

Complaint

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Appearances

For the Commission: *Fauster J. Vittone, Jean F. Greene and Michael A. Pearlman.*

For the respondent: *James H. Kelley, Leonard H. Tokus, Bergson, Borkland, Margolis & Adler, Wash., D.C. Morton A. Sacks, Cable, McDaniel, Bowie & Bond, Baltimore, Md.*

COMPLAINT

Pursuant to the provisions of the Federal Trade Commission Act, and by virtue of the authority vested in it by said Act, the Federal Trade Commission, having reason to believe that Crown Central Petroleum Corporation, a corporation, hereinafter referred to as respondent, has violated the provisions of said Act, and it appearing to the Commission that a proceeding by it in respect thereof would be in the public interest, hereby issues its complaint stating its charges in that respect as follows:

PARAGRAPH 1. Respondent Crown Central Petroleum Corporation is a corporation organized, existing and doing business under and by virtue of the laws of the State of Maryland, with its principal office and place of business located at One North Charles, Baltimore, Md.

PAR. 2. Respondent Crown Central Petroleum Corporation is now, and for some time past has been, engaged in the sale and distribution of gasoline and other petroleum products under the trade name Crown and other names to the public.

In 1969 respondent Crown Central Petroleum Corporation's sales were in excess of \$90,000,000.

PAR. 3. Respondent Crown Central Petroleum Corporation in the course and conduct of its business as aforesaid now causes and for some time past has caused its said products, when sold, to be shipped from its places of business in the States of Maryland and Texas to purchasers thereof located in various other States of the United States, and maintains, and at all times mentioned herein has maintained, a substantial course of trade in said products in commerce, as "commerce" is defined in the Federal Trade Commission Act.

PAR. 4. In the course and conduct of its business as aforesaid, and for the purpose of inducing the purchase of Crown gasolines containing CA-101, a gasoline additive, the respondent has made, and is now making, numerous statements and representations in advertisements published in newspapers and in other promotional material, and by means of radio broadcasts.

Typical of the statements and representations contained in said advertisements, but not all inclusive, are the following:

NOW: NEW CLEAN-AIR GASOLINE
WITH FORMULA CA-101

Dramatically reduces exhaust emissions

Crown Premium 100 PLUS and Super Regular Gasoline now contain Formula CA-101. This remarkable new gasoline additive dramatically reduces exhaust emissions from your engine. Crown with Formula CA-101 *reduces unburned hydrocarbons by as much as 66 percent*, deadly carbon monoxide 41 percent**. Clearly, this is a step toward cleaner air. Crown with Formula CA-101 works well in old cars and keeps new cars clean. Every car on the road should be using it.

Gives better mileage

Crown with CA-101 is both new and different. You get better gasoline mileage. It cleans your engine and keeps it clean. Your engine performs better, more efficiently. It breathes easier. And so do you. Crown, with Formula CA-101 burns cleaner, more completely. You use less gasoline. As a result, you get more miles per gallon, more miles per dollar.

NOW: NEW CLEAN-AIR GASOLINE WITH FORMULA CA-101

****REDUCES EXHAUST EMISSIONS * * *** unburned hydrocarbons up to 66%,
deadly carbon monoxide up to 41%.

****CLEANS ENGINES**

****GIVES BETTER MILEAGE* * ***

Breathe A Little Easier With Formula CA-101

*Source: "A Study on the Effects * * * of Exhaust Emissions" DuPont Chemical Company.

PAR. 5. By and through the use of the statements and representations, set out in Paragraph Four above, and others of similar import not specifically set out herein, respondent has represented and is now representing that:

1. CA-101 additive produces pollution-free motor vehicle exhaust;
2. CA-101 additive will significantly reduce air pollution;
3. CA-101 additive will significantly reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which it is used;

4. Respondent had tests, or had conducted tests, or had had others conduct tests which proved or substantiated representations made for CA-101 additive in its advertisements before publication or dissemination of such advertisements; these representations include, but are not limited to, the following:

- (a) CA-101 additive produces pollution-free motor vehicle exhaust;
- (b) CA-101 additive will significantly reduce air pollution; and will significantly reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which it is used;

- (c) Every purchaser of Crown gasoline containing CA-101 additive will obtain substantially better mileage by or through the use of such

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gasolines that can be obtained by or through the use of any other commercially available gasoline.

5. CA-101 additive will clean or keep clean all engines and engine components.

PAR. 6. In truth and in fact:

1. CA-101 additive does not produce pollution-free motor vehicle exhaust;

2. CA-101 will not significantly reduce air pollution;

3. CA-101 additive will not significantly reduce emissions or carbon monoxide and unburned hydrocarbons from every motor vehicle in which it is used;

4. Respondent did not have tests, or conduct tests, or have others conduct tests which proved or substantiated representations made for CA-101 additive in its advertisements before publication or dissemination of such advertisements; these representations include, but are not limited to, the following:

(a) CA-101 additive produces pollution-free motor vehicle exhaust;

(b) CA-101 additive will significantly reduce air pollution; and will significantly reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which it is used;

(c) Every purchaser of Crown gasolines containing CA-101 additive will obtain substantially better mileage by or through the use of such gasolines than can be obtained by or through the use of any other commercially available gasoline;

5. CA-101 additive will not clean or keep clean all engines and engine components.

Therefore, the aforesaid statements, representations, and demonstrations set forth in Paragraphs Four and Five were and are false, misleading, and deceptive.

PAR. 7. In the course and conduct of its business as aforesaid, and at all times mentioned herein, respondent Crown Central Petroleum Corporation has been and is now in substantial competition in commerce with corporations, firms and individuals in the sale of gasolines and other petroleum products of the same general kind and nature as that sold by respondent.

PAR. 8. The use by respondent of the aforesaid false, misleading and deceptive statements and representations has had, and now has, the capacity and tendency to mislead members of the purchasing public into the erroneous and mistaken belief that said statements, representations and demonstrations were and are true and into the purchase of substan-

tial quantities of Crown gasolines with CA-101 by reason of said erroneous and mistaken belief.

PAR. 9. The aforesaid acts and practices of respondent, as herein alleged, were and are all to the prejudice and injury of the public and of respondent's competitors and constituted, and now constitute, unfair methods of competition in commerce and unfair and deceptive acts and practices in commerce in violation of Section 5 of the Federal Trade Commission Act.

INITIAL DECISION BY THEODOR P. VON BRAND, ADMINISTRATIVE
LAW JUDGE
MAY 25, 1973

PRELIMINARY STATEMENT

On July 14, 1971, the Federal Trade Commission issued its complaint against Crown Central Petroleum Corporation (Crown), charging it with having violated Section 5 of the Federal Trade Commission Act.

Crown, a marketer and distributor of gasoline and other petroleum products, according to the complaint, misrepresented the performance of its gasolines containing CA-101, a detergent additive. Specifically, the complaint charges that respondent falsely represented that:

CA-101 produces pollution free motor vehicle exhaust.

CA-101 will significantly reduce air pollution.

CA-101 will significantly reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which it is used.

CA-101 will clean or keep clean all engines and engine components.

Crown had tests or conducted tests or had others conduct tests which proved or substantiated certain of the representations made for CA-101 in its advertisements before publication or dissemination thereof.

The product claims whose propriety is under consideration here are based essentially on the contention that the additive effectively reduces certain automobile emissions by preventing, removing, or reducing deposits in the carburetor and the engine's intake system and thus keeping in effect or restoring the optimum air fuel ratio.

Prehearing conferences were held on Oct. 22, 1971, Jan. 3, 1972, Mar. 24, 1972, Apr. 7, 1972, June 27, 1972 and Aug. 4, 1972. Evidentiary hearings commenced on Sept. 25, 1972, and the record was closed on Nov. 17, 1972. Oral argument on proposed findings was heard on Apr. 20, 1973. The Commission, at complaint counsel's request, extended the time for the filing of proposed findings and replies fixing June 22, 1973 as the due date of the initial decision.

This matter is now before the undersigned for final consideration of the complaint, answer, evidence, and the proposed findings of fact, conclusions, and briefs filed by counsel for the respondent and complaint counsel. Consideration has been given to the proposed findings of fact, conclusions and briefs filed by both parties, and all proposed findings of fact and conclusions not herein specifically found or concluded are rejected; and the undersigned, having considered the entire record herein, makes the following findings of fact, conclusions drawn therefrom, and issues the following order:

FINDINGS OF FACT¹

I. The Respondent

1. Crown Central Petroleum Corporation is a corporation organized, existing and doing business under and by virtue of the laws of the State of Maryland, with its principal office and place of business located at One North Charles, Baltimore, Md. (Admitted in Answer)

2. Crown is now, and for sometime past has been, engaged in the sale and distribution of gasoline under the trade name Crown and other names to the public. In 1969, its sales were in excess of \$90,000,000. (Admitted in Answer)

3. Crown, in the course and conduct of its business, now causes, and for sometime past has caused its products, when sold, to be shipped from its places of business in the States of Maryland and Texas to purchasers thereof located in various other States of the United States, and maintains, and at all times mentioned herein has maintained, a substantial course of trade in said products in commerce, as "commerce" is defined in the Federal Trade Commission Act. It is in competition in commerce with other corporations, firms, and individuals in the sale of petroleum products. (Admitted in Answer)

4. Crown, at the time of the advertisements challenged in this proceeding, had 30 stations in the Baltimore-Washington area and 17 stations in Virginia (CX 108, 108A). In 1970, its market share of gasoline sales in Maryland and Virginia was 2.65 percent and 1.42 percent, respectively (CX 120A-B).

¹ References to the record are made in parenthesis, and certain abbreviations are used as follows:

CPF - Proposed findings of complaint counsel

RPF - Proposed findings of counsel for respondent

CX - Commission Exhibit

RX - Respondent's Exhibit

Tr. - Transcript page

CRPF - Complaint counsel's reply to respondent's findings

RRPF - Respondent's reply to complaint counsel's findings

Reference to the proposed findings of counsel are to page numbers, preceded by one of the abbreviations listed above. References to the testimony sometimes cite the name of the witness and the transcript page number without the abbreviation.

II. Air Pollution

5. Air pollution is the presence in the outdoor atmosphere of one or more substances in concentrations and over periods of time which have or tend to have a detrimental effect on human health, or adverse effect on vegetation, agricultural animals; reduce visibility, or interfere with reasonable enjoyment of one's property (Schueneman 448).

Among the principal air contaminants are sulfur dioxide, arising primarily from the combustion of sulfur containing fuels; carbon monoxide which arises primarily from motor vehicle exhaust and to some extent from industrial processes; nitrogen dioxide which arises from photochemical reactions in the atmosphere involving hydrocarbons and nitric oxide; nitric oxide arising primarily from the combustion of any fuel; and photochemical oxidants which are produced in the atmosphere through reaction between nitric oxides and hydrocarbons in the presence of strong sunlight. Another principal class of contaminants is particulate matter, which are particles in the atmosphere made up of dust, fumes, metallurgical fumes, and chemical particles. In addition, air pollution is also comprised of such contaminants as lead, asbestos, beryllium, mercury and fluorides (Schueneman 448-49).

6. Over the past 30 years, the major pollutants with the exception of particulates have increased significantly. Such increases may be ascribed to the major increase in population and industrialization marking this period and the short time in which serious control effects have been undertaken (RX 19, p. 6).

Weight of Emissions of Air Pollutants, 1940-1970 (Tons X 10 ⁶)					
Year	SO _x	CO	Particulates	HC	NO _x
1940	22	85	27	19	7
1950	24	103	26	26	10
1960	23	128	25	32	14
1968	31	150	26	35	21
1969	34	154	27	35	22
1970	34	147	25	35	23

Source: EPA, "Nationwide Air Pollutant Emission Trends, 1940-70," 1972, forthcoming. (RX 19, p. 6)

The abbreviations stand for the following: SO_x - sulfur oxides; CO - carbon monoxide; HC - hydrocarbons; NO_x - nitrogen oxides.

Broken down by source, pollutants on a weight basis were set forth as follows in preliminary federal estimates for 1970:

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Estimated Emissions of Air Pollutants by Weight, Nationwide, 1970 (Preliminary Data)
(In millions of tons per year)

Source	CO	Particulates	SO _x	HC	NO _x
Transportation	111.0	0.7	1.0	19.5	11.7
Fuel combustion in stationary sources	.8	6.8	26.5	.6	10.0
Industrial processes	11.4	13.1	6.0	5.5	.2
Solid waste disposal	7.2	1.4	.1	2.0	.4
Miscellaneous	16.8	3.4	.3	7.1	.4
Total	147.2	25.4	33.9	34.7	22.7
Percent change 1969-70	-4.5	-7.4	0	0	+4.5

Source: Environmental Protection Agency

(RX 19, p. 6)

7. The significance of air pollutants should not be evaluated solely in terms of their aggregate weight. Pollutants are of concern because of their effect on human health, damage to vegetation, livestock and structures and effects on atmospheric processes. For example, other things being equal, a pound of sulfur oxides is a greater threat to welfare than a pound of carbon monoxide (CX 72, p. 213, CX 74, p. 10, CX 75, p. 2).

III. The Automobile and Air Pollution

8. Air pollution from automobiles is a major environmental problem. While smog resulting from the automobile was originally considered to be a Southern California problem, it is now becoming a national phenomenon (CX 40E, The President's 1971 Environmental Program).

In terms of total national air pollution, the automobile is the greatest single contributor by weight. Among the pollutants emitted by motor vehicle exhaust are carbon monoxide, hydrocarbons, oxides of nitrogen, lead compounds, and sulfur dioxide. The amount of sulfur dioxide added to the atmosphere by the motor vehicle is, however, insignificant compared to the amounts from stationary sources (CX 75, p. 1).

9. Emissions from uncontrolled automobiles manufactured prior to 1968, came from the crankcase blowby gases, fuel evaporation from the fuel tank and carburetor, and the engine exhaust. The crankcase and evaporative losses were controlled as of 1971. The emissions from the engine exhaust result from the combustion process occurring inside the engine cylinder. Hydrocarbons and carbon monoxide result from incomplete combustion of the fuel-air mixture; oxides of nitrogen form in the high-temperature burnt gases as the combustion process proceeds (CX 115, p. 10).

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10. The annual pollution contributed by 90 million vehicles may roughly be estimated as follows:

66,000,000 tons of carbon monoxide
 6,000,000 tons of nitrogen oxides
 12,000,000 tons of hydrocarbons
 190,000 tons of lead compounds (as lead)
 1,000,000 tons of sulfur oxides
 1,000,000 tons of particulates

Within the automobile itself, the relative importance of various emission sources is estimated as follows:

Hydrocarbons: 55% from the exhaust, 25% from the crankcase or "blowby" and 20% from carburetor and fuel tank evaporative losses
 Carbon monoxide: 99% from the exhaust
 Oxides of nitrogen: 99% from the exhaust
 Lead: 100% from the exhaust

"The Automobile & Air Pollution: A Program for Progress Part II" (1967) (CX 75, p. 1).

The Environmental Protection Agency has estimated the motor vehicle's percentage of national emissions in 1969 as follows:

<i>Carbon Monoxide</i>	<i>Hydrocarbons</i>	<i>Nitric Oxides</i>
64.7%	45.7%	36.6%

(CX 43, p. 4-1)

11. Emissions from automotive vehicles are largely responsible for the formation of photochemical smog in certain areas (CX 74, p. 1). The extent to which the automobile contributes to this process varies area by area (Levy, CX 128A; Tr. 1269).

