Operations Bulletin

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AVIATION FUELLING EQUIPMENT AND MATERIALS QUALIFICATION AND APPROVAL

The terms "**qualified**" and "**approved**" are often used interchangeably to describe the status of aviation fuelling equipment or materials and the purpose of this information bulletin is to clarify the correct use of these terms.

Qualified means that equipment or material has been tested in accordance with a published specification and meets all the requirements. Some examples of relevant aviation fuelling equipment and materials specifications are:

- EI 1581 Specification and qualification procedures for aviation jet fuel filter/separators
- SAE AS 5877 Detailed Specification for Aircraft Pressure Refuelling Nozzles
- UK Ministry of Defence Standard 80-97 Issue 5 Paint, System, for the interior of Bulk Fuel Tanks and Fittings, Multi-Pack

These specifications contain a detailed list of exacting performance, material compatibility and mechanical requirements that need to be met through first-article (prototype) testing under controlled laboratory/test rig conditions. This testing is carried out by the original equipment manufacturer (OEM) and may be contracted out to an independent testing house / laboratory in part or sometimes in its entirety. All of the testing is recorded with relevant evidence such as laboratory analytical test results, instrument readings and measurements. This data is compiled into a Qualification Test report.

In some cases the qualification testing, or at least key parts of it, are carried out under the observation of an expert witness or witnesses. Witnesses may be potential purchasers of the equipment or an individual acting on behalf of the owner of the Specification. For example, the Energy Institute provides expert witnesses to observe the qualification of aviation filters that are being tested against the exacting requirements of their filtration specifications (EI 1581, EI 1583 and EI 1590). The Test Reports are then reviewed by the EI Aviation Fuel Filtration Committee to confirm that the testing was complete, in accordance with the relevant specification and that the results met the specification requirements. The EI Equipment Sub-Committee can provide a similar role for relevant equipment qualifications.

The Qualification Test Report provides evidence that a material or item of equipment does indeed meet all of the requirements of the specification. It is owned by the OEM and should be made available for user review on request. It is only by reviewing the Qualification Test Report that a user can assure itself that an OEM claim of having an item of qualified equipment or a qualified material is correct.

Approval means that equipment or material that has been qualified in accordance with a published specification has also undertaken a formal review that typically, but not always, will include a period of actual field service evaluation. It is **only** equipment or material user companies that decide if a specific material or item of equipment is acceptable for their use.

JIG and the EI do not issue equipment or material approvals and any claims to this effect are incorrect and should be disregarded.

As well as a detailed review of the Qualification Test Report, a rigorous approval process will usually include a Management of Change process although this may not be necessary for a "like for like" change. A Risk Assessment should also be carried out.

Although the qualification process attempts, for example through cyclical testing, to replicate in-service conditions it cannot assess the long-term durability, mechanical integrity and performance of equipment and materials in aviation fuel handling systems. Field evaluation is required to help demonstrate that the item being assessed is fit for purpose or suitable for the intended application.

The user approval process is usually unique to each company - an organisation that operates in a number of diverse geographical areas would likely wish to assess performance in differing climatic conditions. Some users may choose to issue approvals without undertaking a field evaluation however this is not recommended.

It is for these reasons that user companies should follow their own process, rather than relying on any approvals issued by another user company (which may be communicated to them by an OEM).

The approval process and status of each approved item should be documented.

Table 1 Action Type Codes

Action Types	JIG Bulletin Action Type Definition
JS	Change to JIG Standard – to be adopted by JV and/or Operator to continue to meet the JIG Standard(s) (JIG 1, 2, 4) **(**)**.
RP	JIG Recommended Practice which the JV should consider adopting as its own practice **(**)**.
I	**Issued for information purposes only.**