

## ICAO Engine Emissions Databank – Record of Changes

| Issue | Date of publication | Detail of Changes   |
|-------|---------------------|---|
| 31    | 06-Jun-2025         | <p><b>Issue 31 implemented on Website</b></p> <p>NEW: New data for gaseous &amp; nvPM emissions for RR Trent XWB EP (UIDs 07P27RR150-07P27RR153),</p> <p>Updated data for gaseous and nvPM emissions for GE CF6-80C2, CF34-8, CF34-10, Passport 20, GE90 and GEnx (UIDs 07P27GE218-07P27GE219 and 07P27GE221-07P27GE241),</p> <p>Updated data for nvPM emissions for GE CF34-3 (UID 07P05GE220).</p> <p><u>Consistency improvements:</u></p> <ul style="list-style-type: none"> <li>- Corrected information in fields "Data superseded" and "Superseded by UID No" for IAE V2530-A5 and V2533-A5 (UIDs 01P10IA024-01P10IA025) in nvPM Emissions worksheet.</li> </ul>   |
| 30    | 23-Jul-2024         | <p><b>Issue 30 implemented on Website</b></p> <p>NEW: New data for gaseous &amp; nvPM emissions for BR700-730B2-14 (UID 06P26RR149)</p> <p>Corrected [nvPM Elnum Max] values for various RR engines (UIDs 01P14RR101-01P14RR102, 01P18RR103-01P18RR105, 02P23RR126-02P23RR138, 04P24RR144-04P24RR148, 01P18RR121-01P18RR124, 01P21RR125, 01P04BR013, 01P06BR014, 01P20BR015, 01P11BR016).</p>   |
| 29    | 20-Jun-2023         | <p><b>Issue 29B implemented on Website</b></p> <p>NEW: New data for gaseous &amp; nvPM emissions for PW812D and PW812GA (UIDs 05P25PW205 and 05P25PW206)</p>  |
|       | 06-Feb-2023         | <p><b>Issue 29 implemented on Website</b></p> <p>NEW: New data for gaseous &amp; nvPM emissions for RR Trent7000 with improved nvPM combustor (UIDs 04P24RR144 to 04P24RR148), Updated nvPM emissions for PW1500G and PW1900G addressing erroneous SL-corrected nvPM Elmass information (UIDs 04P20PW195-04P20PW204),</p> <p>Updated nvPM data for IAE V2530-A5 (UID 04P10IA027) addressing erroneous fuel flow information in nvPM Emissions worksheet,</p> <p>Additional remarks for RR engines in the nvPM Emissions worksheet providing information about the position of maximum nvPMmass and nvPMnum emissions relative to the LTO thrust levels.</p> <p><u>Consistency improvements and further updates:</u></p> <ul style="list-style-type: none"> <li>- Consistency updates in gaseous emissions worksheet for data in fields [Fuel H/C Ratio Min] and [Fuel H/C Ratio Max], correcting data in erroneous units for engines GP7270 (UID 9EA001) and Honeywell HFT7000 &amp; AS907 family (UIDs 11HN002-18HN010 and 01P14HN011-01P14HN016).</li> <li>- Updated references in remarks of nvPM Emissions worksheet for Honeywell</li> </ul> |

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|       |                     | <p>AS907 family (UIDs 01P14HN011, 01P11HN012, 01P18HN013, 01P14HN014-01P14HN016).</p> <ul style="list-style-type: none"> <li>- Updated production status for RR Trent7000, PW1100G, PW1400G (UIDs 02P23RR139-02P23RR143, 01P18PW148-01P18PW157, 01P22PW170-01P22PW175).</li> <li>- Revised column description for data field [Fuel Hydrogen Content (% mass)] in the nvPM Emissions worksheet clarifying that nvPM EIs in this database are corrected to a reference fuel hydrogen content of 13.8%.</li> </ul>   |
