X-782801

Feb 7.

GF/CB

31st January, 1961

Publicity Manager,
The Rover Co. Ltd.,
Solihull,
Warwickshire.

Dear Sir,

Many thanks for your letter of January 27th. We have pleasure in accepting your invitation to attend the demonstration at Elmdon Airport on February 7th.

We will make our own way to the Airport, and it will not be necessary for you to meet us at Leamington station.

You do not say whether it will be possible to obtain Air-to-Air facilities - if such a facility is available we would certainly like to take advantage of it.

Yours faithfully,
ASSOCIATED BRITISH-PATHE LTD.

GRACE FIELD
NEWS EDITOR
PATHE NEWS

Rel. Feb 9 Reply Feb 7.

TELEPHONE
SHELDON 4242

LONDON SHOWROOM
DEVONSHIRE HOUSE
PICCADILLY LONDON W1
TELEPHONE
GROSVENOR 3252
3253

BY APPOINTMENT TO HER MAJESTY QUEEN ELIZABETH II
MANUFACTURERS OF LAND ROVERS

THE ROVER CO. LTD.

SALES DEPARTMENT
SOLIHULL
WARWICKSHIRE
ENGLAND

TELEGRAMS
ROVER SOLIHULL
TELEX 33-156

LONDON SERVICE DEPOT
SEAGRAVE ROAD
FULHAM LONDON SW6
TELEPHONE
FULHAM 1221

ALL COMMUNICATIONS TO BE ADDRESSED TO THE COMPANY AND NOT TO INDIVIDUALS

JHB/SHN. 27th January, 1961.

ASSOCIATED BRITISH-PATHE LTD.,
Film House,
Wardour Street,
LONDON.

For the attention of Mr. T. Cummings.

Dear Sir,

Our subsidiary Company - Rover Gas Turbines Limited, which, as you know, has for a number of years now been developing and manufacturing light Gas Turbine units for use as portable sources of power for a wide variety of tasks, has found yet another use for its units.

Realising the requirements for an all British power plant for light aircraft, for both Club and Executive machines now in design, Rover Gas Turbines Limited have initiated the development of their single shaft Gas Turbines as turbo-prop units. The advent of this power plant, the world's smallest turbo-prop, will revolutionise light aircraft flight, due to its vibration free operation together with minimum and easy maintenance requirements.

Currently installed in a Currie Wot aircraft, the Rover 1S/60 Gas Turbine engine has proved its capabilities and handling qualities under flight conditions. We have therefore, arranged for a demonstration of this "Flying Test Bed" at Elmdon Airport (A.45 Birmingham/Coventry Road) near Birmingham, on the 7th February.

Continued.....

9. ans / ans.

We would be delighted if you could attend this function or send a representative. We will be having cocktails and luncheon at 12.30 p.m. The release date for press information is the morning o f February 9th. We would be grateful if you would observe this embargo.

Trusting we shall see you on Tuesday, 7th February.

Yours faithfully,
THE ROVER COMPANY LIMITED.

J.H. Baldwin.
PUBLICITY MANAGER.

John Tracey
3.30

Time. ? S. F 12..30.
Outdoor ?
Best Way.
RSVP Air to Air.

Smiles.

T. Cummings Esq.,
Associated British-Pathe Ltd.,
Film House,
Wardour Street,
London.

There is a 9.10. a.m. train from Paddington Station, which arrives at Leamington Station at 11.6 a.m. If you require to be met at Leamington Station, please return this slip in the enclosed stamped addressed envelope., crossing out the line that does not apply.

YES I WOULD LIKE TO BE MET AT LEAMINGTON STATION.

NO. I DO NOT REQUIRE TO BE MET AT LEAMINGTON STATION.

PRESS RELEASE—NOT FOR PUBLICATION UNTIL Thursday, February 9th, 1961. a.m.

