

IN THE MATTER OF
STANDARD OIL COMPANY OF CALIFORNIA, ET AL.

CONSENT ORDER, ETC., IN REGARD TO ALLEGED VIOLATION OF THE
FEDERAL TRADE COMMISSION ACT

*Docket 8827. Complaint, Dec. 29, 1970 - Decision, Nov. 26, 1974**

Consent order requiring a San Francisco, Calif., distributor of gasoline and other petroleum products and its New York City advertising agency, among other things to cease misrepresenting that the F-310 additive in its Chevron gasoline will produce pollution-free exhaust. The order further dismisses certain subparagraphs of paragraphs Five and Six of the complaint.

Appearances

For the Commission: *Fauster Vittone and Jean F. Greene.*

For the respondents: *Turner H. McBaine, James Michael, William C. Miller, Gary H. Anderson, Roland W. Selman, Pillsbury, Madison & Sutro* for Standard Oil Company of California, San Francisco, Calif., *William D. Greene, Lawrence P. J. Bonaguidi, Burns, Van Kirk, Greene & Kafer* for Batten, Barton, Durstine & Osborn, Inc., New York, N.Y. and *David J. McKean, McKean, Whitehead & Wilson*, Wash., D.C.

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 Standard Oil Company of California, a corporation, and Batten, Barton, Durstine & Osborn, Inc., a corporation hereinafter referred to as respondents, have 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 Standard Oil Company of California is a corporation organized, existing and doing business under and by virtue of the laws of the State of Delaware, with its principal office and place of business located at 225 Bush Street, San Francisco, Calif.

Respondent Batten, Barton, Durstine & Osborn, Inc., is a corporation organized, existing and doing business under and by virtue of the laws of the State of New York, with its principal office and place of business located at 383 Madison Avenue, New York, N.Y.

*Petitions for review were filed by Standard Oil of California on February 13, 1975 and Batten, Barton, Durstine & Osborn, Inc. on February 14, 1975 in the Court of Appeals for the Ninth Circuit.

Complaint

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PAR. 2. Respondent Standard Oil Company of California 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 Chevron and other names to the public.

Respondent Batten, Barton, Durstine & Osborn, Inc. is now and for some time past has been an advertising agency of Standard Oil Company of California; and now prepares and places, and for some time past has prepared and placed for publication, advertising material including but not limited to the advertising referred to herein, for the purpose of promoting the sale of respondent Standard Oil of California's Chevron gasolines with F-310.

PAR. 3. Respondent Standard Oil Company of California 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 place of business in the State of California 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 their businesses as aforesaid, and for the purpose of inducing the purchase of Chevron gasolines containing F-310, trademark for a polybutene amine gasoline detergent additive, the respondents have made, and are now making, numerous statements and representations in advertisements published in newspapers and magazines and in other promotional material, and by means of television and radio broadcasts.

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

TELEVISION

SCOTT CARPENTER: I'm Scott Carpenter. We're attaching a clear balloon to this car to show you one of the most meaningful gasoline achievements in history. The balloon is filling with dirty exhaust emissions that go into the air and waste mileage. Now Standard Oil of California has accomplished the development of a remarkable gasoline additive, Formula F-310, that reduces exhaust emissions from dirty engines. The same car, after just six tanksful of Chevron with F-310; no dirty smoke, cleaner air. A major break-through to help solve one of today's critical problems. And since dirty exhaust is wasted gasoline, F-310 keeps good mileage from going up in smoke. Cleaner air, better mileage - Chevron with F-310 turns dirty smoke into good, clean mileage. There isn't a car on the road that shouldn't be using it.

NEWSPAPERS AND MAGAZINES

Announcing The Most Long Awaited Gasoline Development in History!
Remarkable Gasoline Breakthrough From the Research Laboratories of Standard Oil.

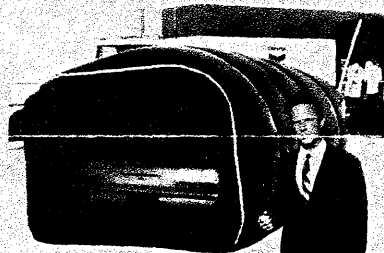
Tests * * * showed that Chevron gasolines with F-310 reduced unburned hydrocarbon and carbon monoxide emissions dramatically. Clearly this is a major step towards solving one of today's most urgent problems.

There isn't a car on the road that shouldn't be using it.

Two such advertisements are reproduced and attached hereto as attachments #1 and #2.

V. BAC PRINT AD

Remarkable gasoline breakthrough from the research laboratories of Standard Oil



BEFORE

This car was tested in a test chamber with dirty engine running. The test showed its dirty exhaust was the exact opposite of what the car. This shows how exhaust emissions from dirty engines can pollute the air and waste mileage.

Scott Carpenter
Astrophotographer
Astrophotographer
Astrophotographer



AFTER F-310

The same car—after running on just one barrel of Chevron with Formula F-310. Dirty exhaust emissions reduced sharply. The big money is in the dirty smoke. Chevron with F-310 turns dirty smoke into good clean mileage.

New F-310 in Chevron gasolines turns dirty exhaust into good clean mileage.

Now, research scientists at Standard Oil Company of California have achieved the most long-awaited gasoline development in history! It's a new gasoline additive—Formula F-310—that sharply reduces dirty exhaust from dirty engines. And it goes toward clean air.

Tests conducted by Scott Research Laboratories, an independent research group, showed that Chevron gasolines with F-310 reduce unburned hydrocarbon and carbon monoxide exhaust emissions dramatically. Clearly, this is a major step toward solving one of today's most urgent problems.

F-310 also improves mileage, because dirty exhaust is really wasted gasoline. So F-310 literally keeps good mileage from going up in smoke.

How does an engine produce dirty exhaust in the first

place? As a car accumulates mileage, deposits build up. The amount of gasoline introduced into the engine gets out of balance. This causes the engine to run rich, wasting gasoline. As a result, excessive unburned hydrocarbons and carbon monoxide exhaust emissions pollute the air. F-310 can correct this condition. Just six tankfuls can do the job.

Formula F-310, a patented gasoline additive, is now available in all three grades of Chevron gasolines at all Chevron Dealers, Standard Stations in the greater Los Angeles area and southward. As soon as additional supplies are available, we'll be introducing this remarkable development elsewhere throughout the West.



Chevron with F-310. There isn't a car on the road that shouldn't be using it.
STANDARD OIL COMPANY OF CALIFORNIA

IV. BALLOON PRINT AD

Announcing the most long awaited gasoline development in history!



BEFORE

A test engine was subjected to the same conditions as a real engine. The results showed that the engine with the F-310 additive produced 10% more power and 10% less smoke than the engine without the additive.

Scott Carpenter
Chevrolet Research Laboratories
General Motors Corporation

AFTER F-310

The same test engine was subjected to the same conditions as a real engine. The results showed that the engine with the F-310 additive produced 10% more power and 10% less smoke than the engine without the additive.

New F-310 in Chevron gasolines turns dirty exhaust into good clean mileage.

Now, research scientists at Standard Oil Company of California have developed a remarkable new gasoline additive — Formula F-310 — that sharply reduces dirty exhaust from dirty engines. And helps toward cleaner air.

Tests conducted by Scott Chevrolet Research Laboratories, an independent research group, showed that Chevron gasoline with F-310 reduced carbon monoxide and carbon hydrocarbon emissions dramatically. Clearly, this is an important step toward solving one of today's major problems.

F-310 also improves mileage, because dirty exhaust is really wasted gasoline. So F-310 literally keeps good mileage from going up in smoke.

What causes an engine to produce dirty exhaust in the first place? Over a period of time, deposits make engines "run rich." They actually consume more gasoline than they can burn efficiently. In addition, wasted gasoline goes out the exhaust pipe as unburned hydrocarbons along with increased carbon monoxide emissions. You can even see the emissions as dirty smoke. And you can feel it — and hear it — through idling. It all adds up to a car that is unnecessarily emitting dirty exhaust and wasting gasoline. Just as tankful with F-310 can correct the condition.

Formula F-310 is a patented gasoline additive. It is now in all three grades of Chevron gasoline — at all Chevron Dealers, Standard Stations in the greater Los Angeles area and throughout the country. As soon as additional supplies are available, we'll be introducing this remarkable development elsewhere throughout the west.



Chevron with F-310. There isn't a car on the road that shouldn't be using it.
STANDARD OIL COMPANY OF CALIFORNIA

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

1. F-310 additive in Chevron gasolines is a revolutionary development in the reduction of air pollution;
2. Chevron gasolines containing F-310 additive produce motor vehicle exhaust which is generally pollution-free;
3. The use of Chevron gasolines containing F-310 additive will significantly reduce the total amount of air pollution;
4. The use of Chevron gasolines containing F-310 additive will significantly reduce air pollution caused by motor vehicles;
5. The use of Chevron gasolines containing F-310 additive will significantly reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which they are used;
6. The balloon and bag demonstrations pictured in respondents' advertising attached hereto as #1 and #2, and in certain of respondents' television advertisements, constitute proof or accurately or visually demonstrate that Chevron gasolines containing F-310 additive reduce motor vehicle emissions of unburned hydrocarbons and carbon monoxide, and significantly reduce air pollution caused by motor vehicles;
7. Every motor vehicle will emit black exhaust in the manner pictured in respondents' advertisements attached hereto as #1 and #2, and in certain of respondents' television advertisements, if operated on motor fuel other than Chevron gasolines containing F-310 additive;
8. The building identified as Standard Oil Company of California Research Center in advertisements attached hereto as #1 and #2, and in certain of respondents' television advertisements, is owned, occupied, or used for research by respondent Standard Oil Company of California;
9. The machine pictured in certain of respondents' television advertising is used by the federal government to measure the total amount of pollution emitted by a motor vehicle;
10. Respondents had conducted or had had others conduct tests or demonstrations which proved or substantiated representations made for F-310 additive in their advertisements attached hereto as #1 #2, and in certain of their television and radio advertisements, before publication or dissemination of such advertisements; these representations include, but are not limited to, the following:
 - (a) Chevron gasolines containing F-310 additive produce motor vehicle exhaust which is generally pollution-free;
 - (b) The use of Chevron gasolines containing F-310 additive will significantly reduce the total amount of air pollution; and will significantly reduce air pollution caused by motor vehicles; and will significantly

reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which they are used;

(c) Every purchaser of Chevron gasolines containing F-310 additive will obtain significantly 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;

11. F-310 additive or Chevron gasolines containing F-310 additive will clean or keep clean all engines and engine components.

PAR. 6. In truth and in fact:

1. F-310 additive in Chevron gasolines is not a revolutionary development in the reduction of air pollution;

2. Chevron gasolines containing F-310 additive do not produce motor vehicle exhaust which is generally pollution-free; such exhaust contains, among other things, unburned hydrocarbons, carbon monoxide, nitrogen oxides, and particulates, all of which are pollutants;

3. The use of Chevron gasolines containing F-310 will not significantly reduce the total amount of air pollution; F-310 additive has no effect upon industrial and other non-motor vehicle sources of air pollution, and does not significantly reduce air pollution caused by motor vehicles;

4. The use of Chevron gasolines containing F-310 additive will not significantly reduce air pollution caused by motor vehicles; F-310 additive has little, if any, effect upon, for example, nitrogen oxides and lead particulates, which are air pollutants; in addition, exhaust from motor vehicles using Chevron gasolines contains, among other things, unburned hydrocarbons and carbon monoxide, which are air pollutants;

5. The use of Chevron gasolines containing F-310 additive will not significantly reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which they are used;

6. The balloon and bag demonstrations pictured in respondents' advertisements attached hereto as #1 and #2, and in certain of respondents' television advertisements, do not constitute proof or accurately or visually demonstrate that Chevron gasolines containing F-310 additive reduce motor vehicle emissions of unburned hydrocarbons and carbon monoxide; motor vehicle emissions of unburned hydrocarbons and carbon monoxide are relatively colorless. Neither do such demonstrations constitute proof or accurately or visually demonstrate that Chevron gasolines containing F-310 additive significantly reduce air pollution caused by motor vehicles; among other things, the black exhaust was produced by an atypically dirty engine, and the "clear" motor vehicle exhaust pictured is not generally free of air pollutants; it contains, among other things, unburned hydrocarbons, carbon monox-

ide, nitrogen oxides, and lead particulates, all of which contribute to air pollution;

7. Every motor vehicle will not emit black exhaust in the manner pictured in respondents' advertisements attached hereto as #1 and #2, and in certain of respondents' television advertisements, if operated on motor fuel other than Chevron gasolines with F-310 additive.

8. The building identified as Standard Oil Company of California Chevron Research Center in respondents' advertisements attached hereto as #1 and #2, and in certain of respondents' television advertisements, is not owned, occupied, or used for research by respondent Standard Oil Company of California; the building pictured is the Riverside County Court House, located in Palm Springs, California;

9. The machine pictured in certain of respondents' television advertising is not used by the federal government to measure the total amount of pollution emitted by a motor vehicle;

10. Respondents had not conducted or had others conduct tests or demonstrations which proved or substantiated representations made for F-310 additive in their advertisements attached hereto as #1 and #2, and in certain of their television and radio advertisements, before publication or dissemination of such advertisements; these representations include, but are not limited to, the following:

(a) Chevron gasolines containing F-310 additive produce motor vehicle exhaust which is generally pollution-free;

(b) The use of Chevron gasolines containing F-310 additive will significantly reduce the total amount of air pollution; and will significantly reduce air pollution caused by motor vehicles; and will significantly reduce emissions of carbon monoxide and unburned hydrocarbons from every motor vehicle in which they are used;

(c) Every purchaser of Chevron gasolines containing F-310 additive will obtain significantly 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;

11. F-310 additive or Chevron gasolines containing F-310 additive will not clean or keep clean all engines and engine components; F-310 additive reduces the accumulation of deposits in the carburetor and in or on certain other 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 Standard Oil Company of California 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.

In the course and conduct of its business as aforesaid, and at all times mentioned herein, respondent Batten, Barton, Durstine & Osborn, Inc. has been, and is now, in substantial competition, in commerce with corporations, firms and individuals in the advertising business.

PAR. 8. The use by respondents of the aforesaid false, misleading and deceptive statements, representations and demonstrations 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 substantial quantities of Chevron gasolines with F-310 by reason of said erroneous and mistaken belief.

PAR. 9. The aforesaid acts and practices of respondents, as herein alleged, were and are all to the prejudice and injury of the public and of respondents' 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 ELDON P. SCHRUP, ADMINISTRATIVE LAW
JUDGE

APRIL 25, 1973

Preface

The following abbreviations are hereinafter used:

Standard—Respondent Standard Oil Company of California;

BBD&O—Respondent Batten, Barton, Durstine & Osborn, Inc.;

Chevron Research—The Chevron Research Company, including its personnel at the research center in Richmond, California;

Compl.—Complaint. Paragraphs and sub-paragraphs of the complaint will be designated as in this example: Five-3—subparagraph 3 of paragraph Five of the complaint;

Ans.—Answer to the Complaint;

Tr.—Transcript of testimony;

CX—Commission exhibit;

RXS or RSX--Respondent Standard's exhibit;

Stip.Fact—A fact stipulated to by the parties, most of which are contained in RXS-113 and in the Transcript (Tr. 859-862);

Stip.Evid—Documentary evidence stipulated into the record by the parties, most of which is contained in RXS-114.

All emphasis and underscoring herein has been added unless otherwise indicated.

STATEMENT OF THE PROCEEDINGS

The complaint in this matter charges the respondents with violating Section 5 of the Federal Trade Commission Act in the national advertising and sale to the consumer public of Chevron brand gasoline containing the additive F-310. Following extensive prehearing conferences, hearings were held in Wash., D.C., San Francisco and Los Angeles, Calif.

The official record consists of some 6,000 pages of transcript and approximately 500 documentary and physical exhibits of voluminous and complicated technical content. No members of the consumer public as such were called as witnesses by complaint counsel to testify to the public understanding of the purported meaning of the challenged advertising as alleged in the complaint. The names of the many witnesses testifying and their testimony are found in the official transcript as follows:

I. Wash., D.C.: Mar. 27 - Mar. 29, 1972.

John M. Miller, Houston, Tex. Project Director, Marplan Research Inc., McCann-Ericson Advertising Agency. Called as a witness by complaint counsel. Tr. 951-1058

Glenn C. Messer, Chesterland, Ohio. Director of Marketing Services, Marschalk Company advertising agency. Called as a witness by complaint counsel. Tr. 1059-1177

William Weitzman, New York, N.Y. Manager of Consumer Advertising Research, Atlantic-Richfield Company. Called as a witness by complaint counsel. Tr. 1177-1206

Brian T. Hitch, Atlanta, Ga. Manager of Marketing, Planning and Research, BP Oil Corporation. Called as a witness by complaint counsel. Tr. 1207-1236

Arthur Levy, Worthington, Ohio. Senior Fellow, Atmospheric Chemistry and Combustion Systems Division, Battelle Memorial Institute. Called as a witness by complaint counsel. Tr. 1252-1404

Palmer B. Stickney, Columbus, Ohio. Ph.D. in Physical Chemistry; employed in research of rubber damage due to air pollution, Battelle Memorial Institute. Called as a witness by complaint counsel. Tr. 1404-1427

II. San Francisco, Calif.: Apr. 18 - Apr. 25, 1972.

Lyndon R. Babcock, Jr., Chicago, Ill. Ph.D. in Air Research Engineering; employed teaching environmental engineering with relation to air pollution, University of Ill. Called as a witness by complaint counsel. Tr. 1526-1704

Lawrence Light, V.P. of respondent BBD & O. Ph.D. in psychology and responsible for marketing research and evaluation of opinion surveys and techniques. Called as a witness by respondent BBD & O. Tr. 1721-1875

J. Roy Bardsley, Portland, Ore. President, Bardsley and Haslacher, Marketing and Public Opinion Research. Called as a witness by complaint counsel. Tr. 1920C - 1920Z-10

James Cormack, Senior Analyst, Consumer Research, Standard Oil Company of California. Called as a witness by respondent Standard Oil. Tr. 1920Z-12-1920Z-37

III. *Los Angeles, Calif.: Apr. 27 - May 3, 1972.*

Joseph Behar, Riverside, Calif. Ph.D. in Chemistry; Asst. Research Chemist and Asst. Director of Project Clean Air, University of Calif. Statewide Air Pollution Research Center. Called as a witness by complaint counsel. Tr. 1923-2065

Joseph Byrne, Los Angeles, Calif. V.P. of Marketing, Western Region, Union Oil Company of California. Called as a witness by complaint counsel. Tr. 2144-2154

Russell P. Sherwin, M.D., Los Angeles, Calif. Professor of Pathology, Univ. of Southern Calif., School of Medicine, specializing in medical area of lung diseases. Called as a witness by complaint counsel. Tr. 2235-2312

Albert S. Bush, Northridge, Calif. Professor in School of Engineering and Applied Science; Professor in School of Public Health, UCLA; Head of UCLA Air Pollution Test Facility and Air Pollution Laboratory. Called as a witness by complaint counsel. Tr. 2340-2432

James E. Edinger, Los Angeles, Calif. Ph.D. and Associate Professor of Meteorology, Univ. of Calif., in conducting research in air pollution problems from meteorological aspect. Called as a witness by complaint counsel. Tr. 2434-2502

Stanley N. Rokaw, M.D., Los Angeles, Calif. Specializes in medical area of chest diseases with research in pulmonary physiology and air pollution effects on human health. Called as a witness by complaint counsel. Tr. 2507-2574

John Chipman, Anaheim, Calif. Supervising Engineer, Air Resources Board, State of Calif., formerly with County of Los Angeles, Air Pollution Control District. Called as a witness by complaint counsel. Tr. 2577-2790

IV. *Wash., D.C.: May 17 - May 24, 1972.*

Robert N. Rickles, Stamford, Conn. Ph.D. Chemical Engineering; Executive Director for the Institute of Public Transportation, New York City, formerly Commissioner of Air Resources, New York City. Called as a witness by complaint counsel. Tr. 2800-2899

Thaddeus J. Murawski, M.D., Schenectady, New York. Employed as consultant to the Director of Air Resources, Department of Health, New York State. Called as a witness by complaint counsel. Tr. 2902-2955

Robert E. Carroll, M.D., Delmar, N.Y. Professor of Preventive and Community Medicine, Chairman of the Department, Albany Medical College. Called as a witness by complaint counsel. Tr. 2957-3003

Kenneth D. Mills, Saline, Mich. General Manager, Laboratory Equipment Corporation, Mooresville, Ind. Former positions included Acting Director, Division of Motor Vehicle Pollution Control, HEW, and an assignment to provide Federal technical assistance to the California Motor Vehicle Pollution Control Board. Called as a witness by complaint counsel. Tr. 3026-3154

Walter W. Heck, Raleigh, N.C. Ph.D. in Botany; in charge of the research on the effects of air pollution on vegetation, Environmental Research Center, Triangle Park, N.C. Called as a witness by complaint counsel. Tr. 3157-3194

R.W. Hurn, Bartlesville, Okla. Research Supervisor, Fuels Combustion Research Projects, U.S. Bureau of Mines, Energy Research Center, Bartlesville, Okla. Called as a witness by complaint counsel. Tr. 3196-3344

Aubrey P. Altschuller, Chapel Hill, N.C. Ph.D. in Physical Chemistry; Director of Division

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of Chemistry and Physics, National Environmental Research Center, EPA, Triangle Park, N.C. Called as a witness by complaint counsel. Tr. 3365-3420

William H. Megonell, Springfield, Va. Director of the Division of Stationary Source Enforcement, EPA, Rockville, Md. Called as a witness by complaint counsel. Tr. 3423-3458
V. San Francisco, Calif.: Aug. 15 - Aug. 24, 1972.

Eneas D. Kane, El Cerrito, Calif. Ph.D. in Mechanical Engineering; V.P. of respondent Standard Oil and responsible for all company research programs. During the period of the development of the gasoline additive F-310 was President of Chevron Research Company. Called as a witness by respondent Standard Oil. Tr. 3482-3657

Robert K. Stone, Kensington, Calif. Senior Staff Engineer, Chevron Research Company and V.P. of company for fuels and asphalt. Called as a witness by respondent Standard Oil. Tr. 3658-3816; 3830-3896; 3898-4113; 4268-4350

Gary H. Anderson, El Cerrito, Calif. Attorney associated with Pillsbury, Madison & Sutro. Asst. trial counsel for respondent Standard Oil and called as a witness by senior trial counsel. Tr. 3816-3824

John Harkins, Redlands, Calif. V.P. of Scott Research Laboratories, Inc. which has been involved in the air pollution field since 1959. Witness had overall supervision and control of certain tests relating to the gasoline additive F-310. Called as a witness by respondent Standard Oil. Tr. 4115-4226

William L. Faith, San Marino, Calif. Ph.D. in Chemical Engineering and a consulting chemical engineer dealing with air pollution problems. Called as a witness by respondent Standard Oil. Tr. 4227-4268

Robert L. Chass, Beverly Hills, Calif. Air Pollution Control Officer for the Los Angeles County Air Pollution Control District. Called as a witness by respondent Standard Oil. Tr. 4352-4445

Everett Eugene Spitler, Novato, Calif. Ph.D. in Mechanical Engineering with a minor in statistical design analysis of experiments. Manager of the Fuels Division of Chevron Research Company, Richmond, Calif. Called as a witness by respondent Standard Oil. Tr. 4446-4723; 4980-4983; 6168-6223

Robert Gordon Anderson, Terra Linda, Calif. Ph.D. in Organic Chemistry; one of the inventors of the patents on the gasoline additive F-310. Presently is assistant to the President of Chevron Research Company. Called as a witness by respondent Standard Oil. Tr. 4726-4738

Frank T. Fenton, San Rafael, Calif. Asst. Advertising Manager, Standard Oil Company of California. Called as a witness by respondent Standard Oil. Tr. 4738-4857

Robert A. Schneider, Cincinnati, Ohio. Senior V.P. of Burke Marketing Research Corporation, a consumer research organization primarily known for the testing of television commercials. Called as a witness by respondent Standard Oil. Tr. 4858-4913

Martin K. Starr, New York, N.Y. Ph.D. in Business Administration; Professor of Business Administration, Graduate School of Columbia University; President, The Eddington Group, Incorporated, a market analytic company dealing in computer symbolizations, consumer marketing studies and consumer behavior in the aggregate. Called as a witness by respondent Standard Oil. Tr. 4915-4936

J. Thomas Clark, Avon Lake, Ohio. V.P. of respondent BBD & O in Cleveland, Ohio, and formerly account supervisor for Standard Oil of California account re: advertising campaign for the gasoline additive F-310. Called as a witness by respondent Standard Oil. Tr. 4937-4980

Phillip Samuel Myers, Madison, Wisc. Ph.D. in Mechanical Engineering; Professor of Mechanical Engineering, University of Wisconsin; received Corning Memorial Award for service and expertise in the fields of fuels and engines, and is a former national president of the Society of Automotive Engineers. Called as a witness by respondent Standard Oil.

Tr. 5000-5156; 6224-6241

Max M. Roensch, Birmingham, Mich. Automotive consultant, mainly in the field of emissions; formerly, among other related positions, a staff engineer with Chrysler and chief test and development engineer with Chevrolet. Called as a witness by respondent Standard Oil.

Tr. 5157-5188

VI. *Washington, D.C.: Sept. 14 - Sept. 27, 1972.*

William L. Kent, Fullerton, Calif. Senior Research Associate, Union Research Center, Union Oil Company. Called as a witness by complaint counsel.

Tr. 5212-5253

Robert W. Snyder, Aurora, Ohio. Supervisor, Petroleum Product Development and R&D Services, Research and Engineering Department, Standard Oil Company of Ohio. Called as a witness by complaint counsel.

Tr. 5259-5316

Ralph C. Stahman, Ann Arbor, Mich. Branch Chief, Test and Evaluation Branch charged with testing new motor vehicle emissions control concepts, EPA. Called as a witness by complaint counsel.

Tr. 5325-5404

Carl G. Beard, Charleston, W. Va. Director of West Virginia Air Pollution Control Commission. Called as a witness by complaint counsel.

Tr. 5411-5441

Francis G. Bollo, Houston, Tex. Manager of Research and Development, Shell Oil Company. Called as a witness by complaint counsel.

Tr. 5443-5481

Theodor D. Sterling, West Vancouver, British Columbia, Canada. Ph.D. and formerly Professor of Bio-Statistics and Director of Medical Computer Center, University of Cincinnati, Ohio; Professor in Department of Applied Mathematics, Washington University, St. Louis, Mo.; now Director of Computer Science Program, Simon Fraser University in Canada. Called as a witness by complaint counsel.

