D8Q4Vspeeds Version 1.6SA, August 2020

(1) Version History

1.6SA Revision 6SA. August 2020. Removed dependency on XMLTABLES for use in P3Dv5, now uses polynomials to model tabular data.

1.6 Revision 6. August 2020. Made correction to ambient temperature selection range.

1.5 Revision 5. September 2019. Made additions to Approach and Landing Speed Bug selection and placement.

1.4 Revision 4. September 2019. Made corrections to Approach and Landing Speed Bug selection and placement.

1.3 Revision 3. August 2019. Made corrections to Approach and Landing Speed computations.

1.2 Revision 2. December 2017. Added Fuel Mass and Zero Fuel Mass to extractions.

1.1 Revision 1. August 2016. Uses stack variables, thanks to my teacher, Roman Stoviak. Fixed ICING bug.

1.0 Initial version. July 2016. Computes V-speeds and optionally sets bugs.

(2) Description

This XML gauge can be installed as a panel window in your *Majestic* **Dash8 Q400** simulation for *FSX*. It computes the V-speeds for the MJC8Q400 for T/O and Landing, optionally applies wet runway and icing corrections, and optionally sets the bugs on the EFIS-PFD. The gauge does **not** apply headwind/tailwind corrections in case of wet runway.

(3) Requirements

This is a Stand-alone gauge that can be installed within a valid installation of the MJC8Q400 in *FSX*, and does **not** require the concurrent installation of any other software (like FSUIPC or XMLTOOLS).

If you have previously installed an earlier version of the gauge (which might have been dependent on XMLTOOLS) please remove it, as its continued presence could interfere with the operation of this new gauge.

(4) Installation

(i) Place the **D8Q4Vspeeds16SA.CAB** file in your *FSX\Gauges* folder.

(ii) Edit the **panel.cfg** file in your *MJC8Q400* aircraft folder this way:

```
[Window Titles]
WindowNN=V-Speed Bugger

[WindowNN]
Background_color=0,0,0
size_mm=300, 1200
window_size_ratio=1.000
position=0
visible=1
ident=750
gauge00=D8Q4Vspeeds16SA!D8Q4Vspeeds16SA,0,0,300,1200
```

where **WindowNN** is your *next* available window.

(5) Operation

T/O-Climb

-At any time with the aircraft on ground, select T/O FLAP (button turns green) to display uncorrected V-speeds for t/o and climb (at currently sensed a/c mass, altitude, ambient temperature and pressure). The code uses polynomial expressions to model the dependency of these speeds on mass, temperature and pressure altitude as tabulated in the MJC8Q400 T/O Speeds Card, and rounds up each computed result to the next highest integer.

-Optionally press the WET button (button turns green) to apply the basic 8 kt wet runway correction to V1. The code cannot correct for headwind/tailwind; these would need to be applied manually later.

-Optionally press the ICE button (button turns green) to apply icing correction to V2, Vfri and Vclimb.

-Optionally press the SET button (momentarily turns green, returns to red on release) to set all 5 EFIS bugs to displayed values.

Approach-Landing

-At any time with the aircraft in the air (ideally at TOD or just prior to Approach), select LANDING FLAP (button turns green) to display uncorrected V-speeds for approach and landing (at currently sensed a/c mass). The code uses polynomial models to compute and round up the results, as before.

-Optionally press the ICE button to apply icing correction to Vapp and Vref.

-Optionally press the SET button (momentarily turns green, returns to red on release) to set the solid ▲ bug to Vref and hollow Δ bug to Vclimb.

(6) Feedback

This is a work-in-progress, and I welcome feedback on the *Majestic* forum: in the associated thread, or via the Messaging system.

(7) Acknowledgements

I thank **Roman Stoviak** for his help and guidance with the XML coding.

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V-SpeedSA Bugger

MJC8Q400 V-Speeds

T/O Flap	Ldg Flap
5	5
10	10
15	15
	35

Mass = 22935 kg
Temp = 8 C
Alt = 3302 ft
QNH = 1013 hPa
PrAlt = 3302 ft
Fuel = 4000 kg
ZFM = 18935 kg

V1= 110	Vapp= 135
Vr= 118	Vref= 135
V2= 120	Vga= 126
Vfri= 129	Vclb= 160
Vclb= 160	

PrAlt > 4000 ft
Wght > 22935 kg

WET   ICE   ICE

SET   SET