

Complaint

91 F.T.C.

IN THE MATTER OF

FRUEHAUF CORPORATION, INC.

ORDER, OPINION, ETC., IN REGARD TO ALLEGED VIOLATION OF
THE FEDERAL TRADE COMMISSION ACT AND SECTION 7 OF THE
CLAYTON ACT*Docket 8972. Complaint, June 21, 1974 — Final Order, Feb. 22, 1978*

This order, among other things, requires a Detroit, Mich. truck trailer manufacturer to divest itself, within one year from the date of the order, of Kelsey-Hayes, a Romulus, Mich. manufacturer of automotive components, excluding those operations unique to Kelsey-Hayes' Aerospace Group and R-V Agriculture Group; and to refrain, for a ten-year period, from acquiring any concern engaged in manufacturing, distributing, or selling heavy duty wheels, antiskid braking devices, or truck trailers.

Appearances

For the Commission: *K. Keith Thurman, George J. Wright, Richard L. Williams and Tom D. Smith.*

For the respondent: *John R. Ferguson, William H. Wentz, Phillip A. Proger, Janine H. Coward, Alan S. Ward and Warren Daane, Baker, Hostetler, Frost & Towers, Washington, D.C.*

COMPLAINT

The Federal Trade Commission having reason to believe that Fruehauf Corporation, a corporation subject to the jurisdiction of the Commission, has acquired the stock of Kelsey-Hayes Company, a corporation, in violation of Section 7 of the Clayton Act, as amended, (15 U.S.C. 18), and Section 5 of the Federal Trade Commission Act, as amended, (15 U.S.C. 45(a)(1)), and that a proceeding in respect thereof would be in the public interest, hereby issues this complaint, pursuant to Section 11 of the Clayton Act (15 U.S.C. 21) and Section 5 of the Federal Trade Commission Act (15 U.S.C. 45(a)(6)(b)), stating its charges in that respect as follows:

I. DEFINITIONS

1. For the purpose of this complaint, the following definitions shall apply:

(a) "Wheels" include wheels, rims, hubs and brake drums.

(b) "Heavy duty" refers to components for application on on-highway vehicles such as trucks, truck tractors, buses, truck trailers and container chassis having a gross vehicle weight (GVW) of 14,000

(c) "Antiskid braking device" is three matched components consisting of a sensor, a computer and a valve designed to control braking during a potential skid situation. [2]

(d) "Truck Trailers" are all types of truck trailers (product class code 37150) reported by the U.S. Bureau of Census in its current industrial report of shipments of truck trailers for 1972.

(e) "Market" includes all shipments of the relevant products manufactured in the United States or imported into the United States.

II. FRUEHAUF CORPORATION

2. Respondent, Fruehauf Corporation (hereinafter "Fruehauf"), is now, and was at the time of the acquisition hereinafter set forth, a Michigan corporation with its principal office and place of business located at 10900 Harper Ave., Detroit, Michigan.

3. In 1972, Fruehauf had sales and rentals of \$550.4 million and assets of \$556.6 million. In that year it was the 245th largest publicly held industrial corporation in the nation in total sales and revenues and ranked 207th in assets.

4. Fruehauf, prior to and following the acquisition hereinafter set forth, was and is the nation's largest and most vertically integrated truck trailer manufacturer. Fruehauf presently produces truck trailers in twelve manufacturing locations in the United States. Ninety-six domestic branch operations owned by Fruehauf sell and service truck trailers in the United States and they constitute the most extensive service and distribution system in the nation's truck trailer industry. Fruehauf produces, sells and services several different types of truck trailers including all types of van trailers, platform, tank, bulk commodity and dry material, pole and logging, dump, low-bed heavy haulers, van size containers and container chassis.

5. At all times relevant herein, Fruehauf sold and shipped its products throughout the United States and was engaged and is now engaged in commerce as "commerce" is defined in the Clayton Act and in the Federal Trade Commission Act.

III. KELSEY-HAYES COMPANY

6. Prior to its acquisition by Fruehauf as hereinafter set forth, Kelsey-Hayes Company (hereinafter "Kelsey-Hayes"), was a Delaware corporation with its principal office and place of business located at 38481 Huron River Drive, Romulus, Michigan. [3]

7. In the fiscal year ending August 31, 1973, Kelsey-Hayes had

sales of \$453.7 million and assets of \$243.0 million. In 1972, Kelsey-Hayes was the 281st largest publicly held industrial corporation in the nation in total sales and revenues and ranked 363rd in assets.

8. In 1972, approximately 72 percent of Kelsey-Hayes' sales were of products and components for automobiles, trucks, and truck trailers.

9. In 1972, Kelsey-Hayes was the nation's largest manufacturer of wheels for use in the manufacture of automobiles. Kelsey-Hayes was and is a significant supplier of heavy duty wheels including truck trailer wheels. In 1972, Kelsey-Hayes was a key supplier of heavy duty truck wheels to both original equipment manufacturers and replacement parts distributors and the major independent supplier of both drum brake assemblies and brake drums to the automotive industry. Kelsey-Hayes has developed and plans to manufacture and sell a heavy duty antiskid braking device of the type which will be standard equipment on all heavy duty trucks, truck tractors and truck trailers manufactured in the United States beginning September 1, 1974.

10. At all times relevant herein, Kelsey-Hayes sold and shipped its products throughout the United States and was engaged and is now engaged in commerce as "commerce" is defined in the Clayton Act and in the Federal Trade Commission Act.

IV. THE ACQUISITION

11. On or about October 31, 1973, Fruehauf Manufacturing Company (hereinafter "Fruehauf Manufacturing"), an inactive wholly-owned subsidiary of Fruehauf, was merged into Kelsey-Hayes, whereby Kelsey-Hayes survived as a wholly-owned subsidiary of Fruehauf. To consummate the merger, Fruehauf issued approximately 3,804,915 shares of Fruehauf common stock at an approximate value of \$99 million to Fruehauf Manufacturing and all Kelsey-Hayes common stock was then converted into Fruehauf common stock owned by Fruehauf Manufacturing in the ratio of five shares of Fruehauf common stock for four shares of Kelsey-Hayes common stock. Kelsey-Hayes has been operated as a Fruehauf subsidiary since the acquisition.

V. TRADE AND COMMERCE

12. The relevant geographic market is the United States as a whole. The relevant product markets are: [4]

- (a) Manufacture and sale of heavy duty wheels;
- (b) Manufacture and sale of truck trailer wheels.

- (c) Manufacture and sale of cast spoke truck trailer wheels, exclusive of rims;
- (d) Manufacture and sale of heavy duty antiskid braking devices; and
- (e) Manufacture and sale of truck trailers.

A. HEAVY DUTY WHEELS

13. The market for heavy duty wheels was \$263.6 million in 1972. Shipments in the truck trailer wheel market were \$72.7 million in that year. In 1972, shipments of cast spoke truck trailer wheels, exclusive of rims, were \$35.0 million.

