

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-22
Relating to Exemptions under Section 27156
of the Vehicle Code

SYNETIC
"SPITFIRE II"

Pursuant to the authority vested in the Air Resources Board by Section 27156 of the Vehicle Code; and

Pursuant to the authority vested in the undersigned by Section 39023 of the Health and Safety Code;

IT IS ORDERED AND RESOLVED: That the installation of a "Spitfire II" ignition system manufactured by Synetic has been found to not reduce the effectiveness of required motor vehicle pollution control devices and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for 1966-74 model-year vehicles except those vehicles originally equipped with breakerless electronic ignition systems and those 1966-70 model-year vehicles equipped with the Carter and Dana NOx devices with electronic speed sensors (Reference Executive Order G-19-2). The device consists of power transistors and an electronic switch (silicon controlled rectifier).

This Executive Order is valid provided that installation instructions for this device will not recommend tuning the vehicle to specifications different than those listed by the vehicle manufacturer.

Changes made to the design or operating conditions of the device as originally submitted to the Air Resources Board for evaluation that adversely affect the performance of the vehicle's pollution control devices shall invalidate this Executive Order.

Marketing of this device using an identification other than that shown in this Executive Order or marketing of this device for an application other than those listed in this Executive Order shall have prior approval of the Air Resources Board.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF THE "SPITFIRE II" DEVICE.

No claim of any kind, such as "Approved by Air Resources Board" may be made with respect to the action taken herein in any advertising or other oral or written communication.

Section 17500 of the Business and Professions Code makes unlawful, untrue or misleading advertising and Section 17534 makes violation punishable as a misdemeanor.

Section 39130 and 39184 of the Health and Safety Code provide as follows:

"39130. No person shall install, sell, offer for sale, or advertise, or, except in an application to the board for certification of a device, represent, any device as a motor vehicle pollution control device unless that device has been certified by the board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as a certified device which, in fact, is not a certified device. Any violation of this section is a misdemeanor."

"39184. No person shall install, sell, offer for sale, or advertise, or, except in an application to the board for accreditation of a device, represent, any device as a motor vehicle pollution control device for use on any used motor vehicle unless that device has been accredited by the board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as an accredited device. Any violation of this section is a misdemeanor."

Any apparent violation of the policy or laws will be submitted to the Attorney General of California for such action as he deems advisable.

Executed at Sacramento, California, this 29 day of January, 1974.

WILLIAM SIMMONS

WILLIAM SIMMONS
Executive Officer

State of California

AIR RESOURCES BOARD

January 25, 1974

Staff Report

Evaluation of the Synetic
"Spitfire II"
Electronic Ignition
Systems for Exemption to the Prohibitions
of Section 27156 of the Motor Vehicle Code

I. Introduction

Synetics, Dublin, California has applied for exemption to the prohibitions of Section 27156 of the Motor Vehicle Code for the "Spitfire II" electronic ignition system. Section 27156 prohibits the installation of any device which reduces the effectiveness of motor vehicle emission control systems. The applicant intends to sell the device as an "add-on" part to the standard ignition system of 1966-1974 model-year vehicles.

II. System Description

For a general description of capacitive discharge ignition systems, see staff report "Evaluation of Capacitive Discharge and Transistorized Ignition Systems for Compliance with the Requirements of Section 27156 of the Motor Vehicle Code", dated February 14, 1973.

The "Spitfire II" device consists of an ignition triggering circuit containing power transistors and a silicon controlled rectifier used for coil primary current switching.

III. Emission Testing

The "Spitfire II" device was tested by the Air Resources Board Laboratory. The following vehicles were used in the evaluation:

1973 Pontiac, 350 CID, 2 Bbl., Carb. EGR/AIR, Auto. Trans.

1973 Mercury, 302 CID, 2 Bbl., Carb. EGR, Auto. Trans.

The idle air fuel mixture and ignition systems of both vehicles were prechecked to insure proper engine operation. For all tests, with and without the device, the engine settings were adjusted to the vehicle manufacturer's specifications.

Baseline and device hot start CVS tests were performed. During the tests on the 1973 Pontiac, open circuit spark voltages and spark curves were at idle and 2200 engine RPM.

The results of the ARB tests are shown below:

	<u>HC</u>	Hot CVS Grams/mile <u>CO</u>	<u>NOx</u>
1973 Pontiac			
Baseline	2.17 (2.32)*	17.24 (18.22)	2.43 (2.60)
Device	2.17 (2.06)	16.88 (17.59)	2.58 (2.43)
1973 Mercury			
Baseline	2.50	20.23	2.21
Device	2.47	20.24	2.33

* Retest. ()

	Open Circuit Spark Voltage <u>Idle (600 RPM)</u>	<u>2200 RPM</u>
Baseline	22,000 Volts	22,000 Volts
Device	22,000 Volts	22,000 Volts

IV. Conclusions and Recommendations

It is the staff's opinion that the Synetic "Spitfire II" electronic ignition system will not adversely effect motor vehicle exhaust emissions when evaluated with respect to the exhaust emissions obtained with a conventional ignition system of a "tuned" engine. This device may also have a beneficial effect in the control of exhaust emissions if it maintains the "tuned" condition of the engine for a longer period of time. Therefore, the "Spitfire II" ignition system should be exempt from the prohibitions of Section 27156 of the Motor Vehicle Code.