Tr. 5484-5683

Robert Ferber, Champaign, Ill. Ph.D. and Research Professor of Economics and Business Administration, also Director of the Survey Research Laboratory, University of Illinois; Editor of the Journal of the American Statistical Association. Called as a witness by complaint counsel.

Tr. 5697-5847

William Kruskal, Chicago, Ill. Ph.D. in Mathematical Statistics; Professor of Statistics and Chairman of the Department of Statistics, University of Chicago. Called as a witness by complaint counsel.

Tr. 5857-5900.

S.B. White, Raleigh, N.C. Senior Statistician, Research Triangle Institute; witness has been employed in the designing of test programs related to automobile exhaust emissions conducted by the EPA. Called as a witness by respondent Standard Oil.

Tr. 5906-5976

Alfred G. Cattaneo, Berkeley, Calif. Doctor of Engineering Sciences, Institute of Technology, Karlsruhe, Germany; formerly with the Technical Advisory Committee of the California Air Resources Board. Called as a witness by complaint counsel.

Tr. 5988-6163

All counsel were afforded full opportunity to be heard, to examine and cross-examine all witnesses presented, and to introduce such evidence as provided for under Section 3.43(b) of the Rules of Practice for Adjudicative Proceedings. The demeanor and the credibility to be accorded all witnesses testifying have been observed and determined in the findings of fact and conclusions made in this initial decision.

Complaint counsel have submitted proposed findings of fact, conclusions and order numbering 482 pages together with a 92 page supporting legal memorandum. Counsel for respondent Standard Oil have submitted proposed findings of fact, conclusions, order and brief in support thereof consisting of 182 pages. Additionally submitted by respondent Standard Oil, with copy to complaint counsel, is a 3 volume appendix of 722 pages in support of respondent Standard Oil's proposed 419 findings of fact. Counsel for respondent BBD & O have submitted proposed findings of fact, conclusions, order and supporting brief of 24 pages overall. Said counsel state for the purposes of their submissions that respondent BBD & O adopts the proposed findings and appendix thereto as submitted by respondent Standard Oil.

Proposed findings of fact and conclusions, orders and supporting legal memoranda, replies thereto and oral argument thereon by respective counsel for the parties have been fully considered. All pending motions by the parties not heretofore ruled upon and not granted in substance in this initial decision are hereby denied.

Proposed findings of fact and conclusions submitted by the respective parties and not adopted in form or substance in this initial decision are hereby rejected as being either irrelevant, immaterial, not necessary of determination and disposition under the pertinent issues, being unduly cumulative, or of insufficient support contra to the greater weight of the substantial credible and reliable factual testimony and exhibits of record in this matter.

After carefully reviewing the entire record in this matter as hereinbefore described and based on said record and the observation of all witnesses testifying, the following findings of fact and conclusions therefrom are made and the following order issued:

FINDINGS OF FACT

1. Respondent Standard Oil Company of California is a corporation organized, existing and doing business under and by virtue of the laws of the State of Delaware, with its principal office and place of business located at 225 Bush Street, San Francisco, Calif. (Complaint, Paragraph One; Standard's Answer, Paragraph 2).

2. Respondent Standard Oil Company of California 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 Chevron and other names to the public (Complaint, Paragraph Two; Standard's Answer, Paragraph 3).

3. Respondent Standard Oil Company of California 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 place of business in the State of California 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 (Complaint, Paragraph Three; Standard's Answer, paragraph 4).

4. Respondent Batten, Barton, Durstine & Osborn, Inc., is a corporation organized, existing and doing business under and by virtue of the laws of the State of New York, with its principal office and place of business located at 383 Madison Avenue, New York, N.Y. (Complaint, Paragraph One; Standard's Answer, Paragraph 2, BBD&O's Amended Answer, Paragraph One).

5. Respondent Batten, Barton, Durstine & Osborn, Inc. is now and for some time past has been an advertising agency of Standard Oil Company of California; and now prepares and places, and for some time past has prepared and placed for publication, advertising material including but not limited to the advertising referred to herein, for the purpose of promoting the sale of respondent Standard Oil Company of California's Chevron gasolines with F-310 (Complaint, Paragraph Two; Standard's Answer, Paragraph 3; BBD&O's Amended Answer, Paragraph Two).

6. Respondent BBD&O admits that it is an advertising agency in competition with other advertising agencies and it is in interstate commerce within the meaning of the Federal Trade Commission Act (BBD&O's Amended Answer, Paragraph Seven).

7. From the outset (Tr. 663-65, 4638), complaint counsel have stated that the complaint's charges are limited to the original F-310 advertisements that were run beginning in Jan. 1970 (Tr. 663-64); for example, complaint counsel stated "it is the original advertisements which the Commission's complaint is concerned with, and those would be on RXS-4, those advertisements for the most part would be contained on pages 1 through 6" (Tr. 665). The initial advertisements consist of a series of five television commercials, identified as the Balloon (RXS-4, p. 2), Bag (RXS-4, p. 2), Torch (RXS-4, p. 1), Meter (RXS-4, p. 3) and Garage Door (RXS-4, p. 3) and the companion radio and printed media advertisements. The record contains the actual television films (RXS-3), radio scripts and copies of the printed advertisements (RXS-4, RXS-5). Storyboards of the television commercials, containing photographs of the televised scenes with the accompanying audio statements, are in RXS-4, pp. 1-3; as indicated in that exhibit, the words overlaid on some of the photographs, so-called "supers," did not appear in the original advertisements but were added in June 1970. Attachments 1 and 2 to the com-

plaint are reproductions of the bag and balloon advertisements used in the printed media.

8. In determining whether the advertisements make the representations alleged in the complaint challenged in this proceeding, they must be examined one by one and as a whole; examined not only for any explicit representations of the type alleged, but also for any statements or depictions which may be said to imply the alleged representations; and the capacity of the advertisements to deceive should be judged upon the net impression of the advertisements evaluated from the perspective of the audience to whom they were directed. Advertisements concerning gasolines for automobiles are directed to persons who own or operate automobiles, and such persons are of intelligence sufficient to allow them to obtain drivers' licenses, and to allow them to understand and observe traffic laws and other items of that nature (Tr. 2101).

Complaint counsel called no witnesses to testify as to the meanings of the advertisements, for the point that they represented or were understood by the public to have the meanings alleged in Paragraph Five of the complaint. The only evidence complaint counsel offered for this purpose was consumer surveys. That evidence cannot be relied upon for the purpose of providing the meaning or public understanding of the F-310 advertisements. Therefore, this administrative law judge must examine the challenged advertisements themselves to determine their meaning (Tr. 208-09; Federal Trade Commission's Organization, Procedures and Rules of Practice, §14; *Federal Employees' Distributing Company, Inc., et al.*, 56 F.T.C. 550, 555-56 (1959)).

There is a substantial difference in meaning between "reduces exhaust emissions" and "reduces all pollutants in exhaust emissions." The former was used in the advertisements; the latter was not. The former does not include the latter; the latter does embrace the former. The advertisements must be judged as they are, not as complaint counsel would want them to appear.

Where the challenged advertisements identify particular types of pollutants in motor vehicle exhaust emissions, which it is represented the use of Chevron gasolines with F-310 will reduce, the only two types named are unburned hydrocarbons and carbon monoxide (*e.g.*, attachments 1 and 2 to the complaint). None of the challenged advertisements represented that F-310 would reduce any pollutants in motor vehicle exhaust emissions, other than hydrocarbons and carbon monoxide; more particularly, no advertisement claimed F-310 would reduce exhaust emissions of nitrogen oxides or lead particulates (RXS-4, RXS-5); indeed, the "Facts" advertisement, published in May 1970, stated (RXS-4, p. 28):

F-310 IS BY NO MEANS THE TOTAL SOLUTION TO THE AIR POLLUTION PROBLEM. It reduces hydrocarbon and carbon monoxide emissions. It has no beneficial effect on emissions of nitrogen oxides, or of lead particulates, and this we have never claimed.

9. Guidance is found in the cases and principles summarized in *Federal Employees' Distributing Company, Inc., et al.*, 56 F.T.C. 550, 557 (1959):

In the following findings with respect to what the advertisements of respondents in question would mean, the hearing examiner has given consideration to the foregoing principles as well as the following ones: "(W)hatever statements are made, must be taken with and accepted in their ordinary sense." *DeForest's Training, Inc. v. F.T.C.* (C.C.A. 7, 1943), 134 F.2d 819, 821. "Words mean what they are intended and understood to mean." *Bennett, etc. v. F.T.C.* (C.A.D.C., 1952), 200 F.2d 362, 363. The Commission cannot interpolate language into advertising that is not there in order to construe it as misleading. *International Parts Corp. v. F.T.C.* (C.C.A. 7, 1943), 133 F.2d 883, 888. "Advertisements must be considered in their entirety and as they would be read by those to whom they appeal." *Aronberg v. F.T.C.* (C.C.A. 7, 1942), 132 F.2d 165, 167. See also *Ford Motor Co. v. F.T.C.* (C.C.A. 6, 1941), 120 F.2d 175, 182, *cert. denied* 314 U.S. 668. "The important question to be resolved is the impression given by the advertisement as a whole. * * * (A)dvertisements which create a false impression, although literally true, may be prohibited." *Rhodes Pharmacal Co. v. F.T.C.*, 208 F.2d 382, 387, and authorities cited. If the advertising has a capacity and tendency to deceive there is no requirement that anyone be actually deceived, or that there was an intent to deceive.

The complaint herein adds words to the challenged advertisements and deletes words which do appear in the advertisements. In particular, the words "*reduces exhaust emissions from dirty engines*" or the words "[a] *reduction of exhaust emissions from dirty engines*" appear in each of the challenged advertisements, but these words are either omitted, or other words of a different meaning are substituted therefor, in paragraph five of the complaint.

The challenged advertisements do not represent, either directly or by implication, that F-310 reduces all pollutants in motor vehicle exhaust, much less that it eliminates all such pollutants, or other asserted automotive pollutants. The actual representations are that use of F-310 will "significantly reduce exhaust emissions from dirty engines." In some instances, notably in conjunction with references to the Scott Research Laboratories tests, the representation is in terms of "sharply reduces" (attachment No. 1 to the complaint) or reduces "dramatically" (attachment No. 2 to the complaint); in no instance is the representation stated in terms of "eliminates" exhaust emissions, or in any comparable terms, the implication of which is equivalent to total removal. While variously stated in the challenged advertisements, the central theme of the representations is consistently the same, namely that the use of F-310 will (1)

reduce, not eliminate, exhaust emissions (2) from dirty engines, as the following examples demonstrate:

A. The Torch TV commercial (RXS-4, p. 1) states: "Formula F-310, that reduces exhaust emissions from dirty engines."

B. The Bag TV commercial (RXS-4, p. 2) states: "a significant step in the reduction of exhaust emissions from dirty engines."

C. The Balloon TV commercial (RXS-4, p. 2) states: "Formula F-310 that reduces exhaust emissions from dirty engines."

D. The Meter TV commercial (RXS-4, p. 3) states "F-310 reduces exhaust emissions from dirty engines" and "A significant step towards solving one of today's major problems."

E. The Garage Door TV commercial (RXS-4, p. 3) states F-310 "has accomplished the reduction of exhaust emissions from dirty engines."

F. Radio Announcement No. 1 (RXS-4, p. 4) states: the testing proved "F-310 sharply reduced exhaust emissions entering the air from dirty engines."

G. Radio Announcement No. 2 (RXS-4, p. 7) states: "a remarkable gasoline breakthrough * * * substantially reduces exhaust emissions entering the air from dirty engines—a significant step towards solving one of today's major problems."

H. Attachment No. 1 to the complaint is representative of the Bag, and attachment No. 2 is representative of the Balloon, advertisements in newspapers and magazines. Both state (with immaterial differences):

Tests conducted by Scott Research Laboratories, an independent research group, showed that Chevron gasolines with F-310 reduced unburned hydrocarbon and carbon monoxide exhaust emissions dramatically. Clearly, this is a major step towards solving one of today's most urgent problems.

The advertisements then continue with explanations of how excessive exhaust emissions of unburned hydrocarbons and carbon monoxide occur in dirty engines which have accumulated mileage and buildup of deposits.

A case in point is *International Parts Corp. v. FTC*, 133 F.2d 883 (7 Cir. 1943), where petitioner advertised that its automobile muffler "prevents" rust and corrosion (133 F.2d at 884). The Commission interpreted the word "prevents" to refer to "permanent" protection against rust or corrosion (133 F.2d at 885). The Seventh Circuit held the Commission had gone too far:

The petitioner never represented that the finish on its mufflers would prevent rust *permanently*. The word "*permanently*" was interpolated by the Commission. * * * The Commission cannot interpolate into the petitioner's representations words not there, and then find the petitioner guilty of misrepresentation because the petitioner's product does not meet the Commission's revised representations. The word "prevents" is a word of

common understanding, and the common acceptance of this word carries no connotation of permanency. The petitioner will be presumed to have used the word in its ordinary and commonly accepted understanding, in the absence of any showing to the contrary. Without the word "permanently" interpolated, there is no misrepresentation. The word "permanently" is the Commission's word, not the petitioner's. The petitioner answers for its own representations, and not those of the Commission (133 F.2d at 885-86).

Similarly in *Heinz W. Kircher, t/a Universe Company*, 63 F.T.C. 1282, Docket 8538 (1963), the Commission found that the claim of "invisibility" for an inconspicuous swimming aid was *not* deceptive:

To be sure, "Swim-Ezy" is not invisible or impalpable or dimensionless, and to anyone who so understood the representation, it would be false. It is not likely, however, that many prospective purchasers would take the representation thus in its literal sense. True, as has been reiterated many times, the Commission's responsibility is to prevent deception of the gullible and credulous, as well as the cautious and knowledgeable (see, e.g., *Charles of the Ritz Dist. Corp. v. FTC*, 143 F.2d 676 (2d Cir. 1944). *This principle loses its validity, however, if it is applied uncritically or pushed to an absurd extreme.* An advertiser cannot be charged with liability in respect of every conceivable misconception, however outlandish, to which his representations might be subject among the foolish or feeble-minded. Some people, because of ignorance or incomprehension, may be misled by even a scrupulously honest claim. Perhaps a few misguided souls believe, for example, that all "Danish pastry" is made in Denmark. Is it therefore, an actionable deception to advertise "Danish pastry" when it is made in this country? Of course not. A representation does not become "false and deceptive" merely because it will be unreasonably misunderstood by an insignificant and unrepresentative segment of the class of persons to whom the representation is addressed (Final Order and Opinion, 63 F.T.C. 1282, 1289-90 (Nov. 7, 1963)).

The above principles have also been applied in two recent decisions. In the *Pfizer, Inc.* case,* the Commission reemphasized that its responsibility to prevent deception of the gullible and credulous, as well as the cautious and knowledgeable, "loses its validity; however, if it is applied uncritically or pushed to an absurd extreme in respect of every conceivable misconception, however outlandish, to which [the] representations might be subject among the foolish or feeble-minded" (Op. 13-13a). And in *ITT Continental Baking Company, Inc. [Wonder Bread]*, (1972) Docket No. 8860, Initial Decision, pp. 75-76, the administrative law judge rejected the interpretations of the advertisements alleged in the complaint and stated:

Complaint counsel's case was based upon a false assumption (to wit, the respondents' advertising said certain things which it did not say either directly or by implication) * * *

10. Nowhere in the challenged F-310 advertisements is it represented, either directly or by implication, that the use of Chevron gasolines

* Commission Opinion, July 11, 1972, Docket No. 8819 [81 F.T.C. 23, 65]. (See also, oral argument in the present matter, Mar. 28 and 29, 1973.)

with F-310 would reduce *all* causes and *all* sources of air pollution, much less is it represented that F-310 would reduce or have any "effect upon industrial and other nonmotor vehicle sources of air pollution." Even the most cursory examination of the advertisements discloses that the claims for F-310 are limited to exhaust emissions of motor vehicles and that the only pollutants specifically claimed to be reduced are hydrocarbons and carbon monoxide.

Air pollution from steel mills and industrial plants (Tr. 175-76, 352), power plants (Tr. 207, 352), home heating units (Tr. 207, 352), and agricultural burning (Tr. 352), have also been urged by complaint counsel. These assertions are a challenge to logic. Common sense suggests that persons living in areas with serious air pollution problems caused by industrial or other nonmotor vehicle sources, would, if anything, more readily recognize that reducing exhaust emissions from motor vehicles could have no effect on such other sources of air pollution.

Glenn C. Messer, a witness called by complaint counsel as an expert in market research, was cross-examined regarding the representations made in the initial F-310 newspaper advertisements (Messer 1113). He recognized that the F-310 representations "only related to the car" and testified (Messer 1114):

Q. Did you get any impression from the advertisements that F-310 would do anything but operate on the exhaust emission from motor vehicles?

A. No.

Q. You didn't gain any impression from reading the advertisements that there was any claim that F-310 would reduce other causes of air pollution? By "other," I mean non-automotive causes.

A. No.

Q. When you characterized the advertisements in this Forward as saying "helps toward cleaner air," did you gain any impression from the advertisements that F-310 would totally eliminate all types of automobile air pollution?

A. No; not at all.

Q. It was simply going to be a help to reduce it?

A. A contributor.

Much of the evidence which complaint counsel offered in this regard was directed towards showing the existence of areas where pulp mills, cement plants, swamp gas or other nonmotor vehicle sources were the principal causes of air pollution. Moreover, existence of such conditions is a matter of common knowledge. In fact, Standard offered to stipulate during prehearing conferences that "there are local conditions in some areas of the country where local or nearby sources of air pollution other than from motor vehicles are so great" that the "total elimination of all motor vehicles" in "those localities would not eliminate, nor reduce the major causes of air pollution in such localities" (Tr. 848-49, 885, 889, 892-93).

11. Such localized conditions do not detract from the importance of reducing air pollution from motor vehicles. Federal regulations controlling motor vehicle emissions are equally applicable in such localities as they are where the automobile is the major contributor to air pollution. The interstate character of air pollution was recognized by Congress in enacting laws to control air pollution on a *national* basis. The Stipulated Evidence establishes:

The need to control motor vehicle pollution *nationally* was recognized by the Congress when it adopted the 1965 amendments to the Clean Air Act. In enacting this legislation, the Congress took into account the *interstate nature of the problem in justifying the need for uniform nation-wide control standards*. (Stip. Evid. RXS-114, p. 22 of CX-91). And further "the occurrence of air pollution in other areas of the United States manifested the need for action on a *nationwide* scale." (RXS-114, item 6 of CX-73)

Under congressional authority regulations were issued controlling "on a national basis * * * emissions of hydrocarbons and carbon monoxide" commencing with 1968 model cars (CX-91, p. 22; RXS-22a, b; Megonnell 3452-53). Indeed, the Stipulated Evidence establishes the "urgency" of the need for immediate adoption of "national standards":

The *urgency* of the need to ameliorate problems of air pollution in general and those associated specifically with automotive emissions *required* that national standards be established *immediately* upon adoption of the Motor Vehicle Air Pollution Control Act (RXS-114, item 2 of CX-162, entitled "Automotive Air Pollution"—Fifth Report of the Secretary of Health, Education and Welfare to the Congress of the United States, dated Dec. 1966, p. 3).

National control of automotive air pollution is in part grounded in the fact that motor vehicles and air pollution are transient and often migrate from area to area. Dr. Joseph Behar, a witness called by complaint counsel, stated that he devoted much of his time and effort to studying the movement of air pollution from one locale to another (Behar 1924-25, 1956-74). Complaint counsel's witness William H. Megonnell testified that New York charges New Jersey is a source of its pollution, and New Jersey blames New York (Megonnell 3442). And complaint counsel's witness Dr. Walter Heck testified that the effect on vegetation of pollutants emitted from automobiles is not limited to the local area where the pollutants are formed, because:

As your air mass moves over the countryside the primary pollutants are continuously forming secondary pollutants. In addition, they are having primary pollutants added to them as they move across the countryside.

So, there is a continuous production of the secondary pollutants from the primary pollutants in the air.

Q. When you talk about moving across the countryside, how large an area are we talking about, then?

A. As an example: in the eastern parts of the United States we have seen injuries at least 100 miles from major urban sources and that is about as far as you can get from a major urban source in the east (Heck 3169-70).

Another illustration of the need for and importance of nationwide control of automotive air pollution is found in the uncontradicted testimony of complaint counsel's witness, William H. Megonnell of the Environmental Protection Agency. He testified on cross-examination that congressional controls of automobile emissions apply throughout the country, notwithstanding the fact that there are local areas where the automobile is an insignificant contributor to air pollution (Megonnell 3452). The reason for national regulation was stated by Mr. Megonnell as follows: "[I]n the field of public health there is a well-established principle that you regulate based on the worst situation" (Megonnell 3452). The stipulated evidence is in accord with Mr. Megonnell's testimony:

The policy which will prevail in the establishment of new *emission standards on a national level* is one which will recognize the needs of the most susceptible members of the population at risk and the quality of air where the risk is highest (RXS-114, item 1 of CX-162, entitled "Automotive Air Pollution"—Fifth Report of the Secretary of Health, Education, and Welfare to the Congress of the United States, dated December 1966, p. 2).

12. Complaint counsel offered a number of exhibits as surveys of public opinion. None of these surveys was conducted for the purpose of eliciting consumer reaction to any allegation of the complaint, nor were any of these surveys conducted to evaluate consumers' understanding of respondents' advertising. After carefully reviewing each of these exhibits, and the testimony of the witnesses Weitzman, Messer, Miller, Hitch, Light, Cormack, Bardsley, Starr and Schneider, it must be concluded that none of these exhibits constitutes probative evidence of the allegations of the complaint. Due to the diverse nature of these survey exhibits, it is appropriate first to consider certain matters which are of general application. The testimony of the witnesses Starr, Schneider and Light is most helpful in this regard, and it is concluded that they are well qualified as experts in the field of marketing and consumer research.

At the outset, none of complaint counsel's survey exhibits was designed to measure consumers' understanding or interpretation of respondents' advertisements and the evidence is conclusive that none can properly be used for that purpose. Next, these exhibits do not reflect consumers' responses to the interviewers' questions; instead, all responses have been grouped under general, catch-all phrases or categories called "codes" or "coded responses." Thus, the language reflected in the codes is not intended to and does not necessarily reflect the opinion or statement of even a single consumer. For the same and other reasons, the numerical summary of individual responses (expressed in percent of those interviewed whose responses fall within a particular category)

cannot be relied upon as evidence of consumer understanding of Standard's advertisements. Further, uncontradicted evidence establishes that the results stated in some of the surveys are unreliable and misleading because of the influences of competitive advertising and adverse publicity.

Surveys are designed for specific purposes or objectives and depending upon the objective, different questions will be asked (Starr 4918; Schneider 4866, 4868-69). The evidence is uncontradicted that a survey conducted for one purpose cannot be relied upon to serve a different purpose. As the witness Schneider testified (Tr. 4884):

Market researchers especially avoid that, and have great difficulty in keeping others from doing it. It is rather easy to try and extrapolate a number from a report and use it for some other purpose. But it is very dangerous.

And I think any researchers who have to deal with brand managers in a company, for example, find that the most difficult part of their job is getting research to be used properly.

So it is a danger, and researchers are very aware that you can only use a research project for the purpose for which it was originally intended, because these are not all-purpose studies in that the information could be used for many ways.

You have to have one purpose, one objective. And you satisfy that objective with a particular design of a research project. And it is information that is only useful to that end.

The witnesses Schneider and Starr confirmed this conclusion (Schneider 4908; Starr 4921-22). For example, a tracking survey designed to measure brand awareness or brand switching is a totally different type of study than a survey to measure consumer understanding of advertisements (Schneider 4864-66, 4901-02, 4860; Light 1799-1800; Starr 4927, 4921-22, 4924-26).

None of the surveys offered by complaint counsel was conducted for the purpose of measuring consumer understanding or interpretation of the F-310 advertising, and none, therefore, can be used for that purpose. Further, none of the surveys sought responses to the F-310 advertisements as a whole; all such questions were oriented toward specific slogans or copy lines, and therefore it is "impossible" as Dr. Starr testified, to rely upon the responses as proof of how consumers understood the actual advertisements (Starr 4924-25). In evaluating consumer understanding, Dr. Starr explained, it is essential that the question be presented in the full context of the advertisement (Tr. 4925);

[t]here is ample documented psychological evidence that people respond differently to bits and pieces than [to] the entire advertisement. * * * [T]o remove any one piece of it and test it in isolation from the others runs counter to all classical theory of psychology, consumer research, and all other aspects.

In each of complaint counsel's surveys (Light, 1824-25), consumer responses are summarized in the form of "codes"—i.e., general, catch-all

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phrases (Light 1747-52; Bardsley 1920Z-2, 1920G-H, 1920K, 1920T-W). The codes are simply:

a label that a research reporter found convenient to use, it doesn't mean that any respondent at all used those very words and, in fact, it is likely * * * that for some of those codes not a single respondent used any of those words (Light 1754, 1807-08, 1750, 1753-54, 1815).

For example, in CX-147, Table 13-A, the reported results might be erroneously interpreted to show that 17 percent of the consumers responded to the interviewer's question by answering "complete combustion." As Dr. Light explained (Tr. 1807):

This is a good example of a code * * * probably nobody used that phrase, but the researcher used the phrase to represent what a lot of people might have said. I am pretty darn certain nobody did say such a thing, we just don't get that kind of language from consumers. The fact that 17 percent of them said it, I am sure 17 did not, and I am pretty positive none did.

The same kind of interpretation would apply on all of the codes. *These are codes, these are convenient labels, they are words of the researcher and they are not the words of the consumer.*

Additional examples are discussed throughout the record (e.g., Light 1807-08, 1814-16, 1824-26, 1750; Bardsley 1920V through 1920W; Messer 1122-24; Weitzman 1201).

Each of the survey exhibits quantifies consumers' responses, i.e., aggregates the responses and assigns a percentage figure thereto. The percentage figures reported, however, cannot be used as evidence to establish that the stated percentage of the general population has the same understanding or would respond to the same question in the same manner. Respondents have raised serious questions, not answered by complaint counsel, concerning the reliability of the survey exhibits (Bardsley 1920K; Miller 986-88, 1004-05; Light 1868-69; see also Light 1801-04; Cormack 1920K-15 through 1920Z-17; Schneider 4912-13, 4866-69; Starr 4926-27, 4929-35; Messer 1127-28).

Further, there is an overriding problem present in all market research illustrated in the testimony of the witness Schneider. Prior to testifying in this proceeding, he had analyzed over two hundred research evaluations in his company's files and concluded (Tr. 4867, 4866-69):

* * * that anywhere from 10 to 15 per cent of * * * [those consumers whom] we feel very confident have seen the commercial, play back elements that are specifically unrelated to the advertising.

