



**Figure 10-2.** *Position lights.*

Landing lights are not only useful for taxi, takeoffs, and landings, but also provide a means by which airplanes can be seen at night by other pilots. Pilots are encouraged to turn on their landing lights when operating within 10 miles of an airport and below 10,000 feet. Operation lights on applies to both day and night or in conditions of reduced visibility. This should also be done in areas where flocks of birds may be expected.

Although turning on aircraft lights supports the “see and be seen” concept, do not become complacent about keeping a sharp lookout for other aircraft. Most aircraft lights blend in with the stars or the lights of the cities at night and go unnoticed unless a conscious effort is made to distinguish them from other lights.

## Airport and Navigation Lighting Aids

The lighting systems used for airports, runways, obstructions, and other visual aids at night are other important aspects of night flying. Lighted airports located away from congested areas are identified readily at night by the lights outlining the runways. Airports located near or within large cities are often difficult to identify as the airport lights tend to blend with the city lights. It is important not to only know the exact location of an airport relative to the city, but also to be able to identify these airports by the characteristics of their lighting pattern.

Aeronautical lights are designed and installed in a variety of colors and configurations, each having its own purpose. Although some lights are used only during low ceiling and visibility conditions, this discussion includes only the lights that are fundamental to visual flight rules (VFR) night operation.

It is recommended that prior to a night flight, and particularly a cross-country night flight, that a check of the availability and status of lighting systems at the destination airport is made. This information can be found on aeronautical charts and in the Chart Supplements. The status of each facility can be determined by reviewing pertinent Notices to Airmen (NOTAMs).

Most airports have rotating beacons. The beacon rotates at a constant speed, thus producing a series of light flashes at regular intervals. These flashes may consist of a white flash and one or two different colors that are used to identify various types of landing areas. For example:

- Lighted civilian land airports—alternating white and green lights
- Lighted civilian water airports—alternating white and yellow lights
- Lighted military airports—alternating white and green lights, but are differentiated from civil airports by dual peaked (two quick) white flashes, then green

Beacons producing red flashes indicate obstructions or areas considered hazardous to aerial navigation. Steady-burning red lights are used to mark obstructions on or near airports and sometimes to supplement flashing lights on en route obstructions. High-intensity, flashing white lights are used to mark some supporting structures of overhead transmission lines that stretch across rivers, chasms, and gorges. These high-intensity lights are also used to identify tall structures, such as chimneys and towers.

As a result of technological advancements, runway lighting systems have become quite sophisticated to accommodate takeoffs and landings in various weather conditions. However, if flying is limited to VFR only, it is important to be familiar with the basic lighting of runways and taxiways.

The basic runway lighting system consists of two straight parallel lines of runway edge lights defining the lateral limits of the runway. These lights are aviation white, although aviation yellow may be substituted for a distance of 2,000 feet from the far end of the runway to indicate a caution zone. At some airports, the intensity of the runway edge lights can be activated and adjusted by radio control. The control system consists of a 3-step control responsive to 7, 5, and/or 3 microphone clicks. This 3-step control turns on lighting facilities capable of either 3-step, 2-step, or 1-step operation. The 3-step and 2-step lighting facilities can be altered in intensity, while the 1-step cannot. All lighting is illuminated for a period of 15 minutes from the most recent time of activation and may not be extinguished prior to end of the 15-minute period. Suggested