| 28    | 20-Jul-2021         | <p><b>Issue 28C implemented on Website</b></p> <p>NEW: Updated nvPM data for PW307A, PW307D and PW308C BS 1289 (UIDs 03P16PW192, 03P15PW193, 03P14PW194)</p> <p><u>Consistency improvements:</u></p> <ul style="list-style-type: none"> <li>- Harmonisation of engine identification between data worksheets for IAE V2500 family (UIDs 01P10IA019 – 01P10IA025)</li> <li>- Corrected erroneous ambient humidity in gaseous emissions worksheet for RR Trent 1000/7000 family (UIDs 02P23RR126 – 02P23RR143)</li> <li>- Deleted erroneous LTO Cycle Total Emissions of HC, CO and NO<sub>x</sub> for Ivchenko Progress engines with UIDs 13ZM002 – 13ZM004</li> </ul>   |
|       | 05-Apr-2021         | <p><b>Issue 28B implemented on Website</b></p> <p>NEW: Updated RR Trent 1000/7000 gaseous and nvPM emissions; Updated production status for RRC AE3007A2 (01P10AL033)</p> <p><u>Consistency improvements:</u></p> <ul style="list-style-type: none"> <li>- Corrected erroneous UID for RR TrentXWB-97 (from 01P21RR124 to 01P21RR125)</li> <li>- Added missing total gaseous emissions in LTO cycle for Honeywell UIDs 01P11HN012 and 11HN003</li> <li>- Harmonisation of engine identification between data worksheets for CF34-10A16/16-B (01P11GE202), and combustor designation for CF34-3B/3B1 (01P05GE189)</li> </ul>   |
|       | 23-Dec-2020         | <p><b>Issue 28 implemented on Website</b></p> <p><b>NEW: First database version with nvPM emissions added, as reported by engine manufacturers.</b></p> <p>Amended database structure to accommodate nvPM emissions in a separate data worksheet. Note that new UIDs were assigned to engines for which nvPM information was added.</p> <p>New (and/or revised) engine data for smoke and gaseous emissions:</p> <p>P&amp;W: <u>PW1100G and PW1400G with TALON X, Block D combustor:</u><br/> PW1133G-JM, PW1133GA-JM, PW1130G-JM, PW1129G-JM, PW1127G-JM, PW1127GA-JM, PW1127G1-JM, PW1124G-JM, PW1124G1-JM, PW1122G-JM, PW1431G-JM, PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-HM, PW1428GH-JM.<br/> <u>PW1200G and PW1400G with TALON X, Block C combustor:</u><br/> PW1217G, PW1215G, PW1431G-JM, PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM.</p> <p>PWC: PW814GA, PW815GA.</p> <p>CFM: CFM56-7B26/3 (Research Measurement) provided by Swiss FOCA for nvPM and gaseous emissions, see remarks columns for details.</p> |

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|       |                     | <p>Harmonisation and update of engine manufacturer designations.</p> <p>Updates of "Current Engine Status", "Data Superseded" and "Superseded by UID No" information.</p>  |
| 27    | 17-Aug-2020         | <p><b>Issue 27 implemented on Website</b></p> <p>New (and/or revised) engine data added:</p> <p>GE: GE90-110B1, -113B, -115B; Passport20-19BB1A</p> <p>P&amp;W: PW1215G, -1217G</p> <p>RR: Trent XWB-97</p> <p>Note: Provision of nvPM emissions is intended for the next issue of the EEDB. Last issue of the databank in both old and new format.</p>  |
