

## JUSTIFICATION FOR SOLE SOURCE/BRAND NAME SOLE SOURCE <\$150K

<b>PO Number:</b> KFS 1070660/ Requisition 67486		
The effort listed on this form is for:	<input checked="" type="checkbox"/> Supply	<input type="checkbox"/> Service
The material and/or service listed on this form is:	<input type="checkbox"/> Sole Source	<input checked="" type="checkbox"/> Brand Name

**Restricted to the following source or manufacturer:**

- Manufacturer/Source: Allison Rolls-Royce

Source: [REDACTED]

- POC and Phone Number: [REDACTED]

- Address: [REDACTED]

**Description of the item(s) or service(s) required and the estimated cost(s):**

- Allison Rolls-Royce Model T63A700 (Also designated as Allison 250, Rolls Royce M250 or as C20) Compressor Only

One of the projects involving our ongoing detonation research is to test a prototype turbine designed for Rotating Detonation Engines (RDE). As with all testing it is imperative to have proper measurements to determine the work output of this turbine utilizing the detonation combustor. This requires a measurement to determine the torque or shaft horsepower output from the turbine. The measurement involves a known compressor able to withstand the load and RPM which is utilized as a Dynamometer attached to the turbine.

The Allison T63 Turbine (also known as Allison 250, Rolls Royce M250 or with C20 designation) is a common turbo shaft engine utilized in small helicopters. This meets the specified load rating and RPM of the designed RDE turbine. The full engines is available though is cost prohibitive (140K \$US) and not necessary as only the Compressor will be utilized. This compressor will be utilized for ground based research not requiring an air worthy engine. Typically once an engine has exceeded the given flight duration (i.e. 20,000 hours) it cannot be utilized for flight.

Estimated Cost: [REDACTED]

1. List the Required Delivery Date (RDD) or Period of Performance (POP):

This compressor is to be received by 24 Aug 15 to maintain program deadlines.

Office of Contracting and Logistics Management

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2. Specify characteristics of the material or service that limit the availability to a sole source/brand product (unique features, function of the item, etc.). Describe in detail why only this source/brand can furnish the requirements to the exclusion of other sources/brands.

This compressor meets the RPM specification of the designed Turbine capable of 40,000 RPM.

Able to absorb load of 250 Shaft Horsepower.

The design of the turbine is unique where the shaft is decoupled between the Turbine and compressor making for ease of dismantling for the respective components.

This engine is utilized for one of our class laboratories where the maintenance is well known.

3. Indicate if the requested material or service represents the minimum requirements of the Government.

Yes.

4. Indicate if the material or service must be compatible in all aspects (form, fit, and function) with existing systems presently installed/performing. Describe the equipment/function you have now and how the new item/service must coordinate, connect or interface with the existing system.

The design of the turbine is unique where the shaft is decoupled between the Turbine and Compressor making for ease of dismantling for the respective components.

This engine is utilized for one of our Mechanical Engineering class laboratories where the maintenance and tooling is well known.

5. Does a patent, copyright or proprietary data limit competition?

No.

6. Are the items "direct replacement" parts/components for existing equipment? If so, provide the information about the Next Higher Assembly (NHA)/equipment which the replacement parts are going into (e.g., description, model, part number, Original Equipment Manufacturer (OEM), etc.).

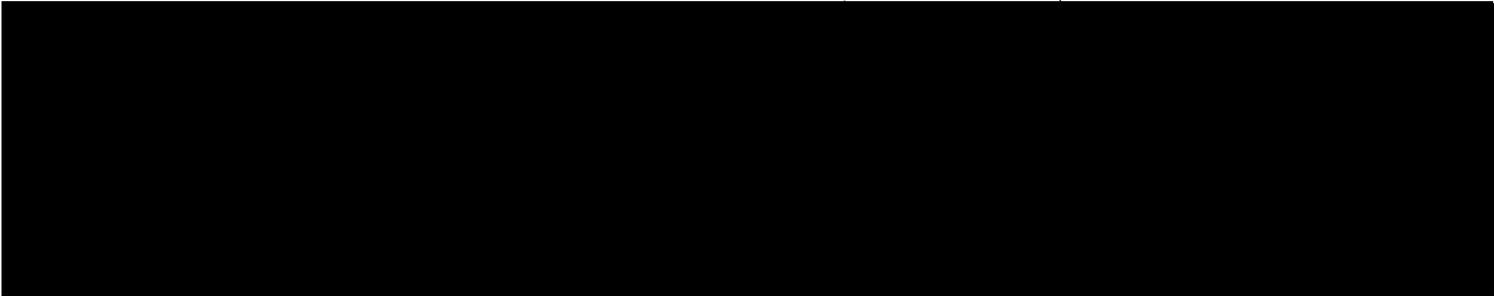
No.

7. Provide any additional information to support a sole source/brand name sole source procurement. The rationale must justify "either" substantial duplication of cost to the Government that is not recovered through competition or unacceptable delays in fulfilling the mission of the agency.

None.

**TECHNICAL OR REQUIREMENTS CERTIFICATION**

I CERTIFY THAT THE STATEMENTS CHECKED, AND INFORMATION PROVIDED ABOVE ARE COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE. I UNDERSTAND THAT THE PROCESSING OF THIS SOLE SOURCE/BRAND NAME SOLE SOURCE JUSTIFICATION PRECLUDES THE USE OF FULL AND OPEN COMPETITION.



**CONTRACTING OFFICER APPROVAL:**

