

Range, Resolution, and No Data encoding of the “Vertical Rate” subfield **shall** be as shown in [Table 2-33](#).

Table 2-33: “Vertical Rate” Encoding

Coding MSB(binary) _{LSB}	Coding (decimal)	Meaning
0 0000 0000	0	No Vertical Rate information available
0 0000 0001	1	Vertical Rate is ZERO
0 0000 0010	2	Vertical Rate = 64 feet / minute
0 0000 0011	3	Vertical Rate = 128 feet / minute
...
1 1111 1110	510	Vertical Rate = 32,576 feet / minute
1 1111 1111	511	Vertical Rate > 32,608 feet / minute

Notes:

1. The encoding shown represents Positive Magnitude data only. Direction is given completely by the VV Sign Subfield.
2. Raw data used to establish the “Vertical Rate” subfield will normally have more resolution (i.e., more bits) than that required by the “Vertical Rate” subfield. When converting such data to the “Vertical Rate” subfield, the accuracy of the data shall be maintained such that it is not worse than +/- ½ LSB where the LSB is that of the “Vertical Rate” subfield.
3. For codes “0” and “1,” the VV Sign Subfield is encoded as ZERO.

If the Vertical Rate Input is “unavailable” for the “Data Lifetime” value listed for this input in [Table 2-64](#), then the “Vertical Rate” subfield **shall** default to a value of ALL ZEROS.

2.2.4.5.2.7.2 Encoding as “A/V Length and Width Code” Form

When the ADS-B Transmitting Subsystem is in the ON-GROUND condition, the “VERTICAL VELOCITY OR A/V SIZE” field **shall** assume the “A/V Length and Width Code” form as shown in [Table 2-34](#). Once the actual Length and Width of the A/V has been determined, each A/V shall be assigned the smallest “A/V Length and Width Code” from the encoding of the “A/V Length and Width Code” shall be as shown in [Table 2-35](#), for which the actual length is less than or equal to the upper bound length for that Length/Width Code, and for which the actual width is less than or equal to the upper bound width for that Length/Width Code. The encoding of the “Position Offset Applied” (POA) flag shown in [Table 2-36](#) indicates whether the reported position reflects application of a position offset to normalize the ownship navigation sensor position to the ADS-B reference point.

Table 2-34: “A/V Length and Width” 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
A/V Length and Width				POA	Reserved					

Table 2-35: “Aircraft Length and Width” Encoding

A/V - L/W Code (decimal)	Length Code			Width Code	<u>Upper-Bound Length and Width for Each Length/Width Code</u>	
	Bit 2	Bit 3	Bit 4	Bit 5	<u>Length (meters)</u>	<u>Width (meters)</u>
0	0	0	0	0	$0 \leq L < 15$	$0 \leq W < 11.5$
1				1		$11.5 \leq W < 23$
2	0	0	1	0	$15 \leq L < 25$	$23 \leq W < 28.5$
3				1		$28.5 \leq W < 34$
4	0	1	0	0	$25 \leq L < 35$	$28 \leq W < 33$
5				1		$33 \leq W < 38$
6	0	1	1	0	$35 \leq L < 45$	$34 \leq W < 39.5$
7				1		$39.5 \leq W < 45$
8	1	0	0	0	$45 \leq L < 55$	$38 \leq W < 45$
9				1		$45 \leq W < 52$
10	1	0	1	0	$55 \leq L < 65$	$52 \leq W < 59.5$
11				1		$59.5 \leq W < 67$
12	1	1	0	0	$65 \leq L < 75$	$65 \leq W < 72.5$
13				1		$72.5 \leq W < 80$
14	1	1	1	0	$L \geq 75$ & $W \geq 80$	$W < 80$
15				1		$W \geq 80$ & $W \geq 90$

Note: If the aircraft or vehicle is longer than 85 meters, or wider than 90 meters, use the decimal A/V Length/Width Code 15.

Table 2-36: “Position Offset Applied” Encoding

Coding	Meaning
0	Position Offset Not Applied
1	Position Offset Applied (POA)

2.2.4.5.2.8 “UTC” Field Encoding

The “UTC” field is a 1-bit field (bit 5 of byte 17) that indicates whether the ADS-B Transmitting Subsystem is in the “UTC Coupled” condition or the “Non-UTC Coupled” condition (§2.2.5). The encoding of this field **shall** be as indicated in [Table 2-37](#).

If the UTC 1-PPS Timing Input is “unavailable” for the “Data Lifetime” value listed for this input in [Table 2-64](#), then the “UTC” field **shall** default to a value of ZERO.

Table 2-37: “UTC” Encoding

Coding	Meaning
0	Non UTC Coupled Condition
1	UTC Coupled Condition

2.2.4.5.2.9 Reserved Bits

Bits 6 through 8 of byte 17 are reserved for future use and **shall** be set to ZERO when the “ADDRESS QUALIFIER” field is set to “0,” “1,” “4,” or “5.”