

**Attachment No. 18**  
**Turbomeca SB 292 72 0246**



# SERVICE BULLETIN N° 292 72 0246

**ARRIEL 1****Application : Recommended****Subject : Ultrasonic frequency inspection of the centrifugal compressor**

The technical information contained in this document has been approved under "the Design Organization agreement JAA No F.JA.05" on 01.04.1999 (Ref. FA 99/30)

## 1. Planning information

### A. Effectivity

#### (1) Validity

- ARRIEL 1 D - 1 D1 engines.
- ARRIEL 1 S - 1 S1 engines.

Note 1 : Application limited to the compressors stated in the list of APPENDIX 1.

Note 2 : The centrifugal compressor serial and part number are given on the M03 log card (FMFE).

#### (2) Application

##### (a) Definition of application for engines in service

**Recommended** : although it does not affect immediately flight safety, the manufacturer considers that this Service Bulletin shall be applied as soon as practicable for engines in operation and returned to an approved Repair Center.

##### (b) Conditions of application for engines in service

###### (b.1) Application in a TURBOMECA approved Repair Center :

At first engine or module M03 return to an approved Repair Center whatever is the reason for return if the Service Bulletin has not been applied on the M03.

###### (b.2) Application at the operator's :

This Service Bulletin must be incorporated before July 2000 for all centrifugal compressors which have accumulated more than 250 hours since new.

Original issue : 31.03.1999

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## **SERVICE BULLETIN**

### **B. Purpose**

The ultrasonic inspection of the blades of the centrifugal compressor in the field or in a TURBOMECA approved Repair Center aims to detect a possible singularity which may result from the machining or possible small cracks which may evolve from the machining singularity. This condition might lead to the rupture of a portion of a centrifugal compressor blade. This has caused in flight a power drop. An engine may experience an uncommanded in flight shutdown, although this has not occurred yet.

### **C. Description**

This maintenance task consists in inspecting once the blades of the centrifugal compressor using an ultrasonic frequency device.

### **D. Approval**

"The technical information contained in this document has been approved under the Design Organization agreement JAA No FJA.05".

### **E. Manpower**

#### **(1) By the operator**

(a) **Personnel** : 1 mechanic especially qualified by TURBOMECA to perform ultrasonic frequency inspection.

(b) **Time required** : 8 man hours.

This time includes the following tasks :

- Removal of module M03
- Centrifugal compressor inspection.
- Installation of module M03 and reconditioning.

#### **(2) By a TURBOMECA approved Repair Center**

(a) **Personnel** from the approved Repair Center especially trained for the ultrasonic inspection.

(b) **Time** as defined by the Repair Center for this level of intervention.

### **F. Material**

See paragraph 3.

### **G. Tooling**

(1) Mechanic's standard tooling necessary for modular maintenance.

(2) Refer to the Maintenance Manual Ref. X 292 87 301 2.

(3) Refer to the Maintenance Technical Instruction Ref. X 292 87 343 2.

Ultrasonic test equipment is available for loan from TURBOMECA.

### **H. Weight and balance**

Not applicable.

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**SERVICE BULLETIN****I. References**

- (1) ARRIEL 1-D - 1 D1 Maintenance Manual.....Ref. X 292 E5 300 2
- (2) ARRIEL 1 S - 1 S1 Maintenance Manual.....Ref. X 292 F9 300 2
- (3) Technical Repair Instruction .....Ref. 292 72 0246
- (4) Technical Maintenance Instruction .....Ref. X 292 87 343 2  
dealing with ultrasonic inspection of centrifugal compressor
- (5) ARRIEL 1 Repair Manual.....Ref. X 292 87 500 2
- (6) Maintenance Manual of the concerned helicopter .

**J. Other publications affected**

- (1) ARRIEL 1 D - 1 D1 Spare Parts Catalogue.....Ref. X 292 E5 700 9
- (2) ARRIEL 1 S - 1 S1 Spare Parts Catalogue .....Ref. X 292 F9 700 9

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## **SERVICE BULLETIN**

### **2. Instructions to be incorporated**

#### **A. Implementation**

This inspection task requires the engine to be removed from the helicopter and may be performed :

##### **(1) By the operator**

Inspection of the centrifugal compressor on a complete module M03.

Operators must qualify their mechanics for ultrasonic inspection using TURBOMECA instructors or coordinate for an on site inspection by TURBOMECA inspectors.

##### **(2) By a TURBOMECA approved Repair Center**

Inspection of the centrifugal compressor on a complete module M03 or on a removed centrifugal compressor.

