



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW306A  
UNIQUE ID NUMBER: 7PW077  
ENGINE TYPE: MTF

BYPASS RATIO: 4.5  
PRESSURE RATIO ( $\pi_{00}$ ): 20  
RATED OUTPUT ( $F_{00}$ ) (kN): 26.87

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{00}$ (g/kN) or SN	12.4	107.5	58.9	4.3
AS % OF ORIGINAL LIMIT	63.3 %	91.1 %	73.6 %	12.7 %
AS % OF CAEP/2 LIMIT (NOx)			92.0 %	
AS % OF CAEP/4 LIMIT (NOx)			92.1 %	
AS % OF CAEP/6 LIMIT (NOx)			92.1 %	
AS % OF CAEP/8 LIMIT (NOx)			97.0 %	

### DATA STATUS

- PRE-REGULATION  
x CERTIFICATION  
- REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- 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 (% $F_{00}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	0.317	0	2.27	20.08	2.6
CLIMB OUT	85	2.2	0.264	0	2.51	19.26	0.8
APPROACH	30	4.0	0.097	0	7.11	11.87	0
IDLE	7	26.0	0.042	4.36	36.35	4.26	0.2
LTO TOTAL FUEL (kg) or EMISSIONS (g)			137	287	2677	1497	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				3	3	3	3
AVERAGE $D_p/F_{00}$ (g/kN) or AVERAGE SN (MAX)				10.6	99.4	55.6	3.9
SIGMA ( $D_p/F_{00}$ in g/kN, or SN)				-	-	-	-
RANGE ( $D_p/F_{00}$ in g/kN, or SN)				6.3 - 13.7	87.0 - 120.3	52.7 - 58.0	3.0 - 5.1

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
STAGE BLEED 0 % CORE FLOW AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.39 - 99.49
TEMPERATURE (K)	284 - 300
ABS HUMIDITY (kg/kg)	0.0054 - 0.0144

### FUEL

SPEC	Jet A-1
H/C	1.85 - 1.87
AROM (%)	20.0 - 22.5

MANUFACTURER: Pratt & Whitney Canada Inc.  
TEST ORGANIZATION: PW306 Development Engineering  
TEST LOCATION: Mississauga, Ontario, Canada  
TEST DATES: FROM 08 May 00 TO 20 Jul 00

### REMARKS

1. P&WC EC C2264A
2. Engines E9541/02, E9402/37, E9403/74
3. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
4. NOx levels in accordance with Part III, Chapter 2, 2.3.2 d) (CAEP/6)

If REVISED, this data supersedes databank UID  
Compliance with fuel venting requirements:

0 ('x' if complies, PR if pre-regulation)