14. Concentration in the manufacture and sale of heavy duty wheels is high with the top four firms accounting for 69 percent, and the top eight firms accounting for 94 percent of the market in 1972. Concentration is similarly high in the manufacture and sale of truck trailer wheels with the top four firms accounting for 63 percent, and the top eight firms accounting for 87 percent of the market in 1972. Concentration in the manufacture and sale of cast spoke truck trailer wheels, exclusive of rims, is very high, with the top four firms accounting for 91 percent, and the top eight firms accounting for 100 percent of the market in 1972.

a. *Vertical Relationships*

15. Entry into the manufacture and sale of heavy duty wheels is difficult. The manufacture and sale of such wheels requires large financial resources, sophisticated technological skills required of a foundry and an effective distribution system. Few firms possess such prerequisites for entry. [5]

16. In 1972, Kelsey-Hayes was the second largest domestic producer of heavy duty wheels, the eighth largest domestic producer of truck trailer wheels, and the fourth largest domestic producer of cast spoke truck trailer wheels, exclusive of rims. In 1972, Kelsey-Hayes' share of the market for heavy duty wheels was 15 percent, its share of the market for truck trailer wheels was 3.7 percent, and its share of the market for cast spoke truck trailer wheels, exclusive of rims, was 7.8 percent.

17. In 1972, Fruehauf accounted for 4.8 percent of all heavy duty wheel purchases. Fruehauf was the largest purchaser of truck trailer wheels and cast spoke truck trailer wheels, exclusive of rims, in that year, accounting, respectively, for 17.9 percent and 17.5 percent of such purchases. Fruehauf purchased 7 percent of its requirements

for truck trailer wheels in 1972 from Kelsey-Hayes and 93 percent from all other suppliers.

18. With the availability of Fruehauf's branches as outlets for selling and servicing of Kelsey-Hayes heavy duty wheels and the aid of the Fruehauf domestic sales force, Kelsey-Hayes' position in the heavy duty wheel market will be strengthened.

b. *Potential Competition*

19. Fruehauf was one of the few most likely competitors of Kelsey-Hayes in the heavy duty wheel market prior to the acquisition. Fruehauf had conducted several studies relating to fabricating its own truck trailer wheels and had done extensive development work with truck trailer wheel manufacturers prior to the acquisition of Kelsey-Hayes. Fruehauf, prior to the acquisition of Kelsey-Hayes, had already integrated into the manufacture of axles and was the only truck trailer manufacturer which fabricated truck trailer axles. Such axles were not only for its own use but also were sold to other truck trailer manufacturers. Similarly, Fruehauf had integrated into aluminum extrusion, a major truck trailer component, and was the only truck trailer manufacturer which produced its own aluminum extrusions. Such extrusions not only were used by Fruehauf but also sold to other truck trailer manufacturers. [6]

20. By virtue of its position as the most vertically integrated truck trailer manufacturer in the United States, its production of truck trailer axles and possession of attendant technological skill, its marketing ability, its financial resources and its demonstrated interest in entering the heavy duty wheel market, Fruehauf was, prior to October 31, 1973, one of the few most likely entrants into the manufacture and sale of heavy duty wheels.

B. HEAVY DUTY ANTISKID BRAKING DEVICES

21. Performance standards set forth in Department of Transportation Federal Motor Vehicle Safety Standard 121¹ will require heavy duty antiskid braking devices on all heavy duty trucks, truck tractors and truck trailers manufactured in the United States after September 1, 1974.

22. Entry into the manufacture and sale of heavy duty antiskid braking devices is difficult. The development, manufacture, and sale of heavy duty antiskid braking devices require large financial resources, sophisticated technological skill and an effective distribu-

tion and service system. Few firms possess such prerequisites for entry.

23. In the year following September 1, 1974, domestic sales of heavy duty antiskid braking devices will be approximately \$80 million. Heavy duty antiskid braking devices having application on truck trailers will comprise approximately 30 percent of the heavy duty antiskid braking device market in the year following September 1, 1974.

24. Concentration in the heavy duty antiskid braking device will be high. Fewer than ten firms will be able to manufacture production quantities of heavy duty antiskid braking devices by September 1, 1974.

25. Kelsey-Hayes is a leading producer and developer of heavy duty antiskid braking devices as well as a leading manufacturer of automobile antiskid braking devices.

26. Kelsey-Hayes' share of the heavy duty antiskid braking device market is projected to be approximately 30 percent in the year following September 1, 1974.

27. Purchases of heavy duty antiskid braking devices by Fruehauf will comprise approximately 8 percent of total heavy duty antiskid braking device purchases in the year following September 1, 1974. [7]

28. With the availability of Fruehauf's branches as outlets for selling and servicing of Kelsey-Hayes heavy duty antiskid braking devices and the aid of the Fruehauf domestic sales force, Kelsey-Hayes' position in the heavy duty antiskid braking device market will be strengthened.

C. TRUCK TRAILERS

29. In 1972, the total value of truck trailer shipments in the United States was \$886.2 million.

30. The truck trailer market is highly concentrated. In 1972, the top four firms accounted for 55.0 percent of total truck trailer shipments and the top eight firms accounted for 69.3 percent.

31. In 1972, Fruehauf's share of the truck trailer market was approximately 25 percent.

32. Entry into the manufacture and sale of truck trailers to significant users is difficult. A successful manufacturer and seller of truck trailers must possess ample financial resources, have manufacturing, assembling and marketing skill and have access to reliable sources of supply for component parts.

33. The prompt supply of truck trailer components is of major importance to truck trailer manufacturers due to short delivery

deadlines often set by truck trailer purchasers. Through the acquisition of Kelsey-Hayes, Fruehauf has captured a secure source of supply for truck trailer wheels as well as a source of heavy duty antiskid braking devices. This secure source of supply to Fruehauf of truck trailer wheels and heavy duty antiskid braking devices gives Fruehauf a significant advantage over its competitors, particularly in periods of scarce supply of either of these truck trailer components.

34. The advantage gained by Fruehauf over its competitors through its acquisition of a secure source of supply for component parts produced by Kelsey-Hayes is magnified by the probability that truck trailer customers who purchase truck trailers from Fruehauf during periods of components' scarcity will continue to purchase truck trailers from Fruehauf in the future. Truck trailer customers generally receive better trade-in terms for Fruehauf trailers at Fruehauf branches than they do from other manufacturers, giving these customers an incentive to continue purchasing from Fruehauf. Many truck trailer customers are trucking fleet operators who seek standardization in their fleets to minimize parts stocking problems and simplify maintenance and therefore are likely to continue [8] purchasing truck trailers from their present source. Fruehauf utilizes many component parts peculiar to Fruehauf trailers when the truck trailers are manufactured. Thus, double stocking of the same type of parts is necessary when a trucker mixes other makes of truck trailers with Fruehauf trailers in his fleet.

