obtained for the dual bed system on the Ford
Pinto, Table II, it is apparent that the vehicle
fitted with the fuel injection system is able to
meet the 1981 emissions legislation with a
single bed three-way catalyst.

Conclusion

Johnson Matthey catalysts for both single
bed and dual bed applications have now been
certified for use by a number of U.S. and
European car manufacturers to meet 1981 U.S.
legislation. While it is not yet clear how U.S.
legislation may be changed in the future, the
development of three-way catalysts within the
Johnson Matthey Group is continuing with the
aims of improving overall activity and
durability and of improving the effectiveness of
both the noble metal and the base metal com-
ponents of the system.

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The 1980 MacRobert Award

PLATINUM CATALYSTS FOR THE CONTROL OF EXHAUST EMISSIONS

The highly regarded MacRobert Award, con-
sisting of a gold medal and a cash prize of
£21,000, has been made to a small team from the
Johnson Matthey organisation for their outstand-
ing work on the development and exploitation of
platinum group metal catalyst systems for the
control of motor vehicle exhaust emissions. Lord
Robens, Chairman of the Company, received the
Award from H.R.H. The Duke of Edinburgh, the
Senior Fellow of the Fellowship of Engineering, at
a private ceremony held at Buckingham Palace on
December 16th, 1980.

The Award was instituted in 1968 and is made
annually now by the Fellowship of Engineering,
on behalf of the MacRobert Trusts. It aims to
honour individuals or small teams who have made
an outstanding contribution by way of innovation
in engineering or the other physical technologies,
or in the application of the physical sciences, which
has enhanced, or will enhance, the prestige and
prosperity of the United Kingdom.

In 1970, when the United States of America
introduced legislation aimed at reducing sub-
stantially the exhaust emissions from motor
vehicles, Johnson Matthey was actively engaged in
improving catalyst technology. It had already
successfully developed and marketed new catalyst
systems for the control of air pollution emitted
from industrial processes, using ceramic honey-
comb supports and mixed platinum metal catalysts.
The pollutant gases present in vehicle emissions,
carbon monoxide, nitrogen oxides and hydrocar-
bons, could each be rendered innocuous under
carefully controlled conditions. However, the
catalysts available at the time did not possess the
activity, selectivity or durability to achieve the
necessary standards in the widely differing condi-
tions prevailing in a motor vehicle exhaust for the
minimum required life of 30,000 miles.

Following intensive research and development,
Johnson Matthey succeeded in producing a system
to satisfy the requirements of U.S. legislation. In
addition Johnson Matthey undertook to
manufacture and market these catalyst systems. In
order to serve both the European car
manufacturers exporting to the U.S.A. and the big
American manufacturers, production facilities were
set up in both the U.K. and U.S.A. These were
built to manufacture up to five million catalyst units
per year, and have been modified since to incor-
porate the latest technology, thus enabling Johnson
Matthey to provide a range of motor vehicle emis-
sion control catalysts that have progressively met
the increasingly stringent legislation in the U.S.A.