2.2.4.5.2.7 "VERTICAL VELOCITY OR A/V SIZE" Field

2.2.4.5.2.7.1 Encoding as "Vertical Velocity" Form

When the ADS-B Transmitting Subsystem is in the AIRBORNE condition, the format for the "VERTICAL VELOCITY OR A/V SIZE" field **shall** assume the "Vertical Velocity" form as shown in Table 2-30.

Table 2-30: "Vertical Velocity" Format

Byte 16							Byte 17			
Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7	Bit 8	Bit 1	Bit 2	Bit 3	Bit 4
VV Src	**VV Sign**	(MSB)		**--Vertical Rate--**						(LSB)

2.2.4.5.2.7.1.1 "VV Src" Subfield Encoding

The Vertical Velocity Source ("VV Src") subfield is a 1-bit (bit 2 of byte 16) field that **shall** be used to indicate the source of Vertical Rate information as defined in Table 2-31.

Table 2-31: "Vertical Velocity Source" Encoding

Coding	Meaning
0	Vertical Rate information from Geometric Source (GNSS or INS)
1	Vertical Rate information from Barometric Source

Vertical rate information **shall** come from a Geometric source, if available, when the *Precision* condition is met, specifically when:

a. The "NAC_P" value is "10" or "11," or

b. The "NIC" value is "9," "10" or "11"

Otherwise, the *Non-Precision* condition is in effect and Vertical Rate information **shall** come from a barometric source, if available.

2.2.4.5.2.7.1.2 "VV Sign" Subfield Encoding

The Sign Bit for Vertical Rate ("VV Sign") subfield is a 1-bit (bit 3 of byte 16) field used to indicate the direction of the "Vertical Rate" subfield. Encoding of this subfield **shall** be as indicated in Table 2-32.

Table 2-32: "Sign Bit for Vertical Rate" Encoding

Coding	Meaning
0	UP
1	DOWN

2.2.4.5.2.7.1.3 "Vertical Rate" Subfield Encoding

The "Vertical Rate" subfield is a 9-bit (bit 4 of byte 16 through bit 4 of byte 17) field is used to report the Vertical Rate (in feet/minute) of the ADS-B transmission device.