VI. EFFECTS OF THE ACQUISITION

35. The effects of the acquisition of Kelsey-Hayes by Fruehauf may be substantially to lessen competition or tend to create a monopoly in the manufacture and sale of heavy duty wheels, truck trailer wheels, cast spoke truck trailer wheels, exclusive of rims, heavy duty antiskid braking devices and truck trailers throughout the United States in violation of Section 7 of the Clayton Act, as amended, and the effects of the acquisition may be to unreasonably restrain trade and hinder competition unduly in the manufacture and sale of heavy duty wheels, truck trailer wheels, cast spoke truck trailer wheels, exclusive of rims, heavy duty antiskid braking devices and truck trailers, thereby constituting a restraint of trade and an unfair act and practice in commerce, in violation of Section 5 of the Federal Trade Commission Act, as amended, in the following ways among others:

Kelsey-Hayes have been and may be foreclosed from selling to a substantial purchaser of heavy duty wheels.

(b) Kelsey-Hayes' position in the heavy duty wheel market will be strengthened.

(c) Actual and potential producers of truck trailer wheels other than Kelsey-Hayes have been and may be foreclosed from selling to the leading purchaser of truck trailer wheels. [9]

(d) Kelsey-Hayes' position in the truck trailer wheel market will be strengthened.

(e) actual and potential producers of cast spoke truck trailer wheels, exclusive of rims, other than Kelsey-Hayes have been and may be foreclosed from selling to the leading purchaser of such wheels.

(f) Kelsey-Hayes' position in the market for cast spoke truck trailer wheels, exclusive of rims, will be strengthened.

(g) Substantial potential competition between Fruehauf and manufacturers of heavy duty wheels, including Kelsey-Hayes, has been eliminated.

(h) Potential competition in the heavy duty wheel market has been substantially lessened.

(i) Sales by Kelsey-Hayes of heavy duty antiskid braking devices may be increased through, and competitive suppliers of such products foreclosed from, the actual and potential purchases of Fruehauf.

(j) Kelsey-Hayes' position in the heavy duty antiskid braking device market will be strengthened at the expense of Kelsey-Hayes' actual and potential competitors.

(k) Truck trailer manufacturers who are competitors of Fruehauf have been or may be foreclosed from a source of supply for heavy duty wheels and heavy duty antiskid braking devices.

(l) Barriers to entry in each of the relevant markets have been raised.

(m) The dominant position of Fruehauf in the truck trailer market will be strengthened. [10]

VII. VIOLATIONS CHARGED

36. The acquisition of Kelsey-Hayes by Fruehauf constitutes a violation of Section 7 of the Clayton Act, as amended, (15 U.S.C. 18), and constitutes a violation of Section 5 of the Federal Trade Commission Act, as amended, (15 U.S.C. 45).

Initial Decision

91 F.T.C.

INITIAL DECISION BY THOMAS F. HOWDER, ADMINISTRATIVE
LAW JUDGE

JULY 31, 1977

PRELIMINARY STATEMENT

This case concerns the effect on competition arising from the merger joining the Fruehauf Corporation ("Fruehauf") and the Kelsey-Hayes Company ("Kelsey") on October 31, 1973. The [2] Federal Trade Commission on June 21, 1974 issued a complaint challenging the merger as violative of Section 7 of the Clayton Act, as amended, (15 U.S.C. 18) and Section 5 of the Federal Trade Commission Act (15 U.S.C. 45).*

The Commission's complaint alleges that competition will be lessened in each of three basic markets, *viz.*, truck trailers, heavy duty antiskid braking devices, and heavy duty wheels — and also in two submarkets, truck trailer wheels (later abandoned by complaint counsel) and cast spoke truck trailer wheels, exclusive of rims. The anticompetitive effects alleged were vertical foreclosure of competing companies from access to markets and/or sources of supply and entrenchment of the merged firms in their respective markets. The complaint also alleges that Fruehauf has been removed as a potential competitor of Kelsey in the manufacture and sale of heavy duty wheels.

On August 19, 1974, respondent Fruehauf filed an answer to the complaint admitting the merger and certain corporate and jurisdictional facts, but denying the substantive allegations thereof.

Prehearing conferences were held in Washington, D.C. on September 10, 1974 and February 4, 1975. Discovery was actively pursued by both parties. Proposed exhibit lists with copies of proposed exhibits and witness lists with narrative summaries of expected testimony were exchanged by the parties prior to trial. Both parties submitted trial briefs in support of their respective positions in this matter. [3]

All hearings in the case were held in Washington, D.C. Presentation of the case-in-chief began on October 20, 1975 and concluded on December 5, 1975. Presentation of Fruehauf's defense began on March 22, 1976 and continued through May 4, 1976. Complaint counsel began its rebuttal case with hearings on June 1, 2 and 11, 1976. A rebuttal subpoena was issued to Fruehauf on May 20, 1976 with the return on September 13, 1976. Rebuttal hearings resumed

* Complaint counsel's "Reply to Respondent's Motion for More Definite Statement" (dated July 29, 1974) indicated that the only theories of liability which they would assert were those encompassed by Section 7 of the

on October 12, 1976 and concluded on November 8, 1976. Fruehauf presented its surrebuttal with hearings on November 29, 1976, December 1 and 2, 1976 and February 10, 1977.

The record (which includes a transcript of 7678 pages and 502 exhibits) was closed on March 29, 1977, following the resolution of various matters regarding exhibits, transcript corrections and *in camera* materials. Proposed findings were filed by the parties on May 1, 1977 and reply findings on June 7, 1977.

Any motions not heretofore or herein specifically ruled upon, either directly or by the necessary effect of the conclusions in this Initial Decision, are hereby denied.

This proceeding is before me upon the complaint, answer, testimony and other evidence, proposed findings of fact and conclusions of law filed by counsel supporting the complaint and by counsel for respondent. The proposed findings of fact, conclusions and arguments of the parties have been carefully considered, and those findings not adopted either in the form proposed or in substance are rejected as not supported by the evidence or as involving immaterial issues not necessary for this decision.

Certain abbreviations, including the following are used in this decision:

CX - Commission's Exhibits.

RX - Respondent's Exhibits. [4]

CC's 1st RAF - Complaint Counsel's Initial Request for Admission of Facts.

CC's 1st RACF - Complaint Counsel's Initial Request for Admission of Confidential Facts.

R's 1st RAF - Respondent's Initial Request for Admission of Facts.

R's 1st RACF - Respondent's Initial Request for Admission of Confidential Facts.

The transcript of testimony is referred to with the last name of the witness and the page number or numbers upon which the testimony appears.

Having heard and observed the witnesses and after having carefully reviewed the entire record in this proceeding, together with the proposed findings and conclusions submitted by the parties, I make the following findings:

FINDINGS OF FACT

I. IDENTITY AND BUSINESS OF RESPONDENT

1. Respondent Fruehauf is a publicly held corporation organized

and existing under the laws of the State of Michigan, with its principal office and place of business at 10900 Harper Ave., Detroit, Michigan. (Complaint and Answer, Para. 2.)

