



**IDENTIFICATION OF OPTIMUM TECHNIQUE FOR
AIRCRAFT COMPONENT FAILURE MODELING AND
PREDICATION**

A Thesis submitted to Department of Management Sciences in part fulfilment
of the requirement for the MBA degree

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degree requirement.

Candidate Signature: Hamza Date: 29/5/14

Certificate of Supervisor

I ASIF REHMAN being the Supervisor of the above student, certify that the research
work of the student has been completed to my satisfaction and that the thesis is in a format
recognized by the department and is in accordance with the rules of the University. The thesis is
appropriate for examination.

Signature: Asif Rehman Date: 29/5/14

Abstract

Purpose- *The major aim of this study was to find the optimum technique which best fits component failure data depending on aircraft flying hours. The data was taken from Airblue archives*

Methodology/sample- *The study involved use of quantitative data in terms of aircraft flying hours and the defects which occurred between June 2012 to June 2013 i.e a total of 13 samples were taken and goodness of fit test was applied to find out whether Weibull or exponential better fit the data. The MTTF was thus calculated though the identified distribution.*

Findings- *The goodness of fit test using Anderson Darling statistic and p-value was carried out on the sample component failure data, which showed that Weibull distribution provided the optimum fit. The MTTF of sample data came out to be 17000 FH.*

Practical Implications- *The outcomes of the research might help ABQ engineering department to assess and utilize component and system failure data to find optimum replacement interval to reduce unscheduled grounding of aircraft and to reduce delays/cancellations to have better customer retention*

Keywords: air-conditioning, Weibull, mean time to failure, flow control valve, aircraft flying hours

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