The foregoing is confirmed by Dr. Starr (Tr. 4929-35). Examples include a survey run by BBD&O on a completely fictitious product in

which 22 percent of the consumers interviewed said they were aware of the product; 8 percent said they had tried it; and 2 percent said they had bought it a second time (Light 1802-03). Another example is in CX-147 where 10 to 21 percent of the consumers indicated familiarity with advertisements of F-310 before any F-310 advertisements had been run (Light 1801-03; Starr 4928-29). Complaint counsel attempted to establish through Dr. Starr that this confusion factor could be quantified at something on the order of 10 to 15 percent, but the witness responded (Tr. 4935):

No, sir. This was a number I gave upon being asked to give an estimate of an average figure. It can be much lower, and it can be much higher, as is the case in the 21 percent figure that I cited, being in the table in CX-147.

But it depends on the area, the amount of attention it has generated in respect to the consumer's mind, and you can find there are cases when individuals are not at high levels of confusion, but you have to get a benchmark of what that level is to find it out.

Complaint counsel did not offer any "benchmark" evidence which would permit the trier of fact to make an evaluation of the accuracy of the results reported in these surveys.

Consumers are often unable to differentiate between sources of information (Light 1795-96). Advertisements by competitors of their products and inaccurate publicity regarding a product influence consumer responses to a survey. A consumer may think he is stating to an interviewer his understanding of certain advertising, but in fact the consumer may be repeating another advertising message concerning another product, or may have been influenced in his response by characterizations of the advertising in newspaper articles. This can render an otherwise reliable survey invalid (Schneider 4870-72, 4903; Starr 4929-31; Light 1857-58, 1844-45). Respondents' Exhibit 54 is a partial compilation illustrative of the types of advertisements published by Standard's competitors from Dec. 1969 through Aug. 1970 (Fenton 4805; see also, Messer 1114-15, 1118-19).

13. Complaint counsel called John M. Miller, a project and research director with the advertising agency for Humble Oil and Refining Company, to testify in regard to CX-170 (Tr. 952-53, 958-59, 963-64). Mr. Miller did not know the actual purpose of the survey (Tr. 963-64), although he thought the purpose was to get a "general indication of consumer opinion" on "air pollution, the automobile, gasoline and lead in gasoline" (Tr. 956, 961-64, 989-90). Mr. Miller did not participate in the interviewing process (Tr. 964); could not verify the accuracy of the data reported (Tr. 965); read only a small portion of the questionnaires and did not tabulate the results (Tr. 965-66); the execution of the survey departed from accepted procedures and techniques for random sam-

pling in a number of particulars (Tr. 997-98, 967-68, 969-72); and the possibility of various kinds of bias in the test results existed (Tr. 984, 986, 995-1005, 1057-58). Based upon the testimony of Mr. Miller it appears that the persons interviewed in each of the cities surveyed were able to distinguish between air pollution and other social problems, between air pollution caused by automobiles and air pollution caused by industry; and that there was no evidence the public would expect changes in gasoline to cause a reduction in air pollution from sources other than the automobile (Tr. 1030-32). The survey had no connection with the F-310 advertisements, and it does not constitute probative evidence of any allegations of the complaint.

Complaint counsel called Glenn C. Messer, director of marketing services of the advertising agency retained by the Standard Oil Company of Ohio (Tr. 1059, 1063) to identify these exhibits, which were prepared for that company. Commission Exhibit 132 is a report of a telephone survey in Cleveland, Ohio, taken to "get some reading" on consumer awareness of pollution levels, the major causes of air pollution and the degree of interest in reduced lead in gasolines (Tr. 1062). Due to nonrandom sampling, the reported results contain nonquantifiable errors exceeding 10 percent (Tr. 1065) and are suitable for obtaining only "a general indication of what the tenor of the public's feelings are like" (Tr. 1066-67, 1099-1100). The survey does not show anyone believes changes in gasoline would reduce pollution from sources other than the automobile, or that anyone confuses the distinction between automotive and nonautomotive sources of air pollution (Tr. 1089).

Commission Exhibit 131. This was a survey conducted for Sohio in the Los Angeles area in Feb. 1970 to measure the effects of F-310 advertising on brand awareness and brand switching (Tr. 1110-11, 1113). There is no evidence that the coded responses represent the opinion of any consumer (Tr. 1122-30, 1132-35); the reported results are quantitatively inaccurate (Tr. 1127-28) and also reflect the impact of competitive advertising (Tr. 1129-30, 1114-16, 1118-19).

Commission Exhibit 172. This exhibit reports two surveys performed in Cleveland, which were of a preliminary and exploratory nature designed to get "a little knowledge of consumer understanding" of the potential market for unleaded gasolines (Tr. 1148-49, 1150). They had nothing to do with Chevron gasolines (Tr. 1153); were deliberately biased in favor of male respondents (Tr. 1148, 1150-51); and the results were distorted by contemporary advertising and news media emphasis on the removal of lead from gasolines (Tr. 1158). The exhibit has no probative value except to show that consumers are able to distinguish

between various pollutants, such as carbon monoxide and hydrocarbons, in automobile exhaust (CX-172 A, p. 14; Tr. 1158).

Commission Exhibit 130. This memorandum is a summary of interviews of 20 Chevron dealers and 6 Shell dealers in Los Angeles on Feb. 4, 1970 (Tr. 1160-61, 1165). Mr. Messer did not conduct the interviews and could not remember the name of the employee who did (Tr. 1171); he testified this was not in any sense of the term a survey (Tr. 1164); nor was it even a research report (Tr. 1165). As a market researcher, he would not base any decisions on this document (Tr. 1174-75); and when questioned about specific aspects of this exhibit which he wrote he could offer no explanation except to respond, "I don't know what that means, I would have to say I can't interpret that, something is screwy" (Tr. 1174). Although originally admitted over respondents' objections, after reviewing Mr. Messer's testimony and the testimony of Dr. Light, Professor Starr and Mr. Schneider, it must be concluded that the exhibit has no probative value.

14. The following exhibits reflect research conducted by BBD&O. Dr. Light was called as an expert witness to explain them. Commission Exhibit 146. This was a preliminary survey conducted May 8, 1969, eight months before the publication of the first F-310 advertisements (Tr. 1779, 1738-39). Its purpose was to provide some form of guidance in formulating future advertising (Tr. 1779-80), or more simply stated, to make sure "we are not going to introduce a product nobody wants" (Tr. 1780). Dr. Light testified there was nothing in this survey which could be used in any way to determine how a consumer would later interpret the F-310 advertisements (Tr. 1781), and the witness Schneider testified he thought it was "obvious" that this exhibit "couldn't be used as an indication of what was gained from the advertising" (Schneider 4873-74).

Commission Exhibits 147, 148 and 150. Commission Exhibit-147 was conducted as a benchmark before the F-310 advertising campaign began; Commission Exhibits 148 and 150 were alternating benchmark and tracking studies designed to measure changes in brand awareness (Tr. 1794-95, 1799-1800, 1818-19; CX-150, pp. 1-4). Collectively, the three exhibits reflect different portions of a multiphase study, originally intended to evaluate the effectiveness of the F-310 campaign (Tr. 1794). Due to adverse publicity in the news media regarding F-310 (RXS-55) and to competitive advertising (RXS-54), the study was abandoned (Tr. 1827, 1831). It became evident that these effects rendered the results of the study invalid. This study was *not* designed to measure consumers' understanding of any of the F-310 advertisements or what the adver-

tisements communicate (Tr. 1794, 1799; Schneider 4874-75, 4879-80; Starr 4921-22, 4932-33); rather it was designed to measure changes in brand awareness (Tr. 1794, 1799-1800, 1809-10, 1818-19; Schneider 4874-75, 4879-80; Starr 4921, 4932-33). The two are not the same thing and a tracking study such as this cannot be relied upon as evidence of consumer understanding of F-310 advertising (Tr. 1825-26; Schneider 4882-83, 4874-75; Starr 4935-36, 4921-22).

Commission Exhibit 149. This survey was designed to sample public awareness concerning five F-310 television commercials to aid in the development of further advertising (Tr. 1835); it was not designed to determine how consumers understood the advertisements (Tr. 1835-36, 1846). It suffers, therefore, from the same basic defect as the preceding three exhibits, namely having been designed for one specific purpose, it cannot be used for another. It has no probative value in determining consumer understanding of the F-310 advertisements (Schneider 4881-82; Starr 4921-23). Adverse publicity and competitive advertising campaigns also rendered the results of this survey invalid (Tr. 1845-46, 1852-53, 1857-58, 1860-61, 1868-69; Schneider 4877-78, 4881-82; Starr 4929-32).

Rejected Surveys—CXID-133, CXID-134, CXID-144, CXID-174. These exhibits also concern consumer surveys and were offered by complaint counsel and objections of respondents were sustained. In reviewing the entire record, including the testimony of Dr. Starr and Mr. Schneider, it must be concluded that these exhibits were properly excluded for reasons previously stated and for the additional reason that none of the excluded surveys was conducted for the purposes for which complaint counsel seek to offer them (Tr. 1211-12; 4907-08; 1722-24; 1920Z-18 through 1920Z-22 and 1920Z-35; 1920X through 1920Y).

15. As a part of its corporate organization, Standard has a product engineering department, staffed with scientists and engineers (Kane 3487-89; Fenton 4741-43). The product engineering department has the primary corporate responsibility to review and evaluate proposed advertising claims and representations for Standard's products to assure that such claims and representations are technically accurate and are supported by reliable scientific and engineering data (Kane 3487-89; Fenton 4741-43). The claims for F-310 which are the subject of this proceeding were reviewed and approved by the product engineering department (Fenton 4741-43, 4745, 4755; Kane 3489).

Chevron Research Company is a subsidiary of Standard that conducts research and development work on refining processes, petrochemicals, lubricants and all fuels including gasolines, jet fuels, diesel fuels, fuel oils and residual fuels (Stip. Fact 8, RX-113). Chevron Research operates a research center at Richmond, California, which includes more

than 20 buildings on a 15.5-acre site, employs over 900 chemists, engineers, mathematicians, physicists and technicians and has a total staff of 1,050 (Stip. Fact 8, RX-113). Over 50 percent of the technical personnel hold masters or doctors degrees (Kane 3493-95, 3497). Chevron Research operates on a budget which in 1970 exceeded \$25,000,000 (Stip. Fact 8, RX-113). It is one of the largest research companies of its kind west of the Mississippi (Kane 3493-94). Chevron Research performed the research and development work which resulted in the invention and commercialization of F-310 (RX-6b, pp. 6-11; RXS-6h, i, j). It conducted tests of F-310 and participated in the design, supervision and analysis of the tests conducted by independent testing laboratories. Chevron Research has played an active role in research to control harmful emissions from automobiles ever since the involvement of such emissions in the formation of photochemical smog was first demonstrated in the early 1950s (RXS-6f, p. 82; Stone 3830-33).

In 1963 Chevron Research scientists began test work on polybutene amine additives. The early polybutene amines added, for the first time, the capability of controlling deposits on the underheads of intake valves (Stone 3771, 3774, 3776; RXS 6e, pp. 52-55). Further work revealed that certain polybutene amines could also control the buildup of sludge and varnish on pistons, positive crankcase ventilation (PCV) valves and throughout the crankcase area (RXS-6b, p. 4; RXS-6e, p. 56; Stone 3769-76, 3779-80). This resulted finally in 1968, in the F-310 additive package. It consisted of a specific polybutene amine called F-309, at a concentration of 400 ppm (active), 1600 ppm of a carrier oil, designated Zerolene 9, and 2.5 to 5 ppm (active) of a demulsifying agent designated F-311 (RXS-6b, pp. 6-7; RXS-6e, p. 72; Kane 3514-15, 3526-27; Stone 3784-86). "F-310" is a trademark registered with the United States Patent Office to designate the additive package (RXS-6x, App. Q, p. 1).

On Feb. 23, 1971, the United States Patent Office issued Patent 3,565,804 to Chevron Research Company covering the polybutene amine component in F-310 (Stip. Fact 1, RXS-113). The issuance of such a patent is presumptive evidence that F-310 is a new and useful product produced by the exercise of inventive ingenuity (35 U.S.C. §§101, 102, 103, 131, 282; *Brenner v. Manson* (1966), 383 U.S. 519, 528, *et seq.*; *King-Seeley Thermos Co. v. Refrigerated Dispensers, Inc.*, 354 F.2d 533, 537 (10 Cir. 1965); *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1965)).

16. In addition to its own extensive testing of F-310, both in the laboratory and in the field, Standard elected, before introducing F-310 to the market, to retain an independent testing laboratory to run still further tests of the product (Kane 3529-30; Stone 3846-47). Scott Research Laboratories was selected for this purpose. The Scott tests are

described in detail in RXS-6f, pp. 92-97, and Appendices H (RXS-6o), I (RXS-6p) and J (RXS-6q) of the Technical Summary RXS-6) and in the transcript (Stone 3846-78 and Harkins 4121-46).

Scott Research Laboratories, Inc. is an independent manufacturing, research and testing organization involved in nearly all phases of the air pollution field since 1959 (Harkins 4117). Its laboratory in San Bernardino, Calif., where its research program on F-310 was performed, is fully equipped to do work in the field of vehicle emissions (Harkins 4118). Scott Research Laboratories conducts both "research programs" and "test programs" in the field of automotive emissions. In an impartial "research program" such as that conducted on F-310, Scott personnel design the test and have "total control over the program." In a "test program," Scott measures emissions only, with no control over vehicle operation prior to the measurement (Harkins 4120-21). Scott, because of its research and test work for many governmental and industry organizations, takes particular care to maintain its objectivity and impartiality (Harkins 4118-19). Scott, at the time of its research program pertaining to F-310, was "the leading laboratory of its type in the entire country;" its credentials "were outstanding" (Fenton 4749; RX-2, p. 10; Stone 3861-62).

The validity of the test procedures and the accuracy of the test results, demonstrated the ability of F-310 to reduce exhaust emissions from dirty engines by an average of 50 percent in the case of unburned hydrocarbons, by an average of 33 percent in the case of carbon monoxide and to improve gas mileage by an average of 7.7 percent.

Standard's witness Dr. E.E. Spitler testified that, after carefully reviewing the Scott tests to assure the accuracy and validity of all the test data (Spitler 4448-49), he concluded that F-310 would substantially reduce hydrocarbon and carbon monoxide emissions from dirty engines (Spitler 4449-50, 4498-99); and that with all the prior experience and experiments of Chevron Research (Spitler 4449-50), it was logical to conclude from the Scott tests that "F-310 would have an average net effect of reducing hydrocarbon and carbon monoxide emissions from cars with less dirty engines" (Spitler 4450).

Standard's witness John Harkins testified that on the basis of all his experience he did not have any reservation at all as to the accuracy and the validity of the tests of F-310 and the results obtained (Harkins 4173) and his conclusion from the Scott tests was that "the use of a gasoline containing F-310, in a vehicle which had deposits in the carburetor throttle body and in the PCV valve, would result in the removal of these deposits, and subsequently reduction in the exhaust emissions" of the

order of 50 percent for unburned hydrocarbons and one third for carbon monoxide (Harkins 4145-46).

Standard's expert witness Dr. Phillip S. Myers testified that he made his own analysis of the Scott test data, as a result of which he was satisfied that the data were accurate, in agreement with engineering theory, and that the test constituted "an unequivocal demonstration" of the effect of F-310; that "unquestionably, during the dirty-up phase, air/fuel ratio decreased, emissions increased; during the clean-up phase, air/fuel ratio increased, emissions decreased" (Myers 5122-23, 5510-23; RX-107; RX-108).

Standard's expert witness Max Roensch testified that he reviewed the Scott tests and particularly the procedures that were employed to determine their suitability with respect to the object of the test, as well as "the overall control applied to the test to assure the validity of the results" (Roensch 5168). He concluded that the test had been well done; he could find nothing to criticize in the conduct of test; he considered it was a proper means of evaluating the ability of F-310 to reduce emissions of hydrocarbons and carbon monoxide and that it demonstrated F-310's deposit-removal capability (Roensch 5168-69).

Particularly notable is the counsel's expert witness on the subject of tests, Kenneth D. Mills, formerly of the Environmental Protection Agency. He could find no reason to dispute the results of the Scott tests (Mills 3140-41) and testified that they would indicate a general reduction in emissions in the car population (Mills 3143). He testified (Mills 3140-41):

Q. Now, taking all the circumstances of these Scott Research Laboratory tests, the design, the objective, the manner in which they were conducted, do you have any reason to dispute the validity of the results of that test?

* * * * *

A. I fully understand what the test program was, I believe. The intent in designing the program and conducting it, I have no reservation as the tests were conducted, no reason to dispute the results.

Standard's witness Robert K. Stone fully concurred in these conclusions as stayed by complaint counsel's witness Kenneth D. Mills (Stone 3876-77).

Each of the individuals and organizations who participated in the research, development, testing or consultation with respect to F-310 possessed sufficient technical and scientific experience and expertise to responsibly evaluate the product. The record of these proceedings establishes that their judgments were rendered on an informed basis; and that respondents were justified in relying upon the technical quali-

fications, expertise and judgments of these individuals and organizations.

17. The results of the Scott tests could be and were properly extrapolated by Standard in Jan. 1970 to establish that exhaust emissions in the general car population would be reduced from the use of F-310, and that, since the average condition of cars in the general car population was not as dirty as the engines in the Scott test vehicles, the reduction in emissions would be correspondingly smaller. This conclusion was supported by respondents' and complaint counsel's witnesses alike. It was the engineering judgment of Dr. Spitler and the other scientists at Chevron Research at the time F-310 was first placed on the market that the range of effect on the average car population would be somewhere between 10 and 20 percent reduction of hydrocarbons and carbon monoxide (Spitler 4522), based upon the Scott tests, Chevron Research's tests of F-310 and knowledge of the condition of carburetors and PCV in the field (Spitler 4522-23).

Dr. Eneas Kane testified that it "is quite common practice in the industry to run this type of severe test" to provide "a technically sound basis" for the characteristics of the product (Kane 3531). When asked whether the results of the severe test by Scott could be extrapolated to the average car population, his answer was "Not directly, without additional data" and he then explained that Chevron Research had the additional data which permitted it to make the extrapolation (Kane 3531-32). Dr. Kane also testified that on the basis of the California Air Resources Board's surveillance data and other data, they calculated that F-310 would produce a reduction of "around 15 per cent" or more in the average level of cars (Kane 3546-48).

Robert Stone testified that with "so much background and experience" they had no difficulty as an engineering matter in extrapolating the results of the Scott tests to the average car population (Stone 3847, 3852, 3855), and that "there would certainly be a general reduction in hydrocarbon and carbon monoxide emissions (Stone 3876-77).

John Harkins testified that from the results of the Scott tests, the conclusion could be drawn that F-310 "would certainly be of benefit to the average motor vehicle population" (Harkins 4146); that, while he had not calculated the percentage reduction in emissions that would be achieved in the average car population, nevertheless on the basis of sound engineering experience, it was "logical to assume that if F-310 cleans very dirty engines that it would also clean less dirty engines" (Harkins 4146); and that it also could be concluded that F-310, when used in new engines and clean engines, would help to prevent increases in their emissions in actual service (Harkins 4146).

Robert L. Chass, originally listed as a complaint counsel witness but actually called as a witness for respondent Standard, testified that from the Scott test data it was "reasonable and prudent" to conclude that reductions in emissions in the whole vehicle population would be smaller, and from all the data available when F-310 was first marketed in Jan. 1970, he had been able to extrapolate that the average reductions would be 15 percent (Chass 4366-67), an extrapolation which subsequently proved correct (Chass 4367).

Witnesses called by complaint counsel likewise confirmed that the results of the Scott Research Laboratories tests could be extrapolated to the general car population to establish that F-310 would result in reductions of hydrocarbon and carbon monoxide emissions. Kenneth D. Mills, the expert witness on testing procedures called by complaint counsel, testified on cross-examination as follows:

Q. Now, Mr. Mills, notwithstanding the fact that the Scott Research Laboratory tests were directed to determining the effectiveness of Chevron gasolines with F310 on motor vehicles with very dirty engines, heavily deposited engines, would the results of these tests in any way permit you to reach any conclusions as to what the results of F310 would be on, say, the general motor vehicle population?

A. I think it certainly suggests 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 hydrocarbon and CO resulting from the use of an extremely effective additive (Mills 3143).

R.W. Hurn, a witness from the Federal Bureau of Mines called by complaint counsel, testified the results of the Scott tests "should be a useful indicator of the result to be expected" in the general car population (Hurn 3245-46).

18. Respondent's expert witness, Dr. Phillip Myers, testified that from his review of all the underlying records, he concluded "there was adequate technical data and support" for the initial advertisements of F-310 (Myers 5018-19, 5140-41). Respondent's expert witness Max Roensch testified that in his judgment Chevron Research and Standard had a sound scientific and engineering basis upon which to make the representations they did make in their advertisements (Roensch 5173-74). John Harkins certified to the national networks that the advertising claims in the initial F-310 "commercials, pertaining to the function of the F-310 additive, are substantiated by the test data" which Scott Research Laboratories compiled and endorsed (CX-283a; CX 283c; CX 283e; Harkins 4174-75).

Commencing over a year prior to the introduction of the F-310 advertising campaign, BBD&O's representatives worked in close cooperation with representatives of Standard's management, Standard's

Advertising and Product Engineering Departments and Chevron Research in the development of the F-310 advertisements. The process involved a continuous interchange of ideas and information between the representatives of BBD&O and Standard; suggestions for advertising themes, as well as specific advertising representations, methods and formats, were proposed, considered and reviewed; each of the claims suggested for F-310 was investigated for technical accuracy and the adequacy of engineering support; in some instances special testing was undertaken; ultimately each proposal was either rejected, modified or accepted in whole or in part (Fenton 4740-51, 4756-60, 4824; Clark 4939-41, 4945-54). Before the initial advertisements of F-310 were published, each was reviewed and examined for the adequacy of the technical support for the claims made therein by the following and each approved the same (Fenton 4740-51; 4755-60; Clark 4939-54):

- A. Chevron Research (Fenton 4742-43; 4755, 4824; Clark 4947-49);
- B. Standard's Product Engineering Department (Fenton 4742-43, 4755, 4824; Clark 4948-49);
- C. Standard's Advertising Department (Fenton 4744-50);
- D. Standard's legal counsel (Fenton 4742-44, 4756; Clark 4948-49);
- E. Two levels of Standard's management (Fenton 4742-44, 4757, 4824);
- F. BBD&O's executives handling Standard's accounts (Fenton 4758, 4821-23, 4825-26a; Clark 4939-43);
- G. BBD&O's corporate management (Fenton 4758; Clark 4952);
- H. BBD&O's legal counsel (Fenton 4758-59; Clark 4948-49);
- I. In the case of the network commercials, by Scott Research Laboratories (Clark 4948-49, 4952);
- J. By Scott Carpenter, the former NASA astronaut, who only agreed to serve as the announcer in the advertisements after he had first reviewed the technical data and satisfied himself that F-310 had the ability to perform as the advertisements represented (Fenton 4761-62). Mr. Carpenter is a mechanical engineer and aeronautical engineer, with "great personal knowledge of carburetion of engines" (Fenton 4760-61).

Although BBD&O's executives, corporate management and legal counsel reviewed and approved all F-310 advertisements, BBD&O sought, received and relied upon the advice and assurances of Standard's technical personnel, notably those of Chevron Research and the product engineering department, for the technical accuracy of the advertising claims made for F-310 and for the adequacy of the scientific

and engineering data in support thereof (Fenton 4758-59, 4819-20, 4823; Clark 4952-54). BBD&O did not have the personnel, facilities or the technical expertise to conduct its own scientific tests of F-310 (Fenton 4819-20; Clark 4952-53). The record is clear that in relying upon the representations and assurances of its client, Standard, BBD&O followed the custom and practice of the advertising industry (Fenton 4819-20; Clark 4953).

19. After the initial advertising and marketing of Chevron gasolines with F-310 in Jan. 1970, further tests were conducted. In early 1970 the Los Angeles County Mechanical Department tested F-310 on six County Sheriff's cars, three 1968 and three 1969 models which had accumulated 30,000 to 60,000 miles (RX-6q, App. J, p. 12), using a premium grade competitive gasoline containing a competitive additive ("Super Shell," containing duPont additive DMA-4) (RX-6f, p. 100; Kane 3558-59; Spitler 4467, 4513, 6174). After measuring the vehicles' exhaust emissions, the cars were switched to Chevron gasoline with F-310 and operated for distances ranging between 678 and 2,093 miles (RX-6f, p. 100; Spitler 4457-58), at which time their emissions were again measured. The results showed the use of F-310 reduced exhaust emissions of hydrocarbons an average of 24 percent and carbon monoxide emissions an average of 42 percent (RX-6f, p. 100; Kane 3558-59; Spitler 4466, 4499-4500). Exhaust emissions decreased for each car (RX-6q, Appendix J, p. 13, fig. 13).

Notably, the emissions requirements on these test vehicles were conducted at the City of Commerce laboratory of the United States Department of Health, Education, and Welfare and used the hot portion only of the Federal 7-mode procedure (RX-6f, p. 100; Kane 3558-59; Spitler 4457, 4499). Respondents' expert witness Max Roensch reviewed the test data and some of the actual engine parts from the test vehicles (Roensch 5169-70; RX-71); he concluded that it was a valid test of F-310's ability to reduce deposits in engines and thereby reduce exhaust emissions (Roensch 5170). The test also confirmed the findings of the Scott Research Laboratories tests that F-310 could reduce substantially hydrocarbon and carbon monoxide emissions from the segment of cars in the general car population with very dirty engines (Spitler 4467-68). It was stipulated that Standard did not conduct or participate in the test (Tr. 748). Standard first learned of the test after its completion (Spitler 6174, 4456).

