



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW307D

UNIQUE ID NUMBER: 15PW109

ENGINE TYPE: MTF

BYPASS RATIO: 4.2

PRESSURE RATIO (π_{oo}): 21.4

RATED OUTPUT (F_{oo}) (kN): 29.9

REGULATORY DATA

| CHARACTERISTIC VALUE: | HC | CO | NOx | SMOKE NUMBER |
|--|--------|--------|--------|--------------|
| D _p /F _{oo} (g/kN) or SN | 2.1 | 72.3 | 49.3 | 2.2 |
| AS % OF ORIGINAL LIMIT | 10.7 % | 61.3 % | 59.4 % | 6.7 % |
| AS % OF CAEP/2 LIMIT (NOx) | | | 74.3 % | |
| AS % OF CAEP/4 LIMIT (NOx) | | | 75.0 % | |
| AS % OF CAEP/6 LIMIT (NOx) | | | 75.4 % | |
| AS % OF CAEP/8 LIMIT (NOx) | | | 79.8 % | |

DATA STATUS

- PRE-REGULATION

x CERTIFICATION

- REVISED (SEE REMARKS)

TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES

x DEDICATED ENGINES TO PRODUCTION STANDARD

- OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
(ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)

- OUT OF PRODUCTION

- OUT OF SERVICE

MEASURED DATA

| MODE | POWER SETTING (%F _{oo}) | TIME minutes | FUEL FLOW kg/s | EMISSIONS INDICES (g/kg) | | | SMOKE NUMBER |
|--|---|-----------------|-------------------|--------------------------|-------------|-------------|--------------|
| | | | | HC | CO | NOx | |
| TAKE-OFF | 100 | 0.7 | 0.355 | 0 | 0 | 20.61 | 0.8 |
| CLIMB OUT | 85 | 2.2 | 0.277 | 0 | 0.02 | 15.44 | 0.9 |
| APPROACH | 30 | 4.0 | 0.112 | 0 | 2.57 | 7.85 | 0 |
| IDLE | 7 | 26.0 | 0.046 | 0.75 | 26.75 | 4.32 | 2 |
| LTO TOTAL FUEL (kg) or EMISSIONS (g) | | | 150 | 54 | 1997 | 1393 | - |
| NUMBER OF ENGINES | | | | 3 | 3 | 3 | 3 |
| NUMBER OF TESTS | | | | 4 | 4 | 4 | 4 |
| AVERAGE D _p /F _{oo} (g/kN) or AVERAGE SN (MAX) | | | | 1.8 | 66.8 | 46.6 | 2 |
| SIGMA (D _p /F _{oo} in g/kN, or SN) | | | | 0.5 | 3.4 | 3.5 | 0.5 |
| RANGE (D _p /F _{oo} in g/kN, or SN) | | | | 1.2 - 2.4 | 62.7 - 70.2 | 43.4 - 51.0 | 1.4 - 2.5 |

ACCESSORY LOADS

POWER EXTRACTION0(kW)AT-POWER SETTINGS

STAGE BLEED0% CORE FLOWAT-POWER SETTINGS

ATMOSPHERIC CONDITIONS

| | |
|----------------------|-----------------|
| BAROMETER (kPa) | 99.14 - 99.30 |
| TEMPERATURE (K) | 294 - 299 |
| ABS HUMIDITY (kg/kg) | 0.0096 - 0.0122 |

FUEL

| | |
|----------|-------------|
| SPEC | Jet A-1 |
| H/C | 1.86 - 1.88 |
| AROM (%) | 21.6 - 21.2 |

MANUFACTURER: Pratt & Whitney Canada Inc.

TEST ORGANIZATION: PW307 Development Engineering

TEST LOCATION: Mississauga, Ontario, Canada

TEST DATES: FROM 24 Jun 14 TO 03 Sep 14

REMARKS

1. Data from P&WC ER-8343-II
2. PW307D Build Spec. 1318
3. Engines tested: CH0005B25 (production standard development engine), CM0005B02, and CM0009B01
4. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
5. NOx levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

If REVISED, this data supersedes databank UID

Compliance with fuel venting requirements:x ('x' if complies, PR if pre-regulation)