Smog formation is involved in the interaction between oxides of nitrogen, the hydrocarbons, particularly certain classes of reactive hydrocarbons and sunlight (Calvert 365). This stimulates a lengthy and complex series of reactions in which a part or all of the various hydrocarbons are consumed and various secondary products are formed as a result of the photochemical reaction. This entails the formation of products such as nitrogen dioxide, ozone, peroxyacyl nitrates (PAN), aldehydes, organic aerosols and other compounds (Altshuller, CX 124; Tr. 3367-69, CX 5, pp. 2-5, 2-6). In short, the reactions of hydrocarbons are important in the urban atmosphere because they give rise to secondary contaminants and reaction intermediates which cause most of the detrimental effects of hydrocarbon air pollution (CX 5, p. 2-2).²

12. In Maryland, the city of Baltimore and the Washington, D.C. metropolitan area have photochemical smog problems in the sense that

² The rates at which the various hydrocarbons react covers a very broad spectrum. Some are considered unreactive or react very slowly in contrast to a whole range of hydrocarbons which are quite potent in causing the manifestations of the photochemical process (Altshuller, CX 124; Tr. 3369-70).

concentrations of photochemical oxidants occur substantially above national ambient air quality standards. Levels of photochemical oxidants have been observed which are more than double the standard considered safe from a public health point of view. Photochemical smog in Maryland is of primary concern during the warm summer months. The smog problem is worst from May through September with occasional high concentrations occurring in April and October and perhaps into November. The most severe smog problems, however, occur during July and August (Schueneman 457).

The State of Virginia has a photochemical smog problem evidenced by higher levels of oxidants in those areas with high auto population. These areas are the Northern Virginia area associated with metropolitan Washington, the metropolitan Richmond area, and the metropolitan Norfolk area. Smog in these areas is primarily a problem in the summer months (Watson 959).

IV. Health Effects Associated with Automobile Pollutants

13. The long term health effects of air pollution are of considerable concern. With continued exposure, those living in polluted air come a little closer to a diagnosable diseased condition. Such diseases are mainly diseases of the bronchial tree ranging from the common cold to lung cancer. Air pollution may also irritate the eyes, and some pollutants in the air, like lead, may build up in the body until they reach harmful levels (CX 98, p. 4).

14. Carbon monoxide is a poisonous gas entering the blood stream replacing the oxygen needed to carry on the body's metabolism. It is not cumulative in its effects but at high concentrations, it kills; at lower concentrations, it brings on headaches and a slowing of physical and mental activity (CX 98, pp. 4, 8).

There is no measurable health effect from a 10 percent reduction in carbon monoxide from automobiles at the lower end of the scale of concentration which is the exposure for the majority of the population (Carrol, CX 130B; Tr. 2976, 3001). At either end of the scale, it would be difficult to pick a point where a 10 to 15 percent reduction of carbon monoxide would be meaningful in terms of health effects to the people exposed to it (Rokaw, CX 132; Tr. 2542).

15. Most hydrocarbons are not considered directly harmful in the amounts found in urban air (CX 98, pp. 11, 12). The adverse health effects of hydrocarbons result primarily from their participation in the photochemical process resulting in a number of secondary pollutants, the photochemical oxidants (Finding 11, *supra*.)

The most common effect of photochemical oxidants on humans is eye irritation. The level at which this occurs is commonly reached in almost every urban area of the country anywhere from a few days a year to as frequently as a third of the days per year depending on factors such as the amount of sunlight, the density of the automobile population and the ability of the local atmosphere to cleanse itself (CX 98, p. 10).

Oxidants, at the levels routinely found in the cities, make it more difficult to breathe especially in the case of those already suffering from respiratory disease (CX 98, p. 10).

Ozone, one of the photochemical oxidants, can severely irritate the mucous membranes. At certain levels and exposures, it produces coughing, choking, and severe fatigue. At relatively high levels, ozone will interfere with lung function (CX 98, p. 10).

At the temperatures commonly reached when fuels are burned, nitrogen in the air combines with oxygen to form nitric oxide which is relatively harmless, but which usually converts to the more dangerous nitrogen dioxide which is also considered a photochemical oxidant. The rate at which nitric oxide converts to nitrogen dioxide is greatly accelerated by the same conditions which lead to the formation of photochemical smog. It is usually considered to be one of the photochemical oxidants. However, nitrogen dioxide is present in the air wherever fuels are burned and whether or not photochemical smog has been produced. Nitrogen dioxide, which is directly toxic to man and animals, may result in eye irritation and increased susceptibility of infection (CX 75, p. 2, CX 98, p. 11).

The control of hydrocarbons is desirable. This, however, does not permit any findings as to the functional relationship between hydrocarbons and oxidants in any particular region. The purpose of controlling hydrocarbons is not to reduce hydrocarbons as such but to achieve such reductions thereof as will control oxidants (Altshuller, CX 124; Tr. 3400). It is not possible to determine whether a 10 percent reduction of hydrocarbons would have reduced smog in the area relevant to this proceeding. There is no way of predicting what such a reduction will accomplish in any atmosphere in view of the many other interrelated factors such as possible increases in nitric oxides, nitrogen dioxides, aldehydes or various meteorological conditions (Calvert 406, 419, 437).

16. Certain hydrocarbons have produced cancer in laboratory animals (CX 98, pp. 11, 12). A 10 to 15 percent reduction of hydrocarbons would have no significant effect on the potential carcinogenesis of hydrocarbons, however (Rokaw, CX 132; Tr. 2533-34).

17. Atmospheric lead became a public health problem in a significant new way, when in 1924, tetraethyl lead was found to be a useful gasoline additive (CX 75, p. 3).

Lead, a biologically nonessential metallic element, is a pollutant which is clearly toxic under conditions of prolonged and excessive exposure as for example, when paint containing lead is ingested (CX 43, pp. 4-8). "Over 95 percent of the total lead emitted into the atmosphere derives from additives in gasoline. Lead particles can penetrate the lungs and can be retained and absorbed in the blood stream. In urban areas, the margin of safety between blood levels of lead in humans and levels at which lead poisoning symptoms have been identified are growing smaller. While no clear case has been found of lead poisoning from automobile emissions, there is ample reason for concern." (CX 40E).³

In densely populated areas such as Baltimore where motor vehicle traffic is heavy, lead in the opinion of the chief of the Division of Air Quality Control of the State of Maryland is a health hazard particularly to children living in such areas (Schueneman 454).

18. Particulate matter from automobile exhaust poses a health problem for the following reasons:

Most of the liquid and solid particles in auto exhaust are submicroscopic. Their concentration in automobile exhaust is often in excess of 10^7 particles per cubic centimeter and their emission rate may exceed 1×10^{12} particles per second at a speed of 30 miles per hour. One of the most serious aspects of modern-day widespread levels of air pollution is the generation and increasing concentrations of submicroscopic Aitken nuclei. These particles are of size less than 0.1 microns diameter and serve as "condensation" nuclei which may absorb pollutants. They constitute the majority of airborne particles now found in urban and most "country" air. Particles in this size range are readily coated with monomolecular layers of organic or inorganic chemicals while in the atmosphere or during passage through the upper respiratory tract. The particles thus may act as carriers for other pollutants and produce more serious adverse effects than larger size particulates which are intercepted in the nose or throat.

(The Automobile & Air Pollution: A Program For Progress Part II, U.S. Department of Commerce 1967; CX 75, p. 4).

The sulfur oxide pollutants aggravate existing respiratory disease and contribute to its development (CX 98, p. 9).

³ In a notice of proposed rulemaking on Feb. 23, 1972, 37 F.R. 3882 (RX 26A-D) pertaining to the "Regulation of Fuels and Fuel Additives," the Administrator of the Environmental Protection Agency stated:

"Based on the available evidence, the Administrator has concluded that *air borne lead levels exceeding 2 micrograms per cubic meter, averaged over a period of 3 months or longer, are associated with a sufficient risk of adverse physiologic effects to constitute endangerment of public health.* Since airborne lead levels in many major urban areas currently range from 2 to somewhat over 5 micrograms, and since motor vehicles are the predominant source of airborne lead in such areas, attainment of a 2 microgram level will require a 60 to 65 percent reduction in lead emissions from motor vehicles* * *." (RX 26B) (emphasis supplied).

V. The Additive

19. DMA-101, referred to as CA-101 in Crown's advertisements, is a gasoline additive manufactured by the E.I. du Pont de Nemours Company of Wilmington, Del. (RX 1A-B).

20. Du Pont has been selling detergent additives since 1958 (Scheule 818). Du Pont's first offering was RP-2 which provided rust prevention and anti-icing properties. It was marketed about 1958 or 1959 (Scheule 818).

In the early 1960's, RP-2 was modified to the DMA-4 and DMA-4A additives which were to provide carburetor icing protection, anti-rust protection and carburetor detergency (Scheule 819).

In the period 1967-1968, du Pont began work on a second generation multifunctional additive to clean up existing deposits as well as to prevent deposit buildup and to combat malfunctions of valves in engines due to deposit formation on intake valves. This work led to the development of the DMA-101 additive which is a combination of a hydrocarbon polymer and DMA-4, an amine neutralized phosphate. Du Pont first introduced DMA-101 in Nov. 1969 (Scheule 819-20, Hagele 1156, Bettoney 1538-39).

21. An additive such as DMA-4 provides carburetor detergency by virtue of its surfactant mechanism. DMA-101 includes DMA-4, the surfactant, and a polymer which acts in concert with the surfactant (Bettoney 1533).

Another of du Pont's detergent additives in the DMA-100 series is DMA-115. It has a higher DMA-4 content versus polymer content than does DMA-101. However, all additives in the series function similarly and are considered by du Pont to be in the same class (Scheule 821, 836). With respect to the reduction of exhaust emissions, du Pont found on the basis of laboratory tests and field tests that there was very little difference in their performance in this respect with a very slight edge in favor of DMA-115 (Scheule 836-37).

22. In DMA-101, the DMA-4 component works as a surfactant which has physical and chemical properties enabling it to attach to the surface of a metal vessel such as a carburetor. By interaction with the metal, the additive forms a water and dirt repellent film and thus prevents the buildup of deposits (Bettoney 1532-34). The polymer component of DMA-101 acts with the surfactant to soften and penetrate deposits which when loosened are washed away (Bettoney 1534).

23. The DMA-101 additive is probably an effective carburetor cleanliness detergent (Cattaneo 1919).

24. Carburetor deposits may form or accumulate in almost any place in the carburetor. The ones that are critical to the mixture of air and fuel are particularly those in the neighborhood of the throttle plate (Bettoney 1512-13). Such deposits interfere with the flow of air with an effect similar to the closing of the throttle valve (Tr. 1514). The net effect is to enrich the air-fuel mixture *viz.* the mixture has more fuel than the manufacturer had in mind when the carburetor was built (Tr. 1515). An enrichment of the air-fuel ratio will cause formation of higher amounts of carbon monoxide and hydrocarbons in automobile exhausts (Tr. 1575). In addition, the deposits on intake valves and some other parts of the engine reached by gasoline with DMA-101 can increase exhaust emissions (Scheule 910).

25. The amount of improvement in automobile exhaust emissions, as a result of the use of the CA-101 additive in a car, depends on how dirty the carburetor or intake system is (Bettoney 2100-01). Such reductions could vary from some small amount up to the order of 50 to 60 percent for some carburetors (id 2099-2100). Prior use of another additive such as DMA-4 would limit the formation of deposits in these areas (Scheule 852). And in the case of a clean or new carburetor, there would be little or no reduction of exhaust emissions as a result of the use of CA-101 (Bettoney 2099-2100).

26. Considered in the light most favorable to respondent, the available technical data would support a claim for a 10 percent overall reduction in the general car population of hydrocarbons and carbon monoxide as a result of CA-101, if used by all cars (Bettoney 2049, 2099, 2124).⁴

27. The CA-101 additive will not reduce exhaust emissions of hydrocarbons and carbon monoxide below the levels that new cars will emit (CX 123C).

28. An automobile may have high emissions because of mechanical conditions which can only be improved by mechanical repairs and on which the additive's detergent action will have no effect (Bettoney 2081, 2122; Cattaneo 1944).⁵

Some cars are high emitters of pollutants because of bad spark plugs,⁶ points, wiring, etc., and the use of an additive would not cure that condition. The same would be true as to bad wiring (Bettoney 2047,

⁴ The opinion of the director of du Pont's Petroleum Laboratory on this point was based on du Pont's testing and the literature generally pertaining to carburetor detergents similar in their function to DMA-101. It is further the opinion of this witness that CA-101 is one of the four most effective detergent additives and that it is possible these additives could achieve a result similar to CA-101 in reducing emissions (Bettoney 2101, 2050).

⁵ *E.g.*, carbon monoxide emissions may drastically increase when the carburetor metering rod linkage is out of position (CX 152K; Tr. 2081).

⁶ Spark plug misfires increase hydrocarbon and carbon monoxide emissions substantially (CX 115, p. 23).

2122; Cattaneo 1944). Similarly, a deterioration of the timing of an engine can also result in an increase of emissions (Bettoney 2047). Burned valves, although not occurring regularly at this time, nevertheless, exist in the general car population and a car with that condition would put out "extremely high hydrocarbons" (Mills, CX 129; Tr. 3085).

In addition, the air-fuel ratio can be reduced by factors such as an automotive choke sticking closed or because of a very dirty air cleaner element. This would generally increase emissions of carbon monoxide and hydrocarbons (CX 65, p. 2-13). The additive would not remedy those conditions.

29. The CA-101 additive will not clean all engine components. It will not affect deposits such as exhaust valve tulips, combustion chamber deposits, crankcase area deposits or rocker arm cover deposits (CX 123F; Scheule 872-73). Combustion chamber deposits increase hydrocarbon emissions (Bettoney 2085).

30. In fact, "there are many, many factors that influence the emissions of vehicles, * * * many of these factors are extremely subtle and cannot be detected in all cars at all times." (Bettoney 1633; See also Mills, CX 129; Tr. 3079-80; CX 367).

31. The additive may work in a car but uncontrolled variables beyond the reach of the additive may nevertheless cause emissions from some vehicles to increase (CX 148, Scheule 883-87, 929-32).⁷ Certain vehicles suffering from mechanical defects and subjected to severe operating conditions will not realize significant reductions of carbon monoxide and unburned hydrocarbons as a result of a detergent additive such as CA-101 (CX 152).⁸

32. Gasoline with CA-101 will not significantly reduce emissions of carbon monoxide and unburned hydrocarbons in every vehicle in which it is used. (Findings 27 to 31, *supra*).

⁷ Respondent states in connection with du Pont's road test, CX 148, "In other words, the additive probably worked in those cars, but *uncontrolled variables beyond the reach of the additive caused emissions from those vehicles to increase* (Scheule 883-87). In the other 18 cars, the action of the additive overwhelmed the variables and the net effect from all 23 cars was a net decrease of HC emissions by about 9 percent (Scheule 883-87, 929-32)" (emphasis supplied) RRPF p. 18.

⁸ In the case of a nine thousand mile test "involving twenty high-mileage and high blowby taxicabs, no significant differences in exhaust emissions or other engine parameters were indicated with the use of DMA-115 relative to a control gasoline. Excessive variability caused by test severity and vehicle condition overshadowed the anticipated fuel effect." (CX 152A) For future testing it was recommended:

"1. Use other tests to evaluate the effectiveness of DMA-115 in reducing exhaust emissions.

"2. In future tests with similar objectives, select fleets with engines and carburetors responsive to deposits and avoid severe operating and maintenance conditions" (emphasis supplied) (CX 152D).