#### **B. Operating instructions**

##### **(1) By the operator**

(a) Removal of the module M03 : refer to the Maintenance Manual, chapter 72-40-10.

(b) Install the module M03 vertically.

(c) Clean the blades at inlet of the centrifugal compressor : refer to the Maintenance Technical Instruction Ref. X 292 87 343 2

(d) Perform the ultrasonic frequency inspection on blades at inlet of the centrifugal compressor : refer to the Maintenance Technical Instruction Ref. X 292 87 343 2.

(e) Install module M03 : refer to the Maintenance Manual, chapter 72-40-10.

##### **(2) By a TURBOMECA approved Repair Center**

Refer to the Repair Technical Instruction Ref. 292 72 0246.

#### **C. Reconditioning and checks**

##### **(1) By the operator**

(a) Carry out a ground run check : refer to the Maintenance Manual, task 71-00-04.

(b) Carry out a vibration check : refer to the Maintenance Manual, task 71-00-08.

(c) Carry out an oil pressure check : refer to the Maintenance Manual, task 72-80-01.

##### **(2) By a TURBOMECA approved Repair Center**

Refer to the Repair Technical Instruction Ref. 292 72 0246.

#### **D. Identification**

##### **(1) By the operator**

Record the application of the Service Bulletin No 292 72 0246 in the section "E" of the engine log book and on the log card (FMFE) of the module M03.

##### **(2) By a TURBOMECA approved Repair Center**

Refer to the Repair Technical Instruction Ref. 292 72 0246.

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**SERVICE BULLETIN****3. Material information****A. Basic information**

The parts required for the incorporation of this Service Bulletin are for 1 engine.

**B. List of parts**

Refer to the Maintenance Manual for the consumable parts required for module removal.

**C. Supply conditions**

Please contact your nearest Service Center or TURBOMECA subsidiary

or

**Louis LABOURDET**



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## SERVICE BULLETIN

### List of evolutive compressors to be inspected

Note : The S/N and P/N of the centrifugal compressor are given on the M03 log card (FMFE).

