

APPENDIX V

LICENSING AGREEMENTS

The particular terms of the licence agreement with NSU/Wankel held by any manufacturer of Wankel rotary engines strictly controls the scope of his operation. Table V.I lists the licensees and the scope of their agreements with a brief indication of their interest. The geographical areas for engine manufacture and for their sales of bare engines are also defined in the agreement, but larger mechanisms or devices of which the engine is merely an essential part, are exempt, as well as replacement engines for such applications. Motorcycles, cars, etc., are examples.

With regard to the table of licensees and the horse power range they may exploit, it should be noted that for purposes of licence definition the figures refer to the power developed at 5,000 rev./min. If, therefore, a particular engine develops much more power at a higher speed it will still be in compliance with the licence agreement. Specifying the permissible power output at a given speed was intended to encourage the development of the higher speed and performance potential which the Wankel engine is known to possess.

The U.K. agents of foreign Wankel engine manufacturers are shown where possible but this does not imply that they can supply whole or part engines or indeed are yet handling the engine.

The Curtiss-Wright Corporation was the first licensee and obtained extraordinarily advantageous terms from the licensors, which include a virtually unlimited and exclusive licence for the whole of the North American continent. This company even attempted to interpret the terms as meaning that every car manufacturer, etc., who imports a vehicle with a Wankel engine must pay a royalty to Curtiss-Wright and, in addition, they claimed, (with equal lack of success), worldwide exclusive rights for Wankel type aircraft engines.

It is not surprising that in a situation such as this even companies the size of General Motors Corporation and others were seeking ways and means of participating in the Wankel venture on more agreeable terms than Curtiss-Wright seemed prepared to offer. These endeavours included examination of the possible purchase of Wankel's own rights and research establishment, thus becoming licensor.

G.M.C. have recently signed a licence agreement and other major companies are showing interest in acquiring rights for the Wankel engine in the U.S.A. for cars and for marine and aircraft applications.

The Wankel licensing situation is still evolving.

The following agreements have been signed since this study was started:-

Nissan Motor Co. Ltd., Japan
 General Motors Corporation, Detroit
 Suzuki Motor Co. Ltd., Japan.

TABLE V.1

N.S.U./Wankel Licence Agreements

Parent Company	Hoverprojects' remarks	U.K. Agent
Wankel GmbH Lindau, Germany.		R.F. Ansdale,* 46, Selwood Road, Brentwood, Essex. Tel: Brentwood 4003.
Audi NSU Auto Union AG, (NSU Motorenwerke), 7107 Neckarsulm, Stuttgart, Germany.	Although carrying the same name, NSU (G.B.) Ltd. is neither NSU owned nor connected, but is part of a British group of companies and is concessionaire for cars only.	NSU (G.B.) Ltd., Harbour Road, Shoreham-by-Sea, Sussex. Tel: 07-917-5281.

* Not an agent but Wankel's associate.

Licensee	Date and scope of Licence Agreement	Hoverprojects' remarks	U.K. Agent
Curtiss-Wright Corpn. 1 Passaic Street, Wood Ridge, N.J. 07075, U.S.A.	21.10.1958 NSU/Wankel engines for all applications regardless of size.	The first licence was negotiated between NSU Motorenwerke AG and Curtiss-Wright Corpn., and later jointly with Wankel GmbH. Several petrol and diesel engines developed but no production quantities. Their licence gives almost unlimited rights in North America.	Dr John W. Drinkwater, (Consultant on International Marketing) 'Langdale', Guildford Lane, Woking, Surrey. Tel: Woking 2176

(Continued)

TABLE V.1 (Continued)

Licensee	Date and scope of Licence Agreement	Hoverprojects' remarks	U.K. Agent
Fichtel & Sachs AG, Schweinfurt, Germany.	29.12.1960 Petrol engines developing 0.5-20 bhp for industrial and marine purposes.	First licensee to go into production. Engines to date all air cooled and largely for North American snowmobile market.	Marny Products Ltd., 11, Goodwin's Court, London E.C.2. Tel: 01-240-0816
Yanmar Diesel Co. Ltd., 62, Chayamachi, Kitaku, Osaka, Japan.	25.2.1961 Petrol engines developing 1-100 bhp and diesel engines developing 1-300 bhp for all applications except two-wheelers, automobiles and aircraft.	Efforts predominantly on outboard motor market and in small horsepower range.	
Toyo Kogyo Co. Ltd., 6047 Shinchi, Fuchu-cho, Aki-gun, Hiroshima, Japan.	27.2.1961 Petrol engines developing 1-200 bhp for all land vehicles.	Manufacturers of the 'Mazda' motor car, production at 6,000 per month soon to be 10,000. Very sophisticated research and production facilities, completely computerised.	Industria Ltd., 248, Holloway Road, London N.7.
F.Perkins Ltd., Peterborough, U.K.	8.8.1961 Petrol and diesel engines up to 250 bhp.	Have stopped work and their licence seems to have lapsed.	
Klöckner-Humboldt-Deutz AG, D.5000 Koeln-Deutz, Germany.	4.10.1961 Diesel engines for all applications irrespective of size or power output.	Due to diesel engine commitments all work on rotary engines has been suspended. No Wankel engine data available.	Klöckner-Humboldt-Deutz, Essex Street, London W.C.2.
Daimler-Benz AG, (Mercedes), Stuttgart-Unterturkheim, Germany.	26.10.1961 Petrol engines developing 50 bhp upwards.	The engines produced are probably the most highly developed. Currently used on the C 111 experimental motor car.	Mercedes (G.B.) Ltd., Great West Road, Brentford, Middlesex. Tel: 01-560-2151 (Thomas Tilling group)

