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Supplement No. 11 — March 19, 1953

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SUBJECT: 40.101
Weather Minimums

40.101-1 Ceiling and Visibility Minimums

The Office of Aviation Safety announces changes to the policy statement on ceiling and visibility minimums issued on December 29, 1950.

Since ceilings are reported by the Weather Bureau in 100 foot increments, this supplement is issued to include existing CAA policy with respect to the application of the obstruction clearance criteria in determining landing ceiling minimums to the nearest 100 feet.

The attached new sheet containing the above described amendment should be inserted in lieu of the present page 40.101-1(c)(5) dated October 1, 1951.

John T. Warlick
for E. S. Hensley
Director, Office of
Aviation Safety

Attachment

Distribution: Air 4, 4a, 11, 14, 40 all tabs,
40B, 40D, 40-F-1, 40-1

(v) LOWEST LANDING MINIMUMS. Where no adjustment to the ceiling minimums is necessary for obstruction clearance as explained in (a) below, landing minimums of 200-1/2 are the lowest minimums which may be approved at the present time with all components of the ILS or GCA facilities in operation. Exception to these minimums may be made at specific locations where the installation of improved navigational aids so warrants.

(a) ADJUSTMENT OF CEILING MINIMUMS FOR OBSTRUCTION CLEARANCE. When the minimum obstruction clearance as described in §609.10 (formerly CAM 60.46-8) cannot be met in the approach area, consideration will be given to establishing ceiling minimums which will afford comparable safety. In this event, the ceiling minimums will be determined by the application of the following formula to all obstructions projecting above the established slope line and located, in the case of an ILS procedure, in the approach area between the outer marker and the end of the runway, or in the case of a GCA procedure, in the approach area within a distance of five miles, outward from the end of the runway:

(i) Extend a line horizontally outward from the top of each obstruction and parallel with the runway center line to a point of intersection with the established slope line, and from that point extend a line vertically to a point of intersection with the glide path. The point of intersection at the highest level of the glide path as established by the foregoing formula will determine the minimum ceiling that may be considered.

(ii) Where minimum obstruction clearances cannot be met in the transitional and horizontal surfaces immediately adjacent to the approach area and when deemed necessary, consideration will be given to an adjustment in the ceiling minimums commensurate with the degree of interference presented by the particular obstruction or obstructions.

(iii) When application of the formula set forth in the preceding sub-paragraphs to an obstruction projecting above the established slope surface indicates a ceiling of less than 300 feet, the ceiling will not be reduced below 300 feet until it has been determined by flight checks that the lower ceiling may be authorized.

(4) LOWEST LANDING MINIMUMS UTILIZING BACK COURSE OF THE ILS. Straight-in approach minimums of 300-1 or 400-3/4 may be approved on the back course of the ILS provided (i) the criteria outlined in §609.10 (formerly CAM 60.46-8(j)(2)) is complied with, (ii) the approach is monitored by surveillance radar, (iii) high intensity runway lights or approach lights are in operation on the runway to which the approach is being conducted, (iv) the obstruction clearance criteria is complied with as outlined in §609.10 (formerly CAM 60.46.8), and (v) the establishment of such a procedure will not adversely affect traffic at the airport concerned.

(5) PPI APPROACH. Minimums for a PPI approach will be established in the same manner as outlined in paragraphs (c)(1)(i) and (c)(1)(ii) above for a regular or circling approach.

(6) AIRPORTS NOT SERVED BY A RADIO NAVIGATIONAL OR LET-DOWN FACILITY.

(i) TAKE-OFF MINIMUMS. Take-off minimums for both two and four-engine aircraft may be approved as low as 300-1 if, after a consideration of all obstructions in the immediate vicinity of the end of the runway used, and of the facilities and procedures used to avoid all obstacles in the take-off area, it is determined that a safe climb to the minimum en route altitude can be made.

(ii) LANDING MINIMUMS. Landing minimums as low as 1000-1 may be approved for airports located outside of control zones; and as low as 1000-3 for airports located in control zones if, after consideration of the terrain in the vicinity of the airport and the traffic density in that area, the Administrator deems that operations at these minimums assures an adequate level of safety.

(7) APPLICATION OF OBSTRUCTION CLEARANCE CRITERIA IN DETERMINING LANDING CEILING MINIMUMS. Unless safety requires otherwise, landing ceiling minimums for approaches using a radio range or comparable facility will be shown on the operations specifications - airport to the nearest 100 feet. For example, assuming that the controlling obstruction at an airport is 249 feet high, a ceiling minimum of 500 feet will normally be considered as meeting the obstruction clearance criteria outlined in paragraph (c)(1)(i) above. If, on the other hand, such obstruction were 250 feet high, minimums of 600 feet will normally apply. In cases where the ILS obstruction clearance criteria cannot be met, the ceiling arrived at by application of the formula contained in paragraph (c)(3)(v)(a) above will normally be shown to the nearest 100 feet; except that a flight check is required where application of the formula indicates a ceiling of less than 300 feet.