|        |         |         |         |         |         |         |         |         |
|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| 5 OTT  | 80 OTT  | 126 OTT | 188 OTT | 1970 FT | 264 OTT | 330 OTT | 445 OTT | 581 OTT |
| 6 OTT  | 81 OTT  | 127 OTT | 1887 FT | 197 OTT | 265 OTT | 334 OTT | 447 OTT | 582 OTT |
| 7 OTT  | 82 OTT  | 128 OTT | 1888 FT | 1971 FT | 266 OTT | 335 OTT | 450 OTT | 584 OTT |
| 8 OTT  | 83 OTT  | 131 OTT | 1889 FT | 1972 FT | 267 OTT | 339 OTT | 451 OTT | 585 OTT |
| 9 OTT  | 84 OTT  | 134 OTT | 1890 FT | 1973 FT | 268 OTT | 341 OTT | 452 OTT | 586 OTT |
| 10 OTT | 85 OTT  | 136 OTT | 189 OTT | 1974 FT | 269 OTT | 346 OTT | 453 OTT | 592 OTT |
| 11 OTT | 86 OTT  | 139 OTT | 1891 FT | 1975 FT | 270 OTT | 347 OTT | 454 OTT | 593 OTT |
| 12 OTT | 87 OTT  | 143 OTT | 1892 FT | 1976 FT | 271 OTT | 352 OTT | 456 OTT | 596 OTT |
| 13 OTT | 88 OTT  | 145 OTT | 190 OTT | 1977 FT | 272 OTT | 357 OTT | 458 OTT | 597 OTT |
| 14 OTT | 89 OTT  | 146 OTT | 191 OTT | 1978 FT | 273 OTT | 358 OTT | 460 OTT | 598 OTT |
| 15 OTT | 90 OTT  | 149 OTT | 1920 FT | 1979 FT | 274 OTT | 361 OTT | 461 OTT | 599 OTT |
| 16 OTT | 91 OTT  | 150 OTT | 192 OTT | 1980 FT | 275 OTT | 364 OTT | 462 OTT | 600 OTT |
| 17 OTT | 934 FB  | 151 OTT | 1921 FT | 1981 FT | 276 OTT | 367 OTT | 463 OTT | 602 OTT |
| 18 OTT | 935 FB  | 152 OTT | 1922 FT | 1982 FT | 277 OTT | 368 OTT | 465 OTT | 604 OTT |
| 36 OTT | 936 FB  | 153 OTT | 1923 FT | 1983 FT | 278 OTT | 371 OTT | 470 OTT | 606 OTT |
| 37 OTT | 937 FB  | 154 OTT | 1924 FT | 199 OTT | 279 OTT | 375 OTT | 471 OTT | 612 OTT |
| 38 OTT | 938 FB  | 155 OTT | 1925 FT | 200 OTT | 280 OTT | 376 OTT | 472 OTT | 616 OTT |
| 39 OTT | 939 FB  | 156 OTT | 1926 FT | 201 OTT | 281 OTT | 378 OTT | 473 OTT | 617 OTT |
| 40 OTT | 940 FB  | 157 OTT | 1927 FT | 202 OTT | 282 OTT | 382 OTT | 474 OTT | 621 OTT |
| 41 OTT | 94 OTT  | 158 OTT | 1928 FT | 233 OTT | 283 OTT | 384 OTT | 477 OTT | 622 OTT |
| 42 OTT | 941 FB  | 159 OTT | 1929 FT | 234 OTT | 284 OTT | 385 OTT | 478 OTT | 628 OTT |
| 43 OTT | 942 FB  | 160 OTT | 1930 FT | 235 OTT | 285 OTT | 389 OTT | 479 OTT | 632 OTT |
| 44 OTT | 943 FB  | 161 OTT | 193 OTT | 236 OTT | 286 OTT | 391 OTT | 482 OTT | 645 OTT |
| 45 OTT | 944 FB  | 162 OTT | 1931 FT | 237 OTT | 287 OTT | 397 OTT | 486 OTT | 657 OTT |
| 46 OTT | 945 FB  | 163 OTT | 1932 FT | 238 OTT | 288 OTT | 400 OTT | 490 OTT | 659 OTT |
| 47 OTT | 946 FB  | 164 OTT | 1933 FT | 239 OTT | 289 OTT | 402 OTT | 494 OTT | 665 OTT |
| 48 OTT | 947 FB  | 165 OTT | 1934 FT | 240 OTT | 290 OTT | 403 OTT | 495 OTT | 666 OTT |
| 49 OTT | 948 FB  | 166 OTT | 1935 FT | 241 OTT | 291 OTT | 404 OTT | 496 OTT | 670 OTT |
| 50 OTT | 949 FB  | 167 OTT | 1936 FT | 242 OTT | 292 OTT | 406 OTT | 497 OTT | 673 OTT |
| 53 OTT | 950 FB  | 168 OTT | 1937 FT | 243 OTT | 293 OTT | 407 OTT | 498 OTT | 674 OTT |
| 55 OTT | 951 FB  | 169 OTT | 1938 FT | 244 OTT | 294 OTT | 410 OTT | 502 OTT | 676 OTT |
| 57 OTT | 952 FB  | 170 OTT | 1939 FT | 245 OTT | 296 OTT | 412 OTT | 510 OTT | 683 OTT |
| 63 OTT | 953 FB  | 171 OTT | 1940 FT | 246 OTT | 297 OTT | 415 OTT | 520 OTT | 690 OTT |
| 64 OTT | 96 OTT  | 172 OTT | 194 OTT | 247 OTT | 299 OTT | 417 OTT | 526 OTT | 693 OTT |
| 65 OTT | 97 OTT  | 175 OTT | 1941 FT | 248 OTT | 300 OTT | 420 OTT | 534 OTT | 697 OTT |
| 66 OTT | 98 OTT  | 176 OTT | 1942 FT | 249 OTT | 302 OTT | 421 OTT | 535 OTT | 698 OTT |
| 67 OTT | 99 OTT  | 177 OTT | 1943 FT | 251 OTT | 303 OTT | 422 OTT | 540 OTT | 711 OTT |
| 68 OTT | 101 OTT | 178 OTT | 1944 FT | 252 OTT | 306 OTT | 423 OTT | 543 OTT | 719 OTT |
| 69 OTT | 102 OTT | 179 OTT | 1945 FT | 253 OTT | 308 OTT | 424 OTT | 544 OTT | 721 OTT |
| 70 OTT | 103 OTT | 182 OTT | 1946 FT | 254 OTT | 312 OTT | 425 OTT | 545 OTT | 742 OTT |
| 71 OTT | 106 OTT | 183 OTT | 1947 FT | 255 OTT | 313 OTT | 429 OTT | 553 OTT | 747 OTT |
| 72 OTT | 107 OTT | 184 OTT | 195 OTT | 256 OTT | 317 OTT | 430 OTT | 559 OTT |         |
| 73 OTT | 108 OTT | 185 OTT | 196 OTT | 257 OTT | 318 OTT | 432 OTT | 562 OTT |         |
| 74 OTT | 109 OTT | 186 OTT | 1964 FT | 258 OTT | 321 OTT | 436 OTT | 566 OTT |         |
| 75 OTT | 110 OTT | 1870 FT | 1965 FT | 259 OTT | 323 OTT | 437 OTT | 567 OTT |         |
| 76 OTT | 115 OTT | 187 OTT | 1966 FT | 260 OTT | 325 OTT | 438 OTT | 572 OTT |         |
| 77 OTT | 116 OTT | 1874 FT | 1967 FT | 261 OTT | 326 OTT | 440 OTT | 575 OTT |         |
| 78 OTT | 119 OTT | 1876 FT | 1968 FT | 262 OTT | 327 OTT | 442 OTT | 576 OTT |         |
| 79 OTT | 120 OTT | 1879 FT | 1969 FT | 263 OTT | 328 OTT | 444 OTT | 578 OTT |         |