See also CX 65, "Control Techniques for Carbon Monoxide, Nitrogen Oxide, and Hydrocarbon Emissions from Mobile Sources" U.S. Department of Health, Education and Welfare (1970) p. 4-9:

"In a large group of vehicles, a few of them could not meet any reasonable emission limit, no matter how much they were repaired or tuned up. This is due to the variability of emissions of both controlled or uncontrolled vehicles. * * *

Crown gasoline with CA-101 will not produce pollution free motor vehicle exhaust (CX 123A-B). Motor vehicles using Crown gasoline with CA-101 emit unburned hydrocarbons, carbon monoxide, oxides of nitrogen, lead, particulates, sulfur oxides and other pollutants (CX 123B). Further, the CA-101 additive has no beneficial effects on emissions of oxides of nitrogen, lead, particulates and sulfur oxides and the use of the additive will not reduce the emissions of these pollutants (CX 123E).

VI. Testing of the Additive

33. Du Pont has performed tests of the DMA-4, DMA-101 and DMA-115 additives for the purpose of demonstrating their keep clean and clean up effects on carburetor and intake system deposits⁹, and to measure the resulting effect on engine emissions of hydrocarbons and carbon monoxide. In that connection, du Pont has utilized laboratory engine tests (CX 110Q; RX 13), programmed chassis dynamometer tests (RX 7, 10, 71, 110F-I), and road tests (CX 148, 149, 152; RX 69, 70) (Bettoney 1537, 1541, 1602-12).

Accelerated Laboratory Testing Procedures

34. The director of du Pont's Petroleum Laboratory developed a laboratory test procedure for testing DMA-101 for its cleanup and emission reduction properties in early 1970 (Bettoney 1612).

35. Most of the laboratory tests were conducted on Plymouth engines mounted on an engine dynamometer and artificially "dirtied up" by the use of a reference fuel, MS 08, to form deposits in the carburetor and other parts of the induction system simulating deposits in "dirty" engines found on the road. Du Pont took steps to ensure that the deposits accumulated during the accelerated "dirty up" stage adhered to the carburetor and were representative of those on the road. The engine fuel was then switched to a commercial premium gasoline containing DMA-101 and the engine run for a number of hours. Emission measurements were taken at idle because at that stage, the emissions of carbon monoxide and hydrocarbon are greatest and the deposits on the throttle area affect the proper functioning of the carburetor. Measurements at idle correlate with measurements during deceleration of the vehicle when the throttle plate is similarly closed (Bettoney 1612-22; Verelli 1067-69; CX 65, p. 4-14; Scheule 904-16).

MS 08, which is used in the "dirty up" phase of such tests, is a reference fuel, the composition of which is controlled from the stand-

⁹"Keep clean" means keeping a carburetor clean as opposed to cleaning up or removing deposits (Tr. 1534).

point of its tendency to form varnish and sludge. To this extent, MS 08 is a dirtier gasoline than most commercial gasoline (Bettoney 1546). It is a fuel widely used in the oil industry for testing purposes generally related to engine cleanliness and has been used in tests by the United States Bureau of Mines (Hurn 1657). MS 08 represents between 3 to 10 percent of the different types of gasoline sold in the United States (Bettoney 1546; Hurn 1658).

In the period Feb. through Nov. 1970, over 25 tests were run using this procedure and the range of reduction of hydrocarbon and carbon monoxide emissions found was on the order of 40 to 80 percent (Bettoney 1625-26).

36. Although du Pont took steps to ensure that the deposits created by the accelerated procedures were representative of those accumulated on the road, the memorandum of the director of du Pont's Petroleum Laboratory dated May 15, 1970¹⁰, seems to corroborate the opinion of the Commission's expert that deposits accumulated during an accelerated test tend to be more sooty and fall off more easily than those encountered in actual service (Verelli 1032, 1044-54).

37. This accelerated testing procedure was devised to simulate the performance of a small group of high emission cars which may comprise 5 to 15 percent of the general car population. As to this group of cars, it is the opinion of the director of du Pont's Petroleum Laboratory, a 50 to 60 percent improvement of emissions in road performance could be predicted on the basis of such laboratory tests (Bettoney 2096-98).

38. CX 110Q is a report dated March 30, 1970, entitled "A Study On The Effect Of DMA-101 On Exhaust Emissions From A Laboratory Engine." The report summarizes the results of tests of DMA-101 on Plymouth engines mounted on a dynamometer stand. The accelerated test procedure set forth in Finding 35 was utilized, and a reduction of approximately 66 percent in hydrocarbon emissions and a reduction of approximately 41 percent in carbon monoxide emissions was reported (CX 110Q).

39. RX 13 is a report dated October 5, 1970, entitled "The Effect Of DMA-101 And DMA-115 On Exhaust Emissions In A Laboratory Engine." The test procedure utilized was similar to that of CX 110Q, except that the reference fuel, MS 08, was used both in the dirty up and cleanup phases of the test. According to the test report, both additives reduced hot idle emissions of carbon monoxide and hydrocarbons in the case of a Plymouth 6 cylinder laboratory engine with an artificially dirtied carburetor (Bettoney 1623-24).

¹⁰ See Finding 55, *infra*.

Programmed Chassis Dynamometer Tests

40. Du Pont's testing program for detergent multifunctional additives utilized chassis dynamometers and programmed chassis dynamometers (Bettoney 1478-81).

A chassis dynamometer is a machine which supports the drive wheel of a vehicle and can be adjusted to provide the power requirements imposed upon an engine as if the car were on the road (Mills CX 129; Tr. 3037). In the case of a programmed chassis dynamometer, signals are sent by a tape to the engine in order to simulate various conditions of on-the-road driving (Bettoney 1477-78). Use of this device eliminates many of the uncontrolled variables inherent in on-the-road driving (Scheule 901-02).

41. RX 9 is a report entitled "Effect of Carburetor Deposits and DMA-4 on Fuel Economy," summarizing a number of programmed chassis dynamometer tests. According to this report, vehicles using the du Pont additive DMA-4, consumed less fuel than did vehicles using the same fuel without the additive. In the opinion of the director of du Pont's Petroleum Laboratory, such tests confirmed the effects of carburetor deposits on fuel economy (Bettoney 1518).

42. RX 10 is a report dated October 1966, entitled "Effect of Du Pont Multifunctional Additive No. 4 (DMA-4) On Exhaust Emissions Of Vehicles Equipped With Air Injection Systems." This involved a test on four new 1966 Chevrolets with 12,000 miles being accumulated on programmed chassis dynamometers. According to the test report, hydrocarbon emissions from the cars using the additive remained substantially unchanged throughout the 12,000 miles in contrast to the control cars while the carbon monoxide emissions increased to a lesser extent than in the control cars.

43. RX 7 is a report dated Nov. 1968 of a programmed chassis dynamometer test entitled "Effect of Du Pont Multifunctional Additive No. 4 (DMA-4) on Exhaust Emissions of Plymouths Equipped with CAP Exhaust Control Systems." This was a 15,000 mile test involving four Plymouths equipped with CAP exhaust control systems. Two of the cars had gasoline with the additive DMA-4 and two cars were operated on the base gasoline. At the end of the 15,000 mile test, the two cars with the additive had lower hydrocarbon and carbon monoxide emissions than the cars running on the base gasoline (Bettoney 2073).

44. RX 71 is a table summarizing the results of a test on taxi engines installed in automobiles and run on du Pont's programmed chassis dynamometers. This test was done concurrently with the road test on

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the taxi fleet set forth in CX 152 (Bettoney 2114).¹¹ The cars were run on programmed chassis dynamometers for 16 or 18,000 miles and deposits were accumulated in the carburetors through the use of MS 08 and other gasoline components (Bettoney 2149). The cars were then operated on a control gasoline and gasoline containing DMA-115. At the termination of the test, there was a decrease in the hydrocarbon and carbon monoxide emissions on the cars operated on DMA-115 (Bettoney 2147).

Road Tests

45. In the case of road tests involving cars taken at random with different drivers driving in different ways and different ways of maintaining the vehicles, many variables are introduced which are completely uncontrolled. As a result, a large number of cars is required to get significant results (Scheule 901).

46. CX 149 is a report dated June 3, 1970, of the first road test on the DMA-101 additive. It was a 2000-mile road test employing three fleets of five privately owned automobiles. According to the report, "DMA-101 did not show a consistent trend towards reduction of engine emission levels when used at 100 and 200 lb. concentrations in Getty premium gasoline." (CX 149C). The only conclusion drawn from the test "was that we [du Pont] should run tests more carefully and for a longer period of time than we had in that work" (Bettoney 2108).

47. CX 152A-AF is a test report evaluating the effect of the use of DMA-115 on exhaust emissions in a 9000-mile test involving twenty high mileage and high blowby taxicabs. The draft report dated Jan. 25, 1971, indicated no significant differences in exhaust emissions as a result of DMA-115 (CX 152A). This report was not completed because du Pont, at the time, felt the work reported therein was inconclusive (Bettoney 2110). The mechanical condition of the vehicles, in du Pont's view, was responsible for the excessive variability and inconclusive nature of the emission test results (CX 152I).

48. CX 148A-H is a report dated July 1971 of a road test of the "Effect of DMA-101 in Reducing Exhaust Emissions and Improving Compression Pressures." The test began in March of 1970, and finished in September (Scheule 882).

The test involved "23 privately owned American cars during approximately 3500 miles of normal driving" (CX 148A). According to the report, the 9 percent average reduction of hot cycle hydrocarbons

¹¹ The draft report of that test is dated Jan. 25, 1971.

collected pursuant to the 1968 federal test procedures was statistically significant. No statistically significant reduction of carbon monoxide was shown (CX 148C).¹²

The 23 cars in the test are not a full cross section of the general car population, so no complete projections can be made from this test to the full car population (Cattaneo 1862).

49. RX 69 is a report on a road test entitled "Effect of DMA-115 on Vehicle Performance in Eight Foreign Cars" dated July 1971. According to the report, the effect of DMA-115 on vehicle performance was determined in eight privately owned and operated European and Japanese automobiles, the car owner adding DMA-115 to the gasoline purchases at the service station.¹³ According to the report, after 3000 miles, there was an average reduction in hot idle exhaust emissions of both hydrocarbons and carbon monoxide for six cars, but individual results were "scattered." The average reduction of hydrocarbons measured by the NDIR method was 9 percent, and the reduction of carbon monoxide shown at idle, 13 percent. Over the road fuel economy, according to the report, improved 11 percent.

50. RX 70 is a report dated September 1971 of a "Consumer Car Test —Effect of DMA-115 on Exhaust Emissions and Engine Performance." This test involved a road evaluation of DMA-115 using 51 employee owned and operated automobiles one to eight years old. The cars were divided into a control group of 26 cars using a completely formulated premium gasoline, and a second fleet of 25 cars operating on the same base gasoline to which DMA-115 had been added. Measurements were made at the start of the program and after approximately 3000 miles of family driving. According to the test report in the DMA-115 fleet, carbon monoxide emissions decreased by 6 percent at hot idle and 13 percent at 15 miles per hour. Average hydrocarbon emissions according to the report were reduced by 11 percent or 8 percent depending on the method of measurement used. The report further stated that an 11 percent average improvement in fuel economy had been observed for the cars operating on DMA-115.

*Correlation of Test Results With Performance
In the General Car Population*

51. It is the opinion of the director of du Pont's Petroleum Laboratory that there is a complete correlation between reduction of emissions

¹² Of the 23 cars tested, at least 5 showed an increase in hydrocarbons (Scheule 936).

¹³ The cars were operated for a test period of July to October 1970.

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by DMA-101 shown in laboratory tests and the reductions of emissions in actual service (Bettoney 1632). The view that such correlation is complete conflicts with other testimony. (Findings 52-56, *infra*).

52. Accelerated test procedures are commonly used by the automobile or oil industries. They may be used for initial screening purposes to separate the marginal from the more promising candidate products or to obtain the earliest possible answers at the least possible expense (CX 129; Mills 3149-50). However, "accelerated testing could be a poor predictor of real life operation." (id. at 3031).

53. The test procedures utilized in testing the emission reducing properties of du Pont's detergent additives were essentially accelerated procedures. Tests such as CX 110Q utilizing accelerated procedures are valid as laboratory tests and the data therein was properly obtained (Cattaneo 1963). Such a laboratory test gives a good indication that the additive reduces emissions. Accelerated procedures, although they are appropriate as development tests for an indication of what might happen in the general car population do not, however, support claims as to actual performance in the general car population without further testing (Cattaneo 1962-63).

54. Du Pont's laboratory test given as a reference to support the claimed emission reductions incorporates a procedure simulating the performance of a small group of high emission cars comprising 5 to 15 percent of the general car population.¹⁴ Reductions in the case of cars not in this group might be much smaller (Finding 25, *supra*).

55. On May 15, 1970, the director of du Pont's Petroleum Laboratory wrote as follows to D. R. Diggs, the technical director of the company's Petroleum Chemicals Division:

Several major oil companies have shown a high interest in buying DMA-115, provided du Pont can supply data showing vehicle emission reduction properties. Preferably, DMA-115 should reduce emissions in normal automotive service, but most, if not all, potential customers will probably buy our product if it can be shown to reduce emissions in an on-the-road accelerated test procedure such as was used by Chevron in their promotion of F-310.

Such accelerated procedures are usually devised to simulate the performance of that small group of high-emission cars in the population which have deteriorated through the use of poor lubricants, infrequent oil changes, or severe operation such as encountered in taxi or police operation.

We have demonstrated that DMA-115 will reduce emissions by cleaning carburetors that have been dirtied by an accelerated laboratory test procedure, but *we have been unable to*

¹⁴ According to one of the Commission's expert witnesses, tests on vehicles with very dirty or heavily deposited engines suggest that "if the general motor vehicle population is composed of vehicles with varying degrees of induction system deposit formations to the point of fouling that there would certainly be a general reduction in hydrocarbons and carbon monoxide resulting from the use of an extremely effective additive." (Mills, CX 129; Tr. 3143).

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demonstrate conclusively such benefits for either DMA-115 or F-310 in cars operated in normal service, presumably because the carburetors were not particularly dirty or because the dirt was of the type that could not be removed from the additives. (Bettoney 2065-67)¹⁵ (emphasis supplied)

This contemporaneous statement by the director of du Pont's Petroleum Laboratory, preceding by approximately two months, Crown's advertisement of the additive in July of 1970, tends to corroborate the testimony of Commission witness Dr. Cattaneo on this point.

56. It takes numerous tests on many different engine configurations, carburetor configurations, and vehicle assemblies to determine what the overall effect of an additive would be (Verelli 1031). To secure data valid for the general car population, you would need a sample representing the different vehicles registered by type, years, models, etc., and within such groups, it would be necessary to consider items such as engine sizes or transmissions (Verelli 1036-37).

VII. Crown's Advertising and Promotion of CA-101

57. In the late winter and spring of 1970, Crown's officials became aware that the automotive emission problem was attracting a great deal of concern particularly in the California area (Loving 1247-48). In this connection, Crown's corporate officials had read about the Chevron F-310 additive (Loving 1248).

Du Pont's account manager involved in the sales talks with respondent was also aware that "back in 1970 the environmental movement was just really getting under way" (Hagele 1165).

58. In connection with the automotive emission problem, Crown's officials felt there were two courses open to them, namely, to market a low lead or no lead gasoline or to take the additive approach (Loving 1249). Crown decided to market a gasoline with an additive because it considered the low or no lead approach impractical and too expensive (Loving 1250, 1317-18).

59. Crown accordingly called in a number of manufacturers of additives which were "designed to be effective in the control of automotive emissions" (Loving 1251). Sometime after June 18, 1970, Crown's officials decided to purchase du Pont's additive DMA-101 (Loving 1253, 1257).

