Federal Aviation Agency

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ADVISORY CIRCULAR

SUBJECT: EFFECT OF RUNWAY LIGHTING FACILITIES ON LANDING MINIMUMS

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1. PURPOSE. This advisory circular is being issued to advise all interested persons of the considerations which the Agency has given, and will continue to give, to runway lighting facilities in the reduction of weather minimums for landing.

2. BACKGROUND. Due to the importance of runway lighting in aiding the pilot to identify and orient himself with the landing runway in the space of time available between the first visual contact with the approach lights and the touchdown, the availability and effectiveness of such lighting has a significant effect on the landing weather minimums which are established. The types of lighting facilities and the consideration given them by the Agency in the establishment of landing weather minimums are discussed herein.

3. RUNWAY EDGE LIGHTS. High Intensity Runway Lights (HIRL) have long been considered essential to landing operations in weather conditions of 200-1/2 in order to provide the guidance, identification, and orientation necessary for operations during such conditions. The usual longitudinal spacing of these lights is 200 feet. The Agency has, in several instances, authorized landing minimums of 2,000 feet RVR based on the availability of such high-intensity lights spaced at 100-foot intervals. While such authorizations will be continued at these airports, it is not intended to approve such minimums at additional airports on this basis. Other than the above-mentioned instances where landing minimums of 2,000 feet RVR have been approved on the basis of 100-foot spacing of high intensity runway edge lights, 2,400 feet RVR is the lowest landing minimum which will be approved at airports where runway edge lighting is not supplemented by touchdown zone and runway centerline lighting.

4. TOUCHDOWN ZONE AND CENTERLINE LIGHTING. In order to insure successful completion of landings during visibility conditions of less than 2,400 feet RVR, the Agency intends to require touchdown zone and centerline

lighting for landing operations during such visibility conditions. The narrow gauge (60 feet) provided by the touchdown zone lights provides additional lighting within the area of the pilot's peripheral vision during the final stages of the approach. These added visual cues provide him with improved roll and directional information while at the same time boldly outlining the runway touchdown area. Thus, the touchdown zone lights together with the centerline lights furnishes the pilot with easy and ready identification of the touchdown area and centerline of the runway which facilitates touchdown at the proper point and improved guidance during rollout and deceleration.

When touchdown zone and runway centerline lighting are available in addition to high intensity runway edge lights spaced at no more than 200 feet longitudinally, landing minimums of 1,800 feet RVR may be authorized for propeller-driven aircraft and for two-engine turbojet aircraft. All other required aids, of course, must be operative; i. e., full configuration A approach lights with condenser discharge flashers, and the complete instrument landing system with compass locator at outer marker, or precision approach radar system.

5. RUNWAY END IDENTIFICATION LIGHTS SYSTEM (REILS). A runway end identification light system, if adequate, also provides assistance in locating the runway end sufficient to permit a reduction in straight-in VOR, ASR, and ILS localizer approach landing minimums from 400-1 to 400-3/4. As the effectiveness of runway end identification lights may vary considerably, the Agency will, prior to development of standards for such lighting systems, approve a reduction of landing minimums based on these lights only at specified airports. A further reduction to 300-3/4 also may be made at such specified airports if a survey of obstruction heights at these airports reveals that such reduction is feasible.

6. OTHER VISUAL AIDS. Other visual aids to approach and landing are under development and consideration. Also, in an effort to promote safer and more dependable operations during instrument weather, facilities, including RVR equipment, are being expanded. The Agency will constantly re-evaluate the policies expressed herein to assure that they are consonant with the development and expansion of all such aids.

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