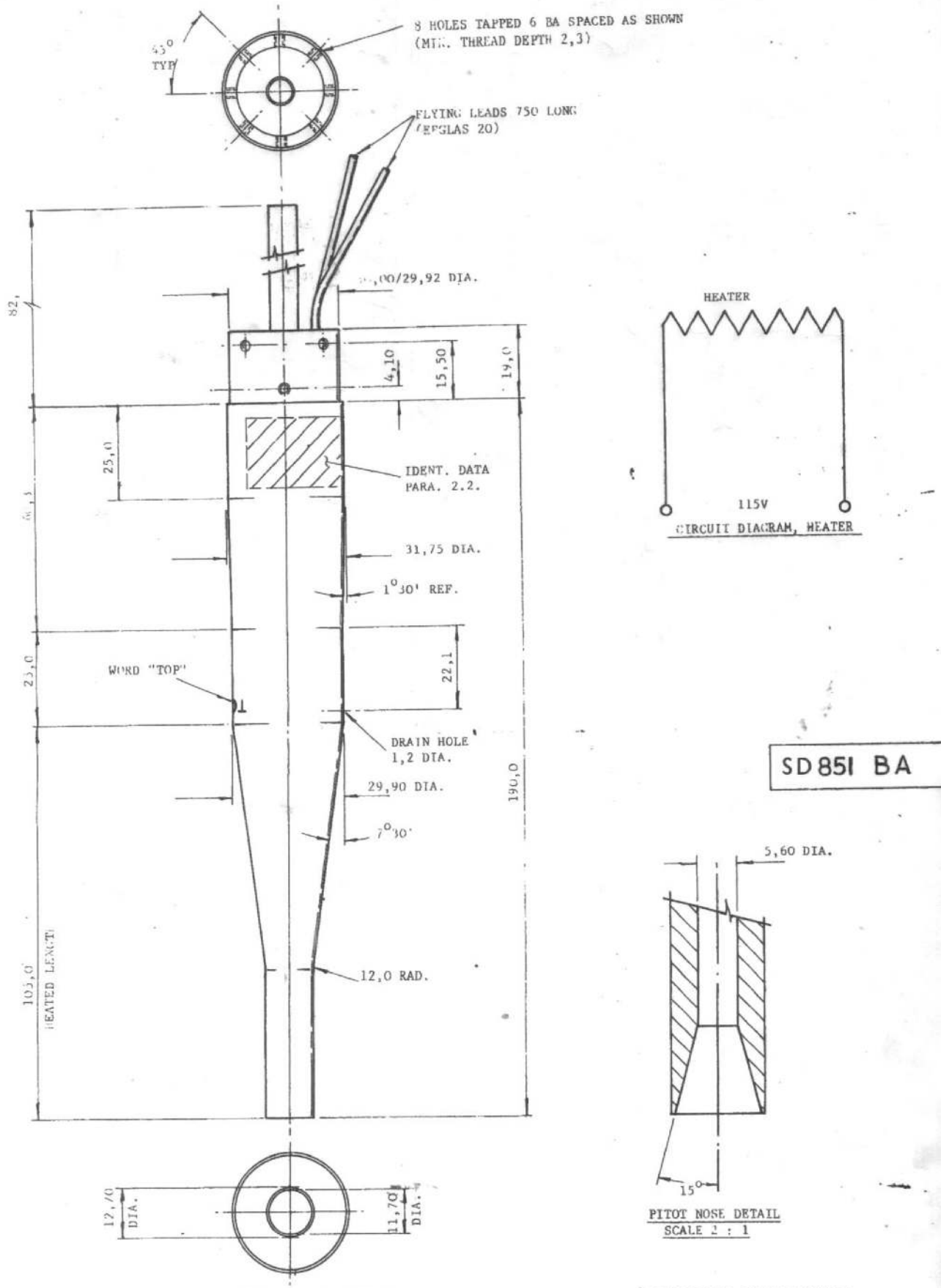

THIRD ANGLE PROJECTION

CIRCUIT DIAGRAM, HEATER

SD 851 BA

PITOT NOSE DETAIL
SCALE 2 : 1

DIMENSIONS IN MILLIMETRES

MOD.	DRAWN M. Landini	SPECIFICATION DRAWING	ROSEMOUNT ENGINEERING COMPANY LIMITED		
ISSUE	CHECKED J.E. Landini	ELECTRICALLY HEATED (115 V) PITOT TUBE ASSY. TYPE 851BA	BOGNOR REGIS, SUSSEX, ENGLAND.		
DATE	APPROVED J.E. Landini				
GE NOTE	DATE : 17.3.67.	SCALE FULL SIZE	WEIGHT SEE PARA. 2.3.	SHEET 1 OF 1	SD 851 BA