| 26    | 20-Sep-2019         | <p><b>Issue 26B implemented on Website</b></p> <p>Corrections of "Superseded by UID" information for engines 6RR042, 13GE158, 18CM084-18CM087</p> <p>Current Engine Status updated for engines 6AL013, 6AL016, 6AL020, 13AL017, 11RR049-11RR054, 12RR055-12RR069, 18RR082</p> <p>Corrected colour codes for some engines</p> <p>Corrected and harmonised data formats in a number of cells, including for UIDs 1RR011, 1KK005, 6AL019, 8GE115-8GE119, 17CM083</p> <p><b>NEW: EEDB optionally presented in new format to facilitate filtering and database operations</b></p> |
|       | 27-May 2019         | <p><b>Issue 26A implemented on Website</b></p> <p>Minor updates of references and test dates in the datasets of PW1500, PW1900 and LEAP-1B</p>   |
|       | 24-May 2019         | <p><b>Issue 26 implemented on Website</b></p> <p>New (and or revised) engine data added:</p> <p>RRD: BR 700-710D5-21</p> <p>CFMI: LEAP-1A<br/>24, 24E1, 26, 26E1, 26CJ, 29, 29CJ, 35A, 33, 33B2, 32, 30<br/>LEAP-1B<br/>21, 23, 25, 27, 28, 28B2, 28B1, 28B3, 28B2C, 28BBJ1, 28BBJ2</p> <p>P&amp;W: PW1500:<br/>1519G, 1521G, 1521GA, 1524G, 1525G<br/>PW1900:<br/>1919G, 1921G, 1922G, 1923G, 1923GA</p> <p>Record UID 14IA018 (V2531-E5) was reset to in-production (no colour code)</p>   |
| 25    | 30-May-2018         | <p><b>Issue 25A implemented on Website</b></p> <p>Data correction on Trent 1000-TEN and Trent 7000; Column [CQ] changed</p>  |
|       | 29-May-2018         | <p><b>Issue 25 implemented on Website</b></p> <p>New (revised) engine data added:</p> <p>P&amp;W: PW814GA, PW815GA</p> <p>R-R: Trent 1000 TEN -AE3, TEN -C3, TEN -D3, TEN -G3, TEN -H3, TEN -J3, TEN -K3, TEN -L3, TEN -M3, TEN -N3, TEN -P3, TEN -Q3, TEN -R3</p> <p>R-R: Trent 7000-72, Trent 7000-72C</p>   |

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|       |                     | <p>Addition of H/C ratio information on various IA and P&amp;W engines</p> <p>PW6122A and PW6124A marked out of production</p> <p>Changes in manufacturer names</p>  |
| 24    | 17-Nov-2017         | <p><b>Issue 24 implemented on Website</b></p> <p>New (revised) engine data added:</p> <p>CFM: LEAP 1B25; LEAP 1B27; LEAP 1B28; LEAP 1B28/B2</p> <p>RR: Trent XWB-75, -79, -79B, -84, and -97; Trent 970, 970B, 972, 972E</p> <p>Honeywell: HTF7700L (AS907-2-1s)</p> <p>P&amp;W: PW1133G, PW1133GA, PW1130G, PW1129G, PW1127G, PW1127GA, PW1127G1, PW1124G, PW1124G1, PW1122G</p> <p>Formatting corrections of superseded data</p> |
| 23    | 01-Jun-2017         | <p><b>Issue 23C implemented on Website</b></p> <p>Formatting corrections of some UID fields for consistency</p>  |
|       | 07-Apr-2017         | <p><b>Issue 23B implemented on Website</b></p> <p>New (revised) engine data added:</p> <p>CFM: LEAP 1A26/26E1; LEAP 1A35A / 33 / 33B2 / 32 / 30</p> <p>GE: revised SN data for Genx-1B/P2 engines and GEnx2B67/P</p>   |
|       | 18-Nov-2016         | <p><b>Issue 23 implemented on Website</b></p> <p>New (revised) engine data added:</p> <ul style="list-style-type: none"> <li>GE: Genx-1B76/P2, Genx-1B76A/P2</li> <li>P&amp;W: PW1525G, PW1524G, PW1521G, PW1519G; PW307A; PW814GA, PW815GA</li> </ul> <p>Formatting corrections and "out of production" status update</p>   |
| 22    | 05-Feb-2016         | <p><b>Issue 22 implemented on Website</b></p> <p>New (revised) engine data added:</p> <ul style="list-style-type: none"> <li>P&amp;W: PW1127G, PW1127G1, PW1130G, PW1133G, PW133G1, PW 307D</li> </ul> <p>UID 14IA018: Engine Identification corrected to read V2531-E5</p> <p>Formatting corrections of some "test date" entries</p>  |
