

News from the Hill

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Producing Parts — Tricks and Traps

An AEA member recently asked me a question about a piece of hardware they wanted to sell to other repair stations. The hardware was a mounting bracket that would be manufactured by a third party. The mounting bracket would have made a nice appliance for a number of the electronic components that the AEA member sold. It seemed innocuous enough, but the member wanted to be sure that it would have been legal to sell this bracket to third-parties before they asked the manufacturer to start producing them.

Even though the mounting bracket appeared innocuous, it actually raised substantial issues under the Federal Aviation Regulations. There are legal (and resulting commercial) issues that affect the manufacturer, the seller, and the installer.

This article examines the legal standards that apply to production of aircraft parts such as the mounting bracket, as well as some of the commercial and safety concerns that extend beyond the scope of the regulations. The article addresses production of parts by manufacturers, as well as production by a repair station in the course of maintenance. It concludes by analyzing the mounting bracket hypothetical in terms of the existing regulations and industry practices.

Manufacturing Approval

In order to manufacture a replacement or modification part that is intended to be offered for sale for installation on a type certificated product, the manufacturer must either possess FAA authority to produce, or else fall into one of the exceptions or exclusions. Some of the productions approvals issued by the FAA include Production Certificates (PCs), Parts Manufacturer Approvals (PMAs) and Technical Standard Order Authorizations (TSOAs).

While the general rule is that manufacturing of aviation parts requires an FAA production approval, there are plenty of exceptions and exclusions to this rule. The FAA has published explicit exceptions to this rule in the regulation. These include owner-operator produced parts and standard parts.

In addition to the exceptions to the rule, there are also exclusions. These are the subjects that the regulation simply does not cover. For example, the PMA rule requires a producer of a replacement or modification part to have a production approval (or fit into an exception) if the part is made for sale for installation on a type certificated aircraft. This means that parts that are made for vehicles that are not type certificated aircraft are not regulated by the FAA. Components and

articles made for experimental aircraft are a very good example of parts that are not made for sale for installation on a type certificated aircraft.

Fabrication by Repair Stations

The limiting language of the PMA rule also applies to parts offered for sale, and thereby excludes parts that are not offered for sale. The courts have held in overhauls and other maintenance activities, that the service predominates over any incidental sale of parts that may be installed during the course of the service. Therefore, the courts have reasoned, a fabrication of part as an incidental activity in the course of a maintenance activity is not regulated under the production rules. This is the reason that repair stations are permitted to fabricate parts in the course of a maintenance activity.

Just because a repair station's fabrication is exempt from the production approval rules does not mean that it is exempt from all of the safety rules! In fact, a repair station that fabricates a part for installation must conform to the performance standards of Part 145 and Part 43. This means that at the time of installation in an aviation product, the fabricated part must return the aviation product to a condition at least equal to its original condition (type certificated) or properly

altered condition (e.g. STC or other FAA-approved configuration).

The FAA is currently working with industry to develop better guidance for fabrication by repair stations, to assure that all repair station-fabricators perform their fabrication activities in accordance with appropriate regulatory standards.

New Standards for Repair Stations

The current draft of the proposed advisory guidance on repair station fabrication is still far from complete but it is beginning to take shape as a well-crafted FAA document.

The draft guidance will likely make it clear that a part that is legally manufactured by a repair station is an approved part under the authority of 21.305(d) (which authorizes the FAA to approve parts using any process adopted by the FAA).

The draft guidance will likely impose three requirements on repair stations fabricating parts for consumption during maintenance or alteration activities. First, the repair station must have data sufficient to show compliance with the appropriate airworthiness standards, so it can prove that it meets the performance standards of the maintenance and alteration regulations. Second the repair station will have to have the housing, facilities, equipment and personnel to perform the functions necessary to the fabrication process (this is already required under the repair station rules). Finally, the repair station will have to have a quality control system that ensures that the fabricated parts conform to their approved design and are in condition for safe operation.

This last element, a quality control system, is currently embodied within the inspection procedures manual, and under the rules that become effective April 6, 2003 it will be embodied in the new quality manual. The draft

advisory circular, though, would provide much more comprehensive guidance. The new guidance is expected to recommend new responsibilities for repair stations that fabricate parts, including marking and continuous airworthiness support through maintenance manuals as needed. Separate sale of repair-station-fabricated parts will continue to be forbidden without PMA or other production approval.

Analyzing Our Example

In the case of the mounting bracket, the AEA member explained that it was designed specifically to mount electronics in certain aircraft and had no other purpose. Therefore it was clearly made for sale for installation in a type-certificated product, which means it was subject to the PMA rule. The manufacturer had no production approval and did not fit into any of the exceptions to the PMA rule so producing the part under those conditions would have violated the Federal Aviation Regulations.

What about subsequent handling of the part? It is a strange twist of the regulations that a part that is not made legally may still be installed in an aircraft if it can be demonstrated to meet the airworthiness requirements of the regulations.

In advisory guidance, the FAA has described such illegally made parts as "Suspected Unapproved Parts," or SUPs, but this advisory guidance does not have the force of law, and a repair station that can prove that the part is airworthy despite its source may legally install the part. Having proven that installation returns the aircraft to an airworthy condition, the aircraft is legal for operation (except where a manual prohibits such installation — such as some air carrier maintenance manuals that preclude the installation of SUPs).

There have been a number of proposals discussed that would have

made it illegal to install a part unless it was manufactured under a production approval. These proposals have uniformly failed because there are a number of parts that are simply not made by production approval holders. This is particularly true of older aircraft that are no longer supported by the original manufacturer. Prohibiting installation of SUPs would effectively ground these aircraft, and the Part 43 performance standards serve as an effective means of enforcing the airworthiness requirements of all installed parts.

Even if installing a SUP can be legal under some circumstances, dealing in SUPs is not a commercially viable line of business in the current environment. There are a number of options that our bracket manufacturer could pursue.

First, the bracket manufacturer could seek PMA on the brackets. While this can be a long process (depending on the complexity of the project and the workload of the local Aircraft Certification Office), it can be a very rewarding process, because it authorizes the fabrication of FAA-approved parts.

Second, the AEA member who wants to broker the brackets could apply for PMA, using the bracket manufacturer as a production subcontractor. This allows the AEA member to control the design and production of the bracket. This sort of a relationship should be described in a contract between the PMA-holder and the production subcontractor. The contract should carefully establish provisions designed to protect the PMA-holder's intellectual property rights underlying the PMA. □