2. In 1972, Fruehauf had sales and rentals of \$550.4 million and assets of \$556.6 million. According to Fortune magazine, Fruehauf in 1972 was the nation's 245th largest publicly held industrial corporation in total sales and revenues and the 207th largest in total assets. (Complaint and Answer, Para. 3; CX 544A.) [5]

3. Fruehauf manufactures numerous types of truck trailers including van, platform, tank, bulk commodity and dry materials, pole and logging, dump, low-bed heavy haulers, van size containers, and container chassis. Fruehauf has established ninety-seven branches to provide sales, maintenance and service throughout the nation. (Complaint and Answer, Para. 4.) Both before and following the acquisition, Fruehauf has been the nation's largest truck trailer manufacturer. (CX 544A.)

4. At all times relevant herein, Fruehauf sold and shipped its products throughout the United States and was engaged in commerce as "commerce" is defined in the Clayton Act and in the Federal Trade Commission Act. (Complaint and Answer, Para. 5.)

II. THE ACQUISITION

5. On October 31, 1973 Fruehauf issued approximately 3,804,915 shares of Fruehauf common stock at an approximate value of \$99 million to Fruehauf Manufacturing Company, an inactive wholly-owned subsidiary of Fruehauf. Fruehauf Manufacturing Company then exchanged these shares of Fruehauf common stock for all the common stock of Kelsey-Hayes in the ratio of five shares of Fruehauf common stock for four shares of Kelsey-Hayes common stock. Fruehauf Manufacturing was thereby merged into Kelsey-Hayes and Kelsey-Hayes survived as a wholly-owned subsidiary of Fruehauf. Kelsey-Hayes has been operated as a Fruehauf subsidiary since the acquisition. (Complaint and Answer, Para. 11.) [6]

III. THE ACQUIRED COMPANY

6. Prior to October 31, 1973 Kelsey-Hayes was a Delaware corporation with its principal office and place of business at 38381 Huron River Drive, Romulus, Michigan. (Complaint and Answer, Para. 6.)

7. For the fiscal year ending August 31, 1972 Kelsey-Hayes had net sales of \$454.7 million and assets of \$243.0 million. According to

publicly held industrial corporation in the United States in total net sales and the 363rd largest in total assets. (Complaint and Answer, Para. 7; CX 544A.)

8. Kelsey-Hayes manufactures various component parts for the automotive industry, such as automobile wheels, brake drums and drum brake assemblies. It also manufactures heavy duty wheels for use on trucks and truck trailers. In addition, Kelsey-Hayes in 1975 was the leading supplier of heavy duty antiskid braking devices to heavy duty truck, truck tractor and truck trailer manufacturers. (Complaint and Answer, Para. 9; see proposed finding 46 of complaint counsel *in camera*.)

9. At all times relevant herein, Kelsey-Hayes sold and shipped its products throughout the United States and was engaged in commerce as "commerce" is defined in the Clayton Act and in the Federal Trade Commission Act. (Complaint and Answer, Para. 9, 10.)

IV. THE GEOGRAPHIC MARKET

10. There is no dispute and it is found that the relevant geographic market is the United States as a whole. (CX 544B.) [7]

V. HEAVY DUTY ANTISKID BRAKING DEVICE MARKET

11. The term "antiskid braking device" refers to certain safety equipment installed on the braking systems of an air-braked vehicle. This mechanism is designed to monitor and, if necessary, to override the driver's action during braking to prevent wheel lock-up and a possible skid. The device consists principally of three matched components: (1) a sensor which determines the speed at which a wheel is rotating; (2) a computer or logic module which calculates the speed at which the wheel should rotate in order to achieve maximum braking efficiency; and (3) a valve which regulates the air pressure so as to release the brakes momentarily in the event of an impending skid. (Campanini 379-80, 402, 407-09; Lindquist 531-32; Perry 662-63; Deibel 1012; DeClaire 1068-69; Denholm 1667; Henry 2438-39; Bell 2601, 2672-73; Robins 2903; Megginson 4198-99.)

12. In the main, development of the antiskid braking device was a direct result of Federal Motor Vehicle Safety Standard (FMVSS) 121 (49 C.F.R. 571.121 as amended), promulgated by the National Highway Traffic Safety Administration ("NHTSA") of the U.S. Department of Transportation. FMVSS 121 is a performance standard regulating stopping distances for heavy duty vehicles. Although this regulation does not specify the use of an antiskid braking device, the device is the only product presently available

which satisfies the standard. (Campanini 450; Perry 664; Deibel 1043.)

13. In promulgating FMVSS 121, the Department of Transportation set braking performance standards which had to be met on the majority of heavy duty air-braked truck trailers manufactured after January 1, 1975, and air-braked trucks and truck tractors manufactured after March 1, 1975. (CX 195; 550C; 555C; Campanini 408, 413, 450; Perry 664; Deibel 1005; Heller 4150-51; Polkow 4323.) [8]

14. Initially one antiskid device was required for each braked axle of an air-braked vehicle. However, a January 1976 modification of FMVSS 121 lengthened the required stopping distances and allowed heavy duty trucks and truck tractors to meet the standard without the necessity for an antiskid device on the front axle of those vehicles. The number of systems required on a truck trailer remains one per axle. (Heller 4184-85; tr. 4354-56 *in camera*.)

15. An antiskid braking device is a distinct product which is necessary, per government regulation, for the manufacture of a truck trailer; a product for which there presently is no substitute. For reasons set forth herein, I find that the antiskid braking device market is an economically meaningful market within which to analyze the competitive effects of the merger in issue.

A. Market Structure

16. Concentration in the manufacture and sale of antiskid devices is high. According to the record, only the following seven companies actively competed in the market in 1975 and 1976: Kelsey-Hayes, the leading seller, Eaton Corporation, Wagner Electric Company, B.F. Goodrich, A.C. (division of General Motors), Rockwell International, and Berg/Fiat. (Campanini 420; Perry 677; Deibel 1020; tr. 1129 *in camera*; Denholm 1672-73; Vause 2211; Henry 2439, 2455; tr. 2608-09 *in camera*; Robins 2903). The top two firms accounted for over 50 percent of the total 1975 unit sales of antiskid devices and the top four accounted for 74 percent. (Nelson 6531 *in camera*.)

17. Antiskid devices are sold in the United States to truck tractor and truck trailer manufacturers, original equipment manufacturers ("OEM"), who install the device on the axles of the vehicles. [9]

18. The major suppliers of antiskid devices each developed or obtained their own designs for their respective antiskid systems. They either manufacture one or more of the three major components themselves, or supervise their manufacture by subcontractors. (CX 190D, CX 191P-Q, CX 585B; Campanini 422-23; tr. 688 *in camera*.)

Deibel 1021-22; DeClaire 1071-72, 1075-76; Vause 2211; Megginson 4215, 4224, 4226, 4239; Schimpf 4305.)

19. The antiskid device has initially been marketed as a "system," the three major components being assembled by the seller and sold as a "package" or "kit" to the OEM. (Bachman 63; Allen 187; Stein 345). Some question was raised in the record as to whether the device will continue to be sold as a system or whether the three major components can be or will be sold separately to the OEM.