### APPENDIX 1

Original issue : 31.03.1999

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292-72 0246

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# **Turbomeca** **SERVICE BULLETIN**

**ARRIEL 1****Application : Mandatory****Subject : Ultrasonic frequency inspection of the centrifugal compressor.**

**The technical information contained in this document has been approved under "the Design Organization agreement JAA No F.JA.05" on 03.02.2000 (Ref. FA 2000/006)**

## **1. Planning information**

### **A. Effectivity**

#### **(1) Validity**

- **ARRIEL 1 D - 1 D1 engines.**

#### **(2) Application**

##### **(a) Definition of application for engines in service**

**Mandatory** : application due to a technical requirement which can affect flight safety. The incorporation required can be immediate or adapted to a scheduled program.

##### **(b) Conditions of application for engines in service**

###### **(b.1) Application at the operator's :**

- If TU 300 was incorporated in the module M03 at original manufacture : no inspection is required.
- If the module M03 was operated less than 350 hours (or less than 600 flights) since incorporation of modification TU 300 : inspection to be performed as soon as possible in agreement with the TURBOMECA subsidiary in charge of your area.
- If the module M03 was operated more than 350 hours (and more than 600 flights) since incorporation of modification TU 300 : no inspection is required.

###### **(b.2) Application in a TURBOMECA approved Repair Center :**

- If TU 300 was incorporated in the module M03 at original manufacture, this inspection will be performed if access is possible at next engine or module M03 return to an approved Repair Center.
- If the centrifugal impeller was operated less than 350 hours (or less than 600 flights) with modification TU 300, this inspection will be performed at first engine or module M03 return to an approved Repair Center (if an inspection has not been performed in the factory).

**Original issue : 31.03.1999**  
**Update No 2 from 03.02.2000**

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- If the centrifugal impeller was operated more than 350 hours (or more than 600 flights) with modification TU 300, this inspection will be performed if access is possible at next engine or module M03 return to an approved Repair Center (even if an inspection has been performed on site).

**Example :**

- Engine modified at a TSN\* = 200 hours and 100 flights since installation :

|                                     | On site inspection | Inspection at an approved Repair Center |
|-------------------------------------|--------------------|-----------------------------------------|
| Now TSN = 400 hours and 300 flights | yes                | yes                                     |
| Now TSN = 600 hours and 500 flights | yes                | yes                                     |
| Now TSN = 800 hours and 700 flights | no                 | if access is possible                   |

\*TSN = Time/ flights Since New (Heures/vols depuis neuf).

**B. Purpose**

Update No 2 redefines the conditions of application for the ultrasonic inspection of the centrifugal compressor blades.

This inspection was initially introduced to detect a possible manufacturing singularity on the centrifugal compressor blade. This hypothesis has been now eliminated. However this inspection remains in force in the Repair Centers. Recently, it allowed two cracked centrifugal impellers to be identified.

Ultrasonic inspection is maintained for the concerned engines to detect the possible presence of a crack which could have been initiated before installation of TU 300 sleeve and which would have propagated since then.

As a reminder, a blade rupture may lead to an in flight engine power loss.

**C. Description**

This maintenance task consists in inspecting the blades of the centrifugal compressor using an ultrasonic frequency device.

The conditions of application of the inspections to be performed at the operator's to the operating engines are calculated in relation to a threshold of 350 hours (and 600 flights) since application of modification TU 300.