20. Commencing in March 1970, a test was conducted on over 50 cars selected by the Orange County, California, Department of Transportation to represent a cross-section of their fleet vehicles. The test vehicles were from a well-maintained fleet of over a thousand vehicles that

followed a rigorous maintenance schedule, including draining of crank-case oil every 2,000 miles, changing of oil filters every 4,000 miles and a complete engine tune-up every 10,000 miles (RX-6t, App. M, p. 5). Included in the test vehicles were 6-cylinder and 8-cylinder engines ranging from 1964 to 1969 Fords and Plymouths; approximately two-thirds were post-1966 models with exhaust emission controls. All of the vehicles had previously operated on a competitive premium grade gasoline containing a well-known carburetor detergent (Super Shell with duPont DMA-4) (RX-6f, p. 101; RX-6s, App. L, p. 1; RX-6t, App. M, pp. 5-6; Harkins 4159-60; Spitler 4472-73; Kane 3559). The exhaust emissions of the vehicles were tested, using the hot portion of the Federal 7-mode procedure, as published in the Federal Register (RX-6t, App. M, p. 6; RX-6s, App. L, p. 2; Harkins 4165-66). The cars were then switched to Chevron gasoline with F-310 and driven in their normal service for approximately 2,000 miles when their exhaust emissions were again measured in the same manner. The results showed that the use of F-310 reduced hydrocarbon emissions an average of 12.4 percent and carbon monoxide emissions an average of 27.6 percent (Harkins 4160; Spitler 4473-74, 4500; RX-6s, App. L, p. 3; RX-6t, App. M, p. 6).

Respondents' witness Harkins testified that this test showed conclusively that switching a well maintained fleet of vehicles from a major competitive brand to Chevron with F-310 resulted in significantly reducing hydrocarbons and carbon monoxide emissions (Harkins 4209) and confirmed the extrapolation of the results of the original Scott tests to "actual, real-life operation" (Harkins 4173). Robert L. Chass from the Los Angeles Air Pollution Control District testified this was a valid test to show the effect of F-310 in the car population; the results showed significant reductions of hydrocarbons and carbon monoxide and were accurate reflections of the effect of F-310 (Chass 4374). Dr. Spitler testified the test confirmed Chevron Research's prior judgment that use of F-310 in the general car population would produce significant reductions of hydrocarbon and carbon monoxide emissions although lesser than those in the Scott tests (Spitler 4474). Standard's expert witnesses, Myers (Myers 5123-24) and Roensch (Roensch 5170-71), both testified the test was a valid determination of F-310's ability to remove deposits and reduce exhaust emissions.

21. Between Mar. and June 1970, Standard tested F-310 on a large sample of cars designed to be representative of the distribution of makes and models in the California car population (RX-6t, App. M, pp. 9-13; RX-6f, pp. 102-03; see for detailed description RX-6t, 6u, 6v, 6w (App. M, N, O, P)). Statistical analysis showed a sample of 300 cars was required; however, to allow for losses of test cars for various reasons

during the test, the sample was increased to 455 cars (RX-6t, App. M, p. 12; Spitler 4532). Cars were selected randomly to match the distribution of makes and models in the California car population, with the limitation that none of the participants should have been users of Chevron gasoline in the preceding three months (RX-6t, App. M, p. 9; Spitler 4524-26). The cars initially were given a mechanical inspection (but no changes were made) and their emissions were tested by Olson Laboratories, Inc., a well-recognized independent automotive emissions testing organization (Spitler 4526), using the hot start portion of the Federal 7-mode procedure. Each participant then operated his car for approximately 2,000 miles on Chevron gasoline with F-310, when emissions again were measured (Spitler 4526; RX-6t, App. M, pp. 10-11). Elimination of cars that failed to return, didn't drive at least 1,000 miles, had tuneups or mechanical changes or had errors in their tests reduced the final test car sample to 297 vehicles (RX-6t, App. M, pp. 12-17; Spitler 4530-32). The test results showed that use of F-310 reduced hydrocarbon emissions an average of 13.9 percent, carbon monoxide emissions an average of 11.6 percent and oxides of nitrogen emissions an average of 5.8 percent (RX-6t, App. M, pp. 15-16; Spitler 4532).

Statistical considerations were taken into account in both the design of the Rose Bowl test (Spitler 4484-97, 4522-33, 6175-77) and in a detailed analysis of the results after it was concluded (reported in RX-6u, App. N; Spitler 4529-30). Dr. Spitler testified the confidence level in the test results was 99.99999 (Spitler 4670) and there was "less than one chance in a million that we would have observed the effect we did if, indeed, F-310 had no effect" (Spitler 4532). The detailed statistical analysis of test results, in particular (RX-6u, App. N), shows that Standard exercised scientific caution and conservatism in determining and reporting the results of the Rose Bowl test. For example, only Federally-approved correction data was utilized. Respondents' Exhibit 6u, App. N, p. 72, table XIII shows that larger reductions of hydrocarbons (HC) and carbon monoxide (CO) from use of F-310 could have been appropriately reported if other scientifically valid correction factors for temperature and fuel composition had been utilized.

Dr. Phillip Myers made his own analysis of the Rose Bowl test data (Myers 5110-11, 5124-25; RX-110) and concluded the test "clearly indicates that the deposits were removed and that air/fuel ratio increased [*i.e.*, became leaner] as the result of the removal of the deposits" (Myers 5125, 5110-11). Max Roensch testified after a complete review of the Rose Bowl test that the "test was well designed," and "well conceived and well executed" and was a reliable and proper test to determine F-310's ability to reduce emissions and to improve mileage (Roensch 5171).

Robert L. Chass, Air Pollution Control Officer of the Los Angeles Air Pollution Control District, testified that "[t]here is no question in my opinion that the Rose Bowl tests are the best tests that have been run on the whole subject;" the results were valid and accurate, and the hydrocarbon and carbon monoxide reductions from using F-310 were significant reductions (Chass 4375). Mr. Chass' testimony in regard to the Rose Bowl test was based on his own review of published data and on the review of such data by his staff in the Air Pollution Control District (Chass 4421-23).

Ralph C. Stahman, Chief of the Test and Evaluation Branch of the Environmental Protection Agency, who was in charge of EPA's test of F-310, testified the test design of the EPA test "was similar to that of the Rose Bowl test" (RX-83; Stahman 5339-41) and EPA "felt that the Pasadena [Rose Bowl] test would cover the kind of used-car population we were interested in" (Stahman 5339). Mr. Stahman testified that EPA's consultants, Research Triangle Institute, had investigated the design of the Rose Bowl test and had adopted many features of the Rose Bowl test for the EPA test of F-310 (Stahman 5340-41). Mr. Stahman further testified that, except for differences in the new CVS procedure for measuring emissions and the use of two test sites rather than one, the EPA test and the Rose Bowl test were essentially of similar design (Stahman 5340-42). S.B. White, Senior Statistician with the consulting firm retained by EPA, compared the similarities of the Rose Bowl test with the EPA test (White 5928-37), and accepting the engineering judgments reached in their design, he couldn't find "anything basically wrong" with either test (White 5936-37).

Complaint counsel's witness Francis G. Bollo of Shell Oil Company had not personally checked the test sample to be sure it was representative of the car population (Bollo 5463-64), but other than that, both he and his department had reviewed the test data, and he considered the results of the Rose Bowl test a valid demonstration of the effectiveness of F-310 (Bollo 5464); it was a "meaningful test" for the purpose for which the data were used (Bollo 5464-65). Complaint counsel's witness Hugh Shannon, whose own test conducted for Humble Oil Company showed that the use of gasolines containing F-310 would reduce emissions 10-15 percent (Shannon 5402), testified that he was familiar with the Rose Bowl test and it substantiated the conclusions drawn from his own testing (Shannon 5402-03). In Mr. Shannon's words, his test "says the same thing" as the Rose Bowl test (Shannon 5403). Complaint counsel's witness R.W. Hurn of the United States Bureau of Mines testified that the Rose Bowl test should "be a useful indicator of the result to be expected" from the use of F-310 (Hurn 3245-46). Complaint

counsel's witness William L. Kent of Union Oil Company testified there was nothing in the tests he conducted of F-310 that in any way contradicts or refutes the results of the Rose Bowl test. (Kent 5247-48)

22. In their rebuttal case complaint counsel called three statisticians and one engineer to offer criticisms of the Rose Bowl test. The statisticians were Dr. Theodor D. Sterling, a former professor in bio-statistics (Sterling 5487; CX-417) whose principal work, according to his curriculum vitae, was in the area of statistics used for medical purposes (CX-417c-g); Dr. Robert Ferber, a professor of economics and business administration working principally in survey research (Ferber 5697; CX-419); and Dr. William Kruskal, whose qualifications (CX-420) and testimony on *voir dire*, by agreement of counsel, would be the same as Dr. Ferber's (Tr. 5855). At the time these witnesses testified, serious reservations existed about the qualifications of each to testify in the field of automotive engineering, but their testimony was admitted to be weighed in light of cross-examination and the entire record.

Each of the statistical witnesses denied any training, experience or expertise in the engineering fields in which his opinions were being sought. Dr. Sterling testified: "Mechanical engineering is not my field of specialty" (Sterling 5502); "I am not an automotive engineer" (Sterling 5505); he admitted he was not qualified to answer questions about procedures for measuring emissions (Sterling 5512-14); he didn't claim to be an expert on internal combustion engines (Sterling 5636); he conceded "my concern is not with the chemistry or mechanics of measuring emissions" (Sterling 5523); when asked questions directed to one of his stated criticisms of the test, he answered, "I have no skills on that" (Sterling 5525-26); he disclaimed any knowledge of PCV valves or expertise "in the field of carburetors and deposits on carburetors and their effect on exhaust emissions" (Sterling 5648); he would "not presume to look into the various procedures," the engineering and chemical procedures used by Chevron Research to evaluate the additive (Sterling 5650); he didn't take the time to look into them because "Chevron does an awful lot of things in chemistry and other areas in which I wouldn't even know what I am reading and yet it may be very relevant to what I am doing" (Sterling 5661-62). Dr. Ferber by his testimony and Dr. Kruskal by agreement of counsel (*supra*), was not an automotive engineer (Ferber 5700, 5709); nothing in his qualifications, training or experience involved the testing of automobile emissions (Ferber 5707-08); he had no experience with experiments involving the testing of auto emissions (Ferber 5709-10) or with the effect of deposits on emissions (Ferber 5710); he admitted, "I have no competence and I don't say that I know what the engineering aspects are" (Ferber 5795) and he con-

ceded that his own opinion herein is subject to criticism because he doesn't know the engineering factors involved (Ferber 5798).

Although conceding their lack of engineering qualifications, the witnesses recognized that their criticisms of the Rose Bowl test depended upon engineering judgments which they could not make. Dr. Sterling agreed, for example, that judgments concerning the design of the test involved questions peculiarly within the expertise of a chemical engineer and "Not being a chemical engineer I may not recognize which ones they are" (Sterling 5637). In this connection, Dr. Spitler, who helped design and was in charge of the conduct of the Rose Bowl test, and who participated in the statistical analysis of the test results is a mechanical engineer with training in statistics (Spitler 4447) and he had the services at Chevron Research of L.J. Painter, who was both a senior research statistician and a chemical engineer (Sterling 5637; Myers 6227-28; RXS-6u, Appendix N, p. 2). Dr. Ferber agreed that there was an intermixture of engineering and statistics needed to reach an overall judgment and he could not say that his criticism of the test did not depend upon engineering judgments (Ferber 5795-96, 5799), for which he had "no competence" (Ferber 5795-96).

While agreeing that "in evaluating any particular step in the scientific process, you must always look to the body of background knowledge that has previously been accumulated" (Sterling 5656) and that variables which may affect a test can be eliminated in advance or through "side studies, ancillary or prior to the central one" (Sterling 5660-61), these witnesses nevertheless had reviewed only a very limited part of the F-310 record. Dr. Sterling, for example, saw only 44 pages of the text out of 115 and only two of the 17 appendices of RXS-6, the Technical Summary of the F-310 Gasoline Additive Development (Sterling 5641-44). In addition, he saw 30-40 pages out of the more than 300 pages of Dr. Spitler's testimony and nothing of the rest of the almost two thousand pages of the defense case (Sterling 5644-45). He had no knowledge whatsoever of the 40,000 hours of laboratory testing of F-310 (Sterling 5648), the 5,000,000 miles of field testing (Sterling 5650), or the half million miles of testing in employee cars (Sterling 5652); and he had not reviewed the data underlying Standard's judgment to conduct the Rose Bowl test without a control group, because it wasn't, as Dr. Sterling admitted, "within his line of expertise to review this kind of data" (Sterling 5649). Dr. Ferber and Dr. Kruskal, if anything, were less informed than Dr. Sterling (Ferber 5791, 5794-5806; Kruskal 5861).

Essentially, these three statistical witnesses were of the opinion that in the Rose Bowl test there should have been a control group of cars to

eliminate any influences that might arise from possible "variables" in the test (Sterling 5518, 5609; Ferber 5753-54; Kruskal 5862-64). The inherent shortcoming in their testimony is that none of these witnesses was qualified to and none did testify that the results of the Rose Bowl test were actually in error; Dr. Sterling testified only that "a variable is a *possible* influence on an experiment" (5586-87); as to each "variable" it would require engineering knowledge to know what effect, *if any*, it would have on the test (Sterling 5678-79) and if a control group had been used, the benefits of F-310 might even be greater than those shown in the test results (Sterling 5677). Dr. Kruskal said his criticisms were "hypothetical" and were only "possible biases" (Kruskal 5868); he emphasized he was "only saying they are possible" and "I don't know that they were present" (Kruskal 5885). Dr. Ferber couldn't say whether his criticisms would make any difference in the test (Ferber 5750); he didn't know whether there already were adequate controls (Ferber 5789); he couldn't say that F-310 did not cause a real reduction in emissions (Ferber 5782-84); and he conceded that a control group might entirely confirm the test results (Ferber 5754, 5843).

In the design of the Rose Bowl test the use of a control group was considered and rejected (Spitler 4711-12, 6175). Careful consideration was given to all potential variables which might influence the results of the test and controls were either designed into the test or the variables were measured and accounted for in some other manner (Spitler 4482-92, 4522-32, 4684-86). The decision that a control group was not needed was based in large part on the California Air Resources Board's surveillance data and findings that in the average car population exhaust emissions increase with time and with the accumulation of mileage (Spitler 480, 6172, 6176; Hurn 3321). A control group in the Rose Bowl test after 2,000 miles of operation would show, if anything, a slight increase in emissions (Spitler 6176-77; Myers 6230, 6238-39; see also White 5910-12; Cattaneo 6155-57). This would have made the reductions from F-310 correspondingly greater than those shown in the test (Spitler 6176-77; Myers 6230).

Ralph C. Stahman of the Environmental Protection Agency appeared as a witness for respondent Standard. He testified that the results of the Rose Bowl test of F-310 had been sufficiently impressive to persuade the Federal agency that it would be "worthwhile" to undertake a similar test of its own of F-310 (Stahman 5330, 5339-42, 5381-82). The EPA test was similar to the Rose Bowl test (*supra*). Mr. Stahman testified that the Federal government, in conjunction with its consulting engineers and statisticians at Research Triangle Institute, considered carefully whether a control group was necessary in the EPA test and

concluded it was not (Stahman 5342-44). A major reason for this conclusion was that more accurate results could be obtained by testing more cars, rather than by using part of them as a control group (Stahman 5343). (In this regard, even Dr. Kruskal conceded that whether or not there should be a control group is in part an economic decision (Kruskal 5868-69.)) Respondents also called S.B. White, a statistician from Research Triangle Institute, who emphasized the importance of engineers answering questions in the design of such a test which the statistician was not equipped to answer (White 5908-10). He also testified that one of the critical circumstances which made a control group unnecessary in the EPA test was the "general consensus" that the emissions of cars in a control group in 2,000 miles would, if anything, increase (White 5910-12); where you already have adequate information, it is unnecessary to have a control group to "[tell] you the same thing" (White 5968). The analysis of the EPA test results had not been completed when the record in this case closed, but Mr. Stahman testified the results of the EPA test should not be used to judge the validity of the Rose Bowl test (Stahman 5334-35); the two tests cannot be directly compared (Stahman 5335) because "of the differences in test procedures, because the test was initiated nearly two years after F-310 was introduced, and because several major oil companies have added similar purpose additives in their gasolines during that period which would influence the base lines" (Stahman 5336).

Dr. Phillip Myers testified in surrebuttal that Drs. Sterling, Ferber and Kruskal, having been statisticians who were principally concerned with medical tests on animate objects, tests on human beings who respond to the fact of testing and in cases where there is no background of prior experiments on which to draw, naturally tend to want a control group (Myers 6225-28)--a group, for example, to receive a placebo in a medical test to eliminate the human element. On the other hand, "Mr. White, and I might add Mr. Painter, who planned the Rose Bowl experiment, have had their experience in the field of engineering where you do have in many cases a background of theory to draw on" (Myers 6227-28). Dr. Myers further testified that even without regard to expense, he would not have used a control group in the Rose Bowl test because "the weight of all the evidence is clearly in favor of the fact that emissions from the control group would either remain constant or increase;" it "seems therefore completely unnecessary and might induce error to use a control group when you can use the conservative estimate that was used, that the emissions would remain constant with time"--conservative because "it underestimates the effect of F-310" (Myers 6230).

Finally, it is significant that the EPA engineers "reached the same automotive engineering judgments that the Chevron engineers" and Dr. Myers had reached and that they so advised their statisticians (Myers 6239; Stahman 5342-44).

23. Complaint counsel's final rebuttal witness called to criticize the Rose Bowl test was Dr. Alfred G. Cattaneo, an engineer formerly with Shell Oil Company, but who has been out of the field of automotive fuels since 1961. (Cattaneo 5998-6000) He was also a member of the former Technical Advisory Committee to the California Air Resources Board (Cattaneo 6000). Dr. Cattaneo's opinions and criticism of the Rose Bowl test are clearly contrary to the weight of the testimonial and documentary evidence. As one example, he testified there is no relationship between a clean carburetor and exhaust emissions (Cattaneo 6058). Every other witness who testified in this regard, both for complaint counsel and respondents, took an opposite view. His testimony also defies the expert opinions expressed in innumerable exhibits in evidence. As Dr. Myers said, there is no explanation for Dr. Cattaneo's views because "there is a clear relationship between carburetor air-fuel ratio, deposits and emissions" (Myers 6236). A second deficiency in his testimony was his conceded lack of knowledge of the underlying facts with respect to matters as to which he rendered an opinion. To illustrate: on direct examination he testified the Orange County test in his opinion was of no moment because the maintenance schedule was untypical of the general car population (Cattaneo 6079); on cross-examination he agreed that the test "showed significant reductions from the use of F-310" and was a valid test (Cattaneo 6113). When confronted with the fact that better maintenance of the test cars would result in their having cleaner engines, intake systems, PCV valves and carburetors (Cattaneo 6115), thereby making the test all the more demonstrative of F-310's effectiveness, he dismissed his ability to judge the test with, "I do not notice that test in sufficient detail to have an opinion sir" and "I would not care to judge that test from the viewpoint of its significance to the general car population" (Cattaneo 6115).

Dr. Cattaneo believed there should have been a control group used in the Rose Bowl test, but for no specific reason, except that he thought the test was looking for 10 to 20 percent reductions in emissions (Cattaneo 6019-20); yet, he conceded on cross-examination, "I have not thought this entirely through how one would have to design it" (Cattaneo 6153-54). He was unaware that F. G. Bollo, whom he recognized as a competent automotive and petroleum engineer (Cattaneo 6106-07) and with whom he had co-authored a number of technical papers (Cattaneo 6105;

CX-421), had appeared as a witness for complaint counsel and testified that, assuming a representative sample, the Rose Bowl test was a valid test of F-310's effectiveness without a control group (Cattaneo 6106-07). Dr. Cattaneo's testimony on a control group added nothing to the testimony of Doctors Sterling, Ferber and Kruskal.

Dr. Cattaneo rejected F-310 because it reduces carbon monoxide and hydrocarbon emissions by 10 to 14 percent which he considered to be "insignificant, a small reduction" (Cattaneo 6012-13). When cross-examined, he claimed F-310's 10 to 15 percent reductions of emissions would be worthless if it interfered with other emission control devices (Cattaneo 6089-90), but when forced to admit that he knew of no device which is adversely affected by F-310, he dismissed the matter entirely by saying he couldn't answer the question and "I don't think it matters at all" (Cattaneo 6090, 6089-93). The evidence is uncontradicted that F-310 does not interfere with any existing or proposed emission control device (Spitler 6209-10). Similarly, at one moment Dr. Cattaneo agreed with Dr. Haagen-Smit of the California Air Resources Board that every method that will produce even a 10 percent reduction in automobile emissions is a worthwhile step (Cattaneo 6103-04), but a few moments later he testified that time should not be spent "trying to accomplish a mere 10 percent improvement" (Cattaneo 6120). Dr. Cattaneo's testimony on this point is contradicted by many of complaint counsel's own witnesses (Chipman 6118-20; Megonnell 6124-26; Edinger 6127-29; Atschuller 6129; Behar 6130-31).

24. Finally, Dr. Cattaneo criticizes F-310 on the grounds that some of the cars in the Rose Bowl test showed increases in emissions after using F-310 and in his opinion no "cleaning method" is acceptable if some cars still increased their emissions (Cattaneo 6013). He dismisses the fact that the average emissions of almost 300 cars in that test were reduced, saying we do "not concern ourselves with an abstract concept like the average" (Cattaneo 6015). Dr. Cattaneo's views in this respect are contradicted by other witnesses who testified on this subject. Complaint counsel's witness, Francis Bollo, of Shell Oil Company, testified that it "is pretty general experience" in tests of the effects of additives on vehicle emissions, that some of the test vehicles may go in a direction other than expected for one random reason or another, independent of the effect of the additive (Bollo 5462-63).

When the Environmental Protection Agency conducted its tests of F-310, it was concerned with determining the average level of emissions, not the emissions of individual cars. Mr. S.B. White of Research Triangle Institute, the consultants to EPA, testified that "it was decided by all that the average emission effect is the parameter of interest" (White

5975). He further testified that in "light of the inherent variability in anything we test," one would expect that some of the cars would show increases in emissions (White 5939-40); and that the basic purpose of the EPA test was to determine the average effect; "the interest was in the average, not in any particular individual" car (White 5942).

Dr. Spitler fully expected that some cars in the Rose Bowl test would increase in emissions; Chevron Research was not interested in individual cars, but rather in the overall average effect of the additive (Spitler 6198-99). Generally, the cars which increased in emissions were cars that initially had low emissions and there was a tendency for such vehicles' emissions to bounce around with some going up for a variety of reasons. On the other hand, cars that started with high emissions consistently trended downward (Spitler 6199-6200). Subsequent to the test, Dr. Spitler made a separate investigation of some of the cars that increased substantially in emissions; in all but two or three cases there were "obvious explanations" independent of any effect from F-310 (Spitler 6219-20). Moreover, even though the inclusion of the data from these cars worked adversely to F-310, they remained in the final test results because in the initial examination of their histories, without regard to their emissions levels, the cars were thought to qualify (Spitler 6220-21). Robert Stone testified that in any large sample of cars, you always expect to find some that increase rather than decrease (Stone 3965).

Ralph C. Stahman of the Environmental Protection Agency testified there will always be some cars whose emissions go up notwithstanding the effect of the additive, and for that reason you look for the average figures (Stahman 5347). Dr. Myers testified that if there wasn't some variability in the emission data, he would suspect it; he would think "it was doctored" (Myers 5147); he further testified that variability is the "reason that you need a large number of cars in order to get a valid average result" (Myers 5147). Finally, with regard to the Rose Bowl test, Dr. Myers testified in surrebuttal that based on his background, training and experience, his detailed analysis of the Rose Bowl test and his review of the testimony of all of complaint counsel's rebuttal witnesses, that he had seen no data which would cause him to change his opinion that the Rose Bowl test was a valid test of the effectiveness of F-310 (Myers 6237).

25. In their rebuttal case, complaint counsel produced witnesses from four oil companies that compete with Standard: William Kent of Union Oil Company, Robert Snyder of Standard Oil Company of Ohio, Hugh Shannon, who conducted research for Humble Oil Company, and Francis Bollo of Shell Oil Company. Complaint counsel introduced tests of F-310 which these competitive oil companies had conducted on *clean*

engines; the tests started with clean engines which emitted very low exhaust emissions and after running during the test period on F-310 the engines were found to have remained clean with no essential change in emissions. As Mr. Kent testified all these tests proved was that the statement in Standard's advertisement that "If a car is new or its engine is clean, F-310 will not improve its performance or reduce its emissions of pollutants" was a correct statement (Kent 5235). And as Mr. Bollo testified, the tests proved that by using F-310 in clean engines "they remained substantially in a clean condition" (Bollo 5466).

On cross-examination it was established that each of the competitive oil companies referred to above had also conducted other tests of F-310, not offered by complaint counsel, which showed that it did reduce deposits and emissions. Mr. Kent found "F-310 gives very good results with respect to intake valve deposits" (Kent 5249). Mr. Bollo found that F-310 improved the performance of the PCV valve (Bollo 5468); gave improvements of 44-46 percent in removal of intake valve deposits (Bollo 5469-70); and his tests showed that "in addition to the current claims for F-310, assertions may be made that this material can reduce engine oil consumption" (Bollo 5468). Mr. Shannon concluded on the basis of his tests that F-310 when used in cars with dirty carburetors would reduce the emissions of those cars 10-15 percent (Shannon 5402), *i.e.*, that the Rose Bowl Test of F-310 conducted by Standard says "the same thing" as Mr. Shannon's tests of F-310 (Shannon 5403).

Mr. Snyder of Standard Oil Company of Ohio on direct examination covered two tests of F-310 which the witness established were inconclusive because "mechanical and/or ambient factors may have hidden the effects of the additive" (Snyder 5284, 5263, 5267, 5297-99). Cross-examination developed other tests which showed: F-310 "was much more effective" than their own additive; in one test of F-310 they started with a very dirty carburetor and ended with it essentially clean (Snyder 5281); "F-310 produced significantly [c]leaner air-fuel ratios" (Snyder 5283); F-310 was found to be more effective than competitive additives (Snyder 5283, 5290-91, 5295); another test showed "rather conclusively" that F-310 was better than their own additive package and "as effective a carburetor cleaner as we had seen" (Snyder 5288, 5290); an intake valve test showed less deposits from use of F-310 and better performance than other additives (Snyder 5294); and another test showed that F-310 produced a "dramatic decrease in emissions" (Snyder 5295-96). The company has under consideration the possibility of using the additive (Snyder 5303).

Complaint counsel have failed to satisfy their burden to establish by "reliable, probative and substantial evidence" that the results of the

tests mentioned in the preceding findings do not support Standard's advertising claims (5 U.S.C. §556(d)—Administrative Procedure Act). Complaint counsel have the burden of proving that respondents have violated the Federal Trade Commission Act (*Koch v. Federal Trade Commission* (6 Cir. 1953), 206 F.2d 311; *Carter Products, Inc. v. F.T.C.*, 268 F.2d 461, *certiorari denied*, 361 U.S. 884 (9 Cir. 1959)), and they must satisfy that burden of proof, as noted above, by substantial evidence. In *Carlay Co. v. Federal Trade Commission*, 153 F.2d 493 (7 Cir. 1946), the court described the meaning of the "substantial evidence" standard:

Substantial evidence is more than a mere scintilla. It means such relevant evidence as a reasonable mind would accept as adequate to support a conclusion. It must be of such character as to afford a substantial basis of fact from which the fact in issue can be reasonably inferred. It excludes vague, uncertain or irrelevant matter. It implies a quality and character of proof which induces conviction and makes a lasting impression on reason (153 F.2d 496).