20. Antiskid can only exist as a components market to the extent that the separate components can be interchanged and assembled by the OEM's for installation on their vehicles. Standardization of the three major components would permit such an interchange; that is, although one supplier's component may not be physically identical to that of another, common performance characteristics would permit compatibility among the various sensors, valves, and logics. (Nelson 7181; Heller 4161; Campanini 509.)

21. At present, most components must be utilized with other components of the same supplier in order to function properly. (Campanini 409, 505; tr. 683-84 *in camera*; tr. 2677 *in camera*; Heller 4182.)

22. The record indicates that a certain amount of standardization of the wheelend hardware, or sensor, has occurred. As of late 1975, one OEM used an Eaton sensor in combination with Goodrich logics and valves. Two others used Eaton sensors [10] with Kelsey-Hayes logics and valves and one OEM combined Wagner sensors with Kelsey-Hayes logics and valves. (tr. 691 *in camera*; Deibel 1024; DeClaire 1079-80, 1110; Denholm 1684; tr. 2670-71 *in camera*; Megginson 4238; tr. 4365-65A *in camera*.)

23. Some witnesses expressed doubt that standardization of the sensor will ever be total due in part to the varying mountings required in different wheels. (Deibel 1024; Megginson 4250-51). Moreover, the signals fed from the sensor into the logic module generally differ among the various antiskid systems. (Campanini 409-10, 412; Megginson 4251.)

24. Complete standardization and separate sales of the logic modules and valves is even more unlikely for several reasons. Some manufacturers combine the valve and logic module into a single unit. (CX 190C; CX 191H, J; CX 194C; CX 196; CX 197; CX 198E-F; CX 199C; CX 204A; CX 550E; CX 556C; RX 149; tr. 692 *in camera*; Denholm 1712; Henry 2453; Bell 2672; Heller 4188; Polkow 4335-36.) In addition, manufacturers' valves perform different functions and have varying degrees of control incorporated within them. (CX 191K; CX 194B-C; CX 196; CX 197; CX 198H; CX 199C; CX 203B; CX 550D;

tr. 1710-11 *in camera*; Bell 2629; Megginson 4216-17, 4220-21, 4239-40, 4256-57; Deibel 1025.) On the other hand, the logics of certain manufacturers can be used with the valves of other manufacturers. (Dahl 4103; Denholm 1705.)

25. Some of the larger OEM's would prefer to buy standardized components. (Heller 4160-62.) For instance, International Harvester has been reviewing many competing valves for use with other manufacturer's sensors and logics. (Heller 4180-82.)

26. Witness Campanini, a representative of supplier Berg/Fiat testified that he expected standardization of the sensor, logic and valve, and that Berg/Fiat would eventually sell the logic and valve separately as well as together. (Campanini 523-24.) He felt that this standardization [11] would take place in 3-5 years for the sensor and another 3-4 more years for the valve. "I believe the standardization of components within the group of qualified manufacturers of components does provide an economy, and, as such, will be promoted by all concerned." (Campanini 523.)

27. However, a major factor reducing the possibility of a complete components market in antiskid is the desire by the vehicle manufacturers and ultimate users for single source responsibility should an antiskid device fail and liability ensue. (Lindquist 561-62; Deibel 1025-26; Bell 2629.)

28. The antiskid market, having been in existence only since 1975, was admittedly in a state of flux at the time of trial. (Perry 747; Henry 2455; Campanini 490; Reeve 891-92; Bachman 145-46.) Nevertheless, it developed as a systems market from the beginning and, at the time of trial still existed as a systems market. The standardization strived for by some OEM's had not yet been achieved. Basically, the seven manufacturers market the product as an integral device and the buyers purchase as such.

29. During 1975, sellers and buyers of antiskid devices participated in hearings held by NHTSA to determine whether FMVSS 121 should be suspended, revoked or modified. (Heller 4159-60; Campanini 488-489; McCuen 2070-71.) Throughout 1975, doubt existed as to whether FMVSS 121 would be administratively or judicially voided in whole or in part. (CX 585; McCuen 2070-71; Denholm 1701.) [12] Prior to becoming effective, it was repeatedly modified and delayed. (39 F.R. 20380; Deibel 1041-42). After it became effective, numerous modifications were proposed, commented on, and enacted. (39 F.R. 20380; 40 F.R. 1246; 40 F.R. 2989; 40 F.R. 38160; 40 F.R. 12797; 40 F.R. 8953; 40 F.R. 31771; 41 F.R. 1598; 41 F.R. 8784; 41 F.R. 29703; 41 F.R. 52055.)

manufacturers still had performance "bugs" which necessitated major recall campaigns during 1975. (Brown 1138; Campanini 491; CX 585.)

31. Notwithstanding the imperfections in the antiskid market, including its short, erratic past and uncertain future, it nonetheless constitutes a valid product market for Section 7 purposes, and as such merits further analysis. (Mann 5784.)

B. Barriers to Entry or to Effective Competition

1. Capital Costs

32. "Capital costs" measure the amount of money needed to build and equip a production facility of minimum efficient size, and includes the costs of inventory, working capital and, with respect to antiskid, research and development. (Mann 5684-85, 7563; Nelson 5819.) [13]

33. Various estimates of capital cost were given by supplier witnesses. This is because of variances on the part of suppliers in their methods of manufacture and/or assembly of the components. (Bell 2604; tr. 683 *in camera*; Denholm 1669, 1686-89; Deibel 1021; Campanini 373; DeClaire 1075-76; Vause 2211). Thus, the estimated capital costs ranged from several million dollars to \$14.6 million. One company spent \$14.6 million; another approximately \$13 million; another less than \$10 million; and one more estimate was several million dollars. (Deibel 1014-15; Brown 1123; McCuen 2074; Campanini 449, 457.)

34. Respondent's economic expert was of the opinion that capital costs fell into the moderate range. (Mann 5686, 7532). Complaint counsel's economic expert placed them on the borderline between moderate and large. (Nelson 6541.)

35. The record suggests that capital costs for entry might be lower today than they were for the present suppliers of antiskid. During the postponements and modifications of FMVSS, prospective suppliers faced continuing research and development costs to alter their designs and prototypes. (Brown 1146, 1177-78; Bell 2602-03.) An entrant today would not be charged with this added expense. Moreover, there is evidence in the record that development of a logic module is a less expensive task today than it previously was, since today's new entrant can use certain readily available parts. (Megginson 4241-45; Schimpf 4319.) [14]

36. Should the antiskid market ultimately develop into a components market, the capital costs for entrance into the production of a sensor, logic or valve would probably be lower than for

entrance as an antiskid "system" supplier. There was testimony that a logic module could be designed for \$1 million or less. (Schimpf 4310.)

