



Federal Aviation Administration

Memorandum

Date: **MAR 13 2014**

To: James E. Gardner, Manager, Flight Standards Great Lakes Region, AGL-200

From: Steven W. Douglas, Manager, Aircraft Maintenance Division, AFS-300 *SWD*

Subject: Request for Clarification: External Camera Mounts;
AGL-200 Memo of 01/23/14

M360-8000.1-F-1403-0047

In reference to the Subject memo, the Aircraft Maintenance Division, in coordination with the Small Airplane Directorate, ACE-100, has reviewed your request for information and provides the following responses:

QUESTION 1: Has AFS determined whether or not the installation of external camera mounts, such as the “GoPro” or “NFlight” cameras, can be considered a minor alteration as defined by Title 14 Code of Federal Regulations (14 CFR) part 43 Appendix A?

RESPONSE: The Appendix A, titled “Major Alterations, Major Repairs, and Preventive Maintenance”, provides a broad spectrum of alterations that are typically considered major. This Appendix does not encompass the numerous possible alterations that could be accomplished to an aircraft and therefore relies heavily on the definitions of major and minor alterations, contained in 14 CFR part 1.

Because of the varying installation possibilities of this equipment, the major vs. minor determination is done on a case-by-case basis and made by the installer. Major alterations are those that have an appreciable effect on the weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness. If the installation did affect one of the above listed variables, then the installation would be considered major and would require approved technical data prior to returning the aircraft to service.

Another consideration, in the case of this type of equipment, is the applicability of the term “alteration”. FAA Order 8110.37E, defines an alteration as “*a modification of an aircraft from one sound state to another sound state*”. The use of suction cups, or other temporary methods of attachment (not including permanent mechanical attachments to the aircraft), would not be considered a modification to the aircraft. These temporary attachments would not be subject to the regulatory purview of 14 CFR part 43.

The use of these type attachments however are not supported by the FAA, and may (in the case of an in-flight detachment) lead to “careless operations” as provided for in 14 CFR sections 91.13 and 91.15.

QUESTION 2: The focus of your second question pertains to the determination of whether or not the installation of this type of equipment could be considered a Minor Change to Type Design” as defined in 14 CFR section 21.93.

RESPONSE: We are aware of no design approval holder that has made a minor change in type design approved under 14 CFR 21.95 to incorporate such an installation. Nor are we aware of any person who has applied for approval of a major change in type design under 14 CFR 21.97 to do so. Therefore, the installation described is not a change in type design, and consequently 14 CFR 21.93 is not applicable. If such an installation were to be approved as a minor change in type design, it would have to be shown to have no appreciable effect on the weight, balance, structural strength, reliability, operational characteristics, or other characteristics affecting the airworthiness of the product. This determination would be dependent upon the specific model type design in question and the details of the design change.

We appreciate the opportunity to assist you. If you have any additional questions regarding this memorandum, please contact Tim Shaver, Manager, Avionics Branch, AFS-360 at (202) 385-4292.