



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

Southwest Region  
Arkansas, Louisiana,  
New Mexico, Oklahoma,  
Texas

Fort Worth, Texas 76193-0000

JUL 24 1989

Jukka Tervamaki  
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Dear Mr. Tervamaki:

In reference to your letter of July 5, 1989, regarding the N-15 GX gyrocopter accident, we are providing the following information:

Amateur-built aircraft such as the KB-3 are issued experimental certificates under the provisions of FAR 21.191(g) which allows operation of an aircraft "which has been fabricated and assembled by persons who undertook the construction project solely for their own education or recreation." The FAA does not have flying quality certification regulations for amateur-built aircraft.

The Air and Space (Umbaugh) 18/18A autogyro was certified to the requirements of Part 6 of the Civil Air Regulations (CAR). The Aero Resources (McCulloch) J-2 autogyro was certified to the requirements of Part 27 of the FAR, (the CAR were replaced by the FAR in the early 1960's). Both of these regulations require positive stick position longitudinal static stability. Neither of the regulations include dynamic stability requirements for the basic aircraft. FAR Part 27 does have dynamic stability requirements when certifying for instrument flight.

Horizontal stabilizers have frequently been used on rotorcraft to meet the longitudinal static stability requirements of FAR 27 and 29 (CAR 6 and 7). However, this does not necessarily result in positive (damped) dynamic pitch stability. Rotorcraft have been certified that have negative (divergent or aperiodic) dynamic stability. Since there is no specific requirement or limit on this characteristic for small rotorcraft, we apply the general requirement that the rotorcraft must be safely controllable without requiring exceptional piloting skill or exceptionally favorable conditions. Further, our certification regulations normally identify the desired flight characteristic but not how it will be achieved; that is, the use of a horizontal stabilizer, canard, or an electronic or mechanical stability augmentation system, etc., is the choice of the applicant.