26. The complaint charges respondents falsely represented the bag and balloon demonstrations pictured in attachments No. 1 and No. 2 to the complaint and in similar television advertisements. The black exhaust shown in the "before" pictures in the bag and balloon advertisements came from cars actually used in the tests conducted by Scott Research Laboratories (Stone 3905); and the same procedures were followed as in the actual tests (Harkins 4147; Spitler 4455). The "clear" exhaust in the "after" pictures in the bag and balloon advertisements was the result of the removal of the deposits from the engines, through the use of F-310, thereby reducing their exhaust emissions and eliminating the visible black smoke (Spitler 4981-83, 4455; Kane 3534-39; Myers 5087-89).

The relationship between the emission of visible black smoke from the tailpipe and excessive exhaust emissions of hydrocarbons and carbon monoxide is a well recognized engineering phenomenon (Harkins 4150-51; Spitler 460-61, 4452; Myers 5072-74, 5088-89; Kane 3535-39; Stone 3899-3900, 3906, 3955). Exhaust emissions of unburned hydrocarbons and carbon monoxide from a new car or a car with a clean engine are colorless, but as the car ages and accumulates mileage, deposits form on critical parts of the engine, such as the carburetor and PCV valve, resulting in a rich fuel-air mixture, which in turn increases both hydrocarbon and carbon monoxide emissions. As the deposits continue to build up in such critical areas, the fuel-air mixture becomes still richer so that black soot (composed of carbon particles) is formed; in the earlier stages the soot particles in the exhaust may not be visible to the eye, but filtering the exhaust will show they are present. As the engine becomes

very dirty with heavy deposits in the critical areas, the fuel-air mixture becomes so rich that visible black smoke appears in the exhaust and under this condition of visible black smoke, hydrocarbon and carbon monoxide emissions are quite high. Accordingly, visible black smoke in the exhaust of an automobile is an indicator and is "symptomatic" that the engine is receiving an excessively rich fuel-air mixture, causing very high emissions of unburned hydrocarbons and carbon monoxide; and conversely a relatively clear exhaust indicates a much lower level of such emissions (Kane 3535-39; Stone 3899-3900, 3955-56; Harkins 4150-51; Spitler 4451-56; Myers 5072-74, 5088-89, Roensch 5174). Complaint counsel's expert witness Mills testified it is certainly reasonable that an engine emitting black smoke has high emissions of hydrocarbons and carbon monoxide (Mills 3147-48).

John Harkins of Scott Research Laboratories, testified the demonstrations accurately depicted the conditions of the cars that were photographed in both the before and after conditions (Harkins 4146-47); that what one saw in the television film truly and correctly reflected exactly what occurred with the test vehicles (Harkins 4148). Standard's witnesses Kane, Stone and Spitler all testified to the technical justification for the bag and balloon demonstrations (Kane 3535-39; Stone 3899-3900; Spitler 4451-55); Dr. Myers testified the use of the bag and balloon demonstrations were properly "based upon the relationship" between the level of visible black smoke and the level of exhaust emissions of unburned hydrocarbons and carbon monoxide (Myers 5088-89); and Max Roensch testified the advertisements were properly supported by good sound engineering facts and foundation and were "straightforward and to the point because of the relationship pointed out earlier between the visible smoke and emissions" (Roensch 5174).

The bag and balloon advertisements do *not* represent, either explicitly or implicitly, that *every* motor vehicle will emit black smoke unless operated on Chevron gasoline containing F-310. The printed advertisements, attachments No. 1 and No. 2 to the complaint, clearly describe the "before" pictures as showing "exhaust emissions from dirty engines" -- *not* from all engines, and they contain explanations of what causes "an engine to produce dirty exhaust in the first place;" similarly the television advertisements correlate the dirty exhaust emissions in the black balloon and bag to "exhaust emissions from dirty engines" -- *not* from all engines. The ability of the public to recognize this distinction is illustrated by the testimony of Robert L. Chass, of the Los Angeles Air Pollution Control District, who, in commenting on the possibility that the general use of F-310 would eliminate visible emissions from motor vehicles, testified (Chass 4411):

This would certainly help, because I don't think there is any question that again we are talking about the public. The man in the street considers this as one of the principal sources of nuisance--driving behind a vehicle that is pouring it out.

The stipulated Evidence points out that smoke is the "most obvious" particulate pollutant; that it is composed primarily of carbon and other combustible substances given off during the incomplete burning of a material; that it is produced by automobiles (Stip. Evid. RX-114, item 2 of CX-217); and that the "most obvious effect of air pollution is the reduction of visibility. Indeed, often this is the first sign of an air pollution problem" (Stip. Evid. RX-114, item 7 of CX-217; RX-114, item 3 of CX-178).

Dr. Myers introduced the results of an extensive survey, reported to the California legislature and in a paper of the Society of Automotive Engineers (Myers 5060-65), which showed the levels of carbon monoxide emissions at idle of approximately 24,000 cars in California (Myers 5074; RX-59). In California 51.5 percent of the noncontrolled vehicles (*i.e.*, pre-1966 models without emission control devices) had carbon monoxide emissions above the 5 percent level (RX-100; Myers 5062, 5067), so that their exhaust would contain sooty materials comparable to what is shown in the upper row of gauges photographed in RX-34a (Myers 5082); 50 percent of the controlled cars had emissions of carbon monoxide above the 3 percent level (RX-101; Myers 5069); and for the 24,000 cars the average carbon monoxide emission level was 4 percent (Myers 5075). He then testified (Myers 5086):

Q. Now, from all this that you just explained to His Honor, Doctor, what conclusion do you draw as respects the bag and balloon demonstrations that were used to illustrate the effect of F-310?

A. That there are a significant number of cars on the road that would have carbon monoxide readings high enough to produce the visible smoke and if you put this smoke in the bag you would get the same results to varying degrees, depending on what the carbon monoxide reading was--the same result as you did in the commercial.

Dr. Myers also testified that similar data for other parts of the United States established that the same conclusions in respect to emission levels are valid elsewhere (Myers 5061, 5066). Commission Exhibit 91 establishes that other states have laws prohibiting the emission of excessive smoke from motor vehicles (CX-91, p. 24); and complaint counsel's witness Rickles testified that regulations both in New York City and New York State prohibit emissions of visible smoke from the exhaust of motor vehicles (Rickles 2826-27).

27. The complaint charges respondents falsely represented that the building identified as Standard Oil Company of California Chevron Research Center in the advertisements attached as No. 1 and No. 2 to

the complaint and in corresponding television advertisements, "is owned, occupied, or used for research" by Standard, whereas in fact it is the Riverside County Courthouse in Palm Springs, Calif. (Complaint, Paragraphs Five-8, Six-8). The one-story building in question is pictured in the background of attachment No. 2 to the complaint and in the corresponding balloon television advertisement (RX-4, p. 2); it does not appear in attachment No. 1 to the complaint, nor the corresponding bag television advertisement (RX-4, p. 2).

The following stipulations were entered into by complaint counsel and Standard (RX-113, p. 3):

A. Standard had an agreement with Riverside County to use the courthouse in return for paving the courthouse parking lot.

B. The Commission's complaint does not charge that Standard's use of the Riverside County Courthouse or the sign placed on the side of the courthouse affected the results of the demonstrations.

C. The Commission's complaint does not charge that the use of the courthouse building or the sign misrepresented the qualities or characteristics of F-310.

The use of the sign and the building in respondents' advertising represented that F-310 was developed by Chevron Research Company and marketed by Standard. Both representations are true (Fenton 4769). The research center at Richmond, Calif., includes more than 20 buildings on a 15.5 acre site, employs over 900 chemists, engineers, mathematicians, physicists and technicians, and has a total staff of 1,050. Over 50 percent of the technical personnel hold Masters or Doctors degrees. Chevron Research operates on a budget which in 1970 exceeded \$25,000,000. It is one of the largest research companies of its kind west of the Mississippi.

Initially, respondents considered filming the advertisements of the Chevron Research facilities in Richmond, Calif., but for technical reasons, such as the weather, they were unable to do so (Fenton 4768; Clark 4954-55). Simple comparison of the courthouse building, as used in the background of some of the advertisements, and the Chevron Research facilities in Richmond (RX-62), supports the uncontradicted testimony that use of the Chevron Research facilities would have been "more impressive" than the building in Palm Springs (Clark 4955). Various pictures of Chevron Research facilities as shown in RX-62 illustrate the point beyond doubt.

In view of the stipulations that the use of the courthouse and the sign neither affected the results of the demonstrations nor "misrepresented the qualities or characteristics of F-310," nothing in the picture of the building or the sign thereon could constitute a material factor in any

consumer's decision to buy Chevron gasolines with F-310; or, in other words, could not have the capacity to mislead or deceive the consuming public into purchasing Chevron gasolines containing F-310.

28. The complaint charges respondents falsely represented the meter pictured in the "Meter" television commercial "is used by the federal government to measure the total amount of pollution emitted by a motor vehicle" (Complaint, Paragraphs Five-9, Six-9). In the 60 second "Meter" television commercial, the audio text accompanying the picture of the meter states "This *type* of meter is used by federal and state authorities" (RX-4, p. 3). This statement is true, for the undisputed evidence is that the meter "is of the same type as is used by various Federal and State agencies such as the Department of Health, Education and Welfare at its Exhaust Laboratory at Ypsilanti, Mich., by the Federal Motor Vehicle Compliance Section Field Laboratory in the City of Commerce, Calif., by the Air Resources Board of the State of California, and by numerous other public agencies and private organizations" (Stip. Fact RXS-113, Exh. 1, p. 3; Harkins 4154). The minor alterations to the face of the meter for the purpose of aiding viewer comprehension in the limited time available in a television commercial did not in any way modify, change or affect its accuracy (Stip. Fact RXS-113, Exh. 1, p. 4).

The "Meter" television commercial did not represent that the meter was being used during the television demonstration to measure the "*total amount* of pollution emitted by a motor vehicle." The advertisement represented only that the meter was used to measure "exhaust emissions," which it does do and was doing at the time of the television demonstration. Complaint counsel place special emphasis on the Meter TV commercial (RXS-4, p. 3). Despite the fact the advertisement nowhere refers to "*all* exhaust emissions," complaint counsel "contend that the meter advertisement does make the specific claim to reduce *all* exhaust emissions" (Tr. 2703). They rely on the words "exhaust emissions" appearing on the face of the meter and in the audio text, and the stipulated facts that the meter is not capable of and is not used to measure more than one pollutant at a time, and, as depicted in the TV commercial, was measuring only emissions of hydrocarbons (Stip. Facts 10-11; RXS-113, p. 4). Complaint counsel's contention must be rejected.

It is undisputed that hydrocarbon emissions are exhaust emissions, and it is common and ordinary usage to refer to the hydrocarbon component in motor vehicle exhaust in the plural, not in the singular. Complaint counsel's own expert witness on emissions testing, Kenneth D. Mills, testified that people in the automobile industry normally use the plural in referring to hydrocarbon emissions (Mills 3124, 3153). In

the *Federal Register* of June 4, 1968, for example (RXS-24), the Department of Health, Education and Welfare established standards for "Evaporative Emissions" (RXS-24a, 24b) yet the only "emissions" covered were hydrocarbons (RXS-24d, § 85.22). Further, the Stipulated Evidence in this proceeding specifically refers to "hydrocarbon emissions" (e.g., RXS-114, item 2 of CX 151, p. 9: "In the 1971 model year, limitations will be placed on hydrocarbon *emissions* resulting from evaporation of gasoline from carburetors and fuel tanks"; e.g., RXS-114, item 7 of CX-143, p. 34: "The advantage of this approach—or any other fuel change—is that it would reduce hydrocarbon *emissions* from all motor vehicles, regardless of whether they were subject to pollution control standards").

It is also undisputed that the phrase "exhaust emissions" can be ordinarily and commonly used in a generic sense to describe hydrocarbon and carbon monoxide emissions. Federal agencies, in establishing regulations to control air pollution from motor vehicles, regularly use the phrase "exhaust emissions" to refer only to hydrocarbon and carbon monoxide emissions. In the *Federal Register* of June 4, 1968, for example (RXS-24), the Department of Health, Education and Welfare published "Standards for Exhaust Emissions" (RXS-24a, 24b), yet the only exhaust emissions for which standards were set were hydrocarbons and carbon monoxide (RXS-24d, § 85.21). (See also, RXS-22, RXS-23, RXS-25.)

The record also provides an additional reason why the Meter TV commercial is an accurate demonstration of F-310's capability in reducing both hydrocarbon and carbon monoxide emissions, notwithstanding the fact that at the time of the filming of the commercial, the meter was only measuring hydrocarbon emissions. As a scientific matter, changes in the levels of the two emissions go "hand in hand." Standard's witness Robert K. Stone testified that the Meter commercial depicting measurements of unburned hydrocarbons was also illustrative of the order of magnitude of reductions of emissions of carbon monoxide: "Considering the fact that in these kinds of tests, the carbon monoxide and hydrocarbons go hand in hand, to that extent, it certainly in my view would illustrate that the carbon monoxide emissions were doing the same thing" (Stone 3998-99).

To the same effect is the testimony of John Harkins:

Q. Now, Mr. Harkins, at the time of the filming of that demonstration, the meter was actually measuring unburned hydrocarbons only; based upon your experience, would this showing on the meter at that time be in any way indicative of what you would expect to receive in the way of measurements of carbon monoxide, had the meter been shifted over and calibrated for that purpose?

A. Yes. Carbon monoxide and hydrocarbons are highly correlatable.

* * * * *

[Q.] In your business, and based upon your long experience, do you frequently use a reading of one exhaust emission, say carbon monoxide, and accept that as a valid indicator of what you would expect to get for, say, unburned hydrocarbons?

A. Yes, we do this on a daily basis at Scott. We use carbon monoxide instruments as an indication of the condition of the vehicle.

Q. And do you generally find that the measurement of one of those exhaust emissions is very closely paralleled by the other?

A. Yes.

Q. Hearing Examiner Schrup: You mean in relation to--they go hand in hand?

A. The Witness: They go hand in hand, yes, sir (Harkins 4154-55).

Similarly, Standard's witness Dr. Phillip Myers testified that the meter as shown in the television commercial "is giving an indication of the changes directly of hydrocarbons and indirectly of carbon monoxide" and that the television commercials were a proper demonstration, an accurate demonstration of the effects of F-310 (Myers 5091-92).

Further, in this regard, complaint counsel's own evidence shows that nationwide motor vehicles annually emit 86 million tons of pollutants to the atmosphere, of which 66 million tons are carbon monoxide and 12 million tons are hydrocarbons (CX-90, Fig. 2, p. 11); thus, these two pollutants together account for over 90 percent of the total exhaust emissions from automobiles. Complaint counsel's own witnesses (*e.g.*, Behar) established that in some local areas, such as Los Angeles, motor vehicle emissions were responsible for as much as 97 percent of the carbon monoxide and 80 percent of hydrocarbons in the atmosphere (Behar 1956, 1941). Since hydrocarbons and carbon monoxide account for over 90 percent of the total exhaust emissions from motor vehicles, since those were the only two pollutants subject to Federal motor vehicle control programs at the time the challenged advertisements were published (Stone 4281; RXS-24), and since the Meter TV commercial correctly demonstrated F-310's ability to reduce those two pollutants, the representations in the commercial that F-310 reduces exhaust emissions are true.

29. The complaint further charges that respondents falsely represented that tests had been conducted to prove that "Every purchaser" of Chevron gasolines containing F-310 "will obtain significantly better mileage" than can be obtained from "any other commercially available gasoline" (Complaint, Paragraphs Five-10(c), Six-10(c)). The challenged advertisements do not represent that *every* purchaser will receive *significantly* better mileage from the use of F-310; they do represent that use of Chevron gasolines containing F-310 "improve mileage" or will provide "better mileage," but such representations are made in the

context either of improving mileage in cars with "dirty engines" or in minimizing mileage loss in cars with clean engines. The challenged advertisements do not refer to competitive gasolines or "other commercially available" gasolines. All the tests of F-310 which established its ability to remove and reduce the buildup of deposits on critical parts of engines and to reduce and control hydrocarbon and carbon monoxide emissions, by the same token established F-310's ability to improve mileage (Stone 3788-89; Spitler 4452-53; Myers 5028, 5031, 5131). As Dr. Myers testified (Tr. 6233-34):

* * * there is a well-established relationship between air-fuel ratio and fuel economy. When you use F-310 and it removes deposits, it changes the air-fuel ratio; it therefore changes the fuel economy. The effect is not tremendous; it is no 20 or 30 percent. But it is real; it is theoretically sound; it is present.

And the Stipulated Evidence establishes that hydrocarbons and carbon monoxide represent "unburned and wasted fuel" (RX-114, item 1 of CX-87).

The Scott Research Laboratories tests conducted prior to the publication of the challenged advertisements established that the use of F-310 reduced fuel consumption in dirty engines by an average of 8 percent with larger improvements under idling conditions (18.2 percent) and at steady cruise of 25 miles per hour (12.6 percent) (Stone 3869; Spitler 4452-53; RX-66, App. H). Tests on taxicabs in Spokane, Washington, showed that three months "after switching to Chevron gasolines containing F-310, the two test groups showed an average increase in mileage per gallon of 15.66 percent. This is a significant improvement and represents a substantial saving in the costs of operating a taxicab fleet" (RX-61, affidavit of the owner of the taxicab company, stipulated into evidence with all objections to admissibility waived, Tr. 5055).

30. The complaint charges respondents falsely represented that Chevron gasolines containing F-310 "will clean or keep clean all engines and engine components" (Complaint, Paragraph Five-11). The complaint further alleges, however, that the representation is false because in "truth and in fact" F-310 "*reduces the accumulation of deposits in the carburetor and in or on certain other engine components*" (Complaint, Paragraph Six-11). The challenged advertisements do not represent that Chevron gasolines containing F-310 will clean or keep clean *all* engines or *all* engine components; they do represent that F-310 "*reduces the accumulation of deposits in the carburetor and in or on certain other engine components.*"

In fact the use of Chevron gasolines with F-310 removes and reduces the buildup of deposits in carburetors, intake manifolds, intake ports

and on intake valves and PCV valves, and minimizes the buildup of sludge and varnish on pistons, piston rings, valve lifters, oil screens, oil pump relief valves and throughout the crankcase area of dirty engines. The degree of improvement necessarily depends upon the condition of the engine. In the case of new cars or cars with clean engines, F-310 will prevent or minimize the accumulation of such deposits.

31. William H. Megonnell, Director of the Division of Stationary Source Enforcement of the Environmental Protection Agency, testified that the automobile as a source of air pollution varies from area to area; for example, in Washington, D.C., it emits more than 70 percent of the hydrocarbons and about 99 percent of the carbon monoxide (Megonnell 3446-47); while in West Virginia, the motor vehicle contributes only 1-2 percent of the air pollution (Megonnell 3448). Mr. Megonnell also testified on cross-examination concerning EPA's regulation of motor vehicle emissions (Megonnell 3451-52); that even though the automobile's contribution is small in some areas of the country, the air quality standards and controls of automobile emissions are established by law on a nationwide basis (Megonnell 3452). He explained the reason for nationwide controls:

A. The reason is: Congress passed a law and it applies nationally, and in the field of public health there is a well-established principle that you regulate based on the worst situation. So, it is quite true that in Mt. Storm, West Virginia, the fellow buying a new car couldn't care less about the controls on it, but he must put it on because Los Angeles, California, has the problem.

Q. Now, in the course of the functions and duties that you performed, and observed in your work for the Federal Government, has it always been the case that these standards and controls are set up on a nationwide basis?

A. Since 1968, that was the first year that there was national control put on" (Megonnell 3452-53).

He also testified that even nationwide control programs, such as the evaporative controls to prevent escape of vapors from gasoline tanks, which provided only a 1 percent reduction in hydrocarbon emissions in the first year (1971) and which will take 10 years to accomplish a little over a 10 percent reduction, were undertaken by the government because "every little bit helps" (Megonnell 3453-55). John Chipman, an engineer with the California Air Resources Board, called by complaint counsel for a different purpose, testified on cross-examination that a 10 percent reduction of hydrocarbons and carbon monoxide would be a "worthwhile" improvement and agreed with Dr. Haagen-Smit, Chairman of the California Air Resources Board, that "every little bit counts" (Chipman 2780-81).

Testimony of most of complaint counsel's witnesses established that reductions of even lesser magnitude than those achieved by F-310 were

"important" and "worthwhile" and were necessary in the "step-by-step" process needed to achieve the required standards of air quality. To establish the significance of F-310's reductions of hydrocarbons and carbon monoxide from exhaust emissions of motor vehicles, Standard introduced comparisons which showed that the reduction in automotive air pollution, which would result from the general use of F-310, would exceed in most instances and approximate in others the reductions achieved from various emission control programs adopted, enforced or approved by government agencies. Most of the comparisons were introduced through respondents' witness Robert K. Stone; and many used data for Los Angeles County, because it had a "large car population for which there is good information;" the results, however, "would apply to other car populations anywhere in the United States" (Stone 4002-04).

Robert K. Stone compared the significance of F-310's capabilities with other additives. He testified on the basis of his background, training and experience, particularly in the field of working with government agencies and the like, seeking ways and means of controlling automotive exhaust emissions. There was, in his opinion, no other known additive which provided the benefits of deposit control to the same degree and to as many areas of the automobile as does F-310 (Stone 4279). Even when other additives were tested at higher concentrations, such as are used with F-310, they were unable to provide the same benefits as F-310, and many at such concentrations developed adverse effects (Stone 4280). Dr. Eneas D. Kane testified that a reduction of only 50 parts per million of hydrocarbon emissions from vehicles in the average car population, i.e., of around 15 percent, from use of F-310, "would indeed be significant" (Kane 3552, 3546-52); and that based on all the in-house testing that was done at Chevron Research on F-310, all of the testing on employees' cars, fleet vehicles, and the Scott Research Laboratories tests, there was a scientific and an engineering basis for the advertising claim that F-310 would result in a significant reduction of hydrocarbons and carbon monoxide (Kane 3553).

Robert L. Chass of the Los Angeles County Air Pollution Control District testified that F-310 is a significant contribution to the reduction of air pollution by reducing hydrocarbon and carbon monoxide emissions in the general car population (Chass 4379, 4441-42); and that the results of the Rose Bowl test are valid and accurate results and represent a "significant" reduction in exhaust emissions of hydrocarbons and carbon monoxide (Chass 4375). Max Roensch, an expert witness for Standard, testified that the reductions in exhaust emissions produced by F-310 are "very significant;" that there is "no magic formula" to eliminate exhaust

emissions; that it must be accomplished step by step and therefore even 2, 3 or 5 percent reductions would be significant (Roensch 5176).

Dr. Phillip Myers, an expert witness for Standard, testified that on the basis of his entire investigation of F-310 it was his opinion that the emissions "reductions achieved by F-310 are significant" (Myers 5128-30); that F-310 "is available now" when emissions are at their highest level, and it "will reduce emissions now;" it will reduce emissions in all cars on the average, if used in all cars (Myers 5130); the consumer doesn't have to do anything, the result comes automatically (Myers 5130); it is an economical way to improve the atmosphere (Myers 5130-31). Dr. Myers also reviewed all the comparisons of reductions by F-310 with reductions by government control measures and he agreed with the analyses of witness Stone (Myers 5130-31). Dr. William L. Faith originally subpoenaed as an expert witness on smog by complaint counsel but then excused, was called by Standard. He was asked whether a 13.9 percent reduction in hydrocarbon emissions from automobiles would be significant and he answered: "Certainly it would be significant," adding that even a 5 percent reduction would be significant (Faith 4250). Dr. Faith was also of the opinion that the comparisons of F-310's reductions with those of other control measures (RXS-36 through RXS-59b) was an appropriate way of determining the significance of the effect of a product such as F-310 (Faith 4252). He was familiar with all the control procedures compared by Mr. Stone and testified that Mr. Stone in no instance unfairly favored F-310 (Faith 4254).

32. The overwhelming weight of the reliable and probative evidence in this matter establishes that in fact the use of Chevron gasolines containing F-310 will reduce hydrocarbon and carbon monoxide emissions from cars with dirty engines, and prevent or minimize the increase of hydrocarbon and carbon monoxide emissions from new cars or cars with clean engines, by amounts which constitute a significant reduction of those pollutants in the atmosphere, thereby making a significant contribution to cleaner air.

Following the close of the evidentiary trial record in this matter, complaint counsel at page 89 in their Memorandum in Support of the Proposed Findings of Fact, Conclusions of Law and Order filed Feb. 26, 1973 have attempted to interject a new issue in this matter not the subject of the specific allegations and charge of the complaint directed to the challenged advertising by the respondents. The memorandum states "we believe the staff is entitled to the following modification of Part I of the proposed order, should the Judge find that the use of Standard's gasoline does significantly reduce air pollution."

The proposed modified order, if issued, would require that the respondents "do forthwith cease and desist, in connection with advertising, offering for sale, sale or distribution of gasoline unless it is clearly and conspicuously disclosed on the pumps dispensing gasoline and in advertising that: 'USE OF THIS PRODUCT IS HARMFUL TO HUMAN HEALTH AND WELFARE. ITS USE WILL HAVE DAMAGING EFFECTS TO HEALTH, VEGETATION, AND CROPS, AND WILL RESULT IN A REDUCTION OF VISIBILITY. IN CERTAIN AREAS IT WILL CAUSE PHOTOCHEMICAL SMOG.'"

This modification or alternative order directed to gasoline as such with or without the additive F-310 being now proposed by complaint counsel is rejected. See particularly, pages 24-28 of Reply of respondent Batten, Barton, Durstine & Osborn, Inc. to Proposed Findings of Fact, Conclusions and Order Submitted by Complaint Counsel. Finally it is found that the Motion filed Febr. 2, 1973 of respondent, Batten, Barton, Durstine & Osborn, Inc. to dismiss the complaint against it for failure of proof should be, and is hereinafter, granted.

