Background Information on Rolls-Royce

Rolls-Royce is a small company concentrating wholly on the production of high quality, prestigious cars. Rolls-Royce markets cars under the Bentley and Rolls-Royce nameplates and currently seeks an exemption for both Bentley and Rolls-Royce cars. The annual production rate for these cars is approximately 1,600 automobiles, of which one-third are sold in the United States. The corporate philosophy concentrates on this limited production as the only way to maintain their reputation for producing what is widely perceived as the best car in the world. It believes that its customers will continue to demand substantial cars, craftsman-built, using traditional materials and equipped to the highest standards. Rolls-Royce operates as an independent unit within the Vickers group of companies and is required to generate its own financial resources. The limited financial resources of this small company and its market position preclude Rolls-Royce from improving fuel economy by any means involving significant changes to the basic concept of a Rolls-Royce car.

Fuel economy improvements are particularly difficult in the short run. Rolls-Royce manufactures its own engine and bodies and is a very low volume manufacturer. Because of this integration of component manufacturing and low volume, model changes are much less frequent than with larger manufacturers. Rolls-Royce may manufacture a body shell for fifteen years before making a major change. The opportunities for improving fuel economy through changing the model mix are also quite limited as Rolls-Royce manufactures only one basic model in different configurations and all have similarly low fuel economy.

Roll's Royce's ability to make long term fuel economy improvements is also very limited. Any change in the basic concept of its cars to reduce size or downgrade the specifications would not, according to the petitioner, be acceptable to its customers.

Nevertheless, Rolls-Royce states that it is making every effort to achieve the lowest possible fuel consumption consistent with meeting emission, safety, and other standards while maintaining customer expectations of its product. In the 17-year period from 1978, when Federal fuel economy standards were introduced, Rolls-Royce has achieved a fuel economy improvement of approximately 30 percent by substituting lighter weight components and tuning its powertrain while leaving basic features of the vehicles unchanged.

Rolls-Royce states that technical innovation and switching to lighter weight materials should result in worthwhile improvements in its vehicles. The company believes that it has been conscious of the need for weight saving for many years, and since the introduction of the Silver Shadow, has made many parts of aluminum. These include the engine block and cylinder heads, transmission and axle casings, doors, hood and deck lid.

In addition to discussing opportunities for weight reduction, Rolls-Royce also included in its petition discussions of improving its fuel economy through mix shifts, engine improvements, and drive train and transmission improvements.

Rolls-Royce's Petition

On November 30, 1994, Rolls-Royce petitioned NHTSA for an exemption from the average fuel economy standards for vehicles to be manufactured by Rolls-Royce in model year (MY) 1997. A number of petitions have been filed by Rolls-Royce covering all model years from 1978. The last was submitted October 1992, which resulted in Rolls-Royce being granted an exemption from the generally applicable fuel economy standard for MYs 1995 through 1996.

Methodology Used to Project Maximum Feasible Average Fuel

Economy Level for Rolls-Royce

Baseline Fuel Economy

To project the level of fuel economy which could be achieved by Rolls-Royce in MY 1997, the agency considered whether there were technical or other improvements that would be feasible for these Rolls-Royce vehicles, whether or not the company currently plans to incorporate such improvements in those vehicles. The agency reviewed the technological feasibility of any changes and their economic practicability.

NHTSA interprets ''technological feasibility '' as meaning that technology which would be available to Rolls-Royce for use on its MY 1997 automobiles, and which would improve the fuel economy of those automobiles. The areas examined for technologically feasible improvements were weight reduction, engine improvements, and drive line improvements.

The agency interprets ''economic practicability'' as meaning the financial capability of the manufacturer to improve its average fuel economy by incorporating technologically feasible changes to its MY 1997 automobiles. In assessing that capability, the agency has always considered market demand since it is an implicit part of the concept of economic practicability. Consumers need not purchase what they do not want.

In accordance with the concerns of economic practicability, NHTSA has considered only those improvements which would be compatible with the basic design concepts of Rolls-Royce automobiles. NHTSA assumes that Rolls-Royce will continue to produce a five-passenger luxury car. Hence, design changes that would make the cars unsuitable for five adult passengers with luggage or would remove items traditionally offered on luxury cars, such as air conditioning, automatic transmission, power steering, and power windows, were not examined. Such changes to the basic design could be economically impracticable since they might well significantly reduce the demand for these automobiles, thereby reducing sales and causing significant economic injury to the low volume manufacturer.

Mix Shift

Rolls-Royce has little opportunity for improving fuel economy by changing the model mix since it makes only one basic model in various configurations, all with similarly low fuel economy. The differences in fuel economy values among the different models available in MY 1997 will likewise be small. For the 1997 model year, Rolls-Royce and Bentley cars will fall into five fuel economy configurations, three from the naturally aspirated engine family and two from the turbocharged engine family with the range of curb weights from 5,360 lbs to 6,100 lbs. The differences in fuel economy values between the different models are small, and the models with the lower projected fuel economies have significantly lower projected volumes. The Rolls-Royce model mix is essentially fixed by the market demand, and variations in sales percentages between the models would produce negligible improvement in CAFE.

Weight Reduction

Rolls-Royce is conscious of the need to improve automotive fuel economy of its passenger vehicles. Work had begun to design a lighter and more fuel efficient model which included new features such as a lighter bodyshell, engine, transmission, suspension, and other components. However, the company's financial resources are limited compared to other manufacturers, therefore its plans had to be re-evaluated.