TELEPHONE
SHELDON 4242

BY APPOINTMENT TO HER MAJESTY QUEEN ELIZABETH II
MANUFACTURERS OF LAND ROVERS

TELEGRAMS
ROVER SOLIHULL

TELEX 33-156

THE ROVER CO. LTD.

METEOR WORKS
SOLIHULL
WARWICKSHIRE
ENGLAND

LONDON SHOWROOM
DEVONSHIRE HOUSE
PICCADILLY LONDON WI
TELEPHONE
GROSVENOR 3252
3253

LONDON SERVICE DEPOT
SEAGRAVE ROAD
FULHAM LONDON SW6
TELEPHONE
FULHAM 1221

ALL COMMUNICATIONS TO BE ADDRESSED TO THE COMPANY AND NOT TO INDIVIDUALS

WITH THE COMPLIMENTS OF THE PRESS DEPARTMENT

A BRIEF HISTORY OF ROVER GAS TURBINES LTD.

The story of Rover's connection with the development of the Gas Turbine engine goes back to 1940, when the Rover Company was associated with Air-Commodore Sir Frank Whittle in the early stages of the Whittle jet engine for aircraft. The Company built some of the first of these engines and was responsible for the design from which the famous Rolls Royce Nene and Derwent engines were developed.

With the end of the war, and the return of civil activities to the Solihull factory, it was felt that the pool of highly specialised knowledge gained on Gas Turbine engine design and production during the war was too valuable to be allowed to remain stagnant. So a team of twenty engineers, headed by Mr. Maurice Wilks, the present Managing Director, who was then the Company's Chief Engineer, embarked on a development programme for small Gas Turbine units. The eventual goal was to be a suitable unit for installation in a motor car.

On March 9th, 1950, at Silverstone race track, a demonstration took place which will without a doubt always be recognised as one of the most important turning points in the development of road transport. Before a large and distinguished audience the world's first Gas Turbine propelled car was put through its paces and it gave such a convincing demonstration that a world-wide sensation was caused.

Continued.....

On June 25th and 26th, 1952, speed trials, officially observed by the Belgium Royal Automobile Club, and subsequently recognised, were held on the Jabbeke motor road near Ostend, Belgium.

The times recorded over a measured mile and kilometre were: Flying kilometre - 244.565 k.p.h., 151.965 m.p.h., Flying mile - 243.327 k.p.h., 151.196 m.p.h., Standing kilometre - 132.596 k.p.h., 83.391 m.p.h. Standing mile 153.962 k.p.h., 95.668 m.p.h.

A statement issued by the Rover Company at the time of the trials stressed that they were "to establish a stage in the development of the car, and should not be constructed as meaning that it was anywhere near its production stage".

In 1956 the latest proto-type appeared, T.3 and although still very much an experimental model, took the Earls Court Motor Show by storm. This particular model is still the basis for further development before any thought of large production can be considered.

Whilst the Gas Turbine progress on motor cars was receiving much attention, work was still going on as normal on the industrial units. Rover generating and instructional sets together with fire fighting units were steadily being produced for many and varied jobs of work. Rover water pump sets are operating with the British and Allied armed services, whilst many generating sets are in use as standard equipment in the Royal Navy's new 'Brave' class fast patrol boats and the 'Ferocity' which is a new high speed boat. Aircraft auxiliary power plants are already in production for the Vulcan and Armstrong Whitworth '660' aircraft. Many of these units are also widely used in the aviation field, where the 1S/60 engine is already well known.

The announcement of the T.P./60 and T.P./90 Engines are a further indication of the growth and versatility of Rover Gas Turbines.

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ROVER GAS TURBINES LIMITED

Turbo-Prop Engines, T.P?/60 and T.P./90

To meet the present day and future needs of the Club and Executive Aircraft, Rover Gas Turbines Ltd., have initiated the development of their single shaft Engines as turbo-propeller power plants. These are designated T.P./60 and T.P./90.