60. As a part of its selling effort, du Pont furnished Crown, in the course of oral discussions and through brochures, bulletins and test

¹⁵ According to respondent, "DMA-101 and DMA-115 are closely-related additives. They are similar chemically and functionally. Performance obtained through the use of DMA-115 should be indicative of similar effectiveness through the use of DMA-101." (RPF 34).

reports with technical data relating to additive's detergent action and to its effect on automobile emissions (RX 1A-F, RX 2A-2PP; Hagele 1158-59, 1161, 1164-65).

In connection with the decision to purchase DMA-101, John I. Loving, Crown's vice president of sales, asked du Pont's officials whether du Pont would approve its advertising of DMA-101 and support Crown's statements therein. He received assurances that Crown would get such approval assuming that du Pont had a chance to review respondent's advertising copy (Loving 1257-58).

Crown's vice president of sales and its advertising department took full control of the preparation of the advertisements for the additive. An outside agency placed such advertisements in the media (Loving 1264).

Crown submitted its proposed advertising copy to du Pont's officials for review and in those instances where du Pont's employees suggested changes such revisions were made (Loving 1260-64). Radio scripts promoting the additive and point-of-sale materials such as pole signs were also forwarded to du Pont for review (Loving 1274), and Crown received du Pont's approval prior to dissemination of any of the advertising concerning the additive (Loving 1279).

61. Respondent's promotion of gasoline with CA-101 was dominated by a clean air theme. That theme was selected by Crown for the following reasons:

Well, as you do in advertising, you look for a shorthand word to convey to the public whom you are addressing what you are talking about.

Clean-Air was the name of the legislative Act which Congress passed in the 1960's. It had become a word or a phrase in common usage which related to the air pollution problem, and probably in particular the automotive emission problem.

So clean-air was taken * * * out of common usage. (Loving 1270).

and it was the intention of Crown in using that term to give "a slogan type of impression, that clean-air was descriptive of what we were talking about" (Loving 1270).¹⁶

62. The promotion of Crown as the Clean Air gasoline capitalized on the public's concern with pollution and the fact that back in 1970, the environmental movement was "really getting underway." (Finding 57, *supra*)

Newspaper Advertisements

63. On July 13, 1970, respondent ran an advertisement in the Baltimore Sun papers and the News American promoting Crown gasoline

¹⁶ According to the witness, the clean air theme was analogous to slogans such as "A tiger in your tank" (Tr. 1270).

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containing formula CA-101 (CX 108)¹⁷ which was not rerun in any of those papers after that date (Loving 1268).

The advertisement was dominated by the headline:
What's behind the new Crown sign?
NOW: New Clean-Air Gasoline CA-101

The phrase "NOW: New Clean-Air Gasoline" was in type approximately twice as large as the remainder of the headline of this advertisement. The advertisement under the headline contained a number of headings in smaller type *viz*:

Dramatically reduces exhaust emissions
Gives better mileage
Crown guarantees its gasoline quality
Express-lane service at the pump island
No stamps or games means savings
Save your cash
Maryland's fastest-growing gasoline stations

Each heading is followed by text material in apparently ordinary type.

Under the heading "Dramatically reduces exhaust emissions" respondent further represented:

Crown Premium 100 PLUS and Super Regular Gasoline now contain Formula CA-101. This remarkable new gasoline additive dramatically reduces exhaust emissions from your engine. Crown with Formula CA-101 reduces unburned hydrocarbons by as much as 66%*, deadly carbon monoxide 41%*. Clearly, this is a step toward cleaner air. Crown with Formula CA-101 works well in old cars and keeps new cars clean. Every car on the road should be using it.

Under the heading "Gives better mileage" respondent represented:

Crown with CA-101 is both new and different. You get better gasoline mileage. It cleans your engine and keeps it clean. Your engine performs better, more efficiently. It breathes easier. And so do you. Crown, with Formula CA-101 burns cleaner, more completely. You use less gasoline. As a result, you get more miles per gallon, more miles per dollar.

Under the heading "Crown guarantees its gasoline quality" respondent represents in pertinent part "Now Crown, with Formula CA-101, gives you better mileage and cleaner air."

64. Crown also advertised its gasoline with the CA-101 additive in a Richmond, Va. paper on August 14, 1970. That advertisement in the lower right hand corner represented:

¹⁷ Appendix A.

NOW: NEW CLEAN-AIR GASOLINE WITH FORMULA CA-101

New Crown with Formula CA-101 dramatically reduces exhaust emissions from your engine. Reduces unburned hydrocarbons by as much as 66%*, deadly carbon monoxide 41%*. Burns cleaner, more completely. You use less gasoline. New Formula CA-101 is now available in both grades of Crown gasoline. Costs no more. Every car on the road should be using it.

*Source: "A Study on the effects * * * of Exhaust Emissions"-DuPont Chemical Co. (CX 108A)¹⁸

Some or all of the foregoing statements appeared once in each of two Richmond, Va. papers and once in each of three Baltimore, Md. papers (Answer, par. 4).

65. In Sept. 1971, Crown ran an advertisement in the Atlanta, Georgia area representing in pertinent part that "Crown gasolines contain Formula CA-101 from Du Pont for cleaner air. You can't buy better gasoline" (CX 108 O; Tr. 2016).

Direct Mail Advertising and Handouts

66. CX 108F was an advertisement sent to credit card holders, BankAmericard and Mastercharge holders. In Maryland and Virginia, 15-20,000 of these brochures were distributed in the mail (Loving 1305). And approximately 4000 copies of these brochures were printed for the use of respondent's service stations (Loving 1306).

CX 108F which is dominated by a banner heading stating "New Clean-Air Gasoline with Formula CA-101" is virtually identical to CX 108.

67. Crown used another direct-mail handout in Virginia in Sept. of 1970, which was mailed to credit card holders and utilized at service stations (CX 108N; Loving 1306-07). This brochure also continued the "New Clean-Air Gasoline" theme in a box in the lower right hand corner.

Radio Commercials

68. Crown disseminated over Baltimore stations WFBR, WCBM, WBAL, and WWIN, a radio commercial with the following script between July 13, 1970 and September 11, 1970 (Tr. 1236). The commercial stated in pertinent part:

[* * *] Crown is the gasoline you should be using. It's now the Clean-Air gasoline because it now has formula CA-101 [* * *] What is this CA-101? Well * * * it's an additive made by Du Pont * * * and what it does is to reduce exhaust emissions. That's right. Your

¹⁸ Appendix B

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exhaust will have as much as 66% less unburned hydrocarbons * * * and 41% less deadly carbon monoxide. How about that? You breathe easier * * * and so does your car's engine. Because Crown with CA-101 burns more completely * * * keeps your engine cleaner * * * helps it run more efficiently * * * so you get better mileage. And you *still* save up to 5 cents a gallon with Crown. So come on over to Crown * * * do your bit for cleaner air* * *. (CX 108L)¹⁹

69. Crown ran a radio commercial in the state of Virginia stating in relevant part:

[* * *] Fill up with Crown's High Octane Clean Air gasoline * * * gives you up to 66% less unburned hydrocarbons in your car's exhaust * * * 41% less deadly carbon monoxide [part omitted] Fill up with Crown's Clean Air gasoline now* * *. (Tr. 1236-37; CX 108H).²⁰

Point of Sale Materials

70. In keeping with the "Clean Air" theme, respondent distributed the following point of sale materials to its stations:

Buttons for station attendants with the legend "BREATHE A LITTLE EASIER with FORMULA CA-101" (CX 108B);

Pole signs with the slogan "NEW Clean-Air GASOLINE With Formula CA -101" (CX 108C);

Pole signs stating "Clean-Air GASOLINE Good for All Cars Costs No More" (CX 108D); and pump signs stating "New CLEAN-AIR FORMULA CA-101" followed in smaller print with the following representation:

Reduces Exhaust Emissions * * * Unburned Hydrocarbons to 66%, Carbon Monoxide to 41% Cleans Engines Gives Better Mileage (CX 108E).

At present, Crown utilizes a pump sign with the representation "100 Octane contains Formula CA-101 For Cleaner Air" (CX 108M; Loving 1302-03).

71. Pole signs such as CX 108C and 108D usually last about ninety days (Loving 1275, 1299). Pump signs such as CX 108E would last about six months (Loving 1277, 1301-02). In the case of the buttons to be worn by station attendants with the legend "Breathe A Little Easier With Formula CA-101," while it is difficult to determine how long they were actually utilized, it was Crown's intention that they would be worn for three or four weeks (Loving 1300-01).

Crown's Representations

72. Crown's promotion of gasoline with the CA-101 additive is directed to drivers and owners of automobiles in the general car population. No distinction is made as to the effectiveness of the gasoline containing the additive as it might pertain to different makes, models or

¹⁹ Elisions in brackets were not contained in original.

²⁰ Elision in brackets not in original.

age groups of automobiles. Nor is any distinction made on the basis of the usage which a car might have been given (Findings 63 to 70, *supra*).

73. Crown, by use of the "Clean-Air Gasoline" theme in newspaper advertising, radio commercials, point of sale materials, handouts and direct mail advertising, represented that the advertised gasoline is pollution free in the sense that it adds no contaminants to the air (CX 108, 108A, 108L, 108H, 108C-108E, 108F, 108N).²¹

Crown gasoline with CA-101 will not produce pollution free motor vehicle exhaust; rather, automobiles using such gasoline will emit unburned hydrocarbons, carbon monoxide, oxides of nitrogen, particulates, sulfur oxides, lead and other pollutants (Finding 32, *supra*). The claim that Crown gasoline produces pollution free motor vehicle exhaust is misleading.

74. In the case of respondent's newspaper advertising and direct mail advertising, the Clean-Air slogan so dominated the text of such materials that the explanatory material therein cannot, as a practical matter, be considered as qualifying the claim. Similarly, Crown's point of sale material, as a practical matter, contained no text qualifying the Clean-Air theme.²²

The use of the Clean Air slogan in newspaper advertising, radio commercials, direct mail advertisements and handouts were disseminated in a setting where Crown's point of sale materials continued and reinforced the theme essentially without qualification for periods of three weeks (station attendant buttons) to six months (pump signs). (Findings 70-71, *supra*)

To the extent that respondent's dominant representation of "Clean-Air Gasoline" is modified by phrases such as "a step to cleaner air"²³ or references to reductions of emissions in smaller type in the body of the text, the meaning of such advertising or promotional claims may become ambiguous. The Clean-Air theme as thus modified could still leave the impression that the gasoline is pollution free although the more careful reader might construe the claim as representing that it emits fewer pollutants.

75. Crown's promotion of the Clean-Air theme, coupled with the reference to "Dramatically Reduces Exhaust Emissions" (CX 108, 108A, 108F), the reference to deadly carbon monoxide and the claims "It [your

²¹ The adjective "clean" is an express representation that the product or material referred to is free of contaminants or "not dirty."

²² The possible exception being pump signs where there is a specific reference to reductions of unburned hydrocarbons and carbon monoxide, and even here the clean air slogan dominated by virtue of the disparity in type (CX 108E).

²³ CX 108, 108F, and 108L state "do your bit for cleaner air."

engine] breathes easier. And so do you" (CX 108, 108F), "You breathe easier" (CX 108L), and "Breathe a Little Easier with Formula CA-101" (CX 108B), gives the net impression that the additive will cause a reduction of automobile exhaust emissions significant in the sense that it will effectively reduce the adverse effects of air pollution including the health hazards associated therewith in a meaningful or tangible way.²⁴

The most favorable finding which can be made from respondent's point of view is that use of CA-101 might overall reduce carbon monoxide and unburned hydrocarbons by 10 percent in the general car population (Finding 26, *supra*).

A reduction of hydrocarbons and carbon monoxide by 10 percent in the general car population would not support a claim that the effects of air pollution would be reduced to the extent that health hazards would be diminished in a meaningful way (Findings 14 to 16, *supra*).

The additive leaves untouched pollutants from automobile exhaust which are detrimental to health, namely, lead, particulates, nitric oxides, and sulfur oxides (Findings 32, 17, 18, *supra*).

The additive does not significantly reduce the health hazards associated with air pollution and the implied representation to the contrary in respondent's advertising and promotion of Crown gasoline with CA-101 is misleading.

76. The claims "New Clean-Air Gasoline," "Dramatically reduces exhaust emissions," "reduces unburned hydrocarbons by as much as 66 percent, deadly carbon monoxide 41 percent," "Crown with Formula CA-101 works well in old cars and keeps new cars clean: Every car on the road should be using it" (CX 108, 108F), and "Good for all cars on the road" (CX 108F) imply that the CA-101 additive will significantly reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which it is used.

The representations "New Clean-Air Gasoline" and "Dramatically Reduces Exhaust Emissions" imply that there will be substantial reductions from existing levels of emissions emitted by cars using respondent's products. The overall impression to this effect is not dispelled by the additional and far less conspicuous claim that Crown with CA-101 "keeps new cars clean."²⁵

²⁴ The representation "Now Crown, with Formula CA-101, gives you * * * cleaner air" in CX 108, reinforces that impression.

²⁵ The technical meaning of the "keep clean" representation is essentially that the additive by controlling deposit formations will prevent emissions of carbon monoxide and hydrocarbons from increasing (RPF 27, 28). The challenged advertising does not, however, provide the consumer with that explanation. Under the circumstances, the statement is ambiguous and does not effectively modify the claim of "dramatic" reductions.

Crown gasoline with CA-101 will not significantly reduce emissions of carbon monoxide and unburned hydrocarbons in every motor vehicle in which it is used. (Findings 27 to 32, *supra*). This representation is misleading and has the capacity to deceive.

77. The claims "It [Crown with CA-101] cleans your engine and keeps it clean" (CX 108, 108F) and "keeps your engine cleaner" (CX 108L), represent that the additive will clean the engine of any car owner reading or listening to such claims. The claims that Crown gasoline with the additive will keep the engine clean makes no distinction as to the engine components subject to the cleaning process. Respondent has accordingly represented that this product will keep clean all engines and all engine components.

The representation is misleading. Crown gasoline with CA-101 will not clean all engine components (Finding 29, *supra*).

78. The footnote reference in CX 108, 108A, 108F and 108N, "Source: 'A Study on the Effects * * * of Exhaust Emissions' Du Pont Chemical Company"²⁶, tied expressly to the claimed reduction of "as much as" 66 percent unburned hydrocarbons and 41 percent carbon monoxide represents that this claim was supported by adequate test data (CX 108, 108A, 108F, 108N). The foregoing reference to the Du Pont Study is not tied to the performance claims challenged by the complaint such as the better mileage claim. With respect to these claims, there is no express representation that they were supported by test data. Rather, the advertisements imply Crown had an adequate, factual or technical basis for making the claim.

79. The technical and scientific data available to and considered by Crown including the test reports furnished by the manufacturer such as in RX 14, do not constitute a reasonable basis for the claim that Crown gasoline with CA-101 is pollution free or that this product will significantly reduce air pollution. The test data submitted to Crown such as CX 110Q indicates to the contrary in the case of the pollution free claim.

The technical data and scientific data available to Crown do not furnish a reasonable basis for the representation that CA-101 will significantly reduce air pollution. The du Pont materials submitted to Crown were not concerned with the environmental impact of the claimed reductions (*e.g.*, RX 14). Accordingly, respondent does not have a reasonable basis for the representation that such reductions are significant in the sense that they will meaningfully reduce the adverse effects of air pollution.

²⁶ The du Pont study referred to in Crown's advertising and promotional materials is included in the record as CX 110Q (Tr. 1266-67).