2. Absolute Costs

37. The absolute cost barrier for entrance into the antiskid market is low. (Mann 7573.) An absolute cost barrier exists when firms in an industry possess some advantage such as patents imposing upon new entrants a cost penalty such that the entrant would have a higher unit cost at the same level of output of existing firms. (Mann 5683.) There are presently no blocking patents in the industry which could deter entry or require a royalty payment. (Lindquist 584; Perry 744.) There is apparently no scarcity of essential raw materials or components needed to assemble the sensors, logics and valves. (DeClaire 1074; Campanini 421-22; Megginson 4244.) Unquestionably the development, testing and manufacture of the antiskid device require application of sophisticated electronic technology, automotive braking technology, and vehicle dynamics theory, but the costs of obtaining the required knowhow is the same for all firms in the industry. (Campanini 435-36, 453-54; tr. 689-90 *in camera*; Deibel 1012-14, 1026-27; Denholm 1673-74; Schimpf 4306.) New firms possessing technical competence could bid along with those established in the industry for the expertise required. [15]

3. Economies of Scale

38. Economies of scale represent the level of output or market share which a prospective entrant would need to achieve so as not to be at a unit cost disadvantage compared to existing competitors. If, in order to operate at a minimum efficient level, a firm must secure 10 percent or more of a market, then that market is characterized by a high economy of scale barrier. (Mann 5676-77.)

39. Antiskid suppliers testified that they equipped themselves for production of well over 10 percent of their estimate of the market. For example, one supplier built a facility to produce 30 percent expected unit sales; another built a factory capable of supplying 50 percent; one felt it needed 30-35 percent of the antiskid market to insure a decent return on investment; one supplier estimated that a firm needed 15-16 percent of the antiskid market in order to remain a viable competitor. (See tr. 676 *in camera*; CC's 1st RACF - #71; CX 248B; see also CC's 1st RACF - #96; tr. 2606-07 *in camera*). Still other

in the market. (Brown 1144; see tr. 2450 *in camera*.) Another supplier testified that it needed 50 percent of the antiskid market in order to meet its profit goals. (Deibel 1017-18.) And two antiskid manufacturers testified that the antiskid market is very "volume sensitive." (Hess 5857, 5888; Brown 1153.)

40. While respondent contends such testimony is imprecise or non-determinative, it is clear that the presently competing antiskid systems suppliers believe that a market share of more than 10 percent is required. Consequently, this barrier to entry must be placed in the "high" category. [16]

4. Product Differentiation

41. A product differentiation barrier exists when an entrant must charge lower prices or spend extensively on sales promotion in order to attract away buyer loyalties from an established seller. Generally, in producers' goods markets this barrier is low, as knowledgeable purchasers make their decisions on a price/quality basis. (Mann 5678-79.)

42. The record indicates that antiskid suppliers believe it is helpful in marketing that a firm has a long established reputation for quality and performance in the automotive or heavy duty vehicle field. (Campanini 455-57; tr. 689-90 *in camera*, 713, 723-24 *in camera*; Deibel 1027; DeClaire 1082-83; Brown 1153-56.) During the developmental stage in particular, would-be antiskid suppliers felt that selection of their systems by a major OEM as "standard" would assist them in marketing to others and would enhance their credibility as a reliable source. (Perry 715; Vause 2220, 2236; tr. 2641-42 *in camera*.)

43. There is evidence in the record that antiskid suppliers believed it important in marketing the antiskid device to be able to provide an effective aftermarket distribution for parts and service. (CX 46, CX 68; CX 89D; CX 91A; CX 191-O; CX 200C; CX 244C-D; CX 550C; CX 546; CX 582A; CX 585G-H; Campanini 430, 457-58; Lindquist 566-67; Deibel 1011, 1057; DeClaire 1083; Brown 1153-55.)

44. The OEM's or buyers in the antiskid market are generally well informed, having participated actively in the testing and development of the antiskid system before implementation of FMVSS 121. (Mann 7567; Hulverson 4450-64, 4497-4510.) [17] When buyers are well informed about a product, they usually purchase on the basis of price and quality instead of product differentiation factors. (Mann 5792; Nelson 6546.) And there is testimony in the record that purchasers in fact did buy on the basis of price and

quality. (Dahl 4048; Allen 187; Campanini 487, 493; Bachman 145; Reeve 892.)

45. Thus, while the record indicates the presence of some product differentiation elements which must be taken into account to effect successful entry or to compete effectively, this barrier is not insurmountable.

C. Anticompetitive Effects

46. In 1975, Fruehauf's purchases of antiskid braking devices totaled \$1,938,614 or 4.7 percent of the dollar universe. (Nelson 6530-31 *in camera*; Mann 7531; tr. 2616 *in camera*; Robins 2907.) In 1975, Kelsey-Hayes sold 32.5 percent of all units sold and 28.6 percent of total dollar volume. (CX 612A-B *in camera*; Campanini 470-72 *in camera*; tr. 695-6 *in camera*; tr. 1126-27 *in camera*; tr. 1292-93 *in camera*; tr. 2615-17 *in camera*; tr. 2906-07 *in camera*; tr. 4341 *in camera*; Nelson 6528-29 *in camera*; Mann 7531 - see CX 585C.)

47. The modification of FMVSS 121 which resulted in the elimination of antiskid devices on the front axles of trucks and truck tractors operates to decrease the total universe both in terms of dollars and units. This will serve to increase respondent's percentage of the total market purchases as Fruehauf manufactures only trailers. [18]

48. In 1973, prior to the effective date of FMVSS 121, Fruehauf began contacting several prospective suppliers of antiskid devices. (Perry 708, 755-58; Hess 5859; tr. 5998, 6034 *in camera*; tr. 2634-44 *in camera*.) Fruehauf had decided that it wanted an in-axle sensor design and communicated this desire to its potential suppliers. (CX 89C; CX 91A-B; Perry 711; Vause 2216; Hulverson 4460-63; Hess 5905; see Deibel 1035-36; tr. 2666 *in camera*; Megginson 4202; see CX 246B.)

49. As of August 1973, competitors of Kelsey-Hayes did not consider it a likely candidate to become a standard supplier of antiskid devices to Fruehauf, primarily due to Kelsey-Hayes' lack of an in-axle sensor design. (CX 239L *in camera*; CX 693B *in camera*; CX 695 *in camera*; Perry 710-11, 713, 752; Deibel 1035; tr. 2644, 2667 *in camera*; Hess 5857, 5864, 5889-90, 5905; see Vause 2218; Hulverson 4478A.) In fact, as of August 1973, Kelsey-Hayes was not and knew it was not an approved antiskid supplier to Fruehauf because of its lack of a proven in-axle sensor. (CX 583A-D; Vause 2218-19; Hulverson 4478A.)