The basic units are the well known industrial Gas Turbine Engines of 60 b.h.p. and 90 b.h.p. output. These engines have amassed considerable world-wide background running in a variety of applications and are proving reliable and easy to maintain under widely varying climatic conditions.

These all-British Engines can be used as conversion power units for existing light aircraft without large airframe modifications, but are obviously suitable for the new range of light aircraft currently under development.

These are undoubtedly the most compact small turbo-props in production in the world to-day, and are another achievement for Rover Gas Turbines Ltd.

Vibration free operation, low maintenance requirements, accessibility of units and long life will enhance the operation of light aircraft. Safety devices to ensure the correct operation of the Engines are incorporated, and all these are designed to "fail safe".

The fuel can be any light liquid distillate, but the T.P./60 and T.P./90 power plants operate on kerosene or diesel fuel, a further factor in safety, coupled with economic operation.

As a complete power plant, the development T.P./60 installed in the Currie Wot Aircraft flown by Mr. V.H. Bellamy of the Hampshire Aeroplane Club, is fitted with a fully automatic variable pitch propeller.

Due to the non-availability of any variable pitch propellers suitable for the T.P./60 Gas Turbine Engine, the operating mechanism was designed and manufactured at Rover Gas Turbines Ltd., whilst the propeller blades were supplied by Messrs. Hordern-Richmond Ltd., of Gloucester.

Continued.....

The principle of operation of the variable pitch propeller is as follows:

The blade roots are retained by ball thrust bearings, and the pitch movements are synchronised by bevel gears. The propeller hub is mounted on taper roller bearings on the drive shaft, and is free to rotate within limit stops. The bevel synchronising pinion is rigidly mounted on the drive shaft, so that if the hub rotates in advance of the drive shaft, the pitch will increase, and if the hub lags behind, the pitch will be reduced. A link mechanism connects the hub to the drive shaft flange in such a way that an increase in torque tends to reduce the pitch of blades. Centrifugal balance weights are secured to the links so that an increase in rotational speed of the propeller assembly tends to increase the pitch. A torsion bar is connected between the shaft and the hub in order to give a bias towards fine pitch. Thus, having determined the values of the C.F. weights and the torsion bar setting, to suit the characteristics of the Engine, the power absorbed by the propeller is constant at a given rotational speed, irrespective of the velocity or attitude of the aircraft.

The T.P./90 Engine is of similar external dimensions, but due to the greater power output, the mechanically operated variable pitch propeller as fitted to the T.P./60 is not suitable. To maintain simplicity, it is envisaged that a hydraulically operated variable pitch propeller will be required.

The Company has already examined this arrangement, and provisional drawings of the hydraulic pump fitted to the Engine have been completed. This arrangement makes possible the use of current hydraulic propellers that have sufficient pitch variation to suit the torque characteristics of the T.P./90 Engine.

T.P./60 Aircraft Unit.

Specification.

Model and Type	T.P./60/1 turbo-shaft with a single stage, centrifugal compressor, one combustion chamber, single stage turbine. Shaft power outlet through redution gear for propeller.
Compressor.	Single stage centrifugal. Two side air intakes. Single sided impeller with 17 vanes mounted on shaft supported in one ball thrust bearing and one roller bearing. Pressure ratio 2.95 : 1 and air mass flow 1.45 lb. (.65 Kg)/second at 46,000 r.p.m.
Combustion Chamber	One reverse flow chamber with fuel burner in the centre. Down stream injection.
Turbine.	Single stage axial flow type. Turbine wheel of Nimonic 90. Turbine inlet temperature 800°C, (1472°F). Exhaust temperature 600°C, (1112°F), at 46,000 r.p.m.
Exhaust	Fixed area outlet at rear of turbine.
Power Outlet.	Reduction gear at front of unit. Output shaft speed, 2325 r.p.m.
Control System.	Mechanical type, automatic overpower and high temperature controls. Variable engine speed.
Fuel System.	Rover multi-piston pump, full load pressure 250 p.s.i. (17.57 Kg/cm^2) Maximum pressure 600 p.s.i. (42.18 Kg/cm^2) By-pass type control. Centrifugal governor, with internal adjustment to prevent overspeeding.
Lubrication.	Return system. Pump pressure 5 p.s.i. (0.35 Kg/cm^2) minimum. Oil sump integral with compressor housing.

