

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-70-6
Relating to Exemptions under Section 27156
of the Vehicle Code

MALLORY ELECTRIC
UNILITE IGNITION SYSTEM (FORD MODELS)

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 Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-5;

IT IS ORDERED AND RESOLVED: That the installation of the Unilite Ignition System manufactured by Mallory Electric, 1801 Oregon Street, Carson City, NV 89701, has been found not to 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 1979 and older model year Ford vehicles except for the following:

- 1) Ford vehicles having a four cylinder engine.
- 2) Ford vehicles using EEC II engine controls.
- 3) Ford vehicles having vacuum retard ignition systems.

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

Changes made to the design or operating conditions of the device, as exempted by the Air Resources Board, that adversely affect the performance of a vehicle's pollution control system 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 be prohibited unless prior approval is obtained from the Air Resources Board. Exemption of a kit shall not be construed as an exemption to sell, offer for sale or advertise any component of a kit as an individual device.

This Executive Order does not constitute any opinion as to the effect that the use of this device may have on any warranty either expressed or implied by the vehicle manufacturer.

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 Unitile Ignition System.

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.

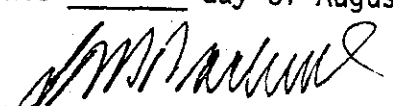
Section 17500 of the Business and Professions Code makes untrue or misleading advertising unlawful, and Section 17534 makes violation punishable as a misdemeanor.

Section 43644 of the Health and Safety Code provides as follows:

"43644. (a) No person shall install, sell, offer for sale, or advertise, or, except in an application to the state board for certification 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 certified by the state 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 subdivision is a misdemeanor."

Any apparent violation of the conditions of this Executive Order will be submitted to the Attorney General of California for such action as he deems advisable.

Executed at El Monte, California, this 28th day of August, 1981.


K. D. Drachand, Chief
Mobile Source Control Division

State of California
AIR RESOURCES BOARD

Staff Report

August 21, 1981

Evaluation of Mallory Electric's, "Unilite Ignition System" in Accordance with Section 2222, Title 13 of the California Administrative Code.

I. INTRODUCTION

Mallory Electric, 1801 Oregon Street, Carson City, Nevada 89701, has applied for an exemption from the prohibitions in Section 27156 of the California Vehicle Code for its "Unilite Ignition System". The applicant requests exemption for 1979 and older Ford vehicles having a V-8 or a six cylinder engine and using either Kettering ignition (points type) or electronic ignition system. The Unilite Ignition System is not applicable to any Ford vehicle which is equipped with an Electronic Emission Control System (EEC II) or has ignition vacuum retard system.

II. DESCRIPTION OF THE UNILITE IGNITION SYSTEM

The Unilite Ignition System consists of an aftermarket ignition distributor and a separate ignition coil. The Unilite ignition distributor replaces the OEM ignition distributor and the electronic ignition control module. Mallory prefers that the Unilite coil be used with the Unilite distributor; however, the OEM coil will function just as well.

The Unilite distributor is designed with external appearances similar to an OEM one. The Unilite distributor uses an infra red light source as the switching mechanism and has an externally adjustable centrifugal mechanism and an adjustable vacuum advance mechanism.

The infra red switching mechanism is housed inside the distributor. The constant light source is interrupted by a modified circular rotor with 8 or 6 windows equally spaced around its circumference. The electronic controls for switching are encased in the light source assembly.

There is an access port for adjusting the centrifugal advance mechanism on the body of the distributor. The only adjustments that can be performed are bending of the spring towers to increase or decrease spring tension which controls the rate (degrees of advance at a certain rpm) of the mechanical spark advance. Replacement of weights or springs requires the disassembly of the distributor. The vacuum advance mechanism can be adjusted by removing the hose port connection and changing the spring or the plunger.

The Mallory ignition coil which is recommended by Mallory for use with the Unilite distributor is capable of a 40 KV (40,000 volts) output.

III. APPLICANTS TEST RESULTS

The applicant submitted comparative exhaust emission tests performed by System Control, Inc., in Anaheim, CA, as evidence that the Unilite Ignition System would not cause an emissions impact. The test vehicle used is described in Table 1 and the test results are given in Table 2. The percentage changes in emissions from the baseline results are shown in parentheses.

Table 1

Test Vehicle Description

<u>Year</u>	<u>Make</u>	<u>Model</u>	<u>Engine Type</u>	<u>Emission Controls</u>	<u>Odometer Mileage</u>
79	Ford	T-Bird	V-8	EGR,AIR,OC	42K

Table 2
Comparative Exhaust Emission Tests
Exhaust Emissions (gm/mi)

<u>Test Type</u>	<u>HC</u>	<u>CO</u>	<u>NOx</u>	<u>Fuel Economy (MPG)</u>
CVS-75 Baseline	0.4	4.2	0.8	11.9
CVS-75 Device	0.4(0)	3.5(-17%)	0.8(0)	12.2(3%)

The applicant also submitted distributor advance curves for randomly selected distributors. The submitted Mallory curves have been superimposed with the OEM ones and are shown in Table 3. The ARB did not perform confirmatory testing of the Unilite Ignition System.

DISCUSSION

The ignition system of an automobile is emission related. It can drastically affect vehicular emissions if it is not precisely calibrated to specifications. The emission data submitted by the applicant demonstrated that the Unilite Ignition System is capable of replacing the OEM system without creating an adverse emissions impact.