| 21    | 10-Feb-2015         | <p><b>Issue 21B implemented on Website</b></p> <p>New (revised) engine data added:</p> <ul style="list-style-type: none"> <li>P&amp;W: PW308C Build Standard 1289</li> </ul>   |
|       | 31-Jan-2015         | <p><b>Issue 21A implemented on Website</b></p> <p>New (revised) engine data added:</p> <ul style="list-style-type: none"> <li>Honeywell: HTF7500E (AS907-3-1E-A1); HTF7500E (AS907-3-1E-A2); HTF7500E (AS907-3-1E-A3); HTF7350 (AS907-2-1A)</li> <li>IAE: V2531-E5 SelectOne™</li> <li>RR plc: Trent 768; Trent 772; Trent XWB-75; Trent XWB-79; Trent XWB-79B; Trent XWB-84</li> </ul>  |

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|       |                     | Superseded data: 11HN002 by 11HN003, 11HN004 by 11HN005<br>Formatting corrections on UID 13GE157, 13GE158  |
| 20    | 07-Mar-2014         | <b>Issue 20B implemented on Website</b><br>New (revised) engine data added for RR Corp. AE 3007/C2;<br>Record for Genx-1B78/P2 removed; this engine never went into production;<br>UID correction (UID 13GE156 --> 13GE157; UID GE13GE157 --> 13GE158);<br>Formatting corrections in Field [Eng Type];<br>correction of misprinted values in dataset 13AA008.  |
|       | 25-Feb-2014         | <b>Issue 20A implemented on Website</b><br>New (revised) engine data added: <ul style="list-style-type: none"> <li>• Aviadgatel: PS-90A; PS-90A1; PS-90A2</li> <li>• ZMBK: D36 series 4A; D-439-148 F1; D-436-148-F2</li> <li>• GE: <ul style="list-style-type: none"> <li>○ GEnx-1B54/P2; GEnx-1B58/P2; GEnx-1B64/P2; GEnx-1B67/P2; GEnx-1B70/72/P2; GEnx-1B70/75/P2</li> <li>○ GEnx-1B70/P2; GEnx-1B74/75/P2; GEnx-1B75/P2; GEnx-1B78/P2; GEnx-2B67B; GEnx-2B67/P</li> </ul> </li> <li>• Minor amendment to correct data or data format (e.g. addition of Fuel mass for LTO cycle on UID11BR011)</li> </ul>  |
| 19    | 15-Apr-2013         | <b>Issue 19 implemented on Website</b><br>New (revised) engine data added: <ul style="list-style-type: none"> <li>• GE: GEnx-1B54/P1; GEnx-1B58/P1; GEnx-1B64/P1; GEnx-1B67/P1; GEnx-1B70/P1; GEnx-1B70/72/P1; GEnx-1B70/75/P1; GEnx-1B74/75/P1; GEnx-1B75/P1</li> <li>• P&amp;W: PW4060; PW4062</li> <li>• RRD: BR700-725A1-12 revised datasheet</li> <li>• RR: Trent 1000-A; -C; D; E; -G; -H (revised data for Package B engines); Trent 1000-A2; -C2; D2; E2; -G2; -H2; -J2; -K2; L2 (Package C1 engines)</li> <li>• Minor amendment to correct entries (originally wrongly entered in reverse) for 'significant numbers' and 'number of tests' for some 11 series UID engines [no consequence for calculation of characteristic values]</li> <li>• Addition of new columns [CY], [CZ], [DA] to indicate NOx compliance paragraph for in-production engines</li> </ul> <p>Addition of certificated NOx compliance paragraph for all in-production engines in [Remarks] field to show compliance with the CAEP/6 NOx production rule.</p> |
| 18    | 31-Jan-2012         | <b>Issue 18 implemented on Website</b><br>New engine data added:<br><u>CFMI</u> : CFM56-7B20E; -7B22E; -7B222E/B1; -7B24E; -7B2E/B1; CFM56-7B26E; -7B26E/B1; -7B26E/B2; -7B26E/F; -7B26E/B2F; CFM56-7B27E; -7B27E/b1; -7B27E; -7B27E/B3; -7B27E; -7B27AE; CFM56-7B27E; -7B27E/F; -7B27E; -7B27E/B1F<br><u>GE</u> : Genx-1B54; -1B58; -1B64; -1B67; -1B70; GEnx-2B6;7<br><u>CF34</u> -10A16; -10A18; -10E5; 10E6; -10E5A1; -10E6A1; -10E7; -10E7-B<br><u>Honeywell</u> : AS907-1-1A; AS907-2-1G<br><u>P&amp;W</u> : PW307A<br><u>PowerJet</u> : SaM146-1S17; -1S18  |