This inspection is to be performed as early as possible according to the engine situation in agreement with the TURBOMECA subsidiary in charge of your area.

**D. Approval**

The technical information contained in this document has been approved under the Design Organization agreement JAA No F.JA.05.

For information purposes, the Airworthiness Directive (DGAC - F) associated to the previous update of this Service Bulletin has been cancelled.

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### **SERVICE BULLETIN**

#### **E. Manpower**

##### **(1) At the operator's**

(a) **Personnel** : 1 technician especially qualified by TURBOMECA to perform ultrasonic frequency inspection.

(b) **Time required** : 8 man hours.

This time includes the following tasks :

- Removal of module M03
- Centrifugal compressor inspection.
- Installation of module M03 and reconditioning.

##### **(2) In a TURBOMECA approved Repair Center**

(a) **Personnel** from the approved Repair Center especially trained for the ultrasonic inspection.

(b) **Time** as defined by the Repair Center for this level of intervention.

#### **F. Material**

See paragraph 3.

#### **G. Tooling**

(1) Mechanic's standard tooling necessary for modular maintenance.

(2) Refer to the Maintenance Manual Ref. X 292 87 301 2.

(3) Refer to the Maintenance Technical Instruction Ref. X 292 87 343 2.

Ultrasonic test equipment is available for loan from TURBOMECA.

#### **H. Weight and balance**

Not applicable.

#### **I. References**

(1) ARRIEL 1 D - 1 D1 Maintenance Manual.....Ref. X 292 E5 300 2

(2) Technical Repair Instruction.....Ref. 292 72 0246

(3) Technical Maintenance Instruction.....Ref. X 292 87 343 2  
dealing with ultrasonic inspection of centrifugal compressor

(4) ARRIEL 1 Repair Manual.....Ref. X 292 87 500 2

(5) Maintenance Manual of the concerned helicopter .

#### **J. Other publications affected**

ARRIEL 1 D - 1 D1 Spare Parts Catalogue.....Ref. X 292 E5 700 9

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## **SERVICE BULLETIN**

### **2. Instructions to be incorporated**

#### **A. Implementation**

This inspection task requires the engine to be removed from the helicopter and may be performed :

**(1) At the operator's :**

Inspection of the centrifugal compressor on a complete module M03.

Operators must qualify their mechanics for ultrasonic inspection using TURBOMECA instructors or coordinate for an on site inspection by a TURBOMECA technician.

**Note :** It is required to return first as soon as possible the situation form (page 7/7) of your engines to :  
the TURBOMECA subsidiary in charge of your area

OR

**Mr. Louis LABOURDET / TURBOMECA / DSO/T /NORIA / 64 511  
BORDES Cedex / FRANCE.**

**(2) In a TURBOMECA approved Repair Center**

Inspection of the centrifugal compressor on a complete module M03 or on a removed centrifugal compressor.

#### **B. Operating instructions**

**(1) At the operator's :**

**(a) Fill in one situation form (page 7/7) per engine and return it to the TURBOMECA subsidiary in charge of your area or to Mr. Louis LABOURDET / TURBOMECA / DSO/T /NORIA / 64 511 BORDES Cedex / FRANCE**

**Note :** The different information dealing with the compressor is to be found on the module M03 log card.

**(b) Application of the inspection :**

**(1) Removal of the module M03 :** refer to the Maintenance Manual, chapter 72-40-10.

**(2) Install the module M03 vertically.**

**(3) Clean the blades at inlet of the centrifugal compressor :** refer to the Maintenance Technical Instruction Ref. X 292 87 343 2.

**(4) Perform the ultrasonic frequency inspection on blades at inlet of the centrifugal compressor :** refer to the Maintenance Technical Instruction Ref. X 292 87 343 2.

**(5) Install module M03 :** refer to the Maintenance Manual, chapter 72-40-10.

**(2) In a TURBOMECA approved Repair Center**

Refer to the Repair Technical Instruction Ref. 292 72 0246.

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### **SERVICE BULLETIN**

#### **C. Reconditioning and inspections**

##### **(1) At the operator's**

- (a) Carry out a ground run inspection : refer to the Maintenance Manual, task 71-00-04.
- (b) Carry out a vibration inspection : refer to the Maintenance Manual, task 71-00-08.
- (c) Carry out an oil pressure inspection : refer to the Maintenance Manual, task 72-80-01.

##### **(2) In a TURBOMECA approved Repair Center**

Refer to the Repair Technical Instruction Ref. 292 72 0246.

