

# **Discussion Points and Considerations Regarding Aircraft Illumination Requirements During Taxi Operations on Joint-use Streets of the Cameron Park Airport District.**

**Glenn S. Gordon  
Resident - Cameron Park Airport District  
January 30, 2023**

**The current rule reads as follows: (ref 2021 revision)**

*No aircraft shall be permitted on "aircraft" streets without adequate landing lights, which shall be in operation thirty (30) minutes after sundown and thirty (30) minutes before sunrise, while aircraft is taxiing on the "aircraft" streets.*

**I recommend that the rule be retained and modified (pending CPAD & legal review) to capture the spirit of the existing rule with possible new wording to read...**

*No aircraft is permitted on Joint-use streets without a landing light or a taxi light, which must be in operation from Sunset to Sunrise, once the aircraft's engine is started and is running.*

\* Note: The last clause of the proposed rule, is to be inclusive of the FAA Flying handbook FAA-H-8083-3B's verbiage "To avoid excessive drain of electrical current from the battery, it is recommended that unnecessary electrical equipment be turned OFF until after the engine has been started. After starting the engine and when ready to taxi, turn the taxi or landing light ON."

\*\* Note: FAA regulations, certification standards, and FAA aircraft lighting documents are included with this docket, and are written for use by pilots/aircraft under the assumption that the discussed operations are occurring on an airport. The CPAD rules are specifically for use on the Joint-use streets, which are, by definition, not part of the O61 airport. FAA regulations or governing aircraft operation standards perhaps carry some applicability to our situation, but they were not written for Joint-use streets, nor do they directly or indirectly convey, in letter or in spirit, the means to address safety issues unique to Joint-use streets.

## **Today's standard per Federal Aviation Regulations**

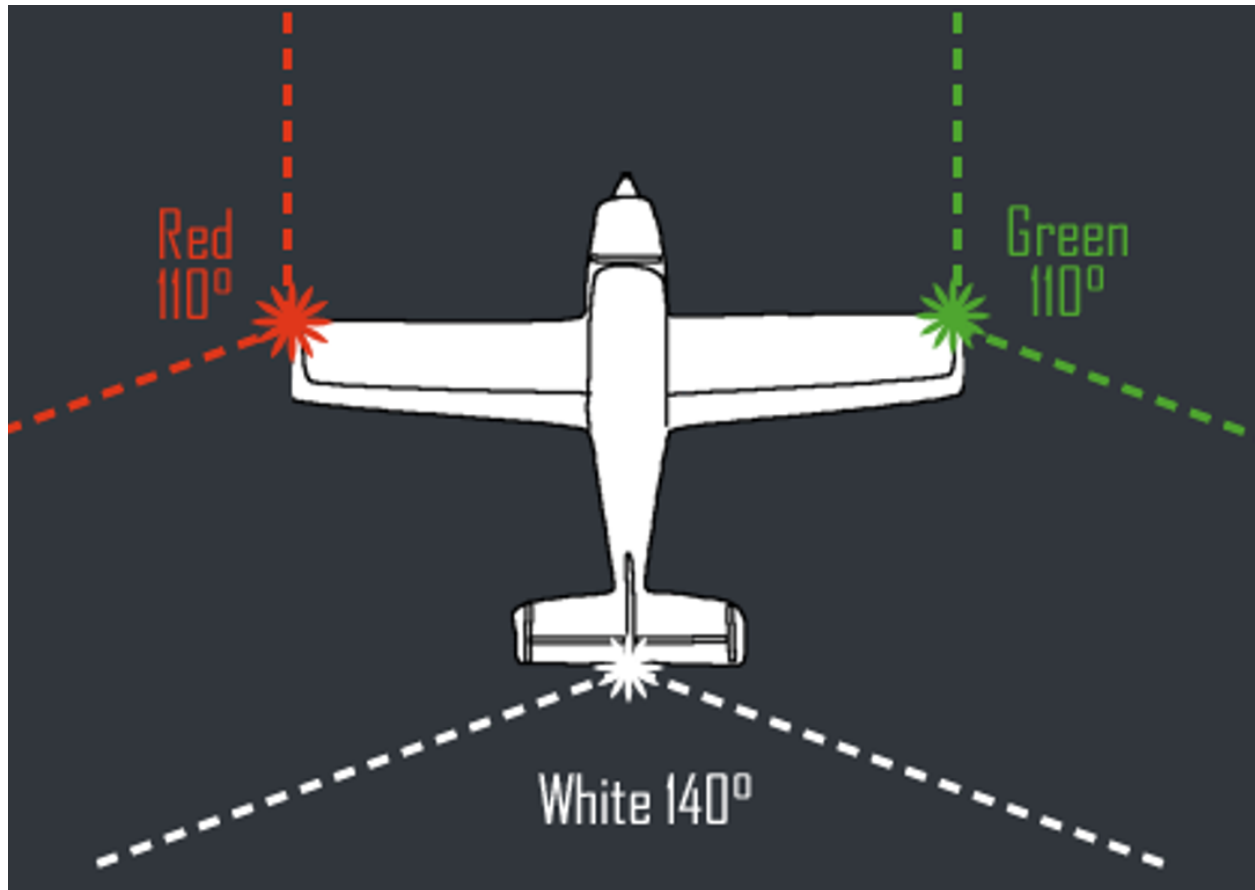
The following aircraft lighting regulations are related to general aircraft night operations and whose jurisdiction would also cover operations within the special district.