50. Because of Fruehauf's acquisition of Kelsey-Hayes in October 1973, Kelsey-Hayes competitors believed that it would get at least a

Fruehauf. (CX 239L *in camera*; Campanini 513; Deibel 1036-37; Brown 1147; Rowan 1935; Hess 5864, 5887; see Perry 713; Widell 2682; see CX 697B *in camera*.) A witness from Rockwell felt that all other antiskid suppliers would be effectively foreclosed from the Fruehauf business because of the acquisition. A B.F. Goodrich witness testified that Fruehauf's acquisition of Kelsey-Hayes "made it more difficult for the B.F. Goodrich Company to get a portion of that business." (Hess 5887; see tr. 6084 *in camera*.) A Wagner memorandum stated that "obviously our potential for selling [19] the skid control system to Fruehauf which we have been developing for such a long time is seriously impaired by the potentiality of a Kelsey-Hayes/Fruehauf merger." (CX 239L *in camera*.)

51. Buying "in-house" is a recognized corporate policy of Fruehauf. (Dahl 4110.) Although this policy has been questioned from time to time, it has been decided at the corporate management level that company-manufactured products are to be utilized despite the fact that it might sometimes be more economical to purchase from outside sources. (Dahl 4110-11; Reghanti 5463.)

52. Antiskid units purchased by Fruehauf from "standard" suppliers bear the Fruehauf brand name rather than the name or brand of the supplier. (Deibel 1035; Rowan 1907, 1917-18; Bell 2630). For example, the physical exhibit which was referred to by Kelsey-Hayes employees as a Kelsey-Hayes' in-axle sensor was branded "ProPar." (RX 222A-C.)

53. Fruehauf selected no antiskid supplier as "standard" until January 1974. (CX 240A-B; Rowan 1918, 1923.) The two suppliers selected were Kelsey-Hayes for dry freight vans (50 percent of production) and Wagner for other vehicles such as dumps, tankers, platform trailers and all Fruehauf "Hobbs" brand trailers (50 percent of production). (CX 240B; Perry 710; Rowan 1918; Bell 2631; Hess 5888; see Hulverson 4476.)

54. It should be noted that additional vertical foreclosure exists in the antiskid industry by virtue of General Motor's ownership interest in AC, one of the seven antiskid suppliers. (Brown 1137; tr. 1294 *in camera*; tr. 2619 *in camera*; tr. 2906-09, 2978, 2982-83 *in camera*.) [20]

55. As for potential entry into the antiskid market, Bendix has the ability to enter as a "system" or component supplier. (Perry 680; Deibel 1020; Denholm 1673; Bell 2610.) The large OEM's such as Ford and International Harvester also have that ability. (Campanini 515; Deibel 1049; DeClaire 1108-09; Heller 4163, 4183, 4186; Megginson 4242-43.)

56. There was testimony that Bendix may in fact attempt to

enter the antiskid market. (Perry 677-79; DeClaire 1082; Brown 1153; Bell 2610-11.) As of November 1975, Bendix was operating at the research and development prototype level with regard to producing the device. (Henry 2439.) On the other hand, Ford was considered qualified by industry members but unlikely to enter. (Deibel 1049; DeClaire 1108; Brown 1154-55.) International Harvester was viewed as unlikely to enter due to its limited in-house requirements and its lack of in-house electronics capability. (Deibel 1049; Brown 1154-55, 1165.)

57. Subcontractors who produce one or more components of an antiskid system are generally not perceived as competitors or potential competitors by present systems suppliers. (Campanini 517; tr. 688 *in camera*; 763; DeClaire 1118-19; Denholm 1704.)

58. Components subcontractors are not permitted to sell to other customers the products which they manufacture for the antiskid systems suppliers. This is because the components are of a proprietary design owned by the antiskid suppliers. The tooling used to manufacture such components is also owned by the suppliers. (CX 316I; CX 318F; CX 319E; CX 324V; CX 448D *in camera*; tr. 688, 738 *in camera*; Deibel 1021-22; MacDonnell 2043; Megginson 4242; Schimpf 4297, 4313.)

59. It would also require a significant amount of development and testing over an extended period of time in order for an antiskid subcontractor to be in a position to offer a component for sale directly to an OEM or ultimate user. (Perry 763; Schimpf 4306, 4309-10.) [21]

VI. TRUCK TRAILER MARKET

60. There is no dispute and it is found that truck trailers as a whole constitute an appropriate product market within which to judge the competitive effects of the merger. (See admission of respondent's counsel tr. 13; Mann 5749.) Indeed, the existence of this market has been recognized by the Commission in prior cases, most recently in *The Budd Co.*, 86 F.T.C. 518, 572 (1975). See also *Fruehauf Trailer Co.*, 67 F.T.C. 878, 904-05, 937 (1965).¹

61. Truck trailers are unique products for which there are no substitutes. A truck trailer is a nonpower vehicle designed to be pulled by a power vehicle, known as a tractor, for the purpose of transporting or hauling products over the highway. (Bachman 70-

¹ The respondent's horizontal acquisitions in the mid-1950's of two competing trailer manufacturers, Strick, the third largest in trailer sales, and Hobbs, the sixth largest, were found to be a violation of Section 7. The Commission ordered divestiture of both companies but later modified its order allowing respondent to retain

71.) It consists of a chassis or frame on wheels and a body attached to the frame. (RX 265; Bachman 96-97.)

62. There are many types of trailers, including van, platform, tank, bulk commodity and dry materials, pole and logging, dump, low-bed heavy haulers, van size container and container chassis. (Complaint and Answer, Para. 4; CX 584G, H, I, L, N, O; CX 660J-M; RX 35D, T, U, X; Bachman 71-72, 96-97; Allen 172; Stein 328; Reeve 852; Fontaine 3548.)

63. The truck trailer industry is recognized as a separate economic entity. (Reghanti 5231-32.) There is a national organization, The Truck Trailer Manufacturers Association, to which many truck trailer manufacturers belong. (Allen 175; Stein 330-32; Fontaine 3558.) There are magazines which focus specifically upon the truck trailer industry. [22] (CX 561A-B; Fontaine 3548-49). The Bureau of the Census reports truck trailer shipments separately and the information is utilized by truck trailer manufacturers in the conduct of their business. (CX 254A-L; Bachman 44-45; Allen 174-75; Stein 330-32; 351-52.) R.L. Polk Company, a statistics gathering organization, reports information on overall registrations and on customers of truck trailers, which information is also used by the manufacturers of truck trailers. (Reghanti 5231-32.)

64. Truck trailers have peculiar characteristics and uses. (CX 584G, H, I, L, N, O; CX 660J-M; RX 35D, T, U, X; Bachman 71-72; 96-97; Allen 172; Fontaine 3548.) Their manufacture requires unique production facilities. (Complaint and Answer, Para. 4; Bachman 27; Allen 176-77, 189; Stein 337; Dahl 4056; Flagan 5052-53.) There are distinct customers for truck trailers. (Bachman 18-19, 100; Reeve 852.) Truck trailers have distinct prices. (Bachman 45-46; Reeve 870, 900; Bell 3308; Kortenhaus 3531.) They are sold through specialized vendors, *i.e.*, company based sales personnel, company-owned branch sales outlets or independent distributors of truck trailers. (Bachman 22-23; Allen 189; Reeve 856-57; Fontaine 3567.)