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|       |                     | <u>RRD</u> : BR700-725A1-12<br><u>RR</u> : Trent 1000-A; -C; -D; -E; -G; -H, TAY611-C<br><b>DataBank transferred from UK CAA to EASA Website.</b>  |
| 17    | 10-Dec-2010         | <b>Issue 17A implemented on Website</b><br>New engine data added:<br>GE: CF34-10E5; -E5A1; -E6; -E6A1 and -E7 (with Block 2 engine mods)<br>IAE: V2522-A5; V2524-A5; V2527-A5; -A5E & -A5M; V2730-A5; V2533-A5<br>(all with SelectOne upgrade package)<br>PW: PW4074D; 4077D; 4084D and 4090 (all with Floatwall combustor)<br>RR-NA: AE3007A2 (with Type 3 combustor)<br>Incorporation of margins to ICAO CAEP/8 NOx standard<br>Updates to out-of-production status  |
| 16    | 05-Feb-2009         | <b>Issue 16A implemented on Website</b><br>New engine data added:<br>EA: GP7270;<br>GE: GE90-76; -77; -85 & -90 (all with 2D turbomachinery & Performance Enhanced Combustor (PEC))<br>GE: GE90-76; -77; -85; -90 & -94 (all with 3D turbomachinery and Performance Enhanced Combustor (PEC))<br>PW: PW4164-1D; PW4168-1D; PW4168A-1D; PW4170 with Talon II combustor<br>RR: Trent 972-84 with Phase 5 tiled combustor<br>Addition of Smoke Number individual mode data (where available)<br>Minor editorial corrections |
| 15    | 07-Apr-2008         | <b>Issue 15-C implemented on Website.</b><br>Addition of new column [BJ] to indicate margin to CAEP/6 NOx standard for existing engine entries. No new engine entries.   |
|       | 08-Oct-2007         | <b>Issue 15-B implemented on Website.</b> Minor amendment to correct entries (originally wrongly entered in reverse) for 'number of engines' and 'number of tests' for 8 series new engines; [no consequence for calculation of characteristic values]   |
|       | 16-July-2007        | <b>Issue 15-A implemented on Website.</b> Many new engine datasets and some corrections to existing entries. See Databank for details  |
| 14    | 06-Jun-2005         | <b>Issue 14 implemented on Website.</b><br>New datasheets added: 7PW083-PW6122A; 7PW084 - PW6124A; 7GE097-GE90-110B1; 7GE098 - GE90-113B; 7GE099 - GE90-115B   |
| 13    | 01-Oct-2004         | <b>Issue 13 implemented on Website.</b><br><b>DataBank transferred from QinetiQ to UK CAA Website.</b>   |
|       | 09-Sep-04           | New engine data added - PW4164 and PW4168A.  |
| 12    | 17-Mar-04           | <b>Issue 12 implemented on Website.</b>  |

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|       | 09-Mar-04           | New engine data added - CFM56 5C2/P, 5C3/P, 5C4/P, 5B8/P, 5B9/P, 5B9/2P<br>1CM006 engine identification changed from CFM56-3C (rerated) to CFM56-3C-1 (rerated)<br>1CM004, 005, 006 - additional note, number 4, added.                      |
|       | 27-Feb-04           | New engine data added - PW306A, PW306B, PW308A, PW308C.  |
|       | 23-Dec-03           | New engine data added - BR700-710-C4-11  |
| 11    | 28-Nov-03           | <b>Issue 11 implemented on Website.</b>  |
