

QUALIFICATION REQUIREMENTS  
SUPERSEDES PREVIOUS EDITIONS

05 OCT 88  
(Revision D)

PRIME ENGINE MFG: Allison  
P/N: 6871864-3  
NSN: 2840-00-169-0185RW  
NOUN: Cage, Rear Bearing Pinion  
AMC: 3C

I. HARDWARE DESCRIPTION

- A. Function: locates and supports the pinion bearing.
- B. Material: AMS 6270 or 6272

II. JUSTIFICATION FOR QUALIFICATION REQUIREMENT

A. Criticality of Part:

Part is used on C-130 aircraft primary propulsion engine, Allison T56. It is considered a critical item because this part is subject to high mechanical stress. Failure of this part can cause unsafe engine operation.

B. Complexity of Part:

1. Part requires use of specialized manufacturing processes such as precision machining.
2. Part requires expertise in manufacturing from special material AMS 6270 or 6272.
3. Part requires sophisticated/rigorous quality assurance controls of raw materials, manufacturing techniques, and inspection processes, to guarantee satisfactory production of acceptable, safe, items.

C. Government Risk If Not From Qualified Source:

1. The probability of an unqualified source to underestimate the manufacturing difficulty, produce an inferior part and fail to meet delivery schedules is considerably greater than that for a qualified source.

2. An inferior part can cause unsafe or unreliable engine operation, resulting in high cost of repair and possible costly premature engine removals to retrieve the defective items.

3. Untimely delivery will critically impact engine overhaul schedules and/or the field level availability of needed spare parts. Failure to deliver on schedule may result in high cost emergency procurement and grounded aircraft.

III. JUSTIFICATION FOR QUALIFICATION PRIOR TO CONTRACT AWARD

A. Need to Lower Government Risk:

The risk of default by the contractor must be minimized. The shortest combined administrative and production lead time is over 29 months. Technical risk must be minimized due to the criticality of part. Manufacturing capability must be demonstrated prior to contract award, failure to do so could result in extensive logistic shortages of the part, or the installation of parts into the engine that contain deficiencies that are not readily apparent.

B. Government Limitations or Risks in Determining Potential Source's Capability to Fulfill the Contract Without Demonstration of Capability:

Required expertise and manufacturing techniques for this part are not commonly available or easily obtained (Reference Complexity of Part, paragraph II.B). Manufacturing capability must be demonstrated prior to contract award to prevent possible occurrence of the logistics and safety concerns noted in paragraph A above.

C. The manufacturing and processing techniques that are critical to performance and reliability are referenced in paragraph II.A and II.B above. This item employs these special processes and techniques and successful completion of all processes and techniques as well as quality control and scheduling of subvendors is necessary to manufacture a consistently acceptable and safe item.

#### IV. DATA AND DOCUMENTATION REQUIREMENTS

A. The DCAS or other government representative must provide written verification that the proposed source has the latest applicable revision of Allison drawing 6871964-3 and all the specifications and drawings it references.

B. The DCAS or other government representative must provide written verification that the proposed vendor's quality program meets or exceeds the requirements of MIL-I-45208A and paragraphs 5.1, 5.2, 6.1, 6.2 of MIL-Q-9858A. This may be provided by written verification from DCAS or other government representatives.

C. The vendor must submit a copy of the proposed manufacturing process sheets for the item (and for the similar item in the event that approval is requested on the basis of similarity). Final process sheets for the actual item must be submitted along with the sample items if samples are requested.

D. The vendor must supply a list of all manufacturing processes and inspections that will be performed by subvendors. In the event that these subvendors also provide these same services to the prime engine manufacturer, it would be desirable to verify this by providing copies of appropriate documents or by DCAS verification. Failure to do so could delay processing of the source approval request.

#### V. SUBSTANTIATION OF MANUFACTURING CAPABILITY

A. A vendor who has manufactured the item for the prime engine manufacturer may be approved as a source for the part provided that the vendor was responsible for all inspection and finishing of the end item, i.e., the prime engine manufacturer did not add any value to the end item. The vendor must submit evidence of the scope of work for the part indicating that the vendor had primary responsibility for all operations necessary to manufacture the item and that the item was accepted by the customer.

B. Other vendors will be considered for approval on the basis of their ability to manufacture a similar item for a prime engine manufacturer, U.S. government, or an ally of the U.S. government. The reason for the following data is for a potential vendor to show the government that he is indeed familiar with the technologies, peculiarities and difficulties associated with the manufacture of the type of part desired and that he has accomplished this successfully for other customers. The following conditions must be met for approval by similarity:

1. Submit evidence of the scope of work for the part which indicated that the vendor had primary responsibility for all operations necessary to produce the part, and that the part was successfully manufactured by the vendor and accepted by the customer. Copies of signed customer acceptance receiving documents are necessary.

2. Submit data on the similar item to show that the material is the same or an alloy of equal manufacturing properties, and provide specific similarities and differences between the desired part and the similar parts. The data must also show that the manufacturing and inspection/test processes for the similar part demonstrate the full range of scope and difficulty required for the desired part.

3. An approval based on similarity will have a requirement for samples included in any contract resulting from this approval. An approval based on similarity is a contingent approval. Final approval will be given only upon successful completion of sample testing and successful delivery of production items once a contract is awarded.

C. Any vendor who cannot meet the criteria in either paragraph A or B above must submit pre-contract qualification samples of the subject part. Pre-contract qualification samples are free, upfront samples provided at no cost to the government and will be used to substantiate the vendor's ability to manufacture the item prior to approval of the vendor as a source for this item.

## VI. TESTING

Estimated cost of testing samples is \$800.00. The tests include: dimensional, metallurgical, . All or part of the cost of testing may be passed on to the vendor requesting qualification. This decision will be based on the number of sources already approved for the part, the amount of the cost, and the amount of future long term savings to the government that will result from having another source of supply. As soon as this decision is made, the vendor will be given the opportunity to decide if he wants to continue his qualification efforts or withdraw.

SUPPLEMENTAL DATA SHEET TO AFMC FORM 260  
AND AFMC FORM 761

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1. Three first articles are required. Any solicitation/contract for this item will require the contractor to meet or exceed the quality assurance requirements of MIL-I-45208A and paragraphs 5.1, 5.2, 6.1, 6.2 of MIL-Q-9858A.

2. First article testing shall consist of evaluation of samples for conformance to the latest revision of drawing 6871864 including, but not limited to, dimensions, material, heat treat, finish, and other required processes.

3. First article testing will be performed by the contractor, witnessed by the cognizant Government representative. Test reports shall be submitted in accordance with the Contractor Data Requirements List, DD Form 1423.

a. The drawing requires all dimensions to be met before processing to AMS 2481 (Phosphate Treatment) and diameter "C" to be finished with the part pressed into a fixture with a diameter "B" hole. To verify the parts meet this requirement it will be necessary for the Government representative to witness the inspection of first article parts while they are in process.

4. Conditions for waiver of first articles are:

a. Bidders who have previously furnished production quantities of the same article to the Air Force or to the prime contractor for delivery to the Air Force within the last 36 months.

b. Bidders currently in production of the same article on an Air Force contract.

c. Bidder is the prime engine manufacturer.

d. Bidder who has previously furnished pre-contract qualification samples.

5. Approved first articles will be retained at the contractor's plant for reconditioning (if necessary); used as a prototype or other purpose (if requested by contractor); or if serviceable, included in the contract quantity.

6. Acceptance test reports (IAW DI-NDTI-80809) must be submitted for approval (see DD 1423). Government evaluation of the test reports will require 45 days.