Advances in Aircraft Structures

Editor

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IIUM Press

Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011

Perpustakaan Negara Malaysia Cataloguing-in-Publication Data

ISBN: 978-967-418-148-2

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM
(Malaysian Scholarly Publishing Council)

Printed by :
IIUM PRINTING SDN. BHD.
No. 1, Jalan Industri Batu Caves 1/3
Taman Perindustrian Batu Caves
Batu Caves Centre Point
68100 Batu Caves
Selangor Darul Ehsan

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Chapter 3
Design and Fabrication of Fuselage Model for Laboratory Purpose

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Abstract

This chapter is regarding the fabrication and testing of a fuselage for lab purpose. The main objective of this project is to analyze the fuselage while applying load at a point on the structure. The fuselage is made up of a frame and skin of aluminum material while 8 stringers which are made up of mild steel beam. The analysis is done based on the concept of a plane doing a wind cross landing on 1 landing gear where force is applied towards the fuselage. Early calculation is done on the fuselage and early configuration and dimension is predetermined which is then brought into the fabrication process of the fuselage. The experiment where a force is applied onto the fuselage is performed and using strain gage the state of stress at certain location; such as skin and stringer can be determined and compared with the theoretical values.

Keywords: *fuselage, experimental, strength, strain gage, aircraft structure, fuselage.*

1. Introduction

The fuselage is an aircraft's main body section that holds crew and passengers or cargo. In single-engine aircraft it will usually contain an engine, although in some amphibious aircraft the single engine is mounted on a pylon attached to the fuselage which in turn is used as a floating hull. The fuselage also serves to