851BA

SPECIFICATIONS

1. SCOPE

1.1. The 851BA is an electrically deiced pitot head for use on high speed aircraft. It is designed to accurately measure pitot pressure over a wide angle-of-attack range. The electrical heater is an hermetically sealed, self-regulating type designed to operate from 115 V supply.

2. GENERAL

2.1. Interchangeability: All units manufactured to this specification will be interchangeable in all respects.

2.2. Identification: The identification of each pitot tube will be permanent and legible and will include the following:

Pitot Head, Deiced,
Model 851BA, 115V,
MOD. 2 Serial No. .....
NATO STOCK No. 6610-99-647-0577
Rosemount Engineering Co. Ltd.
Bognor Regis, England.

2.3. Weight: The weight of the unit will be 0.43 ± 0.06 Kg (0.95 ± 0.15 lb.).

3. DESIGN AND PERFORMANCE SPECIFICATIONS

3.1. Aerodynamic Performance: The unit is fitted with an indirect pitot entry which, together with a drain hole, ensures satisfactory operation in wet or icing conditions. The aerodynamic performance of the head is such that the pitot pressure measured by the head only falls below 99% of the free stream total pressure at angles-of-attack in excess of 20°.

3.2. Mechanical Performance

3.2.1. Vibration: The unit has been designed and tested to meet the vibration environment specified in BS.2G.100 for Grade B equipment.

3.2.2. Salt Spray: The unit shall successfully pass the salt spray test in accordance with MIL-E-5272C for a period of 50 hours.

3.2.3. Humidity: The pitot head shall successfully pass the Humidity, Temperature and Pressure Test of BS.2G.100.

3.2.4. Pressure: The pitot tube is satisfactory for operation at differential pressures up to 80 inches of Hg.

3.3. Electrical Performance

3.3.1. General: The electrical heater of the pitot tube is designed to operate from a 115 V a.c. supply. The heater is of the self-regulating type in that the power drawn is inversely proportional to the ambient temperature.

3.3.2. Power Consumption

3.3.2.1. - The power consumption when the pitot tube is immersed in an agitated ice/water bath shall be 300 ± 25 watts.

3.3.2.2. - The power consumption after 5 minutes operation in still air at 20 ± 5°C shall be less than 160 watts.

3.3.3. Insulation Resistance: All model 851BA units will meet the Insulation Test requirement of BS.2G.100

3.4. Deicing Performance: The pitot tube shall be demonstrated to have a satisfactory performance under the test conditions specified in BS.2G.135, Section 8.7.

4. RELIABILITY

4.1. The Model 851BA pitot head is of integral construction and its life will normally be limited by electrical and structural deterioration. Experience on units of similar construction indicate that a mean time between failures of at least 12,000 hours should be attainable provided the units are operated within the environment specified herein.

4.2. Heater Endurance Test: As a demonstration of heater reliability, a representative unit shall satisfy the Heater Cycling Test specified in BS.2G.135, Section 8.1.3.

5. TESTS

5.1. Individual Tests: Each unit manufactured will be subjected to the following tests before delivery:-

5.1.2. Pressure Leakage: Each pitot tube manufactured shall be immersed in water whilst an air pressure of 80 inches of Hg is applied to the pressure connection with the pitot entry and drain holes suitably sealed. There shall be no evidence of leakage as indicated by the escape of bubbles from the pitot head.

5.1.3. Power Consumption

5.1.3.1. - The power consumption of each pitot head manufactured shall be measured when the head is immersed in an agitated ice/water bath, the power drawn shall be in accordance with para. 3.3.2.1.

5.1.3.2. - At an ambient temperature of 20 ± 5°C, the power drawn by the head shall not exceed 160 watts after five minutes operation.

5.1.4. Insulation Resistance: The insulation resistance of each head shall be checked to demonstrate compliance with para. 3.3.3.

5.2. Type Tests: Tests required to demonstrate compliance with all other paragraphs of this specification can be undertaken subject to separate negotiations.

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							E 4348	E 3996					CHAN