(Continued)

TABLE V.1 (Continued)

Licensee	Date and scope of Licence Agreement	Hoverprojects' remarks	U.K. Agent
MAN AG, 8500 Nürnberg 2, Katzwanger Strasse 101, Germany.	30.10.1961 Diesel engines for all applications irrespective of size and power output.	MAN say that their engines have not yet reached a sufficiently developed stage to consider offering for sale. No development details known.	
Friedrich Krupp GmbH, 43 Essen 1, Postfach 10, Germany.	2.11.1961 Diesel engines for all applications irrespective of size and power output.		
Rheinstahl- Hanomag AG, Hanover, Linden- Hanomagstr.9, Germany.	19.12.1963 Petrol engines develop- ing 40-200 bhp.		
Daimler-Benz AG, Stuttgart- Unterturk- heim, Germany.	12.3.1964 Diesel engines for all applications irrespec- tive of size and power output.		
S.p.A. Alfa Romeo, Via Gattamelata 45, Milan, Italy.	15.4.1964 Petrol engines develop- ing 50-300 bhp for automobiles.		
Rolls Royce Ltd, Motor Car Division, Pym's Lane, Crewe, Cheshire. Tel: Crewe 55155.	17.2.1965 Diesel and multi- fuel engines developing 100-850 bhp.	Mainly military (tank) applications. M.V.E.E. interest.	
Vereinig Volk- seigener Betriebe Auto- mobilbau, Karl Marx Stadt, Scheffelstrasse 10, East Germany.	18.2.1965 Petrol engines develop- ing 5-25 bhp and 50-150 bhp for vehicles.		

TABLE V.1 (Continued)

Licensee	Date and scope of Licence Agreement	Hoverprojects' remarks	U.K. Agent
Dr Ing. h.c.F. Porsche K.G. 7 Stuttgart- Zuffenhausen, Porschestraße 42, Germany.	2.3.1965 Petrol engines develop- ing 50-1,000 bhp for automobiles (for racing and rallying).		
Outboard Marine Corp., 100 Pershing Road, Wankegan, Ill. 60085, U.S.A.	1.3.1966 Petrol engines develop- ing 50-400 bhp for marine purposes.	Engaged on development since 1964 or 65, and are concentrating on productionising their engines. It seems they are continuing their Johnson & Evinrude outboards until bright- er prospects warrant introduction of the Wankel engine.	
Comotor S.A. Luxembourg.	11.5.1967 Petrol and multi- fuel engines develop- ing 40-200 bhp for land vehicles.	Company jointly formed with Citroen whose purpose is to supply power units for the 'European' car developed by Comobil, another joint company.	
Johannes Graupner, D 7312 Kirch- heim-Teck, P.O. Box 48, Germany.	12.9.1967 Petrol and multi- fuel engines develop- ing 0.1-3 bhp as model engines for non-industrial purposes.	The model aircraft engine is manu- factured by O.S. in Japan.	Model shops.
Savkel Ltd., Hadera, Israel.	12.9.1969 Petrol engines from 0.5-30 bhp for industrial applications.		
Nissan Motor Co. Ltd., Tokyo, Japan.	1.10.1970 Petrol engines from 80-120 bhp for automobiles.		

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TABLE V.1 (Continued)

Licensee	Date and scope of Licence Agreement	Hoverprojects' remarks	U.K. Agent
General Motors Corporation, Detroit, U.S.A.	10.11.1970 Worldwide non-exclusive licence for the manufacture and marketing of Wankel engines for all applications except aircraft engines. Apparently no limitation on power output.		
Suzuki Motor Co. Ltd., Hamatsu, Japan.	About 23.11.1970 Manufacture and marketing of Wankel engines developing 20-60 bhp DIN for motorcycle applications.		

POSSIBLE FUTURE LICENSEES

Ford Motor Co., Michigan, U.S.A.		20% holding in Toyo Kogyo Co. Ltd.	
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