In the case of the claims that the additive will significantly reduce emissions of carbon monoxide and hydrocarbons in every car in which it is used and the better mileage claim, Crown relied on the technical data and the explanations in connection therewith furnished by the manufacturer. The record does not show that Crown had the "inhouse" expertise with respect to additives and additive testing to go behind the representations in the technical reports and the explanations given by du Pont employees. Under the circumstances, no finding can be made that respondent did not have a reasonable basis for believing the claims to be true.²⁷

80. The advertising and promotion of Crown gasoline with CA-101 has the tendency and capacity to deceive because of the failure to disclose material facts necessary to an informed evaluation of the product claims in respondent's advertising and promotion.

The representation of emission reductions of carbon monoxide and unburned hydrocarbons of the magnitude claimed are misleading because they fail to inform the public that only cars with very dirty carburetors, approximately 5 to 15 percent of the general car population could expect to realize reductions on that scale. (Finding 37, *supra*).

The failure to disclose that the additive will not remedy mechanical conditions which may result in substantial emissions of carbon monoxide and hydrocarbons is misleading. (Finding 28, *supra*).

The failure to disclose that automobile exhaust contains harmful pollutants other than carbon monoxide and unburned hydrocarbons²⁸ is misleading in the context of the clean air theme and the claimed "dramatic reductions" of unburned hydrocarbons and carbon monoxide. These representations imply that the additive will reduce all harmful emissions from automobile exhaust.

VIII. Discussion

The central issue in this case is whether respondent has misrepresented the performance characteristics of a gasoline additive in relation to "Air Pollution * * * one of the most notorious types of public nuisance in modern experience." *Washington et al v. General Motors Corp., et al*, 406 U.S. 109, 114 (1972). The question is not whether the gasoline with the additive is a worthwhile product or whether it is a step in the right direction from the viewpoint of air pollution control. Rather, the princi-

²⁷ For example, Crown apparently did not have before it the memorandum of Mr. Bettoney to Mr. Diggs of May 15, 1970, indicating that it was difficult to prove such claims in the course of actual car operation. (See Finding 55, *supra*).

²⁸ Finding 32, *supra*.

pal issue is simply whether Crown misrepresented the effectiveness of the product as a device for the control or amelioration of air pollution.

Respondent, it is alleged, engaged in two kinds of misrepresentations. First, the complaint challenges Crown's performance claims directly on the ground that they are false. Second, it is charged that respondent has falsely represented that it had tests, conducted tests, or had others conduct tests which proved or substantiated certain representations as to the performance characteristics of the additive. The following allegations challenge Crown's performance claims directly on the ground that they are false *viz.*, it is alleged respondent misrepresented that:

1. The CA-101 additive will produce pollution free motor vehicle exhaust.
2. CA-101 will significantly reduce air pollution.
3. CA-101 will significantly reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which it is used.
4. CA-101 will clean or keep clean all engines and engine components.²⁹

In the case of the second category of charges, the complaint alleges essentially that respondent falsely represented it had test data to substantiate the following:

- A. The CA-101 additive will produce pollution free motor vehicle exhaust;
- B. CA-101 will significantly reduce air pollution; and will significantly reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which it is used; and
- C. Every purchaser of Crown gasolines containing the additive will obtain substantially better mileage by or through the use of such gasolines than can be obtained by or through the use of any other commercially available gasoline.³⁰

The proposed findings, replies, and associated memoranda have put in issue the standards which should be applied in construing the challenged advertising and point of sale materials. The factual record in this case may be complex. Nevertheless, the applicable criteria in Commission cases for evaluating allegedly false and misleading representations are well established and of long standing.

The Commission may utilize its accumulated expertise to determine what direct and implied representations are contained in such advertising. *Pfizer, Inc.*, F.T.C. Docket No. 8819 (1972); *FTC v. Colgate-Palmolive Co.*, 380 U.S. 374 (1965), and its expertise may be similarly applied to

²⁹ Paragraph Six 1, 2, 3, 5.

³⁰ Paragraph Six 4(a)(b)(c).

determine what facts are material to consumers and whether such information has been withheld. (*Pfizer, supra*). Moreover, in making such determinations, the Commission may draw its own inferences from the advertisements and need not depend on testimony or exhibits, aside from the advertisements themselves, introduced into the record. *Carter Products, Inc. v. FTC*, 323 F.2d 523 (5th Cir. 1963).

In evaluating the challenged advertising and promotional materials, consideration has been given to the testimony of respondent's experts who testified as to the meaning thereof. The testimony of the two psychologists, however, does not have sufficient weight to overcome the inferences to be drawn directly from the challenged advertising.³¹ This determination is supported by the recent Commission decision in *The Firestone Tire & Rubber Company*, F.T.C. Docket No. 8818 (1972) Slip Op., p. 20. There, the Commission held that it need not rely on a respondent's survey but could base the requisite findings on its own reading of the advertisements to determine the meaning thereof and whether they had the capacity to deceive. A fortiori if testimony pertaining to the meaning of advertisements to rebut the allegations of the complaint is based on essentially generalized experience, then the Commission may independently evaluate the claims under consideration.³²

Moreover, the two psychologists in reaching their conclusions, relied heavily on the expectations and beliefs which, in their view, consumers would bring to advertisements. That approach should be evaluated in light of the recent *Firestone* decision, *supra*. There, the Commission held that it should not assume a degree of sophistication on the part of consumers such that they would themselves read into respondent's advertisements, disclaimers with respect to the representations made.³³ That principle applies here.

³¹ Respondent's expert who gave the most detailed findings had performed prior studies for oil companies, but had not concerned himself with air pollution advertising on the part of such firms. Nor was his testimony based on actual research conducted with respect to the challenged advertisements (Tr. 1765). Respondent's other expert testified that his firm had recently completed a study concerning what consumers think about air pollution and its causes (Tr. 1727-30). There is, however, insufficient information in this record to facilitate a determination as to whether such experience provides an adequate foundation for the testimony in support of Crown's position.

³² See also *Bantam Books, Inc. v. FTC*, 275 F.2d 680, 682 (2nd Cir. 1960) *cert. denied*, 364 U.S. 819 (1960) holding on a similar question:

"The Commission was not bound to accept the opinion evidence of petitioner's witness even though petitioner asserts this was uncontradicted. No real basis was laid for the expert's conclusion, the interviews having dealt generally with book-buying habits and having made no attempt to determine whether buyers of petitioner's books were actually deceived* * *."

³³ "The Commission cannot and should not assume a degree of sophistication on the part of tire buyers such that they will themselves read into respondent's advertisement certain disclaimers with respect to its safety claims which are made in such absolute and unqualified terms. The law aims to protect the vast multitude of consumers which includes, 'the ignorant, the unthinking and the credulous' * * * Whatever amount of information consumers may have about tire safety, the burden is hardly on them to read material facts into an advertisement in order to make it truthful* * *." Slip Op., p. 28.

Where the truth of falsity of respondent's claims are directly in issue and the claims prove false, good faith or lack of intent to deceive are irrelevant. *National Dynamics Corp.*, F.T.C. Docket No. 8803 (Comm. Opinion, February 16, 1973, Slip Op., p. 9). A showing of an intent to deceive is not prerequisite to a finding of violation, and lack of knowledge as to the falsity of the challenged representations is not a defense to a charge of misleading advertising; the purpose of the statute is the protection of the public and not the punishment of a wrongdoer. *Gimbel Bros., Inc. v. FTC*, 116 F.2d 578, 579 (2nd Cir. 1941). The decision as to whether material facts have been misrepresented does not depend on the good or bad faith of the advertiser. *Koch, et al v. FTC*, 206 F.2d 311, 317 (6th Cir. 1953); *Ford Motor Co. v. FTC*, 120 F.2d 175, 181 (6th Cir. 1941). Under the circumstances, whatever reliance Crown may have placed on du Pont's clearance of the advertisements and promotional materials challenged here is immaterial in the case of those performance claims challenged directly on the ground that they were false.

A finding of actual deception is not prerequisite to proof of a violation of the Federal Trade Commission Act, and representations merely having the capacity to deceive are unlawful. *Charles of the Ritz Dist. Corp. v. FTC*, 143 F.2d 676, 680 (2nd Cir. 1944).

"The important criterion in determining the meaning of an advertisement is the net impression that it is likely to make on the general populace." *National Bakers Services, Inc. v. FTC*, 329 F.2d 365, 367 (7th Cir. 1964). In determining the impression created by an advertisement, the Commission need not look to the technical interpretation of each phrase but must look to the overall impression likely to be made on the buying public. *Murray Space Shoe Corporation v. FTC*, 304 F.2d 270, 272 (2nd Cir. 1962).

Although a statement "may be obviously false to those who are trained and experienced [this] does not change its character, nor take away its power to deceive others less experienced." *FTC v. Standard Education Society, et al*, 302 U.S. 112, 116 (1937). Clean is an adjective expressly representing that something is not dirty, and respondent's clean air theme dominating its advertisements and promotional materials is an express representation that respondent's gasoline is pollution free. The fact that the representation may be obviously false to the more sophisticated is immaterial. The Commission has only recently reaffirmed the principle that "[t]he law aims to protect the vast multitude of consumers which includes 'the ignorant, the unthinking, and the credulous'" (*Firestone, supra*, Slip Op., p. 28).

In addition, advertisements which are capable of two meanings, one of which is false, are misleading. *Rhodes Pharmacal Co., Inc. v. FTC*, 208

F.2d 382, 387 (7th Cir. 1953), *affirmed*, 348 U.S. 940 (1955). And statements susceptible of both a misleading and truthful interpretation will be construed against the advertiser. *Murray Space Shoe Corporation*, *supra* at 272. In this connection, respondent's dominant clean air theme is an express representation that the gasoline is pollution free. To the extent that this representation is modified by phrases such as "a step to cleaner air" or references to reductions of emissions in smaller type in the body of the text of the advertisements, the claim may become somewhat ambiguous. The clean air theme as thus modified however, could still leave the impression that the gasoline is pollution free although the more careful reader might construe the claim as merely representing that respondent's gasolines emit fewer pollutants. Under the applicable precedents, representations susceptible of both true or misleading interpretations nevertheless violate Section 5 of the Federal Trade Commission Act.

A continuing point of controversy throughout the proceeding has been the meaning which should attach to the term "significant" in connection with the charge that respondent has falsely represented that its gasoline with CA-101 will significantly reduce air pollution. For the purposes of this decision³⁴, the finding is made that the additive may reduce emissions of carbon monoxide and unburned hydrocarbons on the order of 10 percent in the general car population if everyone were using it. Complaint counsel urge that it is not the amount of the reduction alone which determines its significance. Rather, they contend, the question turns on whether the additive effectively eliminates or ameliorates the effect of air pollution. Respondent apparently asserts that if the reductions resulting from the use of the additive show a downward trend that in and of itself is significant. On the basis of the net impression created by respondent's advertising, it is evident that respondent's claims imply that there will be a reduction of air pollution by the additive significant in the sense that it will, in a tangible way, reduce the adverse effects of air pollution including the health hazards associated therewith. That finding is compelled by association of the clean air theme with the representation of dramatic reductions of emissions and the breathe easier claims.

The record shows that a 10 percent reduction of carbon monoxide and unburned hydrocarbons from automobile emissions will not meaning-

³⁴ The evidence as to whether the du Pont test results can be projected with confidence to actual operations in the general car population is in conflict (Findings 51 to 56, *supra*). However, the resolution of that question is not crucial to the decision here, in view of the finding for the purposes of this decision that the additive could reduce carbon monoxide and unburned hydrocarbons in the general car population on the order of 10 percent. As a result, there is no need to dwell on the minutiae of testing procedures.

fully reduce the health hazards associated with air pollution generated by those pollutants. (Findings 14 to 16). The record further demonstrates that the additive has no effect on other elements of automobile exhaust which constitute a serious potential health hazard. (Findings 17, 18, 32).³⁵ Under the circumstances, the claim is misleading.³⁶

It is immaterial that at the time such claims were made, the federal programs under the Clean Air Act required reductions only in the case of hydrocarbons and carbon monoxide³⁷ or that a 10 percent reduction of such emissions might approximate the reductions required by the Act from 1970 to 1972. The overall emission abatement, prescribed by the Act, for cars in the years specified, ranging from 42 to 97 percent and presumably necessary for effective control exceed by a wide margin any reductions which the additive might achieve in the general car population.³⁸ The thrust of respondent's advertising, is an implied promise of a tangible benefit flowing from the use of this product, rather than a mere claim of a step in the right direction.³⁹ In short, the question of the additive's possible relation to an overall air pollution control program is not relevant here.

The record also demonstrates that respondent has failed to disclose material facts necessary to an informed evaluation of the challenged performance claims. The complaint does not expressly charge respondent with the failure to disclose material facts. Nevertheless, the withholding of this information is related to the product claims challenged by the complaint and an order requiring the disclosure of such information is reasonably related to and required to help cure the deception alleged in the complaint and demonstrated by the record.

³⁵ In view of the findings on this point, complaint counsel's proposed findings with respect to the impact of such reductions on other aspects of the environment or the economy are superfluous.

³⁶ Since respondent's market share is on the order of 3 percent, the likelihood of such a 10 percent reduction of emissions in the general car population is remote.

³⁷ Stated in percentage terms, the degree of emission abatement required by the Clean Air Act, as amended, is as follows (based on a scale of 100 percent vs. pre-1968 cars);

	Pre-1968 Vehicles						
	(Uncontrolled)	1968	1970	1972	1973	1975	1976
Unburned Hydrocarbons	0%	59%	73%	80%		97%	
Carbon Monoxide	0%	42%	62%	69%		96%	
Nitrogen Oxides	0%	0%	0%	0%	50%		93%

(CX 115, p. 12)

³⁸ In this connection, see the report of the Subpanel on Current Automobile Systems, U.S. Department of Commerce Technical Advisory Board, stating that work on certain additives had been abandoned because a 5-10 percent reduction of hydrocarbons "was not deemed significant relative to the large reductions desired." (CX 75, p. 46).

³⁹ The advertisement states in the text "Clearly this is a step to cleaner air." (CX 108). Nevertheless, even if this statement were literally true, it would not vitiate the overall impression on this point which is misleading. See *Rhodes Pharmacal Co. v. FTC*, *supra* and *Murray Space Shoe Corporation v. FTC*, *supra*. Moreover, the additional claim in a succeeding paragraph in CX 108 viz., "Now Crown, with Formula CA-101, gives you better mileage and cleaner air.", adds to the ambiguity on this point. (emphasis supplied)

For example, the additive will only achieve large or dramatic reductions of carbon monoxide or hydrocarbons in those vehicles having very dirty carburetors comprising approximately 5 to 15 percent of the general car population. Further, the additive will have no effect on a large number of mechanical defects resulting in emissions of carbon monoxide and hydrocarbons. The failure to disclose these significant facts about the additive's performance in connection with the emission reduction claims, is related to representations in the advertising that the additive will effectively work in every vehicle in which it is used and that it will significantly reduce air pollution. To cure such deception, respondent should be required to refrain from claiming any numerical reductions of carbon monoxide or hydrocarbons as a result of the additive unless it also discloses the circumstances under which the claimed reductions will be achieved, and the percentage of cars in the general car population which can expect to achieve such reductions. Respondent should further be prohibited from claiming that the additive reduces emissions of hydrocarbons and carbon monoxide unless it clearly discloses there are mechanical conditions which will increase such emissions and on which Crown's product will have no effect. In connection with the clean air theme, respondent has also withheld material facts in not advising the public that the additive fails to reduce in any manner certain constituents of automobile exhaust which are an actual or potential health hazard. The order should require a disclosure of such pollutants if future claims of emission reductions are made.

