



Presented at NDE2002, to predict. assure. improve. www.nde2002.org
National Seminar of ISNT, the Indian Society for Non Destructive Testing
Hotel Taj Connemara and Raja Muthiah Hall, Chennai, 05. – 07. 12. 2002

NDE of Kaveri Engine Components

**O. Narasimhan, K. G. Appaiah, S. Ganapathi Sharma, Ashok S. Salehittal and
N. Venkata Sita Ramulu**

Engine Division, Hindustan Aeronautics Ltd., Bangalore Complex

Abstract

Indigenous development of Kaveri engine has offered many challenges to scientists and engineers in India. Design and development of this modern engine requires new materials and advanced processes. Most of the components used in this engine are indigenously developed. The quality of the components is to be ensured during the manufacturing process. Non Destructive Testing (NDT) methods are one of the essential tools for certifying the materials for their soundness. NDT techniques for certifying indigenous components are not well known. Many NDT techniques have been developed and implemented to test and certify the indigenous materials and components of KAVERI engine.

This paper brings out some of the NDT techniques developed and used in the Engine division HAL(BC) to inspect the Forgings, Welded components of KAVERI engine. Ultrasonic Immersion A-Scan is used to inspect the Titanium alloy forgings. Welded components (Titanium and Nickel base alloys) like Fan Drum (Electron Beam Welding), S/A Linear Rear, S/A Casing Outer, S/A Housing Oil Seal (Circumferential Argon Arc Welding) etc., are evaluated by X-ray and Binocular examination.