

# DESIGN ENGINEERS— NATURAL GAS

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**MECHANICAL, CIVIL or AERO, ENGINEERS**, with experience in design, project or stress engineering are required for advanced design projects. The work involves the use of sophisticated fabrication techniques and new materials, in the design of high-pressure pipelines, storage vessels, compressor and control stations.

**QUALIFICATIONS:**

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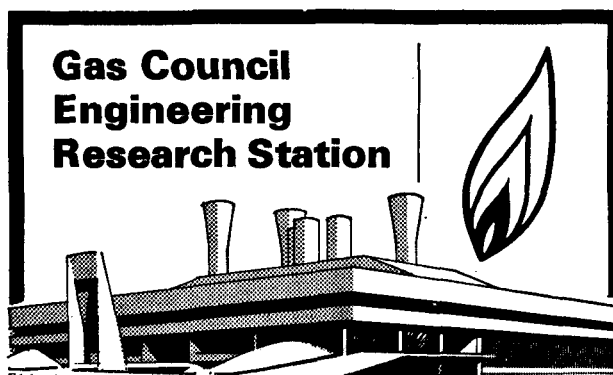
**LOCATION:** Newcastle upon Tyne.

**RELOCATION EXPENSES:**

Where applicable, generous relocation expenses are allowed.

**APPLICATION FORMS FROM:**

M. J. Piper,  
Scientific Secretary,  
Gas Council  
Engineering Research Station,  
Harvey Combe,  
Killingworth,  
Newcastle upon Tyne NE12 0SB.



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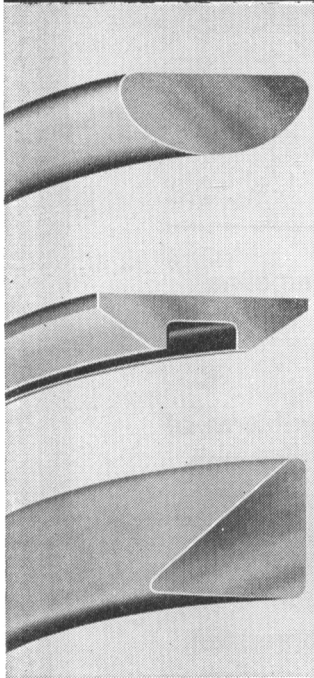
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# APPLIED PHYSICIST— NATURAL GAS

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An APPLIED PHYSICIST is required for measurement and suppression of noise generated by gas flow, machinery and other noise sources in pipeline systems.

**QUALIFICATIONS:**

A good Honours degree or equivalent.

**AGE:** About 30 years.

**STARTING SALARY:**

In one of a number of scales with maxima at £2,095, £2,575 or £2,850 per annum.

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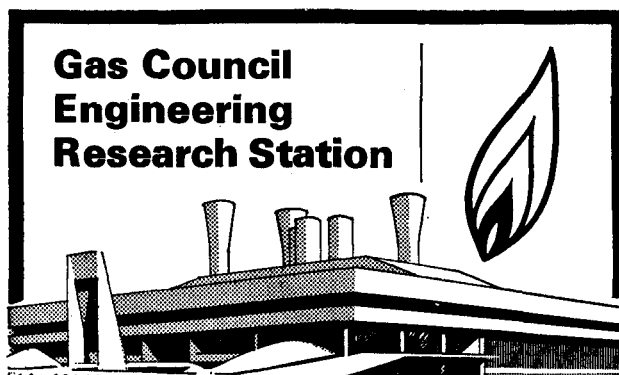
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Engineering Research Station,  
Harvey Combe,  
Killingworth,  
Newcastle upon Tyne, NE12 0SB.



The Aeronautical Journal RAeS October 1969

WENT, T. E.

**Commonwealth Caribbean Air Transport**

*The Commonwealth Caribbean is a geographical area which stretches from Jamaica in the north to Guyana in the south. Honduras and the Bahamas are not being ignored, but they play only a minor part in the substance of the topic under discussion.*

*This area is a region where the winds of change are affecting the evolution of the various Colonial and ex-colonial territories into nationhood. To cover the subject as fully as possible it will be necessary to back track into history. I do not propose to go back any further than the years just before the start of the Second World War.*

The Aeronautical Journal RAeS October 1969

ENGLISH, A. J.

**The Design and Construction of Two-Seater Hovercraft**

*This paper describes the design and construction of a two-seater hovercraft of 50-60 hp and 1000 lb AUW, to operate in reasonably calm weather, by engineering apprentices at Hawker Siddeley Aviation, Chester.*

The Aeronautical Journal RAeS October 1969

MUSKER, A. J.

**Selection of Interplanetary Trajectories**

*It is only in fairly recent years that the idea of sending an object to another planet has become a practical reality. This has led to the rapid development of celestial mechanics, although the subject is by no means new. The purpose of this paper is to introduce the subject and to see how well-established results and equations may be utilised to find out about the motion of an object on its way to another planet. The concept of "launch window" will be introduced and a method of determining it will be presented. Once it is known, the number of available trajectories are narrowed down by selecting desired values of some parameters. Finally a method of computing transfer trajectories given only the launch and arrival date required, will be described.*

The Aeronautical Journal RAeS October 1969

OPENSHAW, P. R.

**Electric Propulsion Development  
Part I Ion Thrusters**

*The development of an ion thruster of approximately 0.3 kW power is described. The thruster is of advanced design and incorporates a hollow cathode electron source. Such a thruster could be used as one of an array for use in an orbit transfer manoeuvre.*

The Aeronautical Journal RAeS October 1969  
CREW, AIR VICE-MARSHAL E. D.

**Air Reconnaissance in the Royal Air Force  
Past, Present and Future**

*This paper attempts to cover the historical highlights, the philosophy, principles and practices of air reconnaissance in the RAF, together with consideration of the aircraft, their associated camera and other airborne sensor systems, ground support facilities and intelligence extraction and exploitation methods. Both high altitude strategic, and the more recent very low level tactical approaches will be discussed, with particular emphasis on the new concepts of multi-sensor reconnaissance covering day/night optical photographic, Infra Red Linescan, Sideways Looking Recce Radar and possible other forecast electro-magnetic sensors. The choice of film types is considered including the relative merits of natural and infra red colour, of which examples will be shown. Film processing, and the future possibilities for airborne processing are covered. The strategic and tactical aspects of ground support including the principles of the latest fully integrated camera handling, sensor processing, photographic interpretation Recce Exploitation Laboratories are dealt with.*

The Aeronautical Journal RAeS October 1969

**Air Law Group: Symposium on Facilitation**

*Six papers were given at this symposium. "Annexe 9" by L. C. Nash; "IATA—Very Suspicious Characters" by Sir William Hildred; "The Shippers Aspect of Facilitation" by Sir Archibald Hope; "Customs" by C. H. Veale; "Immigration" by T. Fitzgerald; and "Health" by Dr. Kenneth Bergin.*

The Aeronautical Journal RAeS October 1969

VAN DER SPUY, K. R.

**Major Ailister MacIntosh Miller: 1892-1951**

*The first Major Miller Memorial Lecture, given to the Johannesburg Branch of the Southern Africa Division of the Society. The lecture describes the life and career of Major Miller, South Africa's leading pioneer in the development of civil air transport.*

The Aeronautical Journal RAeS October 1969

JAMES, THURSTAN

**Charles Grey and His Pungent Pen**

*Personal recollections of a great aeronautical journalist—  
C. G. Grey—Editor of The Aeroplane from 1911 to 1939.*

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