#### **D. Identification**

##### **(1) At the operator's**

Record the application of the Service Bulletin No 292 72 0246 (update No 2) in the section "E" of the engine log book and on the log card (FMFE) of the module M03.

##### **(2) In a TURBOMECA approved Repair Center**

Refer to the Repair Technical Instruction Ref. 292 72 0246.

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## **SERVICE BULLETIN**

### **3. Material information**

#### **A. Basic information**

The parts required for the incorporation of this Service Bulletin are for 1 engine.

#### **B. List of parts**

Refer to the Maintenance Manual for the consumable parts required for module removal.

#### **C. Supply conditions**

Application of the inspection will be managed by :

the TURBOMECA subsidiary in charge of your area

or

**Mr. Louis LABOURDET**

TURBOMECA

DSO / T / NORIA  
[REDACTED]  
[REDACTED]

**Turbomeca**  
**SERVICE BULLETIN****Fiche de situation moteur**  
**Engine situation form****Important / Important notice :**

Veillez compléter la présente fiche de situation (une par moteur) et la retourner par courrier à / Please complete this form (one per engine) and mail it to :

Filiale TURBOMECA couvrant votre territoire

ou

M. Louis LABOURDET

(contact pour toute information concernant ce contrôle/contact for any information concerning this inspection)

**Information concernant le matériel / Equipment information**

| Utilisateur<br>Operator   |           |            |      | N° Appareil<br>Aircraft N° |                   |
|---------------------------|-----------|------------|------|----------------------------|-------------------|
|                           | N/S - S/N | Réf. - P/N | TSN* | TSO**                      | Remarques/Remarks |
| Moteur<br>Engine          |           |            |      |                            |                   |
| module M03<br>module M03  |           |            |      |                            |                   |
| Compresseur<br>Compressor |           |            |      |                            |                   |

\*TSN = Time Since New (Heures/cycles depuis neuf) \*\*TSO = Time Since Overhaul (Heures/cycles depuis RG)

**Situation du compresseur / Compressor situation :**

|                  | Lors de l'application de la TU 300<br>At time of embodiment of TU 300 | Lors du précédent contrôle<br>At time of previous inspection | A réception du Service Bulletin<br>At time of Service Bulletin reception |
|------------------|-----------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------------------|
| Date<br>Date     |                                                                       |                                                              |                                                                          |
| Heures<br>Hours  |                                                                       |                                                              |                                                                          |
| Cycles<br>Cycles |                                                                       |                                                              |                                                                          |
| Vols<br>Flights  |                                                                       |                                                              |                                                                          |

**TURBOMECA vous contactera pour définir les modalités de contrôle ultrasons si celui-ci est requis.**

**TURBOMECA will contact you in order to define the conditions of the inspection application if required.**

Date

Nom / Name

Fonction / Job title

.....  
**Signature :**

 **Turbomeca**  
**SERVICE BULLETIN**

N°

**ARRIEL 1****Application : Mandatory****Subject : Compressor module. Installation of a sleeve in the attachment boss of the bleed valve.****Incorporation of the modification TU 300.**

**The technical information contained in this document has been  
approved by DGAC  
on 20.09.1999**

**1. Planning information****A. Effectivity****(1) Validity**

- **ARRIEL 1D - 1 D1 engines**
- **ARRIEL 1S - 1 S1 engines.**

**(2) Application****(a) Definition of the application for engines in service**

**Mandatory** ; Incorporation of this Service Bulletin is required to eliminate a condition which can affect flight safety. The incorporation required can be immediate or adapted to a scheduled program.

**(b) Conditions of application for engines in service****(b.1) Application in a TURBOMECA approved Repair Center :**

At first return of the engine or of the module M02 to an approved Repair Center whatever the reason for return.

**(b.2) Application at the operator's :**

Upon receipt of the parts sent by TURBOMECA and no later than 31st March 2000 on all the modules M02.

**B. Purpose**

To reduce the vibratory level of the compressor blades by deleting coupling which may occur through the air flow between these blades and the acoustic cavity between the compressor cover and casing. Deleting this coupling is obtained by disturbing the symmetry of this cavity by the insertion of a metal sleeve.

This vibratory level may lead to initiation of cracks on the blades which can lead to rupture of a blade and result in an in-flight power loss and possibly in an uncommanded in-flight shutdown.