THE ORAL ARGUMENT

Counsel for respondent Standard on Mar. 19, 1973 filed a 49-page reply to the proposed findings of fact of complaint counsel. Counsel for respondent BBD&O on Mar. 19, 1973 filed a 33-page reply to the proposed findings of fact of complaint counsel. Complaint counsel on Mar. 16, 1973 filed a 263-page reply to the proposed findings of fact of each of the respondents. Complaint counsel at such time also submitted two very voluminous loose-leaf files entitled, Volume I and Volume II, containing lengthy extracts of the transcript testimony of record of some 28 witnesses.

A two day oral argument was held in this matter on Mar. 28 and Mar. 29, 1973 covering the entire record in this proceeding. Incorporated in the oral argument are two single page documents submitted by respondent Standard, respectively entitled, Factual Guidelines for Interpreting the F-310 Advertisements and Legal Guidelines for Interpreting the F-310 Advertisements. The oral argument was informative and helped pinpoint the pertinent issues necessary for resolution of this matter and was fully considered in the making of the preceding findings of fact.

CONCLUSIONS

1. Complaint counsel have failed to carry the required burden of factual proof that respondent Standard Oil Company of California has violated Section 5 of the Federal Trade Commission Act as alleged and charged in the complaint.

2. Complaint counsel have failed to carry the required burden of factual proof that respondent Batten, Barton, Durstine & Osborn, Inc. has violated Section 5 of the Federal Trade Commission Act as alleged and charged in the complaint.

3. The complaint in this proceeding therefore should be dismissed as to each said respondent.

ORDER

It is ordered, That the complaint in this proceeding be, and the same hereby is, dismissed as to respondent Standard Oil Company of California and as to respondent Batten, Barton, Durstine & Osborn, Inc. for failure of proof.

OPINION OF THE COMMISSION

BY ENGMAN, *Commissioner*:

Complaint counsel appeal from the administrative law judge's initial decision dismissing the complaint as to both respondents. The complaint alleges that respondents used false, misleading and deceptive advertisements to promote the sale of Chevron gasolines containing F-310, an engine cleaning gasoline additive developed by respondent Standard Oil Company of California. Respondent Batten, Barton, Durstine & Osborn, Inc. is the advertising agency which prepared and distributed the advertisements.

The advertisements purport to demonstrate F-310's capacity to control automotive exhaust emissions and increase gasoline mileage. The demonstrations are based on tests conducted by an independent testing firm, and the record indicates that F-310 does have some degree of effectiveness in preventing and removing internal engine deposits and reducing exhaust emissions. However, the development of a product with laudable characteristics does not grant a license to exaggerate its effectiveness. We find that respondents through demonstrations made claims which far exceed the actual effects of F-310. Such advertisements had the capacity to deceive the consuming public and violated Section 5 of the Federal Trade Commission Act.

I. THE F-310 ADVERTISEMENTS

The F-310 advertisements at issue were first disseminated in Jan. 1970, and included five basic television commercials, numerous related radio and print advertisements, and a variety of point of purchase advertising materials. Respondents entitled the television commercials The Balloon, The Bag, The Meter, The Torch and The Garage Door. Full

audio texts and brief descriptions of the video portions of each of the basic, 60-second television commercials are set forth below and in the appendix to this opinion. Also reproduced in the appendix are samples of print ads based on the Balloon and Bag themes.

In each television dramatization, astronaut Scott Carpenter appears and provides the audio portion of the advertisement while a test demonstration is carried out by workers clad in white laboratory coats bearing identifiable Chevron emblems. Each advertisement uses a before-and-after test comparison format, with an assertion that just six tankful of Chevron gasoline with F-310 caused the difference in test results. Our analysis will focus on the Balloon, Bag and Meter advertisements, which contain the most glaring misrepresentations.

A. The Balloon and The Bag

The Balloon and Bag television advertisements have similar formats in which the exhaust from a test car is collected inside a large transparent plastic bag. In the Balloon ad, the plastic bag is attached directly to the exhaust pipe of the car, and as the bag fills with exhaust, it rises until it is suspended in the air to the rear of the car. In the Bag ad, the car is enclosed inside a plastic bag, so the exhaust inflates the bag around the car.

In the "before" sequences of the ads, the bags fill with thick black smoke making it impossible to see into or through them. The "after" sequences, show the bags again filling with exhaust. This time, however, the inflated bags are clear so that the viewer can see inside and completely through them. In the "after" sequence of the Bag ad, the test car which was previously engulfed in black smoke is completely visible. In the same segment of the Balloon ad, one sees objects directly behind the "balloon" which were totally blocked out before. Copies of the storyboard summaries of the 60-second versions of these commercials are set forth on the following pages:*

*The storyboards placed in the record, and reproduced here, show certain superimposed qualifying language being flashed on the screen. As indicated below, p. 7 [p. 1363-64 herein], these messages did not appear in the television commercials during the period Jan. 9, 1970 - June 9, 1970. Films of the actual 60-second commercials as they appeared during this period of time are in the record.

Standard Oil Company of California

BBD & O "BALLOON" 60 SEC. COLOR



I'm Scott Carpenter.



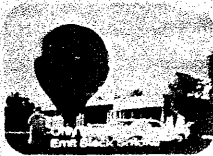
We're attaching a clear balloon to this car.



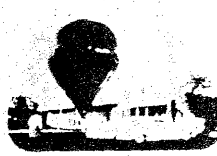
to show one of the most meaningful gasoline achievements in history.



The balloon is filling.



with dirty exhaust emissions.



that go into the air and waste mileage.



Now Standard Oil of California has accomplished the development of a remarkable gasoline additive.



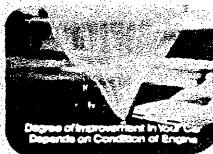
Formula F-310, that reduces exhaust emissions from dirty engines.



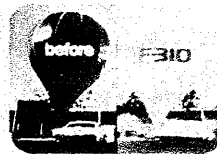
Same car.



after just six tankfuls of Chevron with F-310.



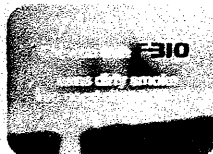
no dirty smoke, cleaner air. A major breakthrough to help solve one of today's critical problems.



And since dirty exhaust is wasted gasoline, F-310 keeps good mileage from going up in smoke.



Cleaner air, better mileage—



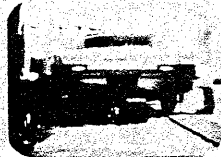
Chevron with F-310 turns dirty smoke into good, clean mileage.



There isn't a car on the road that shouldn't be using it.

Standard Oil Company of California

BBD & O "BAG" 60 SEC. COLOR



You're about to see proof of one of the most significant developments in gasoline history.



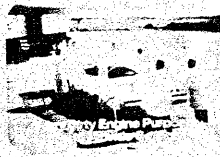
There is so much black smoke,



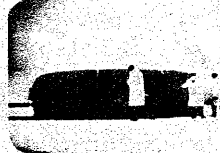
Formula F-310 gasoline additive. Watch.



An important step toward solving one of today's major problems.



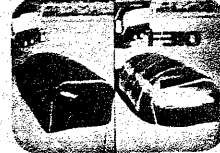
We've sealed a car in a plastic bag to show how dirty exhaust emissions go into the air.



you can't see the car.



Same car after just six tankfuls of Chevron with F-310.



And since dirty exhaust is wasted gasoline, F-310 keeps good mileage from going up in smoke.



That wastes mileage.



I'm Scott Carpenter. Now Standard Oil has achieved a significant step in the reduction of exhaust emissions from dirty engines.



No dirty smoke, cleaner air.



Cleaner air, better mileage—Chevron with F-310 turns dirty smoke into good, clean mileage.

F-310

STANDARD OIL COMPANY OF CALIFORNIA

There isn't a car on the road that shouldn't be using it.

B. *The Meter*

In the Meter ad, after an aerial view of the test car, the dial of a meter is shown with a left-to-right calibration from zero to 100. On the left side of the dial is the word CLEAN with an arrow pointing in the direction of zero. On the right side of the dial is the word DIRTY with an arrow pointing toward 100. The words EXHAUST EMISSIONS appear immediately below the dial. Scott Carpenter describes the meter as the type used by federal and state authorities to test emissions. The test demonstration consists of a technician inserting a test electrode into the exhaust pipe of the car followed by a full screen showing of the meter as it registers the contaminant level. At first the meter registers 100 - DIRTY. In the "after" sequence, the meter registers 20 - CLEAN.

C. *Audio Portions of the Television Commercials*

The audio portions of the television advertisements contain claims that F-310 is one of "the most significant developments in gasoline history," "reduces exhaust emissions from dirty engines," and, after just six tanksful of Chevron with F-310, exhaust emissions are reduced leaving "no dirty smoke" and "cleaner air." The Bag, Balloon and Meter commercials all conclude with the following statements:

Chevron with F-310 turns dirty smoke into good, clean mileage. There isn't a car on the road that shouldn't be using it.

Near the end of each television commercial, a side-by-side, split screen comparison is used to contrast a dirty balloon to a clean one, a meter reading 100 to a meter reading 20, etc. This type of side-by-side comparison is also used in most of the initial newspaper and magazine ads.

By June 9, 1970, the television commercials and some of the print ads had run in all western states. From June 10, 1970 through Aug. 1970, the ads continued, but during that period, some qualifying language was superimposed on the video portion of the television commercials.¹

Although the language of the complaint would permit scrutiny of all F-310 advertisements making emission control and mileage claims after Jan. 9, 1970, we concern ourselves here only with the initial test comparison advertisements disseminated from Jan. 9 to June 9, 1970, focus-

¹ Some or all of the following were flashed on the screen at different times during television commercials run after June 10: "Very Dirty Engines Purposely Used to Provide Severe Test," "Not All Cars Emit Excessive Exhaust," "Only Dirty Engines Emit Black Smoke," "Degree of Improvement in Your Car Depends on Condition of Engine."

The superimposed language was added voluntarily and an Assurance of Voluntary Compliance was filed with the Commission promising continued use of the superimposed language whenever the commercials were used in the future. The Commission has not accepted respondent's assurance of compliance as disposition of this matter.

ing specifically on the Bag, Balloon and Meter television and print advertisements.

II. THE COMPLAINT AND INITIAL DECISION

The Commission's complaint alleges that the challenged advertisements made the following false, misleading and deceptive representations: (1) F-310 in Chevron gasolines is a revolutionary development in the reduction of air pollution; (2) Chevron with F-310 will produce motor vehicle exhaust which is generally pollution free; (3) Chevron with F-310 will significantly reduce the total amount of air pollution; (4) Chevron with F-310 will significantly reduce air pollution caused by motor vehicles; (5) Chevron with F-310 will significantly reduce emissions of carbon monoxide (CO) and unburned hydrocarbons (HC) from every motor vehicle in which it is used; (6) the Balloon and Bag demonstrations constitute proof, or accurately or visually demonstrate that Chevron with F-310 reduces motor vehicle emissions of HC and CO and significantly reduces air pollution caused by motor vehicles; (7) every motor vehicle will emit black exhaust as pictured in the Balloon, Bag and other demonstrations if operated on motor fuels other than Chevron with F-310; (8) the building identified as Standard Oil Company of California Research Center in some of the advertisements is owned, occupied, or used for research by Standard; (9) the machine (Meter) pictured in some of the advertisements is used by the Federal Government to measure the total amount of pollution emitted by a motor vehicle; (10) tests or demonstrations had been performed before publication or dissemination of the advertisements which proved representations (2), (3), (4) and (5) above, and also that every purchaser of Chevron with F-310 will obtain significantly better mileage than with any other commercially available gasoline; (11) F-310 or Chevron with F-310 will clean or keep clean all engines and engine components.

The ALJ concluded that complaint counsel had failed to carry the required burden of proof in support of the complaint's allegations, and he dismissed the complaint as to both respondents.

As a preface to our discussion of the questions raised on appeal, we will summarize the nature of the motor vehicle air pollution problem in the United States prior to 1970, provide a brief history of Standard's development of F-310, and review the testing of F-310.

III. THE MOTOR VEHICLE AIR POLLUTION PROBLEM

The most prominent claim of the challenged advertisements is that F-310 affects emissions of air pollutants from motor vehicles. The record contains considerable evidence concerning the nature of the automotive

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air pollution problem in the United States and the capacity of pre-1970 technology to control it.

The principal groups of air contaminants resulting from the fuels and combustion processes of motor vehicles are unburned hydrocarbons (HC), carbon monoxide (CO), oxides of nitrogen (NO_x), sulfur oxides, and various particulates, including lead compounds. In addition, a number of secondary pollutants are created when the primary pollutants react chemically with each other and with other substances in the atmosphere after leaving the motor vehicle.² On the basis of weight, CO, HC and NO_x are the most abundant of automotive air pollutants.³

Although there is some dispute among authorities as to which of the automotive pollutants are most damaging, and which should command top priority in pollution control programs, federal and state auto pollution programs in effect prior to 1970 were concerned almost entirely with the control of CO and HC.⁴

It should be noted that all the national emission standards and the accompanying mechanical add-on requirements applied to new cars. It is widely acknowledged, however, that emissions generally increase as cars get older, even in cars with built-in pollution control devices. The question of what to do about pollution levels in used cars is a troublesome one, and we have kept in mind the used car emission problem throughout our analysis of this appeal.

Respondent's defense of the disputed advertising claims is based principally on F-310's ability to reduce HC and CO exhaust emissions. Standard admitted in its answer that F-310 had no impact whatsoever on lead compound emissions. In the course of the hearings, the company

² Levy, Tr. 1272-84. Most undesirable HCs from automotive sources, for example, require further chemical alteration before they become hazardous, and some of the most damaging forms of automotive NO_x result from secondary atmospheric reactions. In some geographic areas, a significant product of the interreaction of primary pollutants in the atmosphere is photochemical smog. Photochemical smog results from the chemical combination of certain unburned HC and NO_x in the presence of sunlight. It reduces visibility, causes eye irritation and, in certain forms, can adversely affect the health of plants and people. Smog, of course, is a particularly serious air pollution problem in the Los Angeles Basin where F-310 was heavily marketed and advertised throughout the challenged ad campaign. Levy, Tr. 1260-72; Behar, Tr. 1938-40; Faith, Tr. 4236-47. There are around 200 varieties of HCs in automotive exhaust. Levy, Tr. 1280. There are estimates in the record that only from 60 to 75 percent of them are reactive and therefore contributors to pollutions. Levy, Tr. 1302 (60 percent reactive); Stone, Tr. 4347 and CX 219, p. 4 (75 percent reactive).

³ The United States Environmental Protection Agency has estimated that gasoline operated motor vehicles were responsible in 1968 for 59.0 percent of all CO pollution; 47.5 percent of all HC; 32 percent of all NO_x ; 1.8 percent of all particulates and .6 percent of all sulfur oxides. CX 120, Tables 2, 4, 7, 9 and 11.

⁴ Following early efforts by the California State Government to control auto emissions, including enactment of emission level ceilings as early as 1959, and the requirement that positive crankcase ventilation (PCV) valves be installed in all new cars sold in the state beginning with 1961 models, the Federal Government required PCV valves on all new cars in 1963 and established national auto emission standards for 1968 models. The standards for 1968 cars required a 53 percent reduction of CO and a 62 percent reduction of HC. All 1969 models had to also maintain those levels. Standards for the 1970 model year increased the requirements to a total 68 percent reduction of CO and 67 percent reduction of HC. In the 1971 model year, the standards required 85 percent total HC reduction.

acknowledged it wasn't until after the F-310 advertising campaign began that they learned F-310 may have some impact on NO_x emissions.⁵

One of the main contributors to increased automotive air pollution in cars can be an imperfect air/fuel mixture in an engine's combustion system. The imbalance usually results from faulty carburetor function. If the air/fuel ratio is too rich in fuel, there is a higher level of unburned fuel compounds, and HC and CO emissions increase. If the fuel mixture is too lean, the tendency is toward a slight decrease in HC and CO emissions.⁶ When a rich mixture is present, fuel economy also tends to drop because of an increase in wasted, unburned fuel.

Although carburetor malfunctions may be caused by improper mechanical adjustments, the formation of carbonaceous deposits on vital carburetor components can contribute to an increase in HC and CO emissions. One of the main claims for F-310 is that it removes such carburetor deposits.

IV. THE DEVELOPMENT AND CHARACTERISTICS OF F-310

Respondent Standard became actively involved in the development of deposit-controlling gasoline additives in the early 1950s. Chevron Research Company, a Standard subsidiary, conducted extensive laboratory and field tests in efforts to improve and develop such additives. Numerous mixtures of the components which would eventually become the F-310 additive package were tested and evaluated. In 1968, the present F-310 package was developed, and Chevron Research had accumulated evidence that the new additive package was not only effective in controlling carburetor and intake system deposits, but also in reducing the build-up of sludge and varnish on pistons, piston rings, valve lifters, oil screens, oil pump relief valves and PCV valves. Evidence would also later be uncovered that even certain theretofore untouched crankcase deposits were affected by F-310.

Respondents determined that, although numerous F-310 tests had been conducted during the development of the additive, the strength of their marketing efforts would be increased if another series of tests were run by an independent testing company, Scott Research Laboratories, Inc., in San Bernardino, California.

⁵ According to 1966 Commerce Department estimates, 100 percent of the CO, NO_x and lead pollutants from automobiles came from the exhaust. Fifty-five percent of the automotive HC pollutants came from exhaust with 25 percent coming from fuel tank and carburetor evaporation and 20 percent from crankcase blowby. CX 91, Part I, p. 18, Fig. 3.

⁶ With a lean mixture, NO_x emissions may tend to go up because of a resulting increase in engine temperatures.

V. TESTS BY SCOTT RESEARCH LABORATORIES, INC.

Thirteen F-310 tests were conducted by Scott, beginning in 1968.⁷ A specially formulated fuel developed by Chevron Research was used in the first phase of the tests. The fuel was chemically structured to assure the rapid build-up of heavy internal engine deposits. The test cars were driven 5,000 to 20,000 miles, over a prescribed course until they idled roughly, stalled, and emitted visible black smoke. At the conclusion of this "dirty-up" phase, tests of the cars' exhaust emissions showed substantially increased levels of HC and CO.

A "clean-up" phase was then commenced during which the cars were driven over the same test course for 2,000 miles using Chevron premium gasoline with F-310 additive.⁸

During the "clean-up" phase of the thirteen tests, HC emissions were reduced over 50 percent on the average, and CO emission reduction averaged more than 33 percent. Gasoline mileage improved an average of 7.7 percent.⁹

Complaint counsel's major challenge to the Scott tests is aimed not at whether the tests were properly conducted in a technical sense, but whether the tests really show what respondents' advertisements say they do. There was considerable discussion on the record as to whether the use of an accelerated test procedure with a specially formulated "dirty-up" fuel realistically approximated actual driving experiences of average gasoline consumers. Respondents have conceded that the tests

⁷ For the first series of tests, six 1966 Chevrolets with 25,000 to 30,000 odometer miles were selected from used car lots and inspected to see if they met test specifications. New or rebuilt carburetors and new PCV valves were installed on each car. No other cleaning or mechanical adjustments were made. After the new carburetors and PCV valves were in place, the cars' emissions were tested and five of them met California exhaust emissions standards. All six of the cars were equipped with legally mandated emission control equipment.

⁸ New PCV valves were again installed in five of the six cars at the beginning of Phase II to focus attention on the carburetor cleaning action of the additive. After the "clean-up" phase, all six cars showed HC and CO reductions and better fuel mileage. Two cars from other manufacturers were then added to the test fleet, and seven similar tests were conducted using the additional cars and some of the original six cars. This time, the PCV valves were not replaced at the beginning of the clean-up phase and Chevron regular was used instead of premium in some of the cars.

PCV valve plugging was reduced to zero in six of the eight cars on which PCV valve plugging measurements were taken. In one of the other two there was no evidence of plugging at the start of the clean-up phase and a considerable reduction was achieved in the remaining test even though the plugging did not reach zero.

⁹ At about the time the above tests were being conducted by Scott, Standard ran a test on eleven used passenger cars. In these tests, there was an overall 9.1 percent reduction of HC and 28.1 percent reduction of CO. RXS 6f, pp. 97-99.

Additionally, after the commencement of the F-310 advertising campaign in Jan. 1970, several tests were conducted on the additive by various competing oil companies, local and national government agencies, and respondent Standard. These post-advertising tests, although not admissible on the issue of whether respondents had a reasonable basis for making their advertising claims at the time they were commenced, see *Pfizer, Inc.*, 81 F.T.C. 23 (1972), were properly admitted into the record since the complaint also challenges the veracity of claims in the F-310 advertisements. These tests and our findings concerning them are set forth in the Appendix to this opinion.

As in the case of the Scott tests, these additional tests fail to support the greatly exaggerated depictions contained in the Bag, Balloon and Meter advertisements.

are unquestionably severe tests which resulted in larger emissions improvements than would be enjoyed in the general car population. They argue, however, that if F-310 succeeds in removing deposits from extremely dirty engines, it will also affect deposits in engines of cars with less severe problems and retard build-up of deposits in "clean" engines.

Numerous experts testified concerning the applicability of the Scott test data to the general car population. Dr. Spitler and other experts at Chevron Research estimated the likely impact on the general car population would be somewhere between 10 and 20 percent reduction of HC and CO. Dr. Kane, president of Chevron Research during F-310's development, estimated the likely impact on the average car population to be "around 15 percent" or more. Robert L. Chass, Air Pollution Control officer for the Los Angeles Air Pollution Control District, also estimated the probable average impact to be 15 percent based on the Scott tests.¹⁰

VI. COMPLAINT COUNSEL'S APPEAL

Complaint counsel maintain in their appeal that, contrary to the conclusion of the ALJ, there is ample evidence in the record to support the allegations of the complaint. We will first consider the arguments that the Balloon and Bag television and print advertisements represented that use of Chevron with F-310 will result in motor vehicle exhaust which is generally pollution free.

A. Balloon and Bag Advertisements

Paragraphs Five-2, Five-6, Six-2 and Six-6 of the complaint charge that the Balloon and Bag advertisements deceptively overstate F-310's effectiveness and falsely represent that Chevron with F-310 will produce motor vehicle exhaust which is generally pollution free. The cars used in the Balloon and Bag demonstrations were among the original Scott test vehicles. For the filmed demonstrations, they were run through virtually the same accelerated process as in the Scott tests with

¹⁰ For instance, in a Mar. 18, 1970 letter to a member of the Los Angeles County Board of Supervisors, Mr. Chass said:

The test data available so far * * * concerning the effects on exhaust emissions using F-310 gasoline are *not* adequate to permit any reliable estimate of the quantitative changes in such emissions which might occur for a whole vehicle population. It is reasonable and prudent, however, to estimate that they will *not* be as great as those indicated by the test data publicized so far for extreme cases. In fact, since most vehicles have been operating on detergent-containing gasolines for the past 15 years, it seems quite safe to predict that any changes for a large representative population will probably be rather small, perhaps of the order of 15 percent or less. In any event, it is unlikely that any changes which do occur, whether they are increases or decreases, will affect smog sufficiently to be apparent to the public. This opinion is shared by responsible members of the Air Resources Board staff [RXS 65 (emphasis in original)].

before-and-after sequences filmed at the beginning and end of the clean-up phase.¹¹

Before the Balloon and Bag demonstrations were devised, BBD&O's Research Department conducted a statistically projectable survey of 1,000 motorists to help establish the direction of the campaign.¹² Among other things, the survey report of May 8, 1969 showed that most motorists considered air pollution a serious problem and automobiles to be a major cause of air pollution.

Most significantly, BBD&O's survey showed that only 14 percent of motorists were aware that the most polluting elements in exhaust are invisible.

It is beyond dispute that the black smoke in the "before" segments of the Balloon and Bag demonstration was intended to indicate the presence of air pollutants in the exhaust of the test vehicles. For instance, the Balloon television advertisement reproduced, *supra* at 4 [p. 1461 herein], states: "The Balloon is filling with dirty exhaust emissions," and the print advertisement states: "You can even see the emissions as dirty smoke." The disappearance of the smoke was just as clearly intended to indicate disappearance of the smoke was just as clearly intended to indicate F-310's ability to reduce those air pollutants. Complaint counsel maintain that the demonstrations were misleading because HC and CO emissions are actually invisible and that HC, CO, NO_x and lead were all present inside the clear bags in the "after" sequences of the demonstrations.

Respondents argue that in order to find the advertisements claim F-310 results in generally pollution-free exhaust, we would have to add words which aren't actually contained in the advertisements. We must, however, consider the advertisements in their entirety, including logical implications of both their verbal and visual components. Although the words "generally pollution-free" do not appear in the advertisements, the strong, predominant visual message is that the reduction of pollutants is a complete reduction.

We find that the advertisements make the claim that just six tankful of Chevron cause the disappearance of virtually 100 percent of exhaust emission pollutants. However, it is undisputed that the complete disap-

¹¹ During the filming, the fuel in the test cars was not the dirty-up fuel. It was Chevron without F-310. CX 280a. This was a point of controversy in the case because NBC television network raised the question of which fuel was used in the "before" sequences. Complaint counsel considered it a misrepresentation when BBD&O responded that the fuel was Chevron without F-310, but failed to mention that the dirty condition had been created by a specially formulated fuel. Although we also question the propriety of BBD&O's response, we do not consider it an issue raised in the complaint.

¹² CX 146. Light, Tr. 1778-93.

pearance of black smoke was not accompanied by anywhere near a complete elimination of HC and CO pollutants. In fact, the automobile pollution problem where it exists is, at best, only partly relieved by F-310, and implications that a 100 percent or near 100 percent remedy can be achieved are greatly exaggerated and materially misleading.

Respondents defend the Balloon and Bag demonstrations on the ground that the filming of the demonstrations was not rigged in any way and that the films showing thick black smoke in the "before" sequences and virtually no smoke in the "after" sequences are accurate memorializations of visual changes which did occur. We do not question this but conclude that the Balloon and Bag advertisements were materially misleading and deceptive because of the substantial disparity between the visual impact of the demonstrations and the evidence which showed the actual average reductions to be about 50 percent for HC and 33 percent for CO with respect to the Scott test cars.

Moreover, we believe it likely that a substantial portion of the audience viewing the Bag and Balloon advertisements during the period in question thought they were being told that the dirty exhaust emissions shown in the ads were representative of most used automobiles on the road—that their exhaust, if collected in an enclosed space such as the plastic bag or balloon shown, would tend to have the same black appearance and that use of "just six tankfuls of Chevron with F-310" would clear up pollution from such cars in the same dramatic way that appeared to be the case in the ads. But undisclosed to viewers was the fact that the demonstration cars had unusually heavy engine deposits that were created by a special "dirty-up" fuel before the sequence was televised. The evidence indicates only a small percentage of the cars on the road would have similar engine conditions and Standard concedes that it was known by Jan. 1970, when the commercials were commenced, that the average reduction of HC and CO for the general car population resulting from use of F-310 would be on the order of only 15 percent. These considerations make the exaggerated visual depictions all the more misleading.

