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State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER D-21  
Relating to Exemptions under Section 27156  
of the Vehicle Code

HAYS ENTERPRISES INC.  
"MAGNA-PULSE"

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 "Magna-Pulse", models 11-1112, 11-1113, 11-1114 and 11-1115, ignition systems manufactured by Hays Enterprises Inc. 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 American Motors Corporation, Ford Motor Company and General Motors Corporation vehicles with V-8 engines except those vehicles originally equipped with electronic ignition systems and those 1966-70 model-year vehicles equipped with incompatible NOx devices (Reference Executive Order G-19-2). The device consists of a magnetic pulse generator, power transistor, and electronic switch (silicon controlled rectifier) and eliminates conventional distributor breaker points.

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 "MAGNA-PULSE" 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 11<sup>th</sup> day of January, 1974.

WILLIAM SIMMONS  
Executive Officer

State of California

AIR RESOURCES BOARD

January 2, 1974

Staff Report

Evaluation of the Hays Enterprises Inc.  
"Magna-Pulse"  
Breakerless Electronic Ignition  
Systems for Exemption to the Prohibitions  
of Section 27156 of the Motor Vehicle Code

I. Introduction

Hays Enterprises Inc., Midway City, California, has applied for exemption to the prohibitions of Section 27156 of the Motor Vehicle Code for the "Magna-Pulse" breakerless 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 original standard ignition system of certain 1966-1974 model-year domestic vehicles with V-8 engines.

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 applicant requested an evaluation of models 11-1112, 11-1113, 11-1114 and 11-1115 for installation on American Motors, General Motors and Ford Motor Company vehicles.

The "Magna-Pulse" device consists of a magnetic pulse generator installed in the distributor which produces the ignition signal; a power module which amplifies the ignition signal from a silicon controlled rectifier used for coil primary current switching.

### III. Emission Testing

The "Magna-Pulse" 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 noted 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	17.24	2.43
Device	2.06	17.87	2.21
1973 Mercury			
Baseline	2.50	20.23	2.21
Device	2.60	21.09	2.27

	Open Circuit Spark Idle (600 RPM)	Voltage 2,200 RPM
Baseline	22,000 Volts	22,000 Volts
Device	30,000 Volts	24,000 Volts

IV. Conclusions and Recommendations

It is the staff's opinion that the Hays Enterprise, Inc. "Magna-Pulse" breakerless ignition system will not adversely effect the performance of the motor vehicle exhaust emission control system 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 "Magna-Pulse" breakerless electronic ignition system should be exempt from the prohibitions of Section 27156 of the Motor Vehicle Code.

AIR RESOURCES BOARD  
Baseline and Device Centrifugal  
Spark Advance Curves

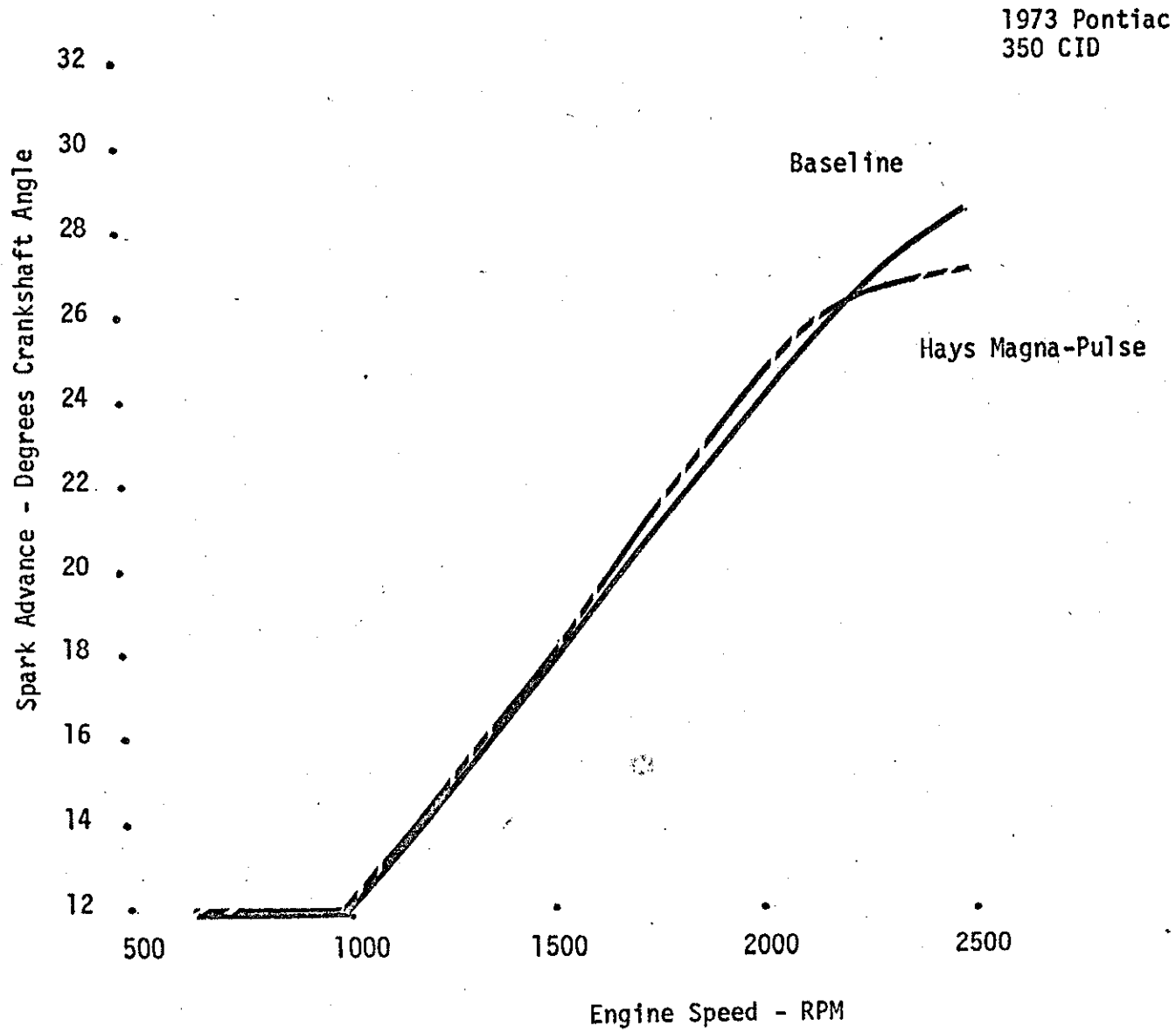


FIGURE 1.

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