**Original issue : 20.09.1999****Update No ... from ...****292 72 0261****Page 1/6****TURBOMECA 40220 Tarnos - FRANCE****Tel. (33) 05 59 64 40 00 - Telex 570 042 - Fax (33) 05 59 64 60 80****LABINAL GROUP  
TURBOMECA MICROTURBO  
DIVISION**

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## **SERVICE BULLETIN**

### **C. Description (appendix 1)**

This modification consists of inserting a sleeve in the attachment boss of the bleed valve.

### **D. Approval**

The technical information contained in this document has been approved under the Design Organization agreement JAA No F.JA.00.

This Service Bulletin is the subject of an Airworthiness Directive.

### **E. Manpower**

#### **(1) At the operator's**

(a) **Personnel** : 1 mechanic.

(b) **Time required** : 0.5 man hour (removal/installation of the bleed valve and fitting of the sleeve).

#### **(2) In a TURBOMECA approved Repair Center**

(a) **Personnel** of the approved Repair Center.

(b) **Time** as defined by the Repair Center for the level of this intervention.

### **F. Material**

Refer to paragraph 3.

### **G. Tooling**

#### **(1) At the operator's**

• Mechanic's standard tooling.

• Tooling for removal and installation of the bleed valve : refer to the Maintenance Manual, chapter 75-30-00.

#### **(2) In a TURBOMECA approved Repair Center**

Refer to the ARRIEL 1 Repair Manual.

### **H. Weight and balance**

Not applicable.

### **I. References**

(1) ARRIEL 1 D - 1 D1 Maintenance Manual .....Ref. X 292 E5 300 2

(2) ARRIEL 1 S - 1 S1 Maintenance Manual .....Ref. X 292 F9 300 2

(3) Manuel de Réparation ARRIEL 1 .....Ref. X 292 87 500 2

(5) Maintenance Manual of the Helicopter concerned.

### **J. Other publications concerned**

(1) ARRIEL 1 D - 1 D1 Spare Parts Catalogue .....Ref. X 292 E5 700 9

(2) ARRIEL 1 S - 1 S1 Spare Parts Catalogue .....Ref. X 292 F9 700 9.



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### **SERVICE BULLETIN**

## **2. Instructions to be incorporated**

### **A. Implementation**

This modification can be incorporated with the engine installed in the helicopter.

### **B. Operating instructions**

#### **(1) At the operator's**

(a) Remove the bleed valve : refer to the Maintenance Manual, chapter 75-30-01.

(b) Install the sleeve at the very bottom of the boss attachment of the bleed valve : refer to appendix 1.

Note : The sleeve slot is used to ensure the elasticity required to maintain it in position, but does not require any special positioning.

(c) Install the bleed valve : refer to the Maintenance Manual, chapter 75-30-01.

#### **(2) In a TURBOMECA approved Repair Center**

Application on complete engines, modules M02 and M03 assembled together or on separated modules M02.

(a) Remove the bleed valve : refer to the Repair Manual, chapter 72-00-01.

(b) Install the sleeve at the very bottom of the boss attachment of the bleed valve : refer to appendix 1.

Note : The sleeve slot is used to ensure the elasticity required to maintain it in position, but does not require any special positioning.

(c) Install the bleed valve : refer to the Repair Manual, chapter 72-00-01.

### **C. Reconditioning and checks**

#### **(1) At the operator's**

Carry out a ground run check : refer to ARRIEL 1 Maintenance Manual concerned, chapter 71-00-04.

#### **(2) In a TURBOMECA approved Repair Center**

Refer to the Repair Manual, chapter 72-00-02.

### **D. Identification**

#### **(1) At the operator's**

(a) Record the incorporation of the Service Bulletin 292 72 0261 dealing with the modification TU 300 in the section "E" of the engine log book and on the module M02 log card (FMFE).

(b) Inform TURBOMECA that the modification TU 300 has been incorporated by returning the compliance certificate fully completed (page 6/6 of this Service Bulletin).

#### **(2) In a TURBOMECA approved Repair Center**

(a) Record the incorporation of the modification TU 300 in the section "E" of the engine log book (if it is available) and on the module M02 log card (FMFE).

(b) Inform TURBOMECA that the modification TU 300 has been incorporated by returning the compliance certificate fully completed (page 6/6 of this Service Bulletin).

**Turbomeca**  
**SERVICE BULLETIN****3. Material information****A. Basic information**

The parts required for the incorporation of this Service Bulletin are for 1 engine.

**B. List of parts**

| New<br>part number | Key | Qty | Description | Deliv.<br>time | Old<br>part number | Key | Qty |
|--------------------|-----|-----|-------------|----------------|--------------------|-----|-----|
| 0 292 15 333 0     | A   | 1   | Sleeve      | *              |                    |     |     |

\* Delivery times will be given upon request.

