CHAPTER 7

RUNWAY VISUAL RANGE

7.1 General

The runway visual range (RVR) is an instrumentally derived value that represents the horizontal distance a pilot may see down the runway.

7.2 Scope

This chapter describes the standards for observing and reporting RVR at designated stations.

7.3 Runway Visual Range (RVR) Parameter.

The runway visual range is the maximum distance at which the runway, or the specified lights or markers delineating it, can be seen from a position above a specified point on its center line. This value is normally determined by visibility sensors located alongside and higher than the center line of the runway. RVR is calculated from visibility, ambient light level, and runway light intensity.

7.4 Runway Visual Range Observing Standards

It is common practice to use a transmissometer or forward scatter meter as the RVR visibility sensor. A transmissometer measures the transmittance of the atmosphere over a baseline distance while a forward scatter meter measures the extinction coefficient of the atmosphere. RVR is then derived from equations that also account for ambient light (background luminance) and runway light intensity based on the expected detection sensitivity of the pilot's eye. RVR Tables are contained in Appendix D.

7.4.1 Observing Positions. The location of the RVR visibility sensor should be within 500 feet of the runway centerline and within 1,000 feet of the designated runway threshold.

7.4.2 Day-Night Observations for Transmissometers. The day scale shall be used in the evening until low intensity lights on or near the airport complex are clearly visible. The night scale shall be used in the morning until these lights begin to fade. Alternately, a day-night switch may be used to determine which scale should be used.

7.5 Runway Visual Range Reporting Standards

RVR shall be reported whenever the prevailing visibility is 1 statute mile or less and/or the RVR for the designated instrument runway is 6,000 feet or less. RVR shall be reported in the body of the METAR/SPECI report (see paragraphs 12.6.7).

7.5.1 Multiple Runway Visual Range Sensors. At automated stations where it is applicable, RVR values for as many as four designated runways can be reported for long-line dissemination (see paragraph 12.6.7). At manual stations, only RVR for the designated runway shall be reported.

7.5.2 Units of Measure. RVR is measured in increments of 100 feet up to 1,000 feet, increments of 200 feet from 1,000 feet to 3,000 feet, and increments of 500 feet above 3,000 feet to 6,000 feet.

7.5.3 Runway Visual Range Based on a Transmissometer. Ten-minute extreme values (highest and lowest) of transmittance shall be reported. Manually reported RVR shall be based on light setting 5 for either day or night time conditions, regardless of the light setting actually in use. One RVR value shall be reported if the ten-minute high and low value are the same.

7.6 Summary of Runway Visual Range Observing and Reporting Standards

Table 7-1 summarizes the RVR observing and reporting standards.

Table 7-1. Summary of RVR Observing and Reporting Standards

RVR	Observing and Reporting
Number of RVRs	Up to 4[a]
RVR Light Setting	5 for transmissometer systems
When Reported	When visibility # 1 statute mile AND/OR RVR # 6,000 feet
a. Manual observations shall contain only one RVR.	