The Commission has ruled it is an unfair practice violative of Section 5 of the Federal Trade Commission Act to make affirmative product claims absent a reasonable basis therefore. *Pfizer, Inc., supra*, Slip Op., p. 10. The determination of what constitutes a reasonable basis depends upon the circumstances of the particular case. Cf. *Firestone, supra*, Slip Op., p. 33. In short, the law on the seller's responsibility for implied or express representations of substantiation for product claims appears to be evolving on a case-by-case basis, and the obligations of advertisers in this area have apparently not yet been defined in complete detail. See *Firestone, supra*; *Pfizer, Inc., supra*; and *National Dynamics, supra*.

In any event, where the complaint puts in issue not the truth and falsity of the representations made but raises the question of whether respondent had "a reasonable basis for believing [its] claims are true," then the Commission may appropriately consider the reasonableness of the advertiser's action and his good faith. *National Dynamics, supra*, Slip Op., p. 9. As already noted, there is a sharp distinction between the standard for evaluating representations of this nature and those claims directly challenged as false.

The making of such performance claims is an implied representation that there is a reasonable basis therefore. Whether the particular claim implies that it is supported by fully validated test data or by a lesser measure of substantiation depends upon the nature of such claims and the surrounding circumstances. Cf. *Firestone, supra*. The standard for evaluating the substantiation claims set forth in the complaint is narrower than the criteria actually applicable to this proceeding. The complaint alleges that Crown represented it had competent, fully validated test data to support the performance claims made.⁴⁰ The record developed in this proceeding demonstrates that the challenged performance claims implied that Crown had adequate factual or technical data to support the representations made. At the oral argument, it became apparent that the question of whether respondent had met this broader standard became an issue during the course of the trial.

The record shows that respondent did not have such substantiation in support of the pollution free representation and the claim that the additive would significantly reduce air pollution. The question in the case of the better mileage claim and the representation that the additive will significantly reduce emissions of hydrocarbons and carbon monoxide in every car in which it is used is more complex. The technical data furnished in support of those claims⁴¹ purported to relate to the representations of performance made. Further, respondent relied on the representations of the manufacturer that these claims could be substantiated. The testimony of Crown's vice president that he did not have the expertise to go behind du Pont's representations with respect to such data seems uncontradicted. The record, moreover, is not clear whether Crown had other inhouse expertise permitting it to make a more searching evaluation.⁴² In the case of these claims, it appears that respondent has met the subjective standard of *National Dynamics* pertaining to the substantiation of such claims and these allegations should therefore be dismissed.

⁴⁰ The footnote reference in the advertising to a "Study on the Effects * * * of Emissions, E.I. du Pont Company" on which complaint counsel rely to support those allegations, is an express representation that the claims for reductions of "as much as" 41 percent and 66 percent of carbon monoxide and unburned hydrocarbons, respectively, were supported by adequate test data. This footnote is on its face confined to the numerical reductions claimed, and the reference to the study in small type is not prominent in the challenged advertisements. As a result, this citation does not appear related to the more generalized, express or implied performance claims pertaining, for example, to better mileage or to the "significance" of such reductions.

⁴¹ In connection with the better mileage claim, see RX 9. In connection with the representation that the additive will significantly reduce carbon monoxide and hydrocarbons in every car in which it is used, see RX 14 and testimony of Loving and Hagele.

⁴² The evidentiary record in this case was closed before the issuance of the *National Dynamics* decision stressing this factor. It may be that Crown as a gasoline refiner, in fact, has such knowledge as complaint counsel suggest in their reply to respondent's proposed findings. CRPF 12, *et seq.* In view of the complexity of the technical and scientific issues involved herein, such a finding on this point would be speculative since, in fact, the record was not fully developed on this issue.

Initial Decision

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Turning to the question of remedy, although substantiation is properly in issue, the standard originally set forth in the complaint for evaluating the substantiation claims did not encompass the violations actually found. Further, the charges in Paragraph Six, Subparagraph 4, related to substantiation have only been partially sustained and relate to a novel area in terms of the legal, scientific and technical issues presented.⁴³ Under the circumstances, the provisions of the notice order pertaining to substantiation and covering all products and all performance claims appear too sweeping. The order's provisions on this point as a result should be limited to such claims as respondent may make in connection with reductions of exhaust emissions or any claim that a gasoline additive has a beneficial effect on air pollution.

Complaint counsel's request for an order requiring Crown in the future to disclose that gasoline is a product which is harmful to human health and welfare should be denied. The need for such a remedy was not litigated, and the Commission does not have before it a record which would support a fully informed decision on whether such a provision is necessary to remedy the violations demonstrated in this proceeding.

CONCLUSIONS

The use by respondent of the aforesaid false, misleading and deceptive statements, representations and practices relating to the performance characteristics of its gasoline with CA-101 has had and now has the capacity or tendency to mislead members of the purchasing public into the erroneous and mistaken belief that said statements and representations were and are true and into the purchase of substantial quantities of respondent's products by reason of said erroneous and mistaken belief. The acts and practices of respondent were and are all to the prejudice and injury of the public and of respondent's competitors and they constituted and now constitute unfair methods of competition in commerce and unfair and deceptive acts and practices in commerce violative of Section 5 of the Federal Trade Commission Act.

ORDER

It is ordered, That respondent Crown Central Petroleum Corporation, a corporation, and its officers, representatives, agents, and employees, directly or through any corporate or other device in connection with the advertising, offering for sale, sale or distribution of Crown gasolines, or the additive CA-101, or any other product in commerce as "commerce"

⁴³ Cf. *Swanee Paper Corp. v. FTC*, 291 F.2d 833 (2nd Cir. 1961) cert. denied 368 U.S. 987 (1962), indicating that in determining the appropriate scope of orders, some consideration should be given to the novelty of the issues encompassed by the proceeding.

is defined in the Federal Trade Commission Act, do forthwith cease and desist from:

1. Representing directly or by implication that any such product is free of pollutants or produces pollution free exhaust.
2. Representing directly or by implication that any such product will reduce any pollutants from automobile exhaust without clearly and conspicuously disclosing or identifying those pollutants on which the product will have no effect.
3. Representing directly or by implication that any such product will significantly reduce air pollution or have any beneficial effect upon the environment or misrepresenting in any manner the importance, significance, or effect of any gasoline product or development.
4. Representing directly or by implication that any such product will reduce the emissions of pollutants from automobile exhaust by any percentage or numerical quantity unless in connection therewith there is a clear and conspicuous disclosure of the type of vehicle which can expect to achieve reductions of such magnitude and the percentage of such vehicles in the general car population.
5. Representing directly or by implication that any such product will significantly reduce emissions of unburned hydrocarbons and carbon monoxide in every vehicle in which it is used.
6. Representing directly or by implication that any such product will significantly reduce emissions of carbon monoxide and unburned hydrocarbons in any automobile unless in connection therewith there is a clear and conspicuous disclosure that there are mechanical conditions which will increase such emissions and on which the respondent's product will have no effect.
7. Representing directly or by implication that any such product will clean engines unless there is a clear and conspicuous disclosure in connection therewith of the engine components which will not be cleaned by the additive.
8. Making any representation that a gasoline additive will reduce automotive exhaust emissions or has any beneficial effect on air pollution unless such claims have been fully substantiated by adequate scientific or technical data.

It is further ordered, That the respondent corporation shall forthwith distribute a copy of this order to each of its operating divisions.

It is further ordered, That respondents shall notify the Commission at least thirty (30) days prior to any proposed change in the corporate respondent such as dissolution, assignment, or sale resulting in the emergence of a successor corporation, the creation or dissolution of



**Clean modern stations...Express-lane service...
Top quality gasoline...and you Save up to 5¢ a gallon.**

Save Every Mile!

3678-10

CROWN CENTRAL PETROLEUM CORPORATION • PRODUCERS • REFINERS • MARKETERS OF PETROLEUM PRODUCTS & PETROCHEMICALS • GENERAL OFFICES, BALTIMORE, MARYLAND

subsidiaries, or any other change in the corporation which affect compliance obligations arising out of the order.

It is further ordered, That other allegations of the complaint as to practices not covered by this order be, and they hereby are, dismissed.

OPINION OF THE COMMISSION

By ENGMAN, *Commissioner*:

This matter is before the Commission pursuant to cross appeals by respondent Crown Central Petroleum Corporation (Crown) and complaint counsel from the administrative law judge's (ALJ) initial decision of May 25, 1973. The initial decision concluded respondent had violated Section 5 of the Federal Trade Commission Act by deceptively advertising an engine cleaning additive used in Crown gasolines called CA-101. Respondent's appeal takes issue with all but a few of the substantive conclusions of the initial decision, and complaint counsel's appeal urges a holding that respondent falsely represented it had test evidence to back up the challenged advertising claims and had no adequate factual or technical support for claims of increased gasoline mileage and reductions of certain harmful exhaust emissions.

After reviewing the record compiled during the adjudication of this case and receiving briefs and hearing oral arguments on the appeals now before us, we conclude that the challenged advertisements are deceptive and misleading in violation of Section 5 because of the great disparity between the representations contained in the advertisements and the evidence of the advertised product's actual effectiveness. The evidence shows that CA-101 has some effectiveness in cleaning engines and reducing undesirable emissions, but respondent's advertising claims greatly exceed even the most favorable interpretation of such evidence. The development of a product with some desirable characteristics does not justify exaggeration of its capabilities. Except as otherwise set forth in this opinion and in the accompanying final order, we agree with the analysis and conclusions of the initial decision.

I. CROWN'S CA-101 ADDITIVE

As explained in detail in the initial decision,¹ the CA-101 additive used by Crown at the time of the disputed advertisements was developed by

¹ I.D., Section V, contains a more complete discussion of the development and capabilities of CA-101 (DMA-101). The following abbreviations will be used in this opinion:

I.D. - Initial Decision
CX - Complaint Counsel's exhibit
RX - Respondent's exhibit
HC - Hydrocarbons
CO - Carbon Monoxide
NO_x - Oxides of Nitrogen

E. I. du Pont de Nemours Company (du Pont) of Wilmington, Del. under the name of DMA-101. Du Pont began manufacturing and selling detergent additives for gasoline in 1958. The company's first such product was RP-2 which had rust prevention and anti-icing capabilities. RP-2 was altered in the early 1960s to become the DMA-4 and DMA-4A additives designed to provide anti-rust protection, carburetor icing protection and carburetor detergency. After extensive additional work which began in 1967, DMA-101 was introduced in November 1969 as a combination of DMA-4 and a hydrocarbon polymer designed to clean up existing deposits and prevent deposit build-up in and around carburetors and intake valves.

One of the intended results of such cleaning action is the achievement of a proper ratio of air and fuel in the automotive combustion system. When deposits build up on throttle plates and other parts of the carburetor or on and around intake valves, the air/fuel mixture tends to become too rich in fuel, resulting in incomplete combustion. Among the products of such incomplete combustion are excess automotive exhaust emissions of carbon monoxide (CO) and unburned hydrocarbons (HC). HC and CO along with oxides of nitrogen (NO_x) are the most prevalent automotive pollutants.

Although by weight HC, CO and NO_x are by far the most substantial pollutants resulting from auto fuels and combustion, other pollutants such as sulfur oxides and particulates, including lead compounds, are also present in small quantities in automotive exhaust. Some of these less substantial pollutants are potentially more hazardous to health than equivalent quantities of either HC or CO, but the much higher quantitative levels of HC and CO emissions prior to 1970 led government regulators to concentrate all early automotive air pollution control efforts on HC and CO.² DMA-101 doesn't affect any pollutants other than HC and CO.

Another hoped for result of optimum air/fuel ratio operation is the reduction of wasted fuel from incomplete combustion and a resulting improvement in gasoline mileage.

The record contains reports of numerous laboratory and road tests conducted by duPont to evaluate the effectiveness of DMA-101 and other closely related additives. Except as otherwise noted in the order accompanying this opinion, we have adopted Section VI of the initial decision which enumerates and discusses the tests and their relationship to the general car population and normal driving habits of gasoline consumers.

² See I.D., Sections II, III and IV for a more complete discussion of air pollution, automotive air pollution and health effects associated with automotive air pollutants based on the record in this case.

The ALJ concluded that, as seen in the light most favorable to respondent, the test results in evidence provide substantiation for a potential HC and CO reduction in the 1970 general car population of no more than 10 percent.³ Respondent does not dispute the 10 percent finding, and we have no reason to disagree with the finding. We point out, nevertheless, that even if we assume CA-101 will achieve the maximum 66 percent HC and 41 percent CO reductions for some cars noted in some of the challenged advertisements, the advertisements are still misleading. We discuss below our determination that the phrase "Clean-Air Gasoline" has the potential of being interpreted by consumers as a claim for pollution-free motor vehicle exhaust. Even 66 percent HC and 41 percent CO reductions are not sufficiently close to pollution free levels to justify the words used in the advertisements.

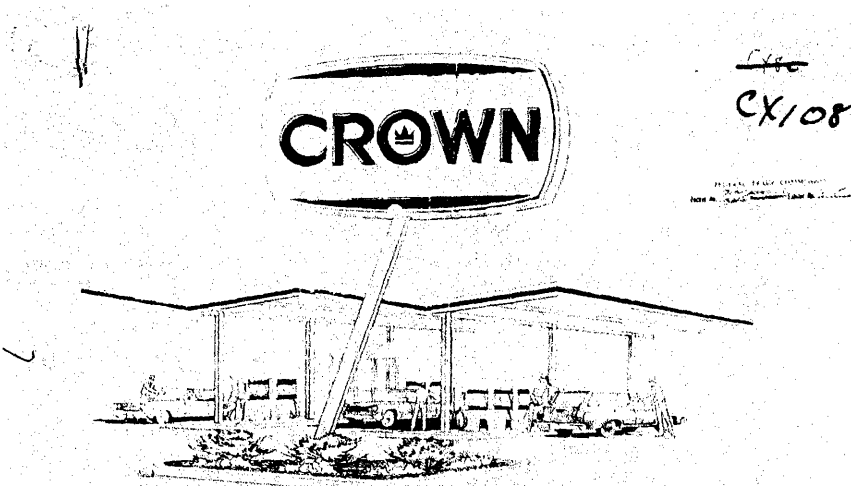
II. THE CHALLENGED ADVERTISEMENTS

The advertising materials challenged in the complaint include newspaper ads, direct mail advertising and handouts, radio commercials and point-of-sale materials. One of the newspaper ads preceding the complaint⁴ was a full page ad published in three Baltimore newspapers on July 13, 1970.⁵ Following is a copy of the advertisement:

³ I.D., Findings 26 and 75.

⁴ In September 1971, after the complaint was issued, Crown ran a newspaper advertisement in the Atlanta, Georgia area stating that, "Crown gasolines contain Formula CA-101 from DuPont for cleaner air. You can't buy better gasoline." CX 1800; Tr. 2016.

⁵ CX 108.



What's behind the new Crown sign?

NOW: New Clean-Air Gasoline WITH FORMULA CA-101

Dramatically reduces exhaust emissions

Crown Premium 100 PLUS and Super Regular Gasoline now contain Formula CA-101. The remarkable new gasoline additive dramatically reduces exhaust emissions from your engine. Crown with Formula CA-101 reduces carbon buildup in all parts of the engine, keeps pistons running smoothly, and keeps the engine clean. Crown with Formula CA-101 works well in all cars and keeps new cars clean. Heavy cars and old cars should be using it.

Gives better mileage

Crown with CA-101 is both new and different. You get better gasoline mileage. It cleans your engine and keeps it clean. Your engine performs better, runs more efficiently, it breathes easier. And so do you. Crown with Formula CA-101 burns cleaner, more completely. You use less gasoline. As a result, you get more miles per gallon, every mile per dollar.