Futhermore, there is no specific description in the television versions of the Bag and Balloon commercials of which pollutants are actually affected by F-310, so viewers have no reason to assume less than all pollutants are affected. As indicated earlier, a number of important pollutants, such as lead compound emissions, are not affected by F-310. Some of the print advertisements specifically mention HC and CO as affected pollutants, but they give no hint to potentially uninformed viewers that other pollutants also come from motor vehicles.

In drawing conclusions about the Balloon and Bag advertisements, we

have not ignored their verbal texts. In evaluating advertising representations, we are required to look at the complete advertisements and formulate our opinions of them on the basis of the net general impression conveyed by them and not on isolated excerpts. *See e.g., Rhodes Pharmacal Co. v. FTC*, 208 F.2d 382, 387 (7th Cir. 1953); *Charles of the Ritz Distributing, Corp. v. FTC*, 143 F.2d 676 (2d Cir. 1944); *Aronberg v. FTC*, 132 F.2d 165, 167 (7th Cir. 1942). Respondents would have us hold in this instance, that the verbal portions of the television and print advertisements sufficiently qualify the implications of the visual demonstrations to eliminate any deception which might result from isolated consideration of the demonstrations.

The television texts do speak in terms of "cleaner air," and "reduction" of emissions rather than "completely clean air" or "total elimination" of emissions. Most of the print texts contain the same or similar wording. At the same time, however, they also contain these phrases: "Chevron with F-310 turns dirty smoke into good *clean* mileage," "There isn't a car on the road that shouldn't be using it," "*no* dirty smoke" and "F-310 keeps good mileage from going up in smoke." (Emphasis added.) The latter phrases give the impression of a more complete, unqualified claim of effectiveness, and, at least, create considerable uncertainty as to the degree of qualification gained by the less absolute language stressed in respondents' arguments.¹³ It is well settled that where one of two meanings conveyed by an advertisement is false, the advertisement is deceptive within the meaning of the Act. *Giant Food Inc. v. FTC*, 322 F.2d 977, 981 (D.C. Cir. 1963); *Rhodes Pharmacal Co. v. FTC*, *supra*; *Colgate-Palmolive Co.*, 58 F.T.C. 422 (1961).

In any event, the net impression conveyed by the Balloon and Bag advertisements is overwhelmingly influenced by the striking visual portions of the advertisements, and we do not find that the verbal texts provide sufficient qualification or limitation to the visual representations to remove the overall, misleading impressions conveyed by the advertisements taken as a whole.¹⁴

Respondents have also raised the argument that because the major automotive air pollutants are invisible, they were compelled to show the

¹³ In the matter of *The Coca Cola Company* (Hi-C), Docket 8839, Slip Opinion, p. 19 (Oct. 5, 1973), the Commission stated:

The Commission is willing to recognize that even express claims phrased merely in the positive degree such as "high" and "sensible" can convey comparative, and even superlative, meanings. They can do so, for example, if the advertisement's net impression serves to support such a comparison * * *.

¹⁴ Some of the print advertisements utilized by respondents use no pictures at all, and of these, some more fully explain the nature of F-310's background and effectiveness. We need not reach the question of whether any of these advertisements violated the standards of Section 5 since it is enough to sustain our order that we find the advertisements that relied upon verbal depictions during Jan.-June 1970 were deceptive.

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reduction of some related, visible substance in order to make television and other pictorial advertising meaningful to viewers. We would not be so troubled by that argument if the visual demonstrations they chose accurately portrayed the degree of F-310's efficacy. If, however, respondents can devise no way to visually represent the claimed effects of F-310, then they should not employ that demonstration. As the Supreme Court observed in *Federal Trade Commission v. Colgate Palmolive Co., et al.*, 380 U.S. 374, 391 (1965):

If * * * it becomes impossible or impractical to show simulated demonstrations on television in a truthful manner, this indicates that television is not a medium that lends itself to this type of commercial, not that the commercial must survive at all costs. Similarly unpersuasive is respondents' objection that the Commission's decision discriminates against sellers whose product claims cannot be "verified" on television without the use of simulations. All methods of advertising do not equally favor every seller. If the inherent limitations of a method do not permit its use in the way a seller desires, the seller cannot by material misrepresentation compensate for those limitations.

The complaint also alleges (Paragraphs Five-10 and Six-10) that the foregoing advertisements claim tests had been conducted prior to the commencement of the advertising campaign and proved or substantiated the claims that Chevron with F-310 will produce generally pollution-free exhaust.

The advertisements contain statements such as "Here's proof" and "You're about to see proof" which clearly invite the assumption that what follows is based on tests or other reliable substantiation. The appearance in the demonstrations of complicated measuring instruments and white-coated "technicians" contributes to the impression that scientific testing is behind the advertisements. We find that the advertisements do represent that tests had been conducted which proved the claims made in the advertisements. As we found, however, representations in the advertisements about F-310's effectiveness far exceed any reasonable interpretation of pre-advertisement or post-advertisement tests. The advertisements were, therefore, misleading and deceptive in their representations that pre-advertisement tests proved or substantiated the advertised representations.

The challenged F-310 advertisements are examples of the type of advertising which focuses on serious anxieties of consumers resulting from heated public discussion of issues such as environmental protection; individual and public health; job, home and auto safety; economic woes such as shortages and inflation; etc. In addition to respondents' undoubted general awareness of consumer concern about the environment in 1970, they knew from BBD&O's May 8, 1969 survey report that most motorists considered air pollution to be very serious problem

(ranked closely in seriousness in the motorists' minds with the problems of narcotic drugs and local crime) and associated black smoke from automobile exhaust with air pollution. In our opinion, it is incumbent upon advertisers who seek to advance their own interests in even partial reliance on such serious consumer concerns to exercise an extra measure of caution in order to be certain that their representations to consumers will not deceive or mislead.

B. The Meter Advertisements

In the preceding sections we have focused on the Balloon and Bag advertisements, but we should also discuss the misrepresentations contained in the Meter advertisements. The Meter advertisements were only used on television, and they depicted a change in "EXHAUST EMISSIONS" from 100 to 20 on a scale of 100.¹⁵ The meter itself was not rigged in any way, and the needle on the meter actually reflected the differences in electronic impulses associated with a reduction in HC.

One misleading aspect of the demonstration was that the meter showed a reduction of 80 out of 100 units on the dial. However, for technical reasons, a change of 80 units on the meter dial did not in fact mean an 80 percent reduction of emissions was effectuated. The reduction was no more than 50 percent of HC in actual fact.¹⁶ Such a wide disparity between an advertising representation and the factual basis for the challenged product claim compels the conclusion that the advertisements are materially misleading and deceptive. It is less likely that consumers will interpret the Meter commercial as making a "pollution-free" claim similar to the Bag and Balloon ads because the Meter demonstration still shows 20 units of exhaust emissions on the dial in the "after" sequence. Nevertheless, the substantial difference between the reduction claimed and the most favorable reduction to be expected based on the test results creates a clear likelihood for deception.

Also, we agree with complaint counsel that the Meter advertisements at least have the capacity to mislead viewers into the belief that *all* pollutants are being measured simultaneously. There is no explanation of any kind that "EXHAUST EMISSIONS" refer to a single pollutant rather than *all* pollutants, and nothing in the advertisements gives viewers any reason to believe that only one pollutant (HC) is being measured rather than all pollutants.

In conjunction with the representations discussed here and in Subpart A above, we have determined that because F-310's effectiveness in

¹⁵ See Appendix III [p. 1477 herein].

¹⁶ The Scott tests, unadjusted to the general car population showed average HC reductions of 50 percent. No other F-310 test showed better HC control.

controlling air pollutants is limited to only two or possible three specific pollutants, all future F-310 advertisements claiming any reduction of air pollution or motor vehicle air pollution should contain a conspicuous disclosure that not all harmful pollutants in automotive exhaust are affected by F-310. This will provide consumers with information vital to a proper understanding of F-310's effectiveness.

C. Liability of Batten, Barton, Durstine & Osborn, Inc.

The ALJ dismissed the complaint as to BBD&O after finding the advertising agency had properly relied on Standard's assurances concerning the technical accuracy of the F-310 advertising claims.¹⁷ BBD&O has maintained all along that its lack of research facilities compelled it to rely on Standard and Scott for conclusions about the technical correctness of the claims. BBD&O further contends that if it held liable for deception in the F-310 advertisements, advertising agencies will be unable to develop advertisements for technically complex products without first building their own elaborate research and testing facilities. The rationale urged for the latter argument is that if BBD&O is held liable in this case, advertising agencies will no longer be able to place reasonable reliance on the scientific and technical expertise of their clients or of independent testing companies.

We do not accept BBD&O's arguments because the assumptions inherent in them are inconsistent with the facts of this case. This is not a case of an advertising agency that helped develop deceptive advertisements through unknowing, good faith reliance on faulty back-up data. The evidence shows the F-310 advertising representations went far beyond even the most favorable interpretation of test results or other research data available when the advertisements were created and distributed. Such a wide disparity between advertising claims and substantiation information is inconsistent with the contention that the advertisements were conceived through reasonable reliance on the data or on the assurances of experts that the advertising claims were technically correct.

In analyzing a similar issue in the matter of *Merck & Co., Inc.*, 69 F.T.C. 526, 558 (1966), the Commission stated:

Although the agency contends, in this connection, that it relied on information furnished by Merck (the advertiser), the deception found to exist stems not from the falsity of this information but from the use made of it by the agency.

In like fashion, the deceptiveness of the advertisements challenged in this proceeding resulted from the way BBD&O and Standard jointly

¹⁷ I.D., findings 18 and 32. [pp. 1433, 1457 herein.]

used the substantiation information rather than from falsity of the information itself.

The legal standard which must be applied in determining the liability of an advertising agency in a case like the present one requires that the agency actively participated in the deception and knew or had reason to know the challenged advertisements were false or deceptive. *Dougherty, Clifford Steers & Shenfield v. Federal Trade Commission*, 392 F.2d 921, 928 (6th Cir. 1968); *ITT Continental Baking Company, Inc.*, FTC Docket No. 8860, Slip Opinion, pp. 26-28 [83 F.T.C. 865, 968-69] (Oct. 19, 1973).¹⁸

In the same opinion, the court noted the Commission had found, as we do in this case, that "the advertising at issue * * * is the product of both respondents jointly." *Id.*

Representatives of BBD&O were involved in the development of the F-310 advertising from the very earliest stages. They carefully reviewed all the test results and were active participants in numerous meetings in which alternative advertising approaches were evaluated and ultimately accepted or rejected. The final determination to use the demonstration format of the Jan. 1970 advertisements was a joint decision of representatives of BBD&O and Standard, and after the final joint decision was made, BBD&O actively participated in the filming of the pictorial portions of the advertisements,¹⁹ the drafting of the verbal texts, the preparation of layouts and the promotion and distribution of the advertisements.²⁰

BBD&O's representatives clearly knew what the research and test results were, and they also knew the demonstrations showed changes from heavy smoke to no smoke, a 100 - DIRTY reading to a 20 - CLEAN reading, etc. It does not take engineering or scientific expertise to realize that demonstrations depicting emission changes ranging from 80 percent to 100 percent cannot be justified by data showing much lower improvements. Also, as previously noted, BBD&O Research Department had conducted a consumer survey to establish the direction of the campaign and learned that most motorists correlate black smoke from

¹⁸ In *Dougherty* the court said:

The proper criterion in deciding in a case of this kind as to whether a cease and desist order should issue against the advertising agency is "the extent to which the advertising agency actually participated in the deception. This is essentially a problem of fact for the Commission." In order to be held to be a participant in such deception, the agency must know or have reason to know of the falsity of the advertising. *Carter Products, Inc. v. F.T.C.*, *supra*, 323 F.2d 523, 534 (5th Cir.)

¹⁹ The filming of the television advertisements was actually carried out by Film Fair, Inc. under contract. BBD&O had representatives present at all filming sessions, however, to see that all went as planned.

²⁰ I.D., finding 18, ¶2 lp. 1433 herein; Fenton, Tr. 4745-48, 4756-59; Kane, Tr. 3510-12; Clark, Tr. 4939, 4953. BBD&O also conducted a final review of all materials intended for network distribution and handled all communications with network officials in the distribution process. Clark, Tr. 4967-71.

exhaust with air pollution emissions and only 14 percent are aware that the most polluting elements in exhaust are invisible.

BBD&O also argues the agency was justified in proceeding with the advertising campaign because the F-310 advertisements were subjected to extraordinarily thorough reviews and clearances by technical experts, engineers, advertisers, lawyers, and management from Standard and account executives, lawyers and management from BBD&O.²¹ But obviously, reviews and clearances by numerous individuals at various levels of respondents' organizations do not satisfy the law's requirements of truth in advertising. In the *Merck* case, where one matter in issue was the alleged liability of an advertising agency for deception in test-related throat lozenge advertisements, the Commission said, "Nor is it a defense to the agency that the advertising was approved by Merck's (the advertiser's) legal and medical departments."²² The same rule applies here, even though there were more steps of review in this instance than in *Merck*.

For the reason stated in this section we find that BBD&O knew or had reason to know the F-310 advertisements in dispute in this case were false, misleading and deceptive, and that the agency actively participated in that deception. We conclude that BBD&O's actions constitute a violation of Section 5 and that entry of an order against said agency is appropriate.

D. Corrective Advertising

The notice order in this case provides for corrective advertising for a period of one year after the entry of an order against respondents. However, the evidence is inconclusive on the residual effects of the advertising in the minds of consumers, and the state of the record fails to justify entry of a corrective advertising order.

E. Additional Points Raised by Complaint Counsel on Appeal

In their appeal brief, complaint counsel rely on a number of other allegations made in the complaint which are not specifically discussed in this opinion. We have examined each of these charges and other issues raised on appeal and have determined in each case that complaint counsel's position is without merit or that resolution of the issue is not required in arriving at the conclusions contained herein.

²¹ I.D., finding 18, ¶12, provides a complete list of the levels of review to which the F-310 advertisements were subjected. In the case of Standard, the review actions reached the highest levels of corporate management. Such high level review does not occur in most Standard advertising activities. See also, Clark, Tr. 4946-49.

²² 69 F.T.C. 526, 559 (1966).

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VII. CONCLUSION

In accordance with the legal and factual conclusions discussed in this opinion, we find that the F-310 advertisements discussed herein were false, misleading and deceptive in violation of Section 5 of the Federal Trade Commission Act and that the entry of the order accompanying this opinion is appropriate.

APPENDIX

I. *METER* (Basic 60-second TV Commercial shown Jan. 22 - June 9, 1970)

Scene: Test car parked by the side of a large trailer truck in a partially filled parking lot.

Video

Before: After an aerial view of the test car and trailer truck in the parking lot, the dial of a meter is pictured with a left to right calibration running from zero to 100. The word CLEAN and an arrow pointing toward zero appear on the left of the dial, and the word DIRTY and an arrow pointing toward 100 appear on the right of the dial. The words EXHAUST EMISSIONS appear beneath the dial. A measurement instrument is inserted into the exhaust pipe of a test car, and the pointer on the meter goes to 100 (DIRTY).

After: The measurement instrument is again placed in the idling test car's exhaust pipe. This time the pointer on the meter only goes to 20 (CLEAN).

Audio

You are about to see proof of one of the most important achievements in gasoline history. I'm Scott Carpenter. This type meter is used by federal and state authorities to measure exhaust emissions that go into the air. On this test car the meter shows excessive dirty exhaust. Now Standard Oil of California has created an extra-ordinary gasoline additive, Formula F-310. F-310 reduces exhaust emissions from dirty engines.

Same car, just six tankful of Chevron with F-310—exhaust emissions reduced. A significant step towards solving one of today's major problems. And since dirty exhaust is really wasted gasoline, F-310 keeps good mileage from going up in smoke—cleaner air, better mileage. Chevron with F-310 turns dirty smoke into good, clean mileage. There isn't a car on the road that shouldn't be using it.

II. *TORCH* (Basic 60-second TV Commercial shown Jan. 26 - June 9, 1970)

Scene: Test car parked in what appears to be a laboratory testing room.

Video

Before: A hose is attached to the exhaust pipe of a test car. On the other hand of the hose, supported by a vertical floor stand, is a metal cylinder a little larger than a one-gallon can. The cylinder is open at the top. As the car idles, the room lights are dimmed and a flaming wand is waved over the cylinder by Scott Carpenter. The exhaust coming out of the cylinder instantly ignites and continues to burn as the car idles.

After: This time when the flaming wand is waved over the "torch" no flame appears. A small flag bearing the Chevron emblem and the trademark F-310 is attached to the cylinder, and it flutters upward to indicate that exhaust is actually coming out.

Audio

I'm Scott Carpenter. We're about to demonstrate how an amazing gasoline develop-

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ment reduces wasted gasoline and restores mileage. We've connected this device to a car to show that dirty exhaust contains enough wasted gasoline to ignite a torch. That is wasted gasoline burning. Now Standard Oil of California has developed an extraordinary additive, Formula F-310, that reduces exhaust emissions from dirty engines.

Same car, after just six tanksful of Chevron with F-310. Exhaust emissions reduced, no wasted gasoline burning, Chevron gasolines with F-310 reduce wasteful exhaust emissions, keep good mileage from going up in smoke. Cleaner air, better mileage. Only Chevron Gasolines have F-310. There isn't a car on the road that shouldn't be using it. III.-GARAGE DOOR (Basic 60-second TV Commercial Shown Feb. 8 - June 9, 1970)

Scene: Test car parked before what appears to be a large automotive garage. Immediately behind the car is a portable frame containing a white, sliding garage door.

Video

Before: A test vehicle is backed up until it almost touches a white garage door supported by a frame behind the car. As the car idles, a dark, black circle forms on the surface of the door immediately behind the tailpipe.

After: The car is again allowed to idle immediately in front of the white garage door. This time, no deposit builds up on the door's surface. It remains completely clean. Small white streamers flutter in the tailpipe to show that exhaust is actually coming out.

Audio

I'm Scott Carpenter. Here's proof of one of the most long-awaited gasoline developments in history. We've backed this car against a garage door to show dirty exhaust emissions going into the air. That adds up to wasted mileage. Now, Standard Oil of California has accomplished the reduction of exhaust emissions from dirty engines with the development of Formula F-310, a unique gasoline additive.

Same car, after just six tanksful of Chevron with F-310. Dirty exhaust reduced. No dirty smoke. Cleaner air. An important development to help solve one of today's major problems. And since dirty exhaust is wasted gasoline, F-310 keeps good mileage from going up in smoke. Cleaner air, better mileage. Chevron with F-310 turns dirty smoke into good clean mileage. There isn't a car on the road that shouldn't be using it.

IV. BALLOON PRINT AD

Announcing the most long awaited gasoline development in history!



BEFORE

1. A car that runs on regular gasoline will burn 10% more gasoline than a car that runs on F-310. This means that a car that runs on regular gasoline will burn 10% more gasoline than a car that runs on F-310. This means that a car that runs on regular gasoline will burn 10% more gasoline than a car that runs on F-310.

AFTER F-310

1. A car that runs on F-310 will burn 10% less gasoline than a car that runs on regular gasoline. This means that a car that runs on F-310 will burn 10% less gasoline than a car that runs on regular gasoline. This means that a car that runs on F-310 will burn 10% less gasoline than a car that runs on regular gasoline.

New F-310 in Chevron gasolines turns dirty exhaust into good clean mileage.

Now, research scientists at Standard Oil Company of California have developed a remarkable new gasoline additive — Formula F-310 — that sharply reduces dirty exhaust from dirty engines. And helps toward cleaner air.

Tests conducted by Sept Research Laboratories, an independent research group, showed that Chevron gasolines with F-310 reduced unburned hydrocarbon and carbon monoxide emissions dramatically. Clearly, this is an important step toward solving one of today's major problems.

F-310 also improves mileage. Because dirty exhaust is really wasted gasoline. So F-310 literally keeps good mileage from going up in smoke.

What causes an engine to produce dirty exhaust in the first place? Over a period of time, deposits make engines "run rich." They actually consume more gasoline than they can burn efficiently. Result: wasted gasoline goes out the exhaust pipe as unburned hydrocarbons, along with increased carbon monoxide emissions. You can't even see the emissions as dirty smoke. And you can feel it and hear it — the rough idling. It all adds up to a car that is unnecessarily emitting dirty exhaust and wasting gasoline. Just six tankfuls with F-310 can correct the condition.

Formula F-310, a patented gasoline additive, is now in all three grades of Chevron gasolines: all Chevron Dealers Standard Stations in the greater Los Angeles area and southward. As soon as additional supplies are available, we'll be introducing this remarkable development elsewhere throughout the west.

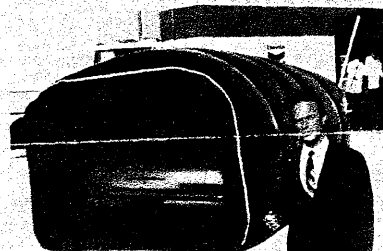


Chevron with F-310. There isn't a car on the road that shouldn't be using it.

STANDARD OIL COMPANY OF CALIFORNIA

V. BAG PRINT AD

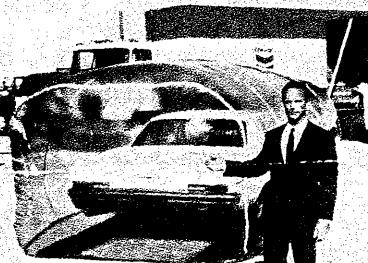
Remarkable gasoline breakthrough from the research laboratories of Standard Oil



BEFORE

This car was made in a clean, glowing bag with the engine running. The bag started to fill with dirty exhaust when the engine started. (Inventor's note: The bag shows how exhaust emissions from dirty engines go into the air and waste mileage.)

Scott Carpenter
Automotive Specialist
Research Laboratory
Standard Oil Company



AFTER F-310

The same car—after running on just six tankfuls of Chevron with Formula F-310. Dirty exhaust emissions reduced sharply. The bag remains clear and dry. (Inventor's note: Chevron with F-310 turns dirty exhaust into good clean mileage.)

New F-310 in Chevron gasolines turns dirty exhaust into good clean mileage.

Now, research scientists at Standard Oil Company of California have achieved the most long-awaited gasoline development in history! It's a new gasoline additive—Formula F-310—that sharply reduces dirty exhaust from dirty engines. And help toward cleaner air.

Tests conducted by Scott Research Laboratories, an independent research group, showed that Chevron gasolines with F-310 reduced unburned hydrocarbon and carbon monoxide exhaust emissions dramatically. Clearly, this is a major step towards solving one of today's most urgent problems.

F-310 also improves mileage, because dirty exhaust is really wasted gasoline. So F-310 literally keeps good mileage from going up in smoke.

How does an engine produce dirty exhaust in the first

place? As a car accumulates mileage, deposits build up. The amounts of gasoline and air fed into the engine get out of balance. This causes the engine to "run rich," wasting gasoline. As a result, excessive unburned hydrocarbons and carbon monoxide exhaust emissions go into the air. F-310 can correct this condition. Just six tankfuls can do the job.

Formula F-310, a patented gasoline additive, is now available in all three grades of Chevron gasolines at all Chevron Dealers, Standard Stations in the greater Los Angeles area and southward. As soon as additional supplies are available, we'll be introducing this remarkable development elsewhere throughout the West.



Chevron with F-310. There isn't a car on the road that shouldn't be using it.
STANDARD OIL COMPANY OF CALIFORNIA

VI. F-310 TESTS CONDUCTED AFTER THE COMMENCEMENT OF THE ADVERTISING

A. The Los Angeles County Sheriff's Car Tests

The first F-310 tests after the advertising began were conducted in January and February 1970 by the Los Angeles County Mechanical Department on six County Sheriff's cars. Three 1968 and three 1969 Plymouths with 30,000 to 60,000 accumulated miles were selected for the tests. "Super Shell" gasoline, a premium grade competitive gasoline containing DuPont engine-cleaning additive DMA-4, had previously been used in the test cars.¹

After pre-test emission measurements, the cars were switched to Chevron gasoline with F-310 and driven by Sheriff's deputies in regular service for 678 to 2,093 miles. Concluding emission measurements showed average HC reductions of 24% and CO reductions of 42%. Each vehicle had achieved some degree of emission improvement. Standard had nothing to do with the tests and first learned of them at or near their completion in February 1970.²

Criticisms raised on the record as to the reliability of the test results included suggestions that the sample was too small and not properly selected for an accurate representation of the general United States car population.³ It was also argued that the driving done during the tests was not typical of the average gasoline consumer.⁴ Factors raised in defense of the tests were that the cars had very dirty engines to begin with, they had been operated for a long time on a premium grade gasoline with an engine-cleaning additive, and the tests, unlike the Scott tests, were not accelerated.

B. The Orange County Fleet Test

Beginning in Mar. 1970, 53 vehicles⁵ from the fleet of the Department of Transportation of Orange County, California were tested at Standard's request by Scott Research Laboratories, Inc. to determine the effects of Chevron gasoline with F-310 on their exhaust emissions. A varied group of 1964 through 1969 Fords and Plymouths were used.⁶ Their beginning mileage readings ranged from 9,439 to 76,034 and test miles driven ranged from 1,619 to 3,136 with a mean of 2,056. Prior to the tests, the cars had been operated on "Super Shell" gasoline with DuPont additive DMA-4. During the tests, the cars were driven by Orange County personnel in normal use. Before and after emission tests⁷ showed an average 12.4% reduction of HC, 27.5% reduction of CO and 0.5% increase of oxides of nitrogen. In this test, not all cars showed HC and CO decreases. By one means of measurement, 17 cars showed increased CO, 15 showed increased HC and 27 showed increased NOx.⁸

Standard considered this series of tests an opportunity to document the effects of F-310 on a well maintained fleet of cars in normal use. In fact, the maintenance on the fleet

¹ I.D., finding 19, RXS 6f, p. 100; Kane, Tr. 3558-59; Spitler, Tr. 4467, 4513, 6174.

² RS Ans., p. 38; I.D., finding 19; RXS 6f; RXS 71, Kane, Tr. 3558-59, 4457-58, 4466-67, 4499-500, 4511-13. As in the Scott tests, only the hot portion of the Federal 7-mode test cycle was used. Kane, Tr. 3558-59; Spitler, Tr. 4457, 4499.

³ Stahman, Tr. 5364; Cattaneo, Tr. 6077.

⁴ Stahman, Tr. 5364.

⁵ One car was lost to the test from the original total of 54 because of conversion to burn natural gas instead of gasoline. RXS 6s, Table 1.

⁶ The cars had both V-8 and I-6 engines.

