Whelen Engineering graphically shows night flight requirements

Time To Check Anticollision

Have you taken a look lately at FAA's list of required equipment for night flight? Well, if you haven't, now might be a good time for a quick looksee at the regulations. Under terms of an amendment to the Federal Aviation Regulations (FAR, Part 91.33), all aircraft must now have an approved anticollision lighting system, either white or red, to be legal for night operations. Dead line for compliance with the new requirements, incidentally, was this past Aug. 11 [Oct. 1971 PILOT, page 45; Aug. 1971 PILOT, page 9; Aug. 1970 PILOT, page 54].

Despite the revised requirements set out in the amended FARs for anticollision lighting systems, a system that was installed and approved by FAA prior to Aug. 11, 1971, still meets the minimum equipment requirements.

A minimum output of 100 effective candlepower is required, and coverage standards have been set at 360 degrees around the aircraft's vertical axis and \pm 30 degrees to the aircraft's horizontal plane without pilot and crew interference.

At first examination, the preceding might seem a simple requirement to comply with, but compliance apparently is easier discussed than accomplished, according to some aircraft lighting firms. Whelen Engineering Company, Inc., Deep River, Conn., for example, has gone to the trouble of developing a special pamphlet that details anticollision requirements. The illustrated pamphlet, entitled "What Is An FAA Approved



Anti-Collision Light System?," graphically attempts to explain what is now required under the FARs. Company officials readily said yes to a request that The PILOT be allowed to reproduce information in the pamphlet for the benefit of readers (see accompanying illustrations). For complete compliance with the FARs, all anticollision hardware must be FAA-approved.

The new federal standards are spelled out in FAR 23.1397 and FAR 23.1401. FAA's established procedure for installation of approved lighting systems is contained in Advisory Circular (AC) 43.13-2, Chapter 4, Change 10 and Change 11, according to Whelen Engineering.

Besides establishing new light-intensity requirements, FAA has also set out a solid-angle light blockage minimum. Any new aircraft that applies for an original type certificate after the Aug. 11, 1972, effective date must have a lighting system producing 400 effective candles, either red or white, Whelen officials noted.

So, if you haven't run a check on the current lighting requirements for night flights and you plan to fly at night, it might be well worth your time to make a close study of the accompanying illustrated material. \Box



An approved anti-collision strobe light system must project light 360° around the aircraft's vertical axis. One or more strobe lights can be used.



An approved anti-collision strobe light system must project light +/- 30° above and below the horizontal plane of the aircraft. One or more strobe lights can be used.

An approved anti-collision light system must produce an envelope of light a minimum of 100 effective candles in aviation red or aviation white (Ref. FAR 23.1397), 360° around the aircraft's vertical axis +/- 30° above and below the horizontal plane with a maximum of .5 steradians (1642 sq°) of solid angle blockage, (Ref. FAR 23.1401).

Described on this page are 5 basic types of installations approved by the administrator.



One anti-collision strobe light mounted on the vertical fin will meet the minimum requirements on most aircrafts. A half red and half white lens is recommended.



Enclosed wingtip anti-collision strobe lights, require a third strobe light on the tail or vertical fin, to fill in the required light envelope. This is an approved anti-collision system.



Two wingtip strobe lights that protrude beyond the wingtip, their light converging in front and back of the aircraft within 1200 ft., is considered an approved anti-collision strobe light system.



A fuselage mounted anti-collision strobe light system requires a minimum of two strobe lights to get the required vertical coverage. This is an approved anti-collision system.