14 CFR part 91, section 91.205(c)(3) specifies that during VFR flight at night, operating aircraft are required to have an approved anti-collision light system, which can include a flashing or rotating beacon and position lights. However, 14 CFR part 91, section 91.209(b) gives the pilot-in-command leeway to turn off the anti-collision lights in the interest of safety. There are no part 91 sections stating a required use of landing or taxi lights.

This leaves position lights as the sole required illumination on an aircraft taxiing through our streets.

**Position lights are not adequate to provide sufficient illumination and visibility to other aircraft, vehicles, or pedestrians on the Joint-use streets.**

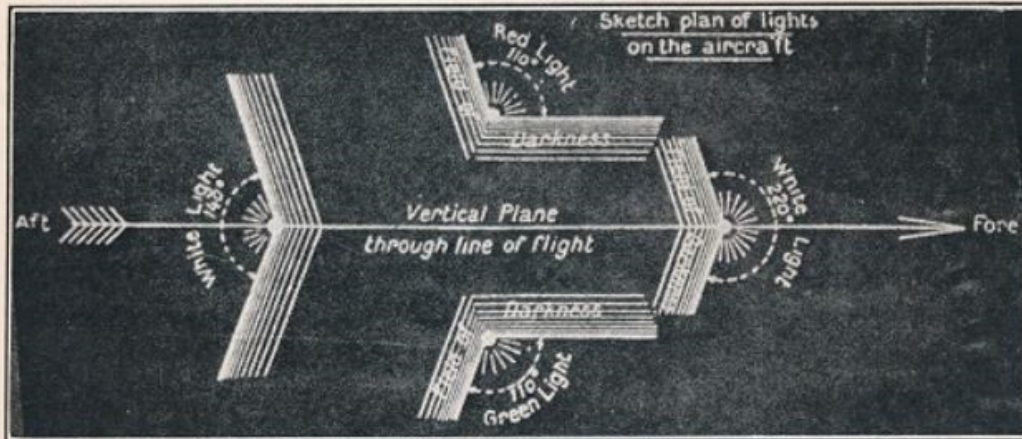
14 CFR part 91, section 23.1385 describes in detail the requirements and required limits of operation of the aircraft's position lights.



Not only are position lights not adequate to provide sufficient illumination and visibility to other aircraft, vehicles, or pedestrians under nominal conditions, but by design requirements and definition, **position lights feature several blind-spots or dark viewing angles**. While it may be possible for position light beams to overlap, is not the design intent for them to do so as prescribed by FARs 23.1387, 23.1388, and 23.1389. Maximum intensities for light beam overlap are purposefully limited and prescribed in FAR 23.1395 and are further clarified in AC NO: 20-74 AIRCRAFT POSITION AND ANTICOLLISION LIGHT MEASUREMENTS.

These blind-spots can be further illustrated from the origin document for the current FARs. The Paris Convention of 1919 (formally, the Convention Relating to the Regulation of Aerial Navigation) was the first international convention to address the political difficulties and intricacies involved in international aerial navigation. In this document, the blindspots were recognized and titled as **"Field of Darkness"**.

rules as shown in the sketch (attached) shall be determined when the aircraft is in its normal attitude for flying on a rectilinear horizontal course.



1. The rules concerning lights shall be complied with in all weathers from sunset to sunrise, and during such time no other lights which may be mistaken for the prescribed lights shall be exhibited. The prescribed navigation lights must not be dazzling.

2. A flying machine, when in the air or manœuvring on land or water under its own power, shall carry the following lights: —

- (a.) Forward, a white light visible in a dihedral angle of 220 degrees bisected by a vertical plane through the line of flight, and of such a character as to be visible at a distance of at least 8 kilometres.
- (b.) On the right side, a green light so constructed and fixed as to show an unbroken light between two vertical planes whose dihedral angle is 110 degrees when measured to the right from dead ahead, and of such a character as to be visible at a distance of at least 5 kilometres.
- (c.) On the left side, a red light so constructed and fixed as to show an unbroken light between two vertical planes whose dihedral angle is 110 degrees when measured to the left from dead ahead, and of such a character as to be visible at a distance of at least 5 kilometres.

(d.) The said green and red side lights shall be fitted so that the green light

**Standards for rules:**

The aforementioned rule recommendation comes in response to the CPAD Street Rules Ad-Hoc Committee meeting, during which it was agreed upon that the following standards for challenging new rules should be considered.

- A. Is it needed?**
- B. Is the lack of a rule condoning a dangerous condition?**
- C. Is there precedence for a rule?**
- D. Is there a liability concern?**
- E. Is the proposed rule enforceable simply?**
- F. Are violations easy to detect?**
- G. Does the rule promote aviation and the airport's future?**

On the following pages I have compiled a list of 20 responses which serve as affirmation to these challenges.