⁷ Again, as in the Scott tests and Sheriff's car tests, only the hot portions of the Federal 7-mode procedure was used.

⁸ RS ans., p. 39; I.D., finding 20, ¶1; RXS 6s; RXS 6t, pp. 4-8 and accompanying charts and pictures; Harkins, Tr. 4159-60, 4165-66, 4209; Spitler, Tr. 4472-74, 4500.

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was extraordinarily thorough.⁹ Respondents' witnesses argued that the high maintenance level adds strength to the test findings because even with such conscientious care the cars still averaged an improvement with F-310. They also said it is significant that average improvements were seen even though the cars previously used a high grade gasoline.¹⁰ Some witnesses, on the other hand, expressed doubts about the tests, because of alleged limited applicability to the general car population and obvious pollution increases in many of the cars.¹¹

C. The Rose Bowl Test

After trying without success to interest the California Air Resources Board in carrying out a broad-based test of F-310 in the general car population, Standard retained Olson Laboratories, Inc. to conduct comparative emission tests on a large number of automobiles in the Pasadena, California area. Olson is a recognized independent automotive testing company. Haug Associates, Inc., a marketing research firm, was hired to obtain the desired samples of cars for the tests. Standard's instructions to Haug were that they should select the sample randomly from a five mile radius of the Rose Bowl in Pasadena and they should not select cars which had used Chevron gasolines after December 1, 1969. The random sample was stratified according to representative, statewide model, make and engine-type data obtained from the California State Department of Motor Vehicles.¹²

Haug made 4,000 initial telephone contacts to determine gasoline use patterns among eligible car owners.¹³ Seven hundred were contacted a second time and asked if they would participate in the tests. Four hundred fifty-five cars actually started the tests in which before and after emissions tests were conducted in the Rose Bowl parking lot.¹⁴ Drivers were instructed to return after driving 2,000 miles in normal car use.

Test results are given only in terms of the measurements taken on 297 of the cars. The reasons so many of the original cars were excluded from the final tabulations are varied: 12 cars didn't return for the second test,¹⁵ 14 received improper emissions tests at the test site, 19 cars had been driven less than 1,000 miles during the test period, 46 cars underwent "gross" mechanical changes,¹⁶ and 67 had received tune-ups.¹⁷ Final adjusted¹⁸ computations of the test data show average reductions of 13.9% HC, 11.6% CO, and 5.8% NOx.

There was more dispute during the evidentiary hearings about the reliability, general applicability and significance of the Rose Bowl test results than there was about any of the other F-310 tests. Complaint counsel claimed the following elements were weaknesses in the tests: (1) no control group was used to assure that F-310 and not some other factor or factors were responsible for the improvement; (2) the adjustments for humidity which increased the recorded percentage improvements were improperly made; (3) the strati-

⁹ RXS 6s, Table 3.

¹⁰ See, e.g., Spittler, Tr. 4479.

¹¹ Stahman, Tr. 5376. Cattaneo, Tr. 6079, 6115. But see, Chass, Tr. 4374.

¹² RXS 6t, pp. 8-9.

¹³ It was estimated that 135,000 cars were owned by people living in the five mile test radius.

¹⁴ The 7-mode hot start test was used as in the Scott, Orange County and Sheriff's car tests.

¹⁵ One was lost in an accident, one participant died during the tests, and the others simply didn't return the second time. RXS 6t, p. 13.

¹⁶ *Id.*

¹⁷ *Id.* at pp. 13-14.

¹⁸ The final figures were adjusted for humidity variations according to conversion tables developed by Ethyl Corp. Unadjusted reductions were 11.0% HC, 9.3% CO, and 5.8% NOx.

fied sample was not a statistically proper "random" sample; (4) the size of the sample and the types of cars used do not permit projection of the results to the general United States car population; (5) it was improper to rely on participant questionnaire answers to ascertain prior gasoline use and driving conduct during the test; and, (6) exclusion of cars which had undergone mechanical changes during the test made the results unrealistic because such changes do occur in normal use and would influence the general use of F-310.

Respondents countered with arguments that: (1) no control group was needed because there were other controls built into the tests, and no value would have accrued from the use of such a group; (2) no recognized humidity adjustment factors existed at the time of the test other than Ethyl Corporation figures, which were properly applied; (3) without stratification the sample wouldn't have had a realistic chance of including a representative variety of makes, models and engine types; (4) they had aimed at a sample of 300 in the first place because they were convinced that was a minimum necessary size, and sufficient controls were present to make the sample valid and generally projectionable to the United States car population; (5) there was no sensible way to obtain gasoline use and test conduct information other than through participant questionnaires; and (6) because the test was aimed only at a measurement of F-310 effects, it would have been improper to include cars which may have changed because of mechanical problems or tune-ups—other deleted cars were excluded so they wouldn't improperly bias the results through uncontrolled variances.

There was also a great deal of analytical and conclusory testimony by experts for both sides about whether the test as a whole was statistically valid and whether the average percentage improvements were really significant in light of the greatness of the air pollution problem.

D. Tests By Competing Oil Companies

1. Union Oil Company Tests

Between January and March 1970, Union Oil Company of California conducted comparative emissions tests on ten late model cars which had previously been operated on Union gasolines containing an engine-cleaning additive. The cars ranged in age from 1965 to 1969 and had odometer mileage of 23,000 to 66,000. They were switched to Chevron gasoline with F-310 for six tankful and an average of 1,400 miles was accumulated during the tests.¹⁹

According to Union's statistical analysis, before and after emission measurements were not significantly different from zero, but average figures showed a 6.14% HC increase, a 1.44% CO increase and a 0.21% improvement in gasoline mileage.²⁰ Union's technical experts did not expect much of an improvement when they started the tests because they inspected the carburetors of the test cars and found them to be essentially clean before the tests began.²¹

Standard argues that the tests prove their contention that if a car is clean to begin with, Chevron with F-310 will keep it that way.²² Without analyzing that argument at this point, we do find that the Union test results serve to help place the Scott test results, upon which

¹⁹ The miles were accumulated on a chassis dynamometer rather than through actual road driving.

²⁰ The measurements were made by Scott Research Laboratories, Inc. CX 410.

²¹ It should be noted that even in light of these test results, Union did increase the percentage concentration of its own additive in its commercial gasolines after F-310 was introduced. Kent, Tr. 5236.

²² RS Brief, pp. 26-7.

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the basic ads are based, into their proper overall perspective. The following was Union's summary of the significance of their test findings:

* * * Standard reported that their test of F-310 on cars with artificially fouled carburetors showed a reduction of 55% in hydrocarbon emissions, 34% in carbon monoxide emissions and an improvement in gasoline mileage of 5%. The results of our tests provide clear evidence that cars regularly using Union's gasolines would show no significant improvement when switched to Chevron fuel. It is estimated that Standard would have had about one chance in 35,000 of getting their published results if they had picked cars previously run on Union gasolines for their test instead of cars that had run on a selected and non-typical gasoline.²³

Union gasoline is a commercially available gasoline which is more representative of fuels used by most drivers than the "dirty-up" fuel used to prepare cars for Standard's Scott tests.

One notable aspect of Union's tests was that exhaust filled, polyethylene bag comparisons were used in an attempt to compare the tests with Standard's advertising dramatizations.²⁴ When the bags were filled before the switch to Chevron with F-310, they were just about as clear as they were after the six tankful of Chevron. The bags never filled with black smoke. We find it is worth noting that cars run for 23,000 to 63,000 miles on a commercially available detergent gasoline did not fill a bag with black smoke.²⁵

2. Standard Oil Company of Ohio Tests (SOHIO)

Two 1970 F-310 tests by SOHIO were introduced by complaint counsel during direct examination of the SOHIO employee who wrote the test reports.²⁶ Complaint counsel attach significance to the fact that the tests showed no significant effects of F-310 use, but we note that in both test reports, the reader is cautioned that mechanical maladjustments may have obscured any additive effects.

Other tests conducted by SOHIO led them to the conclusion that F-310 was somewhat better than their own additive and better than certain other competitive additives.²⁷ Although at the time of the hearing, the company was still considering using F-310 in its own gasolines, there is no evidence that it ever began such use.²⁸

3. Esso Research and Engineering Company Tests

Early in 1970, Esso compared Chevron Custom Supreme Extra by using eight employee-owned cars which had previously operated on Esso Extra 90% of the time. The cars were driven at an average speed of 30 m.p.h. for 400 miles per day for a total of 2,400 miles. Emission measurements²⁹ were made every 600 miles, with two measurements at 2,400 miles.³⁰ Over the course of the tests, average emissions increased rather than declined. The Esso test report concluded that, although some other factors may have influenced the test results, it could at least be determined that "Chevron Supreme containing F-310 is unable to further clean carburetors operated with Esso Extra."³¹

²³ CX 410f.

²⁴ CX 410 a-c consists of pictures of these bag comparisons. There is no noticeable difference between the bags in the before and after pictures.

²⁵ Standard ran some early tests on ARCO gasoline to see if could use it as a base for the bag and balloon tests. Exhaust from cars running on ARCO did not fill the bags with black smoke. Thereafter, Standard developed its special "dirty-up" fuel for the Scott tests.

²⁶ CX 411, CX 412.

²⁷ I.D., finding 25, ¶3; Snyder, Tr. 5280-290 (*in camera*).

²⁸ Snyder, Tr. 5305 (*in camera*).

²⁹ They used the whole 7-mode cycle rather than just the hot portion as in most of the other F-310 tests.

³⁰ Seven of the eight cars had emission control devices on them as required by law. CX 413.

³¹ CX 413b.

A second test was conducted on eight 1963 and 1964 cars which had no emission controls. A July 1970 report says that the tests show F-310 does not significantly reduce emissions relative to the additive Esso was then using. A witness from Esso testified that on the basis of the tests run by the company, F-310 could result in 10-15% emission reducing effect.³² During the testimony of this witness, respondent emphasized and obtained agreement from the witness that, at a minimum, the tests show that F-310 keeps clean engines clean.³³

4. Shell Oil Company Tests

Shell ran a number of tests during 1970 comparing F-310 to Shell additives. One test of five late model employee-owned cars with 20,000 to 45,000 miles of operation exclusively on Shell products, resulted in average emission changes of 0.8% decrease in HC, 0.0% change in CO, and 12% decrease in NOx.³⁴ The conclusion of the test report was that "the use of Chevron Supreme Gasoline with F-310 affords no significant benefit regarding exhaust emissions for cars that have been using Super Shell Gasoline and Super Shell Motor Oil."³⁵

Another test was conducted using four cars from Shell's salesmen's fleet. The 1968 and 1969 cars had been driven 25,000 to 44,000 miles on Super Shell, and after 7,850-10,716 miles on Chevron Premium with F-310, there were "no significant changes in the emissions from the initial to the final measurement."³⁶

Two series of laboratory engine tests were also conducted, one to evaluate F-310's keep-clean capacity and the other to measure accelerated clean-up.³⁷ The keep-clean tests showed F-310 would keep some engine parts clean, but the clean-up tests were not so clear.³⁸

At the request of their Marketing Sales Department, Shell ran comparative plastic bag tests to simulate Standard's Balloon advertisements. Two new cars were used—one operating on Super Shell and the other on Chevron Supreme. In two direct comparisons, the bags appeared the same on both cars. At no time did the bags fill with black smoke.³⁹ Standard maintains that because both cars were new, making any comparison to cars with dirty carburetors would not be valid. Standard's position appears to be that this test is just another indication that F-310 keeps clean engines clean.⁴⁰

E. Standard's Four Car Stay-Clean Test

Standard purchased four new 1970 cars, two Chevrolet V-8s and two Ford V-8s, for a 50,000 test of F-310's ability to control increases in emissions in new cars without engine deposits. The PCV valves were not changed, and after a 2,500 mile break-in period, no further carburetor adjustments were made. One car of each make was driven over the

³² Shannon, Tr. 5401-5.

³³ Shannon, Tr. 5401.

³⁴ Scott Laboratories did the emission measurements. CX 418h. The NOx reduction was not attributed to F-310 in the test report. CX 418i.

³⁵ CX 418h. Bollo, Tr. 5446.

³⁶ Bollo, Tr. 5448. CX 398c. Another Shell test showed that tune-ups had a greater effect on emissions than carburetor clean-up. Specifically, carburetor clean-up showed little effect after the cars had been tuned-up and intake valves had been replaced. CX 418j-u. Bollo, Tr. 5450.

³⁷ A dirty-up fuel was used to accelerate the test. Bollo, Tr. 5452.

³⁸ Bollo, Tr. 5451.

³⁹ Pictures of the comparisons are in the record. CX 418f, g.

⁴⁰ RS brief, p. 26. During the period of January to March 1972, Shell conducted tests on F-310 in an unleaded base fuel which showed intake valve deposit clean-up of 44-46%. RXS 119.

Scott Laboratories course using Chevron gasoline with F-310. The other two used ARCO Regular Grade Gasoline which had been purchased in March and May 1970.

The cars using Chevron with F-310 showed a 1% HC increase and a 6% CO increase. The cars operated on ARCO Regular had a 62% HC increase and a 168% CO increase.⁴¹

F. The California Air Resources Board Tests

Three tests from the CARB were offered by complaint counsel to challenge the claims made for F-310 by respondents. The written reports of two of the tests were rejected by the ALJ on the grounds that they were not sufficiently reliable or conclusive to have probative value.⁴² A May 1970 letter discussing the tests written by the Air Pollution Control Officer of Los Angeles County Air Pollution Control District was received.⁴³ The letter states that the tests showed changes which have "no significance" for the general automobile pollution problem. In testimony at the hearings in this case, the author of the letter also stated that the test results were so inconclusive that they could not be used as indicators of F-310's effectiveness or lack thereof.⁴⁴

The first of the tests was the so-called "19-Car Test." As an attempt at a rapid evaluation of F-310 effectiveness, cars of 19 CARB employees were tested before and after six tankful of Chevron with F-310, accumulating between 1,500 and 2,000 miles each. A chassis dynamometer was used to run the tests in place of regular driving. The results were inconclusive according to the testimony of several witnesses.⁴⁵

The second test was a series of survey tests on 842 cars in the Los Angeles area in which motorists voluntarily submitted their cars to one-time tests of emissions and answered questions about the gasoline their car was using.⁴⁶ The purpose of the test was apparently to compare emission levels of Chevron users and users of other brands to see if the levels for Chevron with F-310 were significantly lower taken as a group.⁴⁷ Although we do not have the document now in the record, testimony indicates that although no substantial emission differences existed between F-310 users and other groups, the reliability of the available figures is very questionable. The rejection of the exhibit appears to have been proper because of its equivocal nature.⁴⁸

The third test offered in the group was the so-called ARCO Project.⁴⁹ This test of 120 state-owned vehicles was conducted by the CARB, but ARCO installed the exhaust gas recirculation devices which were the focus of the test. Respondents have argued that the purpose of the tests was only to measure the effectiveness of the pollution control device, so it is not a proper vehicle for an evaluation of F-310's effectiveness. We would not be persuaded by this argument if it could be shown that the figures about F-310 were reliable

⁴¹ RXS 6f, pp. 104-5. An additional stay-clean test was conducted as test number 14 of the original Scott tests. In the earlier test, the "dirty-up" fuel used in the original Scott tests was run in a test car with F-310 added to provide a comparison to the increase in emissions observed in the dirty-up phase when F-310 was not used. RXS 6o, p. 5-5, Fig. 5.3, App. Test No. 6 & No. 14.

⁴² Tr. 2636.

⁴³ CX 346. The author of the letter was Robert L. Chass who appeared as a witness in these proceedings on behalf of respondents. The letter was addressed to the Los Angeles County Board of Supervisors.

⁴⁴ Chass, Tr. 4370-72.

⁴⁵ Chipman, Tr. 2616-17; Spittler, Tr. 4501-05; Chass, Tr. 4369-72.

⁴⁶ Chipman, Tr. 2581. The cars tested were owned by people who came to state agencies for licenses, inspections, etc.

⁴⁷ Chipman, Tr. 231-33; CX 346a.

⁴⁸ One of the major objections respondents had to the admission of the tests was the fact that the only evidence of which gasoline was being used was questionnaire answers from participants which only gave current use information and not prior use patterns. Chipman, Tr. 2773.

⁴⁹ Chipman, Tr. 2663; CX 140.

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and probative. There were, however, some questions raised about the tests which we find damaging to the value of them as indicators of F-310 performance.

Although the drivers of the cars had credit to purchase Chevron gasoline during at least a substantial portion of the tests, there is no assurance that some did not deviate from exclusive Chevron gasoline use.⁵⁰ There is also evidence that some changes and adjustments were made in the cars while the test was going on which may have affected emissions. Given these facts, we attach little significance to the report of the ARCO Project results as far as they have been urged as a negation of F-310 effectiveness.

G. Standard's Union Gasoline Comparison Test

One of the original Scott test vehicles was run through another dirty-up phase in order to test the clean-up capacity of Union Oil Company gasoline and compare Union with Chevron and F-310. After the dirty-up phase, the car was operated on Union Regular for 2,000 miles. Only a slight drop in HC emissions occurred, and there was no CO decrease. The car was then operated on Chevron gasoline with F-310, and after another 1,400 miles, emissions had returned to the starting level.⁵¹

H. Taxicab Fleet Test in Spokane, Washington

The affidavit of the president of a Spokane taxi company was introduced by respondents upon a stipulation of complaint counsel to provide evidence of a favorable gasoline mileage test of Chevron with F-310. Thirty cabs were operated for three months using Chevron without F-310. Then, in Mar., Apr. and May 1970, twenty of them were switched to Chevron with F-310 and they experienced an overall 15.66% improvement in gasoline mileage.⁵² This was considered a significant improvement by the company president because he felt it meant substantial savings in the cost of operating his fleet. The affidavit states that a check was made six months after the second phase and the results verified that the mileage improvement was still present.

I. Miscellaneous Additional Tests

The Bureau of Mines conducted an F-310 test using two cars with low engine deposits for 12,000 miles. The tests were designed to evaluate deposit control rather than emission reductions, and the results were at best inconclusive. (Hurn, Tr. 3321-23). There was some evidence of superior deposit removal by F-310 in the tests. (Hurn, Tr. 3267, 3278).

General Motors' Chevrolet Division used Chevron with F-310 in its 1973 federal engine certification tests. (Roensch, Tr. 5180). And because there was no increase in emissions over the test period and no noticeable engine "deterioration," the company planned to use the gasoline in its 1974 tests. In prior tests using other fuels, emissions had increased as much as 23% during the course of the tests. (Spitler, Tr. 4558-59; Roensch, Tr. 5186).

The United States Environmental Protection Agency has conducted emissions tests on 300 cars using F-310 but the results were not published by the time of the trial of this case. (Kane, Tr. 3645-6). The tests were similar in format to the Rose Bowl test, but it is doubtful a meaningful comparison could be made between the two tests because they are based upon different emission measurement methods. (RXS 33; Spitler, Tr. 4564).

Additional, less significant tests are mentioned in the record, but are not discussed here. (See RXS 6f, pp. 106-108; RXS 75, Spitler, Tr. 4688).

⁵⁰ STP Facts, 5, 6; Tr. 860. There is also some question as to whether the change of the State's gasoline purchase agreements may have altered gasoline buying patterns before the end of the test. RXS 9, 10, 11.

⁵¹ RXS 6f, p. 104; Spitler, Tr. 4517-18.

⁵² RXS 61, Tr. 5055.

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FINAL ORDER

This matter is before the Commission on the appeal of complaint counsel from the administrative law judge's initial decision filed Apr. 25, 1973. The Commission has received written briefs, heard oral arguments and considered the record in this matter, and has determined that complaint counsel's appeal should be granted in part. The Commission also has determined that, except as otherwise ordered herein, the initial decision should be set aside, and the findings and conclusions contained in the accompanying opinion should be adopted as the findings of fact and conclusions of law of the Commission, and that the cease-and-desist order contained herein should issue.

After the Oct. 15, 1973 oral argument on this appeal, three motions were filed with the Commission by parties hereto. Said motions shall be acted upon in the manner and for the reasons set forth herein. Accordingly,

It is ordered, That respondent Standard Oil Company of California's Motion to Strike Portions of Complaint Counsel's Briefs in this Docket and in Docket No. 8851 (*Crown Central*) filed on Oct. 23, 1973 is denied for the reason that it is not improper for parties to adjudicative proceedings before the Commission to cite to initial decisions of administrative law judges in other such proceedings in briefs on appeal to the Commission. Such citations have no evidentiary value and are considered by the Commission only as references to pre-existing adjudicative conclusions which may serve as precedents or guides to future decisions when similar or related issues are before the Commission for resolution. In addition, no prejudice has been shown as a result of the challenged references to the initial decision in question.

It is further ordered, That the Joint Motion to Correct the Record of Oral Argument filed by counsel for all the parties hereto on Mar. 1, 1974 is granted and that a copy of said motion shall be attached to the official copy of the transcript of the oral argument to provide a record of the agreed changes.

It is further ordered, That respondent Batten, Barton, Durstine & Osborn, Inc.'s Motion to Correct the Record filed Feb. 25, 1974 is denied for the failure of the motion to state persuasive reasons for a change on the grounds alleged. However, said motion shall be considered a statement by said respondent in explanation of its counsel's remarks about its abilities to sell gasoline chemistry recorded at page 67 of the transcript of the oral argument.

It is further ordered, That only the following portions of the adminis-

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Final Order

trative law judge's initial decision in this case are adopted as findings and conclusions of the Commission:

The lists of witnesses; the first two paragraphs following the witness lists; findings 1-6; all but the first full sentence of finding 7; finding 11; finding 15; ¶¶1, 2, 5, 6 and 8 of finding 16; ¶¶1, 2, 4 and 5 of finding 17; ¶2 of finding 18; all of finding 19 except the second and third sentences of ¶2; ¶1 of finding 20; ¶3 of finding 25; ¶1, all but the fifth sentence in ¶2, the first full sentence of ¶3 and ¶¶5 and 6 of finding 26; finding 27; ¶3, the last two sentences of ¶5, all but the last sentence of ¶6 and the first two sentences of ¶7 of finding 28; ¶2 of finding 29; ¶2 of finding 30; ¶¶1 and 2 and the first four sentences of ¶3 of finding 31; ¶¶2 and 3 and the first two sentences of ¶4 of finding 32; and both paragraphs under the heading *The Oral Argument*.

All other findings and conclusions of the initial decision are hereby set aside, and the conclusions contained in the accompanying opinion are established together with the above listed sections of the initial decision and the appendix to the opinion, as the findings of fact and conclusions of law of the Commission in this case.

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

I

It is ordered, That respondent Standard Oil Company of California, a corporation, its successors and assigns, its officers, representatives, agents, employees, directly or through any corporate or other device, in connection with the advertising, offering for sale, sale or distribution of Chevron gasolines, or the additive F-310, 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 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:

(a) Automotive exhaust has certain observable or measurable characteristics in all or any number or group of motor vehicles when such is not the fact; or

(b) Any machines, measuring devices or technical instruments have particular characteristics or capacities when such is not the fact; or

(c) Any 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; or

(d) 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.

II

It is ordered, That respondent Standard Oil Company of California, a corporation, its successors and assigns, its officers, representatives, agents, employees, directly or through any corporate or other device, in connection with the advertising, offering for sale, sale, or distribution of Chevron gasolines, or the additive F-310 or any other product in commerce, as "commerce" is defined in the Federal Trade Commission Act, do forthwith cease and desist directly or indirectly from:

1. Advertising by or through the use of or in conjunction with any test, experiment, or demonstration, or the result thereof, or any other information or evidence that appears or purports to confirm or prove, or is offered as confirmation, evidence, or proof of any fact, product characteristic or the truth of any representation, which does not accurately demonstrate, prove, or confirm such fact, product characteristic, or representation.

2. Using any pictorial or other visual means of communication with or without an accompanying verbal text which directly or by implication creates a misleading impression in the minds of viewers as to the true state of material facts which are the subject of said pictures or other visual means of communication.

3. Misrepresenting in any manner or by any means any characteristic, property, quality, or the result of use of any gasoline or gasoline additive product.

III.

It is ordered, That respondent Batten, Barton, Durstine & Osborn, Inc., a corporation, its successors and assigns, its officers, representatives, agents, employees, directly or through any corporate or other device, in connection with the advertising, offering for sale, sale or distribution of Chevron gasolines, or the additive F-310, 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 respondent has a reasonable basis for such representation based upon competent scientific tests by it or its client. The results of said tests and the data

collected in the course thereof relied upon by respondent 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:

(a) Automotive exhaust has certain observable or measurable characteristics in all or any number or group of motor vehicles when such is not the fact; or

(b) Any machines, measuring devices or technical instruments have particular characteristics or capacities when such is not the fact; or

(c) Any 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; or

(d) Any product will reduce any emissions of pollutants from automobile exhaust by any percentage of 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.

IV.

It is ordered, That respondent Batten, Barton, Durstine & Osborn, Inc., a corporation, its successors and assigns, its officers, representatives, agents, employees, directly or through any corporate or other device, in connection with the advertising, offering for sale, sale, or distribution of Chevron gasolines, the additive F-310, or any other product in commerce as "commerce" is defined in the Federal Trade Commission Act, do forthwith cease and desist directly or indirectly from:

1. Advertising by or through the use of or in conjunction with any test, experiment, or demonstration, or the result thereof, or any other information or evidence that appears or purports to confirm or prove or is offered as confirmation, evidence or proof of any fact, product characteristic, or of the truth of any representation which does not accurately demonstrate, prove, or confirm such fact, product characteristic, or representation unless the respondent can establish it neither knew, nor had reason to know, nor upon reasonable inquiry could have known that such was the case.

2. Using any pictorial or other visual means of communication with or without an accompanying verbal text which directly or by implication creates a misleading impression in the minds of viewers as to the true state of material facts which are the subject of said pictures or other visual means of communication unless the respondent can establish it neither knew nor had reason to know nor upon reasonable inquiry could have known the true facts.

3. Misrepresenting in any manner or by any means any characteristic, property, quality, or the result of the use of any gasoline or gasoline additive product unless the respondent can establish it neither knew nor had reason to know nor upon reasonable inquiry could have known that such representations are false.

It is further ordered, That Subparagraphs 1, 3, 4, 5, 7, 8, 9, 10(b), 10(c) and 11 of Paragraphs Five and Six of the complaint be, and they hereby are, dismissed.

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

It is further ordered, That respondents herein shall notify the Commission at least thirty (30) days prior to any proposed change in any of the corporate respondents 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 respondents shall, within sixty (60) days after service of the order upon them, file with the Commission a written report, signed by the respondents, setting forth in detail the manner and form of their 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.