Crown guarantees its gasoline quality

Crown Gasoline consistently ranks at the top in National Consumer Quality Surveys. They come to you direct by pipeline from Crown's own refineries and are mixed with the best. You get high performance and long mileage from Crown's gasoline every time. An instant reaction and continuous protection. Now Crown with Formula CA-101 gives you better mileage and cleaner air. You can't buy better gasoline.

Express-lane service of the pump island

You know what it's like to pump. Our high volume, multi-pump stations are equipped to serve you in the way you like. Crown Express lanes, on both sides. Most major express lanes are open 24 hours a day. 23 are open Sundays and Holidays.

No stamps or games means savings

Crown with low-polluting gasoline and cash or card. No stamps or games. No postage stamp facilities. No high volume gasoline stamp book. Crown stations let you get what you need. We pass the savings on to you.

Save your cash

Use your Crown Save Backstamps and 5¢ Master Charge Card. No cash required.



Maryland's fastest-growing gasoline stations

There are 30 Crown, Express Crown stations in the Baltimore Washington area. Most are on major highways. You'll find the best prices for the best gasoline. You'll find Crown's new Formula CA-101. The Crown's new gasoline.

... AND YOU STILL SAVE UP TO 5¢ A GALLON
Save Every Mile!

MARYLAND

BALTIMORE (DOWNTOWN)
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CROWN CENTRAL PETROLEUM CORPORATION • PRODUCES • REFINES • MARKETS OF PETROLEUM PRODUCTS AND PETROCHEMICALS • BIRMINGHAM, ALA.

Opinion of the Commission

84 F.T.C.

A newspaper advertisement also appeared in Richmond, Va., on August 14, 1970. This ad has a box in the lower right corner containing the following:

NOW: NEW CLEAN-AIR GASOLINE
WITH FORMULA CA-101

New Crown with Formula CA-101 dramatically reduces exhaust emissions from your engine. Reduces unburned hydrocarbons by as much as 66%*, deadly carbon monoxide 41%*. Burns cleaner, more completely. You use less gasoline. New Formula CA-101 is now available in both grades of Crown gasoline. Costs no more. Every car on the road should be using it.

*Source: "A Study on the effects . . . of Exhaust Emissions"—DuPont Chemical Co. (CX 108A)

The initial decision contains quoted excerpts from radio commercials broadcast over Baltimore and Richmond radio stations between July 13, 1970 and Sept. 11, 1970.⁶ The two direct mail handouts used in the ad campaign were flyers very similar to the Baltimore and Richmond newspaper ads, and the point of sale materials included pole signs stating "New Clean-Air GASOLINE with Formula CA-101" (CX 108C) and "Clean-Air GASOLINE Good for All Cars Costs No More" (CX 108D); buttons for station attendants which read "BREATHE A LITTLE EASIER WITH FORMULA CA-101" (CX 108B), and pump signs reading "New CLEAN-AIR FORMULA CA-101" with a smaller print text stating:

Reduces Exhaust Emissions * * * Unburned Hydrocarbons to 66%, Carbon Monoxide to 41% Cleans Engines Gives Better Mileage (CX 108E).

III. THE INITIAL DECISION

The initial decision upheld the allegations of the complaint that the challenged advertisements falsely represented Crown's CA-101 additive would produce pollution free motor vehicle exhaust, significantly reduce air pollution, significantly reduce emissions of CO and HC from every motor vehicle in which it is used, and clean or keep clean all engines and all engine components. The ALJ also found that prior to the distribution of the ads, Crown lacked the substantiation necessary to form a reasonable basis for claims about pollution free exhaust and a significant reduction of air pollution. He was unwilling, however, to find a similar lack of pre-advertisement substantiation for claims that CA-101 results in significant HC and CO reductions in every car in which it is used or that Crown gasolines with CA-101 produce substantially

⁶ I.D., Findings 68 and 69.

better mileage than can be obtained with competitive gasolines. His rationale was that because Crown lacked "inhouse" expertise to evaluate thoroughly information given by du Pont on those two subjects, its reliance on du Pont's representations about the available data was not unreasonable.

The order written by the ALJ would require Crown to cease and desist from making the misrepresentations found to be present in the ads and would further require specific affirmative disclosures in future ads where claims are made about the effectiveness of CA-101. The disclosure requirements are related to pollutants not affected by CA-101, types and percentages of vehicles expected to achieve specifically stated emission reductions, engine components which will not be cleaned by CA-101 and the existence of pollution creating mechanical factors not affected by CA-101. The order also prohibits future claims about reductions of automotive exhaust emissions or beneficial effects on air pollution without the substantiation of "adequate scientific or technical data."

IV. CROWN'S APPEAL

Crown's first assignment of error charges the ALJ with improperly construing the advertisements without regard to the evidence and the record as a whole. It is alleged by Crown that the ALJ attempted a novel extension of the use of expertise in interpreting advertising claims by ignoring the preponderance of evidence in the record. We do not find that the ALJ ignored the evidence of record in interpreting the advertisements. On the subject of interpretation of the CA-101 advertising claims, respondent offered the testimony of two psychologists who had worked extensively in the field of marketing and advertising research and analysis. The ALJ stated in his discussion of their testimony:⁷

In evaluating the challenged advertising and promotional materials, consideration has been given to the testimony of respondent's experts who testified as to the meaning thereof. The testimony of the two psychologists, however, does not have sufficient weight to overcome the inferences to be drawn directly from the challenged advertising.

He further noted the following:⁸

Respondent's expert (psychologist) who gave the most detailed findings had performed prior studies for oil companies, but had not concerned himself with air pollution advertising on the part of such firms. Nor was his testimony based on actual research conducted with respect to the challenged advertisements (Tr. 1765). Respondent's other expert

⁷ I.D., Section VIII, Paragraph 5.

⁸ I.D., Fn. 31.

(psychologist) testified that his firm had recently completed a study concerning what consumers think about air pollution and its causes (Tr. 1727-30). There is, however, insufficient information in this record to facilitate a determination as to whether such experience provides an adequate foundation for the testimony in support of Crown's position.

In reaching his conclusions about the challenged advertising representations, the ALJ obviously did not ignore this testimony or the other evidence offered on the subject of proper interpretations. His discussion of the evidence indicated that he considered this testimony, weighed it in light of the advertisements themselves, and decided it should be given little, if any, weight. This is not the exercise of expertise in a vacuum as suggested by respondent's arguments, but the proper consideration of evidence proffered by a party to this dispute in addition to the exercise of the expertise required in deliberations by the Commission or its administrative law judges.

The ALJ's action in this instance was a proper application of the principle reiterated in the matter of *Firestone*, 81 F.T.C. 398 (1972), where evidence was offered to aid the Commission in interpreting challenged advertising claims:

It is incumbent upon us, therefore, to consider this evidence and determine the weight, if any, which should be attributed to it in *adding to the expertise which we must bring to bear upon the issue* of whether this advertisement constituted an unfair or deceptive practice. *Id.* at 454 (emphasis added).

When evidence is offered to assist the Commission in interpreting advertising representations, it supplements rather than supplants the Commission's expertise. Such evidence must be weighed in terms of its probative value the same as all other evidence offered during adjudicative proceedings. If its probative value is low, the Commission would fail in the performance of its proper adjudicatory function if it gave undue weight to the evidence in resolving the issues related to the offer.

We have also carefully considered the testimony of the two psychologists and we do not believe their opinions about the proper interpretations of these advertisements are worthy of sufficient weight to overcome what we consider to be the obvious representations of the advertisements standing by themselves. The psychologists' testimony made clear that although their firm had conducted research regarding several types of gasoline advertisements,⁹ neither the firm nor either witness had ever conducted research in the geographic area covered by the CA-101 advertisements or any other geographic area regarding Crown's or

⁹ The gasoline advertising studies conducted by the witnesses have included the subjects of consumer brand preference, the image of gasoline companies, consumer response to station design, gasoline station communications, gasoline signature programs, appraisal of certain gasoline advertisements (no further helpful details were supplied as to subject matter) and consumer reaction to self-service stations. Smith, Tr. 1713-14, 1726; Payne, Tr. 1757-58.

anyone else's advertising about pollution control gasoline additives. Neither witness had other than general knowledge about air pollution problems and neither had conducted research concerning consumer awareness of the incidence, effects or control of the various polluting components of motor vehicle exhaust or total air pollution.¹⁰ Under the circumstances, we believe the testimony of the two witnesses in question was properly evaluated by the ALJ in his efforts to correctly interpret Crown's advertisements.

The "Pollution Free" Issue

The complaint alleges that the CA-101 advertisements claim the product will produce pollution free motor vehicle exhaust. Respondent asserts that the ALJ had to interpolate language into the advertisements which was not actually there in order to find such a representation. The dispute on this point basically centers on the question of whether the phrase "Clean-Air," as used in the advertisements taken as a whole, constitutes a claim for pollution free performance.

Respondent argues that the word "clean" has many meanings, depending on the language or circumstances surrounding it and that "clean" cannot be read to mean "not dirty" in the context of the challenged ads. Some examples of various meanings of the word clean offered by respondent include the suggestions from one of respondent's psychologist witnesses who said: "To the robber on the street, to be clean means he has no weapon on him. To the small boy who is showing his hands to his mother, it means something quite different."¹¹ Respondent then contends that because of the use of the phrase "Clean Air" in the name of the federal legislation aimed at controlling air pollution (the Clean Air Act) and the use of the same or related phrases by Crown's competitors, automotive manufacturers and other businesses in describing products related to air pollution reduction, a special meaning has attached to the word "clean" when related to air pollution which is not the equivalent of "not dirty" or "pollution free." Respondent specifically asserts that " * * * the term Clean-Air in 1970 had come to be associated with steps to reduce emissions, not eliminate all pollutants."

¹⁰ With regard to some partially related research, Dr. Smith did testify as follows:

Q Have you done any research into what people think the main ingredient of automobile [exhaust] is?

A We have in the course of some research had occasion to ask people, if not that question that precisely, questions which permitted them to reveal their views about what pollutants are associated with automobiles as well as what pollutants are associated with other pollution sources. It is my impression, though I do not have the data before me, that by and large consumers were almost as ignorant as I about the components of automotive pollution, of that (sic) their respective importance in contributing to a variety of the conditions you describe. (Tr. 1729-30.)

¹¹ Payne, Tr. 1785.

Despite these arguments, we are not prepared to attribute to gasoline consumers the special knowledge about the phrase "Clean-Air" suggested by respondent. Nothing in the advertisements themselves specifically links them to the Clean Air Act or "Clean Air" products of other companies. Even though some consumers may have become aware that according to some interpretations "Clean-Air" had come to mean only partially clean air, we believe that many if not most consumers reading or hearing the phrase "Clean-Air" would interpret it to mean air which is not dirty, or, in the context of representations about air pollution, air which is free of pollutants. Likewise, the designation of a product as a "Clean-Air Gasoline" implies the ability of the gasoline to create automotive exhaust (which becomes part of the ambient air) which is free of pollutants. Some consumers may be sophisticated and informed enough to know that no such product exists, but because the advertisements have the capacity to convey the "pollution free" message, we consider them materially deceptive.

Respondent further argues that the text¹² of the advertisements sufficiently qualifies the Clean-Air Gasoline headline and theme¹³ to eliminate the possibility of anyone finding a "pollution free" representation in the ads. The ALJ concluded that the Clean-Air Gasoline headline so dominates the ads that the representations made in the accompanying text are inadequate to tone down the central "pollution free" representation. The text does contain phrases such as "a step toward cleaner air," "dramatically *reduces* exhaust emissions" and "*reduces* unburned hydrocarbons by *as much as 66%*, deadly carbon monoxide *41%*" rather than more absolute phrases such as "the final step toward clean air," "eliminates harmful exhaust emissions" or "eliminates unburned hydrocarbons by 100% and carbon monoxide by 100%." (Emphasis added.) Although such phrases may qualify the "Clean-Air" claim for some readers, for others they would go unnoticed or merely create the potential of double meanings and confusion. We, therefore, agree with the ALJ that the text is inadequate to sufficiently qualify the absolute representation embodied in the "Clean-Air Gasoline" headline.

The headline in the newspaper ads and the direct mail handouts is in print so much larger and bolder than the rest of the language of the advertisements that even a casual glance at the advertisements will

¹² The point of purchase materials have little or no text, so the "Clean-Air Gasoline" theme even more clearly dominates them than it does the newspaper and direct mail materials.

¹³ The radio advertisements do not have a headline, as such, but the "pollution free" claim represented by the phrase "Clean-Air Gasoline" is featured in the radio advertisements and the capacity for outright deception or, at a minimum, confusing double meanings is present in the radio scripts.

probably focus on that headline in lieu of or before anything else.¹⁴ In the few seconds during which many consumers would consider an advertisement of this kind,¹⁵ one of the impressions they will most likely gain is of the "pollution free" claim represented by the headline "Clean-Air Gasoline."

The issue of how to resolve problems of interpreting advertisements with contradictory double meanings has been faced by the Commission before. In the matter of *Colgate-Palmolive Company*, 58 F.T.C. 422 (1961), the Commission was faced with an argument that certain language in the verbal portion of a television advertisement was sufficient to qualify a representation of "total" tooth decay prevention in the visual portion of the ad. In response, the Commission stated:

In our opinion, the words "fights" and "reductions" in the context in which they are used in respondent's advertisements, do not negate a claim of complete protection from tooth decay. Viewed in the light, most favorable to respondent, these words only serve to make the advertisements capable of two meanings. It is well settled that where one of two meanings conveyed by an advertisement is false, the advertisement is misleading. (58 F.T.C. at 431.)

Respondent also raises the argument that it is unfair and inconsistent to hold, on the one hand, that the text is in print too small to qualify the bold headline, and, on the other hand, that the same text is large enough to form the basis of a violation separate from the one found in the headline (see below). Although we base our finding of a violation on factors in addition to the contrast in type size, the difference in type size does make the headline more forceful and strong in its communication to the consumer, and makes it more difficult for the smaller print text to adequately water down the headline's claim. Aside from the truth of that obvious headline-text relationship, however, it would be folly for the Commission to countenance misrepresentations in the small print just because the small print is over-shadowed by bold headlines. Those who carefully read the smaller print are entitled to at least the same protection from deception as those who gain their impressions mostly or exclusively from the headline.

The Issue of the "Significance" of the Emission Reductions Claim

¹⁴ Respondent's witness, Dr. Payne, verified that the headline (and accompanying picture) of an advertisement with this format would be the focal point of the first glance. Tr. 1794-95.

¹⁵ The following exchange took place at Tr. 1794:

Judge von Brand: How much time would the consumer spend on one of these ads, Dr. Payne?

The Witness [Dr. Payne]: Typically a few seconds at most.

The complaint alleges that the Crown ads also falsely represent to some viewers that CA-101 will “significantly” reduce emissions of CO and HC from every motor vehicle in which it is used, and “significantly” reduce the total amount of air pollution. Crown’s appeal does not dispute the presence of the representations in the advertisements. Instead, it assails the ALJ’s conclusion that, assuming the greatest HC and CO emission reduction possible if all cars used CA-101 would be 10 percent,¹⁶ such a 10 percent HC and CO reduction would be insignificant.

The record contains lengthy and contradictory statements of a number of experts as to whether a 10 percent HC and CO reduction would be significant. Many very knotty problems of air pollution control policies and priorities form the backdrop for this debate among the experts. Numerous highly subjective elements enter into the arguments on both sides. We do not find it to be advisable or helpful to try to draw a non-disputable conclusion from the disparate views before us, and we thus reject Findings 75 and 32 (Paragraph 1 only) of the initial decision wherein the ALJ concluded that a 10 percent HC and CO reduction would not be significant.

