Airspace System (NAS) regarding steps taken by the Federal Aviation Administration to address the unauthorized illumination of aircraft by lasers.					
b. In addition, this AC provides guidance to air crews on the reporting of laser illumination incidents and recommended mitigation actions to be taken in order to ensure continued safe and orderly flight operations.					
c. This AC is promulgated in response to the recent, increasing incidents of unauthorized illumination of aircraft by lasers, as well as the proliferation and increasing sophistication of laser devices available to the general public and other parties. FAA and other governmental studies indicate that the exposure of air crews to laser illumination may cause hazardous effects (e.g., distraction, glare, afterimage flash blindness, and, in extreme circumstances, persistent or permanent visual impairment), which could adversely affect the ability of air crews to carry out their responsibilities.					
d. The FAA, in coordination with other governmental stakeholders, such as the Transportation Security Administration (TSA), is taking immediate steps to safeguard flights against these unauthorized illuminations.					
2. AUTHORITY					
a. The FAA has the authority to regulate the safe and efficient use of navigable airspace (Title 49 U.S.C.,					
Section 40103, Sovereignty and Use of Airspace, and the Public Right of Transit).					
b. The FAA also has the authority to protect the flight of aircraft in air commerce (Title 49 U.S.C., Section 44701(a)(5)).					
3. EFFECTIVE DATE This advisory circular becomes effective January 19, 2005.					
4. FAA NOTIFICATIONS AND REPORTING					
a. All FAA Air Traffic Control (ATC) facilities will immediately report unauthorized laser illumination incidents through the Domestic Events Network (DEN). The DEN, <i>inter alia</i> , supports the sharing of real-time security-related information affecting NAS air traffic operations among the FAA, TSA, and other governmental stakeholders, including law enforcement agencies. This information will be used to support appropriate action taken by these governmental entities to safeguard the safety and security of aviation operations in the NAS.					
b. The ATC report will include event date and time (UTC), operator, flight number, type of aircraft, nearest major city, altitude, location of event (e.g., latitude/longitude and/or Fixed Radial Distance (FRD)), a brief description of the event, and any other information needed to support the aforementioned action.					
c. If the laser event occurs in the vicinity of an FAA air traffic control terminal facility, ATC will notify flights operating in the					
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HQ Laser Enforcement Working Group

- **Members**

- FAA Flight Standards
- FAA Air Traffic Operations Security
- FAA Security Investigations
- FAA General Counsel
- FAA Civil Aeromedical Medical Institute
- FAA Federal Air Marshal (assigned to FBI)
- DHS (Department of Homeland Security)
- FBI (Federal Bureau of Investigation)
- CBP (Customs and Border Protection)
- U.S. Coast Guard
- Air Line Pilots Association, International
- Helicopter Association International
- Aircraft Owners and Pilots Association



Flight Crew Actions

- **Don't rub your eyes**
- **Don't look into the beam**
- **Shield your eyes**
- **Look at your instruments**
- **Maintain control of the aircraft**
- **Turn the background lights up**
- **Turn on the autopilot**
- **Communicate with the other pilot**
- **If needed, transfer command to other pilot**
- **Inform ATC**



Laser Information- FAA Guidance

- **AC 70-1, *Outdoor Laser Operations***
- **AC 70-2, *Reporting of Laser Illumination of Aircraft***

http://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.list/parentTopicID/123

- **Outdoor Laser Events -**
www.faa.gov/regulations_policies/policy_guidance
- **Laser FAQ's and Contact Information**

www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/aaim/organizations/airspace_rules/laser

Laser Information- FAA Reports

- **Laser Hazards in Navigable Airspace**

www.faa.gov/pilots/safety/pilotsafetybrochures/media/laser_hazards_web.pdf

- **The Effects of Laser Illumination on Operational and Visual Performance of Pilots Conducting Terminal Operations**

www.faa.gov/library/reports/medical/oamtechreports/2000s/media/0312.pdf

- **A Review of Recent Laser Illumination Events in the Aviation Environment**

www.faa.gov/library/reports/medical/oamtechreports/2000s/media/200623.pdf



The Impact of Laser Illuminations

Is this dangerous?



- Is it an aircraft's position light?
- Is it a laser from a weapon?
- Is it a laser pointer?

Thank you!

To help educate the public and make it easier to report a lasing event, we have created a new web site devoted to this issue which we will be launching:

<http://www.faa.gov/go/laserinfo>

