ACADEMIC EXPERIENCES WITH A VERY LIGHT AIRCRAFTDEDICATED FLIGHT TEST INSTRUMENTATION SYSTEM

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ABSTRACT
The present paper presents the academic Flight Testing activity at the Dipartimento di Ingegneria Aerospaziale of the Politecnico di Milano, started more than 5 years ago on the Department owned and operated TECNAM P92 ECHO 80 Ultra Light Machine. The unusual and somehow very peculiar characteristics of such class of machines have quite and impact on Flight Testing, an engineering discipline traditionally applied to very different kinds of aircraft. Along with some adaptations to the Flight Test Procedures, it has therefore been necessary to identify the unique requirements for a Flight Test Instrumentation system suitable for the desired application. An activity involving the project to design, develop and test of a Very Light Aircraft tailored Flight Test Instrumentation system has therefore been launched as the main topic of a PhD, and the MNEMOSINE system is the result of such efforts.

Fostered by the positive outcome of the first missions, the system has been gradually improved and has shown to be reliable and dependable.

Moreover, it has recently been signed an agreement between the Department and Nando Groppo, one of the leading Italian Ultra Light Machine manufacturers, aimed to the execution of Flight Testing activities on Groppo's brand new machine, in a joint effort.

Using the occasion of such agreement, and capitalizing the feedback from the completed Flight Test activities, MNEMOSINE has undergone a major improvement in order to be ready to be used as one of the principal resources for the planned certification of the XL.