Mallory has purchased Mitchell Manuals as the standard reference material. Mitchell Manuals were found to be quite accurate for distributor advance specifications. Mallory would match the OEM curve from the reference manual with proper Unilite distributor for replacement.

CONCLUSIONS AND RECOMMENDATIONS

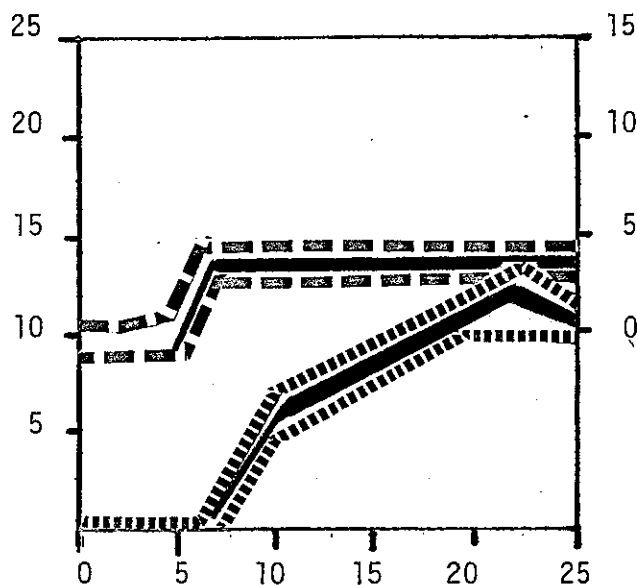
The staff finds that the Unilite Ignition System meets the ARB evaluation criteria. The staff, therefore, recommends that the Unilite Ignition System be exempted from the prohibition in Section 27156 of the California Vehicle Code for 1979 and older Ford distributors except for the following:

- i) Ford vehicles having a four cylinder engine.
- ii) Ford vehicles using EEC II engine controls.
- iii) Ford vehicles having vacuum retard ignition systems.

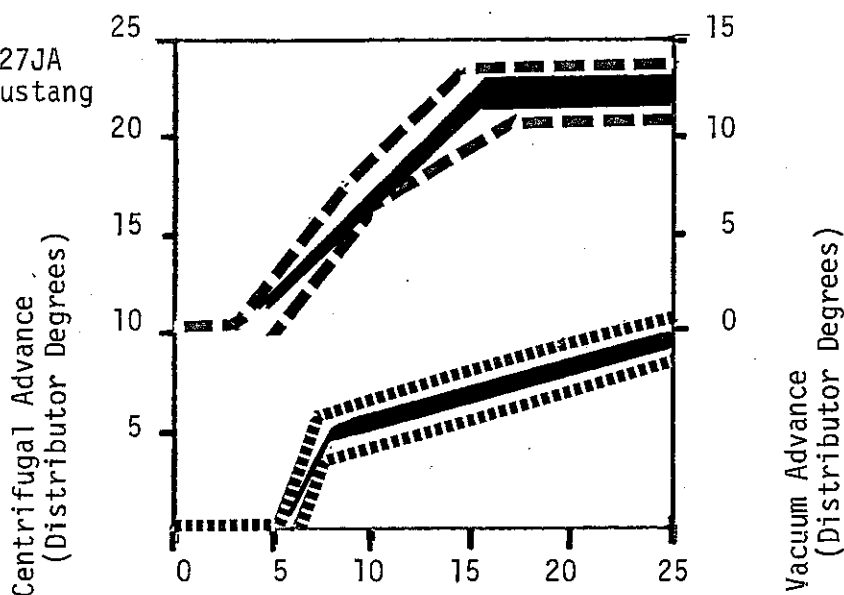
Executive Order D-70-6 has been prepared for Mallory Electric's Unilite Ignition System.

Table 3
Comparison of OEM and Mallory Distributor Specifications

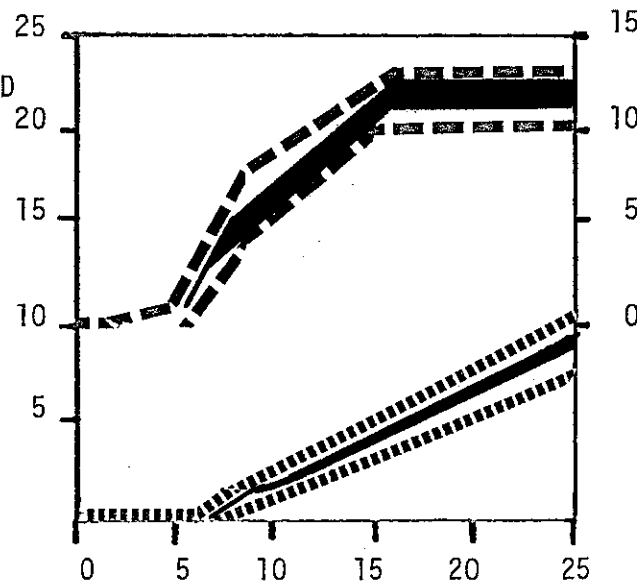
Dist. #: 76TF 12100KA
Application: 76 Mustang 20
Engine: 2800 CC



Dist. #: D7DE 12127JA
Application: 77 Mustang
Engine: 302 CID



Dist. #: D7AE 12127UA
Application: 78 Ford LTD
Engine: 351 M/400 CID



LEGEND

- OEM Vacuum Advance Tolerance
- OEM Centrifugal Adv. Tolerance
- Mallory Tolerance

Distributor Speed (in RPM)
and Manifold Vacuum (in "Hg)