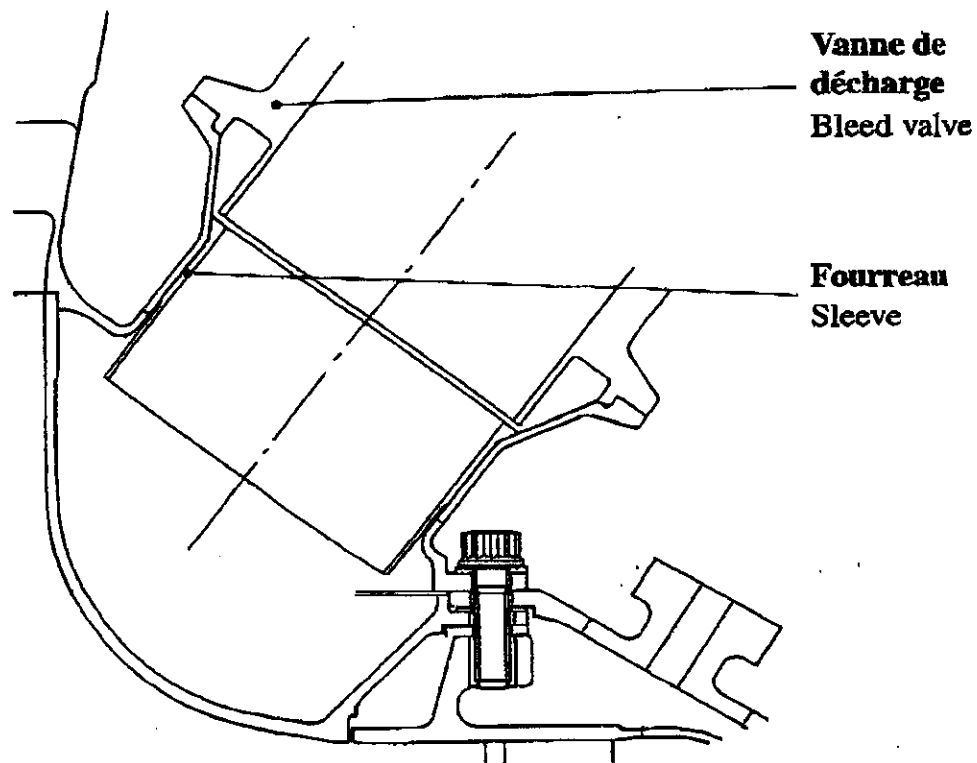
**Key**

*A - Part incorporated in the modification.*

**C. Supply conditions**

The sleeves will be supplied by your nearest TURBOMECA subsidiary or :

**Mr. Louis LABOURDET**  
TURBOMECA  
DSO / T / NORIA

**Turbomeca**  
**SERVICE BULLETIN**

**Montage du fourreau**  
**Sleeve installation**

**ANNEXE 1**

**Turbomeca**  
**SERVICE BULLETIN****Objet : Attestation d'application de la modification TU 300****Subject : TU 300 modification compliance certificate.****Important / Important notice :****Après application de ce Service Bulletin, veuillez compléter la présente attestation et la retourner par courrier à :****After incorporation of this Service Bulletin, please complete this certificate and mail it to :****M. Louis LABOURDET**  
**TURBOMECA**

F

**Information concernant le matériel / Equipment information**

| Utilisateur<br>Operator                         |           |            |      | N° Appareil<br>Aircraft N° |                   |
|-------------------------------------------------|-----------|------------|------|----------------------------|-------------------|
|                                                 | N/S - S/N | Réf. - P/N | TSN* | TSO**                      | Remarques/Remarks |
| Moteur<br>Engine                                |           |            |      |                            |                   |
| Module M02<br>modifié<br>Modified<br>module M02 |           |            |      |                            |                   |

\*TSN = Time Since New (hours/cycles)  
Heures/cycles depuis neuf\*\*TSO = Time Since Overhaul (hours/cycles)  
Heures/cycles depuis révision générale**Opération effectuée par :**  
**Works performed by :****Je certifie que le moteur identifié ci-dessus est modifié selon les directives du Service Bulletin en objet.****I certify that the engine has been modified according to the directives given in this Service Bulletin.**DateNom / NameFonction / Job title**Signature :****Edition originale/Original issue : 20.09.1999**  
**Mise à jour n° /Update No ... du/from...****292 72 0261**  
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