

46E-83: Alstom industrial gas turbine engines and technology evolution

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The present paper gives an overview of the development of the Gas Generation Gas Turbine on one of the leading companies in the field over a period of more than 120 years where engineers of the Swiss development centre of A.G. Brown Boveri & Cie, ABB Asea Brown Boveri Ltd from 1988, Alstom Power Ltd in Baden Switzerland to General Electrics and Ansaldo Energia since 2014 have significantly contributed to the art of turbomachinery design in general. Naturally some specifics on the history of the products and their ownership through the years is given up to present where some of these products have ended up in the General Electrics portfolio with a small fraction belonging to Ansaldo Energia. Emphasis is given to the development of readymade GT families after 1970 with mention of fascinating aspects in terms of technology evolution such as the development of the Welded Rotor design and manufacturing, various aerodynamic turbine development milestones, water and film cooling technologies and further Low Emission Combustion developments. This paper will allow an overview in the formation of some of the most influential products in the industry of GT Power Generation and their ongoing evolution.