## **A. Is it needed?**

1. Yes. It is needed for drivers in California and even the ad-hoc committee agreed that the rule should exist for motorized vehicles operating on Joint-use streets.
2. Yes. It is required for cars. If it is needed for cars, why would it not be needed for airplanes which DO NOT already have an existing FAA rule governing required use of landing or taxi lights in a same or similar circumstance that occurs on our Joint-use streets?
3. Yes. This proposal seeks to clarify and strengthen an existing rule, which was previously deemed as "needed" and currently exists through a rulemaking process.
4. Yes. An aircraft operating with minimal lights under FAA standards doesn't project light forward in the direction of travel, so as to make obvious its presence to oncoming traffic. Current FAA minimum requirements require a nav light on each wing tip
5. Yes. NTSB report CHI96FA323, involving a nighttime fatal collision occurring on a non-public / private airpark taxiway involving a head-on collision between a motor vehicle and aircraft taxiing with only position lights illuminated, cited the need for such a rule.

**Challenge consideration 1:** Since the State law above already exists for cars, why should the vehicle lighting be included in the O61 rules?

Because the CA VEH code is specific to general-use vehicles on roads where there is a reasonable expectation by drivers of encountering only motorized land-based vehicles. Our Joint-use streets should include considerations specific to special situations encountered by CPAD drivers of vehicles and aircraft, which promote the safety of all drivers.

**Challenge consideration 2:** Since a similar rule already exists, specifically, when and why would this have changed from being "needed" to being "not-needed"?

*Ref. - California vehicle code 24400 & seq., requires that "Drivers must use their headlights in darkness, as well as in inclement weather conditions that prevent the driver from clearly discerning a person or another motor vehicle from 1,000 feet away, or about 1/5 of a mile, or slightly more than 3 football fields."*

## **B. Is the lack of a rule condoning a dangerous condition?**

1. Yes. Since the existing rule is currently considered "needed" in order to mitigate a dangerous condition, a removal of this long-standing rule would be a conscious and intentional decision by the committee. Such an intentional deletion/omission of the same, or of a similar rule, is effectively condoning a dangerous situation.
2. Yes. Within FAA Advisory Circular AC 91-42D titled "Hazards of Rotating Propeller and Helicopter Rotor Blades" (attached), it should be noted that in the 9 fatalities exemplified, 7 of the 9 fatalities were passengers or bystanders, NOT people operating or involved in the operation of the aircraft. In other words, these were people who were not familiar with aircraft operations.
3. Yes. The lack of a rule addressing this topic was cited as a contributing factor in NTSB report CHI96FA323. This was a nighttime fatal collision occurring on a non-public / private airpark taxiway and involved a head-on collision between a motor vehicle and aircraft taxiing with only position lights illuminated.

The accident analysis notes; "there was no rule, or note of caution, in the Airport Rules and Regulations concerning the use of landing lights at the residential airstrip while taxiing at night."

Finding (F) was titled "INSUFFICIENT STANDARDS/REQUIREMENTS - OTHER INSTITUTION.

4. Yes. The intention of the rule is to assist in fostering safe operations in an environment consisting of aircraft operating in a public and uncontrolled environment that includes pedestrians, animals, motorized, and non-motorized vehicles. The majority of this "public" element has no familiarity with aviation safety considerations.

\* Note: The term "propeller-to-person" is used by the FAA to describe fatalities associated with accidents involving direct contact with a person, however my intent is not to exclude other types of accidents such as bicycle, motorcycle, and other motor vehicles making contact with aircraft.

**C. Is there precedence for a rule?**

1. Yes. The current rule serves as precedence.
2. Yes. Even within controlled "Airport" environments, propeller-to-person accidents and fatalities occur. A public environment with Joint-use streets presents even more opportunities for these incidents to occur.
3. Yes. NTSB accident reports have specifically cited the need for operating standards in same or similar environments. See attached NTSB report.

**D. Is there a liability concern?**

1. Yes. Having had a rule to address the topic, and then intentionally excluding it, poses a liability concern.
2. Yes. Being aware that fatalities have occurred in even more controlled environments, and doing nothing about it, poses a liability concern.
3. Knowing that the NTSB recommends the need for operating standards in same or similar environments, and then not acting upon these recommendations, poses a liability concern.

**E. Is the proposed rule enforceable simply?**

1. Yes. It has been determined by CPAD and legal counsel that simply enforceable Joint-use street rules can be made, which apply to all manner of users of the Joint-use streets including pedestrians, operators or motorized vehicles, and operators of aircraft.

**F. Are violations easy to detect?**

1. Yes. It can be quickly determined whether a violation occurs between the universally recognized and FAA-defined time from sunset to sunrise.
2. Yes. It can be quickly determined whether an aircraft's taxi or landing light is on or off.

**G. Does the rule promote aviation and the airport's future?**

1. Yes. Taking reasonable precautions in the spirit of public safety, promotes aviation and the airport's future.
2. Yes. Taking reasonable actions in the spirit of reducing the airport's liability footprint, promotes aviation and the airport's future.