Nevertheless, even if most people would consider as “significant” emission reductions at the level of 10 percent, the fact remains that those reductions would not be even close to pollution free—*i.e.*, would not result in “Clean-Air” as claimed in the challenged advertisements. The substantial disparity between the effectiveness claimed for CA-101 and its actual capabilities thus gives rise to a finding of a violation of Section 5 regardless of how the “significance” issue is resolved.

The Issue of Whether “Every” Car Will Enjoy Emission Reductions Due to CA-101

Respondent admits the advertisements “represented the additive would benefit every car in terms of emission reduction and other improvements.”¹⁷

Although Crown’s admission is non-committal as to the degree of improvement promised for every car, we do not need to pursue this question further. We have already determined that the ads claim CA-101 will cause pollution free exhaust, a level of improvement which *no* car will achieve. It is sufficient that order provisions based on our findings regarding the “pollution free” issue require disclosure of the limitations on numbers or groups of vehicles included in future pollution reduction claims.

¹⁶ I.D., Finding 26.

¹⁷ R Brief, p. 27.

Related to the "every" car issue is the question of whether the ALJ erred in finding the ads claimed CA-101 would clean "all engine components."¹⁸ We conclude the ads do not speak with sufficient specificity as to effects on particular engine parts to sustain such a finding, and we, therefore, disagree with the portions of the ALJ's Finding 77 related to representations about "all engine components."

The Question of the Omission of Material Facts from the Advertisements

The ALJ found three categories of material facts were omitted from the CA-101 advertisements, and would require by his order that the disclosure of such facts accompany any future representations concerning the subjects to which they pertain. Respondent argues none of the alleged omissions are material and the required disclosures would not be helpful to consumers. The disputed findings state the following:¹⁹

The representation of emission reductions of carbon monoxide and unburned hydrocarbons of the magnitude claimed are misleading because they fail to inform the public that only cars with very dirty carburetors, approximately 5 to 15% of the general car population could expect to realize reductions on that scale* * *.

The failure to disclose that the additive will not remedy mechanical conditions which may result in substantial emissions of carbon monoxide and hydrocarbons is misleading* * *.

The failure to disclose that automobile exhaust contains harmful pollutants other than carbon monoxide and unburned hydrocarbons * * * is misleading in the context of the clean air theme and the claimed "dramatic reductions" of unburned hydrocarbons and carbon monoxide. These representations imply that the additive will reduce all harmful emissions from automobile exhaust.

One way to help remedy the problem of communicating to consumers what groups of cars would benefit from CA-101 use would be to disclose specific percentages of vehicles which could be expected to obtain the levels of reduction claimed. Other ways could also be devised, however, and the Final Order accompanying this opinion takes a somewhat different approach to this problem than the one taken by the ALJ. By using the language "UNLESS and *only to the extent* that each and every such representation is true* * *." (emphasis added) to limit the claims permitted by the order, the kind of deception found in the challenged Crown ads should be remedied in a way which permits somewhat greater flexibility on the part of the advertiser than the requirement proposed by the ALJ.

¹⁸ I.D., Finding 77.

¹⁹ I.D., Finding 80.

In the case of the suggested disclosure that the additive will not remedy mechanical conditions resulting in CO and HC emissions, the language of the final order also limits emission reduction claims for "all or any number or group of motor vehicles * * * UNLESS and only to the extent" such claims are true. The disclosure of the existence of unaffected mechanical factors would be one way to help clear up the problem in the existing ads. Another would be to state realistic and substantiated expected emission reduction levels and sufficiently qualify them so no misunderstandings will result about the limitations of the effectiveness of the additive. (See Paragraph 3 of our final order.) Again, we prefer to leave the exact form of the claims and disclosures in this instance to the advertiser operating within the limitations established by the final order.

The third problem area noted by the ALJ is more troublesome because his related requirement of a disclosure of *all* unaffected pollutants may create only increased misunderstanding for consumers. The list of unaffected pollutants is long, even though many of them are not present in very large quantities, and literal compliance with the ALJ's order would compel listing of them all in every future ad where pollution reductions are specifically mentioned. We are not disposed to order such disclosure, which may pit a long list of relatively incomprehensible chemical compounds against a short list of truly affected harmful substances that are present in substantially larger and, in some cases, more harmful quantities than most of the others. We have, therefore, modified the disclosure requirement so it now calls for, at a minimum, a clear indication that not all of the harmful pollutants in automotive exhaust are affected by Crown's additives.

An additional disclosure requirement contained in the ALJ's order relates to information about engine components not affected by Crown's additives. In accordance with our determination that the advertisements do not make representations about the cleaning of all engine components, we have not included this requirement in the final order.

Miscellaneous Additional Issues Raised by Respondent

Respondent's appeal also raises questions about several other matters not discussed in this section. We have carefully considered each of those matters and we find them to be either without merit or adequately resolved by our disposition of the issues already discussed.

V. COMPLAINT COUNSEL'S APPEAL

The complaint alleges respondent falsely represented that:

Respondent had tests, or had conducted tests, or had had others conduct tests which proved or substantiated representations made for CA-101 additive in its advertisements before publication or dissemination of such advertisements; these representations include, but are not limited to, the following:

- (a) CA-101 additive produces pollution-free motor vehicle exhaust;
- (b) CA-101 additive will significantly reduce air pollution; and will significantly reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which it is used;
- (c) Every purchaser of Crown gasoline containing CA-101 additive will obtain substantially better mileage by or through the use of such gasolines than can be obtained by or through the use of any other commercially available gasoline.

The ALJ was unwilling to find the CA-101 ads made representations specifically about substantiating "tests." He considered the question of whether "test" results substantiated the CA-101 claims, to the exclusion of other types of data or information, to be a more stringent standard than the one required by existing law. Nevertheless, he was willing to apply a standard requiring an "adequate, factual or technical basis for making claims."²⁰ He determined, after the oral argument at the conclusion of the trial, that the issue had been adequately tried under the lesser standard.

Using the "adequate, factual or technical basis" standard, the ALJ found that respondent lacked such a basis for the claims that CA-101 additive produces pollution free motor vehicle exhaust and significantly reduces air pollution. He declined to find, however, a lack of substantiation for the claims of a significant reduction of HC and CO in every car or substantially better mileage through the use of CA-101. He concluded that Crown lacked the inhouse expertise on the subject of additive testing to go behind the representations of du Pont on the two latter claims, so he found in favor of respondent as to those alleged violations.

Complaint counsel now argue that the two claims discarded by the ALJ's ruling about inhouse expertise should be found to violate the "adequate, factual or technical basis" standard; and all four of the claims mentioned in the above-quoted portion of the complaint should also be found to be unsubstantiated by acceptable pre-advertisement "test" evidence.

²⁰ I.D., Finding 78.

There is some dispute between the parties concerning the proper legal standard for measuring the acceptability of pre-advertisement substantiation in this case. The complaint speaks of "tests," the ALJ called for an "adequate, factual or technical basis," and previous Commission decisions require a "reasonable basis."

The phrase "adequate, factual or technical basis" employed by the ALJ in the initial decision in this case has not been used in previous cases. We do not, however, consider it to be a new standard which is meaningfully distinguishable from the requirement of a "reasonable basis" established by previous Commission decisions.

In *Pfizer*, 81 F.T.C. 23 (1972), a case dealing with the issue of unfairness in advertising, the Commission said:

* * * the Commission is of the view that it is an unfair practice in violation of the Federal Trade Commission Act to make an affirmative product claim without a reasonable basis for making that claim. (*Id.* at 62.)

Then in *National Dynamics*, 82 F.T.C. 488, 550 (1973), the Commission determined that it was also deceptive to make performance claims implying the existence of substantiation when no reasonable basis in fact existed.²¹

In the *Pfizer* opinion, the Commission made it clear that the type of substantiation required to satisfy the reasonable basis standard would depend on the facts of each case. In some instances, it was recognized that only competent test evidence would suffice. In other cases, a combination of tests and other factual evidence or other factual evidence alone may be enough. In the case of the air pollution reduction claims in the challenged Crown advertisements, we conclude that competent test evidence is necessary to provide the required reasonable basis. Other factual evidence, such as research on relevant automotive engineering principles or automotive performance characteristics, may be added to evidence of tests on the advertised product to complete the substantiation picture, but the performance claims made for the CA-101 additive could not be reasonably made without competent test data.

Although the complaint speaks in terms of tests rather than "scientific" tests, our definition of a scientific test set forth in *Firestone*, 81

²¹ 82 F.T.C. 488, 550 at n. 10 (1973). The Commission stated:

This (*National Dynamics*) application of the "reasonable basis" test, based on deception, is to be distinguished from the Commission's review of the question of advertising substantiation in the context of our recent decision in *Pfizer, Inc.*, Docket No. 8819 (July 11, 1972). There we considered the impact of unsubstantiated, affirmative product claims as a matter of marketplace fairness; and our decision was grounded exclusively on the unfairness jurisdiction conferred upon the Commission by Section 5 of the FTC Act. Whether an advertisement is analyzed from the standpoint of unfairness or deception, however, the standard for evaluating the substantiating material and test which is applied is the same—does the substantiation provide a reasonable basis to support the claim. Essentially, this is a factual issue to be formulated in the context of circumstances present in each case. *Pfizer, Inc.*

F.T.C. 398, 463 (1972), is broad enough to cover the kind of tests which would be necessary in this instance:

In our view a scientific test is one in which persons with skill and expertise in the field conduct the test and evaluate its results in a disinterested manner using testing procedures generally accepted in the profession which best insure accurate results. This is not to say that respondent always must conduct laboratory tests. The appropriate test depends on the nature of the claim made. Thus a road or user test may be an adequate scientific test to substantiate one performance claim, whereas a laboratory test may be the proper test to substantiate another claim. Respondent's obligation is to assure that any claim it makes is adequately substantiated by the results of whatever constitutes a scientific test in those circumstances.²²

We find that the challenged Crown advertisements do represent that tests had been conducted prior to the publication of the ads which provided substantiation for the pollution reduction and better mileage claims enumerated in the complaint. A specific study is cited in support of the 66 percent HC and 41 percent CO reductions whenever they are mentioned in the ads. When a test is cited for one performance claim or part of a performance claim, and no indication is given that equally technical representations in the same ad have no substantiation, or perhaps less adequate substantiation, the implication is clearly present that substantiation exists for all performance claims. This conclusion is consistent with the testimony of one of Crown's psychologist witnesses who said that where the Crown ads "* * * assert certain factual support, that carries with it the assumption, the implicit suggestion, that where there is support for some there is support for all."²³ Furthermore, the designation of the advertised product as *Formula CA-101* and the obviously technical nature of air pollution-related performance claims for a gasoline or a gasoline additive contribute to the clear suggestion that the product has properties and characteristics which could not be fully verified other than through adequate testing.

We find no test evidence in existence prior to the time of the advertisements that CA-101 produces pollution free exhaust, and we do not agree with the ALJ that Crown's lack of inhouse expertise as to additive testing excused their representations about significant HC and CO reductions. Clearly, it took no expertise to know that none of du Pont's tests supported a claim of pollution-free performance. Crown now has sufficient know-how in this area to concede that no test results from

²² Respondent has expressed concern that in order to satisfy a requirement of full and complete substantiation including tests, it would have to expend disproportionately large amounts of resources to conduct perfect or near perfect tests. The standard announced here does not require such perfection, but it does prohibit product claims which go beyond realistic interpretations of imperfect or limited tests or other data.

²³ Payne, Tr. 1779.

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before or after the advertisements would justify a representation that CA-101 will reduce HC and CO emissions by more than 10 percent in the general car population. We are convinced that even before the ads were run, Crown, a gasoline refiner and marketer having extensive experience with gasolines and gasoline additives, knew or should have known that the available test evidence showed the claims it was making materially exaggerated CA-101's effectiveness.

With respect to the mileage claim we do not find a violation. The claims themselves are non-specific and the evidence in the record is unclear as to how far the pre- or post-advertisement mileage test results on Crown additives²⁴ can be applied to the general car population. There was considerable expert testimony about the extrapolation of the emission reduction data to the general car population, but no such evidence is in the record regarding the mileage data.

CONCLUSION

For the reasons discussed in this opinion, we conclude that Crown's CA-101 advertisements were false, misleading and deceptive in violation of Section 5. Accordingly, it is in the public interest that an Order should be entered against respondent.

FINAL ORDER

This matter is before the Commission pursuant to cross appeals of respondent and complaint counsel after the filing of an initial decision finding respondent in violation of Section 5 of the Federal Trade Commission Act. The Commission has received written briefs from the parties, heard oral arguments on the appeals and considered the record developed during the adjudicative proceedings before the administrative law judge. For the reasons set forth in the opinion accompanying this order, we have determined that complaint counsel's appeal should be granted in part and respondent's appeal granted in part, and that, except to the extent it is inconsistent with the Commission's opinion, the initial decision of the administrative law judge should be, and it hereby is, adopted along with the opinion accompanying this order as the final findings of fact and conclusions of law of the Commission in this matter. We have also determined, for the reasons stated in the opinion accompanying this order that the order of the administrative law judge should be modified and the provisions set forth herein adopted as the final order of the Commission in this case. Accordingly,

²⁴The only mileage tests in the record were run on DMA-4 and DMA-115.

It is ordered, That the following cease-and-desist order shall be and it hereby is entered:

It is ordered, That respondent Crown Central Petroleum Corporation, a corporation, its successors and assigns, and its officers, representatives, agents, and employees, directly or through any corporate or other device in connection with the advertising, offering for sale, sale or distribution of Crown gasolines, or the additive CA-101, or any other product in commerce as "commerce" is defined in the Federal Trade Commission Act, do forthwith cease and desist from:

1. Representing directly or by implication that any such product:

(a) Will produce or result in motor vehicle exhaust which is pollution free or generally pollution free; or

(b) Will eliminate or reduce air pollution caused by motor vehicles; or

(c) Will eliminate or reduce emissions from all or any number or group of motor vehicles in which it is used;

or that:

(d) Any gasoline or gasoline additive product has any other quality, performance ability or other characteristic; or

(e) Tests, demonstrations, research or experiments have been conducted which prove or substantiate any of said representations;

UNLESS and only to the extent that each and every such representation is true and has been fully and completely substantiated by competent scientific tests. The results of said tests, the original data collected in the course thereof and a detailed description of how said tests were performed shall be kept available in written form for at least three years following the final use of the representation.

2. Representing directly or by implication that any such product has any effectiveness in reducing air pollution or any air pollutant or air pollutants without at the same time, in the same advertisement or other form of communication, conspicuously disclosing that not all of the harmful pollutants in automotive exhaust are affected by said product.

3. Representing directly or by implication that any product will reduce any emissions of pollutants from automobile exhaust by any percentage or numerical quantity unless in connection therewith there is a clear, accurate and conspicuous disclosure of the type of vehicle which can expect to achieve reductions of such magnitude and the approximate percentage of such vehicles in the general car population.

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It is further ordered, That the respondent corporation shall forthwith distribute a copy of this order to each of its operating divisions.

It is further ordered, That respondent shall notify the Commission at least thirty (30) days prior to any proposed change in the corporate respondent such as dissolution, assignment, or sale resulting in the emergence of a successor corporation, the creation or dissolution of subsidiaries, or any other change in the corporation which may affect compliance obligations arising out of the order.

It is further ordered, That respondent shall, within sixty (60) days after service of the order upon it, file with the Commission a written report, signed by the respondent, setting forth in detail the manner and form of its compliance with the order to cease and desist.

Commissioners Hanford and Nye did not participate since oral argument was heard prior to their assumption of Office.

IN THE MATTER OF

CHARLES S. NAGOL JEWELRY CO., ET AL.