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FEBRUARY 1970

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Mechanical C/P Encoding Altimeter from Smiths Industries

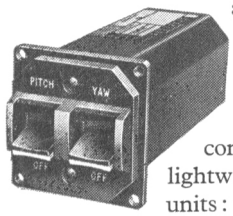
A programme of continuous development in the field of aircraft instrumentation has led to the recent introduction by Smiths Industries Aviation Division of a number of sophisticated new designs.

One of these, the Mechanical Counter/Pointer Altimeter, the 800 series, incorporates a 5-figure readout of altitude by means of counter drums which are driven without servo assistance—a major advance made possible by the development of a unique and more powerful capsule assembly. And the latest version has an optical digital encoder for height reporting to ARINC 548/549.

The five-digit presentation includes zeroes as part of the moving display, obviating the ambiguity that can otherwise occur with two-or even three-digit counter/pointer altimeters. Variants are available with either single or twin baroscales and integral lighting is standard. These altimeters conform to TSO C10b, and TSO C88.

Autostabilisation for Jaguar

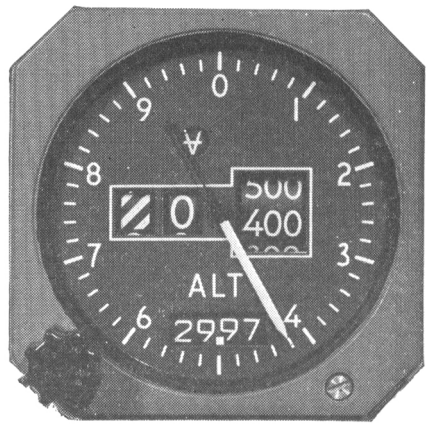
An advanced technology autostabiliser system by Smiths Industries is specified for the BAC Jaguar. The system, designed to augment the stability of high performance aircraft in both pitch and yaw, consists of only two lightweight compact units: the Pilot's Selector and the Computer.



Incorporated in the Computer are two Smiths Series 400 Rate Gyroscopes for measurement of pitch and yaw rates and a manometric unit for gain scheduling as a function of airspeed and altitude throughout the flight envelope. The electronic assembly forms a separate unit within the computer case.

The outputs from the Computer drive three electro-hydraulic servo actuators, one in yaw and two in pitch.

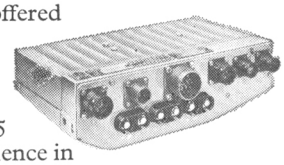
The Computer power supply is 115V 400Hz.



The Pilot's Selector has been designed for solid mounting and carries the switches needed by the pilot to engage the Autostabiliser in the pitch and/or yaw modes. The unit is housed in a 2 ATI case conforming to ARINC 408, and electrical connections are made through a 19 pin connector.

Smiths Industries—the power monitors.

Engine temperature and speed monitoring, temperature and speed control, overspeed protection and engine life recording are typical functions performed by the engine equipment offered by Smiths Industries. We have more than 15 years' experience in the design and manufacture of such accessories for many different types of gas turbine.



Monitoring and control equipment includes multi-function units for engines as advanced as the 3-shaft gas turbine. On the less sophisticated side, units have been produced for such applications as A.P.U.'s and booster engines, where the engine is unattended, with no flight deck instrumentation other than warning lights.

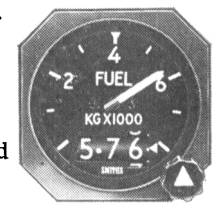
Details of the existing range of Smiths engine equipment, and of the resources and enterprise that can be applied to new projects, are readily available from us.

Capacitance fuel gauging systems—made to measure

During the past 20 years Smiths Industries have designed and manufactured fuel gauging systems for more than 50 types of fixed and rotating wing aircraft.

A recent innovation is the Type 8 system, which features micro-electronics and printed circuit boards, while retaining the flexibility of design and application that distinguished the earlier systems. A significant reduction in size has been achieved without loss of reliability, and the introduction of modular construction has simplified servicing.

A typical gauging system consists of a number of probes in the tank, and a fuel-contents amplifier/indicator.



Type 8 tank probes are self-compensating and each system is individually tailored to the airframe constructor's requirements, so that the highest practical level of accuracy can be provided for a given aircraft/attitude relationship. Additionally a total fuel contents summation indicator is available and fuel management facilities can be provided.

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