Continued.....

Propellar.	Automatic variable pitch propeller. Mechanically compensated for engine speed, and power.
Standard Accessories.	Electric Starter - generator. Oil Cooler. Variable speed throttle control. R.P.M. indicator. Jet pipe temperature indicator. Variable pitch propeller. Spinner and Backplate. 12 v. electric starting system. Ammeter. Oil pressure warning light.
Width	20 inches.
Height	27.5 inches.
Length	49. inches, including propeller and spiiner. 30.1 inches without.
Weight complete with propeller and standard accessories.	235 lbs.
Power/Weight Ratio.	0.2555 hp/lb.
Fuel Specification.	D.ENG.R.D. 2482 and 2486. Diesel. Kerosene.
Fuel Consumption.	Maximum take-off 1.36 lb/bhp/hr. Maximum Cruise. 1.48 lb/bhp/hr.
Oil Specification.	S.A.E. 10.
Oil Consumption.	0.1 pints/hr.
Rating.	Maximum take-off 70 b.h.p. at 47,000 r.p.m. Maximum cruise. 60 b.h.p. at 46,000 r.p.m.
Application.	Power Plant for Aircraft.

T.P./90/1 Aircraft Unit.

Specification.

Model and Type.	T.P./90/1 Gas Turbine with a single stage centrifugal compressor, one combustion chamber, single stage turbine. Shaft power outlet through reduction gear for propeller.
Compressor.	Single stage centrifugal. Two side air intakes. Single sided impeller with 17 vanes mounted on shaft supported in one ball thrust bearing and one roller bearing. Pressure ratio 2.8 : 1 and air mass flow 1.88 lb (.84 Kg)/second at 46,000 r.p.m.
Combustion Chamber.	One reverse flow chamber with fuel burner in centre. Down stream injection.
Turbine.	Single stage axial flow type. Turbine wheel on Mimonic 105. Maximum exhaust temperature 650°C (1202°F) at 46,000 r.p.m.
Exhaust	Fixed area outlet at rear of unit.
Power Outlet.	Reduction gearbox at front of unit. Output shaft speed 2525 r.p.m.
Control System.	Mechanical type, automatic overpower and high temperature controls.
Fuel System.	Rover multi-piston pump, full load pressure 250 p.s.i. Maximum pressure 600 p.s.i. By-pass control, centrifugal governor with internal adjustment to prevent overspeeding. Air assisted burner, air supply from compressor housing.
Lubrication.	Return system. Pump pressure 5 p.s.i. (0.35 Kg/cm^2) minimum. Oil sump integral with compressor housing.
Propeller.	Hydraulically operated V.P. Propeller.

Continued.....

Standard Accessories.	Electric starter. Generator. Oil Cooler. Variable speed throttle control. R.P.M. indicator. Jet Pipe Temperature indicator. Variable pitch propeller. Spinner and backplate. 12 v. electric starting system. Ammeter. Oil pressure warning light.
Width.	20 inches.
Height.	27.5 inches.
Length.	48.6 inches including propeller and spinner. 30.1 inches without.
Weight complete with propeller and standard accessories.	235 lb.
Power/Weight Ratio.	.383 hp/lb.
Fuel Specification.	D.ENG.R.D. 2482 and 2486. Diesel. Kerosene.
Fuel Consumption.	1.38 lb/bhp/hr.
Oil Specification	S.A.E. 10.
Oil Consumption.	0.1 pints/hr.
Rating.	Maximum take-off. 120 b.h.p. at 47,000 r.p.m. Maximum cruise. 90 b.h.p. at 46,000 r.p.m.
Application.	Power plant for Aircraft.