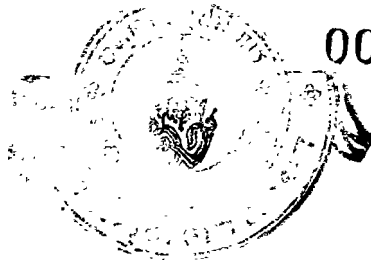


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LONGITUDINAL DYNAMIC STABILITY

OF

RTAF 5 AIRCRAFT

BY

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Abstract

The theoretical investigation of longitudinal dynamic stability of the RTAF-5 aircraft is presented. The solution of motion problem is developed by transforming a set of linearized equations derived from equations of motion into transfer functions. The stability characteristics and the parameters of two oscillations so-called "short period" mode and "phugoid" mode are calculated by using LOPROG computer program. The effect of variation in the moment of inertia about the y-axis, I_{yy} , on stability behaviour is also studied. Results obtained from the calculation are analysed by comparing with MIL-F-8785 B and those indicate that the response of longitudinal motion of the RTAF-5 at selected range satisfies the requirements which established in that military specification and is influenced by the change in I_{yy} values when the motion is of short period mode.