

## ICAO Engine Emissions Databank – Record of Changes

Issue	Date of publication	Detail of Changes
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 AS907 family (UIDs 01P14HN011, 01P11HN012, 01P18HN013, 01P14HN014-01P14HN016).</li> <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>

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05-Apr-2021	<b>Issue 28B implemented on website</b>	<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	<b>Issue 28 implemented on website</b>	<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> 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.</p> <p><u>PW1200G and PW1400G with TALON X, Block C combustor:</u> 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> <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>

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		<b>NEW: EEDB optionally presented in new format to facilitate filtering and database operations</b>
	27-May 2019	<b>Issue 26A implemented on website</b> Minor updates of references and test dates in the datasets of PW1500, PW1900 and LEAP-1B
	24-May 2019	<b>Issue 26 implemented on website</b> New (and or revised) engine data added: RRD: BR 700-710D5-21 CFMI: LEAP-1A 24, 24E1, 26, 26E1, 26CJ, 29, 29CJ, 35A, 33, 33B2, 32, 30 LEAP-1B 21, 23, 25, 27, 28, 28B2, 28B1, 28B3, 28B2C, 28BBJ1, 28BBJ2 P&W: PW1500: 1519G, 1521G, 1521GA, 1524G, 1525G PW1900: 1919G, 1921G, 1922G, 1923G, 1923GA Record UID 14IA018 (V2531-E5) was reset to in-production (no colour code)
25	30-May-2018	<b>Issue 25A implemented on website</b> Data correction on Trent 1000-TEN and Trent 7000; Column [CQ] changed
	29-May-2018	<b>Issue 25 implemented on Website</b> New (revised) engine data added: P&W: PW814GA, PW815GA 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 R-R: Trent 7000-72, Trent 7000-72C  Addition of H/C ratio information on various IA and P&W engines PW6122A and PW6124A marked out of production Changes in manufacturer names
24	17-Nov-2017	<b>Issue 24 implemented on the website</b> New (revised) engine data added: CFM: LEAP 1B25; LEAP 1B27; LEAP 1B28; LEAP 1B28/B2 RR: Trent XWB-75, -79, -79B, -84, and -97; Trent 970, 970B, 972, 972E Honeywell: HTF7700L (AS907-2-1s) P&W: PW1133G, PW1133GA, PW1130G, PW1129G, PW1127G, PW1127GA, PW1127G1, PW1124G, PW1124G1, PW1122G  Formatting corrections of superseded data
23	01-Jun-2017	<b>Issue 23C implemented on website</b> Formatting corrections of some UID fields for consistency
	07-Apr-2017	<b>Issue 23B implemented on website</b> New (revised) engine data added: CFM: LEAP 1A26/26E1; LEAP 1A35A / 33 / 33B2 / 32 / 30 GE: revised SN data for Genx-1B/P2 engines and GENx2B67/P

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	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> <p>Superseded data: 11HN002 by 11HN003, 11HN004 by 11HN005</p> <p>Formatting corrections on UID 13GE157, 13GE158</p>
20	07-Mar-2014	<p><b>Issue 20B implemented on Website</b></p> <p>New (revised) engine data added for RR Corp. AE 3007/C2; Record for Genx-1B78/P2 removed; this engine never went into production; UID correction (UID 13GE156 --&gt; 13GE157; UID GE13GE157 --&gt; 13GE158); Formatting corrections in Field [Eng Type]; correction of misprinted values in dataset 13AA008.</p>
	25-Feb-2014	<p><b>Issue 20A implemented on Website</b></p> <p>New (revised) engine data added:</p> <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>

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19	15-Apr-2013	<p><b>Issue 19 implemented on Website</b></p> <p>New (revised) engine data added:</p> <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	<p><b>Issue 18 implemented on Website</b></p> <p>New engine data added:</p> <p>CFMI: 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</p> <p>GE: Genx-1B54; -1B58; -1B64; -1B67; -1B70; GEnx-2B6;7</p> <p>CF34-10A16; -10A18; -10E5; 10E6; -10E5A1; -10E6A1; -10E7; -10E7-B</p> <p>Honeywell: AS907-1-1A; AS907-2-1G</p> <p>P&amp;W: PW307A</p> <p>PowerJet: SaM146-1S17; -1S18</p> <p>RRD: BR700-725A1-12</p> <p>RR: Trent 1000-A; -C; -D; -E; -G; -H, TAY611-C</p> <p><b>DataBank transferred from UK CAA to EASA Website.</b></p>
17	10-Dec-2010	<p><b>Issue 17A implemented on Website</b></p> <p>New engine data added:</p> <p>GE: CF34-10E5; -E5A1; -E6; -E6A1 and -E7 (with Block 2 engine modifications)</p> <p>IAE: V2522-A5; V2524-A5; V2527-A5; -A5E &amp; -A5M; V2730-A5; V2533-A5 (all with SelectOne upgrade package)</p> <p>PW: PW4074D; 4077D; 4084D and 4090 (all with Floatwall combustor)</p> <p>RR-NA: AE3007A2 (with Type 3 combustor)</p> <p>Incorporation of margins to ICAO CAEP/8 NOx standard</p> <p>Updates to out-of-production status</p>
16	05-Feb-2009	<p><b>Issue 16A implemented on Website</b></p> <p>New engine data added:</p> <p>EA: GP7270;</p> <p>GE: GE90-76; -77; -85 &amp; -90 (all with 2D turbomachinery &amp; Performance Enhanced Combustor (PEC))</p> <p>GE: GE90-76; -77; -85; -90 &amp; -94 (all with 3D turbomachinery and Performance Enhanced Combustor (PEC))</p> <p>PW: PW4164-1D; PW4168-1D; PW4168A-1D; PW4170 with Talon II combustor</p>

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		RR: Trent 972-84 with Phase 5 tiled combustor Addition of Smoke Number individual mode data (where available) Minor editorial corrections
15	07-Apr-2008	<b>Issue 15-C implemented on Website.</b> 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>  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>  <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>
	09-Mar-04	New engine data added - CFM56 5C2/P, 5C3/P, 5C4/P, 5B8/P, 5B9/P, 5B9/2P 1CM006 engine identification changed from CFM56-3C (rerated) to CFM56-3C-1 (rerated) 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 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

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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 New engine data added - CFM56-5B7/P 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
	27-Nov-01	New engine data added - CF34-3B, CF34-8C1, CF6-80E1A3 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 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) New engine data added - PW2037 and PW2040 - revised to add second engine test 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.

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		New engine data added - JT8D-217, -217A, -217C, -219 with E-Kit combustors.
2	08-Feb-99	<p>Engine UID 2PW062, CO idle EI and Dp/Foo average were reversed. This has been corrected.</p> <p>New engine data added. Spey 555, standard fuel pump. RB211-524G-T and -524 H-T, BR700-715A1-30, -715B1-30 and -715C1-30</p> <p>New engine data added. CFM56-5A4, -5A5. CFM56-5B2/2P, -5B3/2P</p> <p>CFM56-7B20/2, -7B22/2, -7B24/2, -7B26/2, -7B27/2.</p> <p>CF6-80E1A4 standard combustor, CF6-80E1A4 low emissions combustor</p> <p>PW4168A</p>
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