



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: NK-8-2U  
UNIQUE ID NUMBER: 1KK002  
ENGINE TYPE: MTF  
BYPASS RATIO: 1.24  
PRESSURE RATIO ( $\pi_{00}$ ): 10.8  
RATED OUTPUT ( $F_{00}$ ) (kN): 103

### REGULATORY DATA

| CHARACTERISTIC VALUE:      | HC      | CO      | NOx   | SMOKE NUMBER |
|----------------------------|---------|---------|-------|--------------|
| $D_p/F_{00}$ (g/kN) or SN  | 180.3   | 305.0   | -     | -            |
| AS % OF ORIGINAL LIMIT     | 920.1 % | 258.5 % | 0.0 % | 0.0 %        |
| AS % OF CAEP/2 LIMIT (NOx) |         |         | 0.0 % |              |
| AS % OF CAEP/4 LIMIT (NOx) |         |         | 0.0 % |              |
| AS % OF CAEP/6 LIMIT (NOx) |         |         | 0.0 % |              |
| AS % OF CAEP/8 LIMIT (NOx) |         |         | 0.0 % |              |

### DATA STATUS

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

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
- DEDICATED ENGINES TO PRODUCTION STANDARD  
x OTHER (SEE REMARKS)

### EMISSIONS STATUS

- 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          | 1.750          | 2                        | 5     | -   | -            |
| CLIMB OUT                                       | 85                          | 2.2          | 1.330          | 2                        | 6     | -   | -            |
| APPROACH  | 30                          | 4.0          | 0.550          | 2.6                      | 13    | -   | -            |
| IDLE  | 7                           | 26.0         | 0.220          | 32                       | 64    | -   | -            |
| LTO TOTAL FUEL (kg) or EMISSIONS (g)            |                             |              | 724            | 11824                    | 25102 | 0   | -            |
| NUMBER OF ENGINES                               |                             |              |                | 1                        | 1     | -   | -            |
| NUMBER OF TESTS                                 |                             |              |                | 2                        | 2     | -   | -            |
| AVERAGE $D_p/F_{00}$ (g/kN) or AVERAGE SN (MAX) |                             |              |                | 117.1                    | 248.5 | -   | -            |
| SIGMA ( $D_p/F_{00}$ in g/kN, or SN)            |                             |              |                | -                        | -     | -   | -            |
| RANGE ( $D_p/F_{00}$ in g/kN, or SN)            |                             |              |                | -                        | -     | -   | -            |

### ACCESSORY LOADS

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

### ATMOSPHERIC CONDITIONS

|                      |         |
|----------------------|---------|
| BAROMETER (kPa)      | 102.7   |
| TEMPERATURE (K)      | 293     |
| ABS HUMIDITY (kg/kg) | 0.00905 |

### FUEL

|          |      |
|----------|------|
| SPEC     | TS-1 |
| H/C      | 2    |
| AROM (%) | 18   |

MANUFACTURER: KKBM  
TEST ORGANIZATION: State Inst for Civ Aviation  
TEST LOCATION: Sheremetjevo, Moscow  
TEST DATES: FROM 14 Jun 90 TO -

### REMARKS

1. Data obtained on aircraft (Tu-154A)
2. In-service engine(s), tested after overhaul

If REVISED, this data supersedes databank UID  
Compliance with fuel venting requirements: 0 ('x' if complies, PR if pre-regulation)