|       | 27-Nov-03           | New engine data added - Tay 611-8C   |
|       | 02-Sep-03           | Correction to engine identifier for UID 1RR001, M54H corrected to M45H<br>Correction to data for engines UID's 3GE067 to 3GE079 to include note showing idle data calculated at normal idle setting rather than 7%.                          |
|       | 01-Sep-03           | New engine data added - CF34-8C1 Block 1   |
| 10    | 19-May-03           | <b>Issue 10 implemented on Website.</b>  |
|       | 12-Feb-03           | Data in columns CR and CS changed to date format (previously a mixture of date and text formats).  |
|       | 04-Feb-03           | New engine data added - CF34-8C5, -8E2, -8E5, -8E5A1<br>New engine data added - CFM56-5B7/P<br>CF6-80E series UID No's 2GE050, 2GE051 and 4GE081 not currently produced with low emissions combustor (1862M39), marked as out of production. |
|       | 28-Nov-02           | New engine data added - AE3007 family, 20 new entries.   |
| 9     | 31-Jul-02           | New engine data added - Trent 556-61 with Phase 5 tiled combustor  |
|       | 17-Jul-02           | New engine data added - GE90-76B, -77B, -85B, -90B, -94B with turbomachinery incorporating 3D aero   |
|       | 02-Jul-02           | Further format changes. No new data at this time.  |
|       | 27-Mar-02           | Rolls-Royce Corporation AE3007C1 added   |
| 8     | 19-Dec-01           | New engine data added - GE90-76B   |

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|       | 27-Nov-01           | New engine data added - CF34-3B, CF34-8C1, CF6-80E1A3<br>Changes to background notes, column descriptions and data base format (data requirements and associated data)   |
| 7     | 14-Nov-00           | New engine data added - PW4098   |
|       | 27-Oct-00           | New engine data added - PW4168 with TALON II combustor.  |
| 6     | 02-May-00           | New engine data added - PW4X58 with TALON II combustor.  |
| 5     | 29-Feb-00           | New engine data added - Trent 895<br>New engine data added - RB211-535E4 and -535E4B with phase 5 combustor  |
| 4     | 31-Dec-99           | New engine data added - AE3007A, AE3007A1 series (A1, A1/1, A1/2)<br>New engine data added - PW2037 and PW2040 - revised to add second engine test<br>New engine data added - BR700-710A1-10, -710A2-20.   |
| 3     | 16-Nov-99           | New engine data added - BR700-715A1-30, -715B1-30 and 715C1-30 with improved fuel injectors.<br>New engine data added - JT8D-217, -217A, -217C, -219 with E-Kit combustors.  |
| 2     | 08-Feb-99           | Engine UID 2PW062, CO idle EI and Dp/Foo average were reversed. This has been corrected.<br>New engine data added. Spey 555, standard fuel pump. RB211-524G-T and -524 H-T,<br>BR700-715A1-30, -715B1-30 and -715C1-30<br>New engine data added. CFM56-5A4, -5A5. CFM56-5B2/2P, -5B3/2P<br>CFM56-7B20/2, -7B22/2, -7B24/2, -7B26/2, -7B27/2.<br>CF6-80E1A4 standard combustor, CF6-80E1A4 low emissions combustor<br>PW4168A |
| 1     | 10-Mar-98           | <b>First full issue of the databank on the internet</b>  |
|       | 1995                | ICAO Engine Exhaust Emissions Databank, <b>ICAO Doc 9646-AN/943</b> , First Edition, 1995  |