A. Market Structure

65. There are numerous manufacturers of truck trailers in the United States (Stein 351; RX 285M-R; CX 254A), and industry witnesses knew of no significant imports from other nations. (Bachman 20; Allen 173; Stein 336, Reeve 870.) There were, however, some exports. (Bachman 156-57.)

66. Total value of truck trailer shipments in the United States is in the area of \$1 billion per annum (CX 254A) and concentration in this market is high. According to 1972 Census data, the top [23] four

firms accounted for 55.0 percent of shipments and the top eight 69.3 percent.² The 1973 figure for the top four and top eight firms were 54.5 percent and 70.4 percent respectively. Many of the top twenty firms and all of the remaining firms have market shares of less than 2 percent or 1 percent. (See RX 266.) The concentration levels in the market have remained fairly constant over the last ten years. For the years 1968 to 1971, inclusive, the combined market shares of the top firms have been as follows:

	Top Four	Top Eight
1968	54.6%	68.4%
1969	58.0	70.8
1970	51.2	65.1
1971	48.6	63.8

67. Throughout this period Fruehauf has been the largest manufacturer in the industry with a 1973 market share of 25.2 percent. And for the period 1968-72, it had shares of 29.9 percent, 32 percent, 26.4 percent, 24.9 percent and 24.4 percent respectively.²

68. Respondent points out (using figures from unadjusted Polk registrations), top four and top eight firm concentration has declined over the 19-year period 1955-73 and the share of market held by the largest companies has shrunk. (Mann 5752; RX 266.) During this time, according to Polk data, Fruehauf's market share slipped 17.9 percent, from 41.1 percent to 23.2 percent. (RX 266.) Fruehauf's largest competitor, Trailmobile, also lost market share over this period. (Reghanti 5315; RX 266.) Fruehauf's President and Chief Executive Officer, Mr. Rowan, testified, but [24] presented no supporting data, that the company's market share has continued to decline; and that in September of 1975 its share was 19 percent. (Rowan 1974, 2002.) It should be noted that there has been little change in the identity and market position of the top eight firms in the industry since 1955. (RX 266, Reghanti 5317.)

69. The figures relied upon by respondent show that certain small and medium-sized companies have increased their market shares (RX 266), but only by small incremental amounts. Gains against Fruehauf have been made largely by top eight firms.

70. The truck trailer market has been growing at the rate of about 8 percent to 10 percent per year, (Bachman 80), and there has been some new entry into trailer manufacturing and sale. (Bachman 129-31.)³

² See chart at p. 75 of complaint counsel's proposed findings, *in camera*, for compilation of percentages referred to in this paragraph.

71. The manufacture of truck trailers can range from an assembly operation that requires relatively inexpensive machinery and unskilled labor to vertically integrated, mass production facilities.

72. There was testimony that competition in the truck trailer market is on the basis of price and quality, and the ability to meet customer specifications. (Reghanti 5377-80; Alderson 5927; Reeve 874; Bachman 107-08; Bell 3345; *see also* Kortenhaus 3511-12.)

73. Trailer prices declined from 1950 to 1971; they have increased somewhat since then due to increases in material and labor cost and the government required FVMSS 121 antiskid system. (Bachman 138, 154; Reeve 900; Reghanti 5396.)

74. Trailer prices have increased less than have prices in general over the period 1967-74 (RX 233), while the quality of trailers has generally improved. (Bell 3301.)

75. Many customers are sophisticated and knowledgeable about the trailers they are purchasing. The major truck trailer purchasers are large fleets, which typically have maintenance and engineering staffs which maintain detailed records of performance of trailers and their components. (Bachman 104-05; Bennett 267; R's 1st RAF - #124.) In the truck trailer market, bids are often made with regard to specifications presented by customers. (Bachman 106; Bell 3312; Pfund 3372; Cox 3456; Kortenhaus 3509; *see also* Stein 358.)

76. Few fleets are standardized on any one trailer, and the make-up of a fleet may well vary over time. (Rowan 2005; Bachman 107.) Most fleets contain trailers built by several manufacturers. (Rowan 2005; Cox 3455-56; Alderson 5914, 5926; Bell 3344; Kortenhaus 3508; Pfund 3370.) There are fleets composed of trailers made by the largest down to the smallest manufacturers. (Bachman 110.)

77. Some large fleets have the capacity to build their own trailers (Bell 3306; Cox 3478), and some do so now, albeit infrequently, or have done so in the past. (Reghanti 5310-11, 5314, 5434-36; Thompson 3430, 3439-40; Cox 3481-82.) Although some fleets have rebuilding capabilities (Kortenhaus 3516-17; Thompson 3422), fleets have not entered the manufacturing market because it has been economically sounder for them to purchase than to build their own trailers. (Cox 3498; Bell 3306.) [26]

major fleets, including Saunders (Cox 3455-56, 3491-92), Mason & Dixon (Reghanti 5384), and Yellow (Alderson 5914). One industry witness said Monon was not a substantial, but an effective, competitor. (Bachman 129-30.) Bertolini has entered the truck trailer market since 1968. (Bachman 40-43.) Stainless Tank & Equipment, a former repair facility, entered the truck trailer market within the past four or five years manufacturing tanks for Coca-Cola. (Allen 175.) Polar was also a rebuilder before entering the trailer market. (Allen 210.) [25]

B. *Barriers to Entry or to Effective Competition*

1. Capital Costs

78. According to respondent's economic expert witness, Dr. Mann, the capital cost barrier into the truck trailer market is low or nonexistent. He felt that all estimates in the record fell into Bain's "small" category, (adjusted for inflation), that is, below \$4 million or touching \$4 million.

79. One witness did testify that the production of truck trailers could be entered and 2 percent of the market captured for an investment of \$3-4 million but the witness felt his estimate was "really incomplete" in that he had estimated the lowest possible figure of \$2 million for building vans using leased facilities, that is, for making a "poor boy" entrance into the market. (Reghanti 5308-09.)

80. Respondent maintains that numerous truck trailer manufacturers have entered with an investment of less than \$2 million including Monon, Kentucky, Utility, Transcraft and Ohio Body (Reghanti 5309-10), and that numerous manufacturers have entered and survived for many years with market shares of less than 2 percent. (See RX 266.)

81. One witness was of the belief that entry into the production of tanks could be accomplished for \$3-4 million. (Allen 198.)⁴

82. It is the position of complaint counsel, however, that effective competition in the truck trailer market requires more than a single plant, and that therefore, the capital cost barrier is in the \$15 million range, which is on the borderline between a moderate and large barrier to entry. (Nelson 6567.)

83. One witness estimated the cost of replacing one of its tank trailers plants at \$10 million. (Allen 176-77.) Others placed the cost of a dry freight van plant at between \$6 million and \$8 million. (tr. 908 *in camera*; Dahl 4064; tr. 5485 *in camera*.)

84. In addition to the cost of a plant, a truck trailer producer must have several million dollars invested in inventory and receivables. (Allen 197; Fontaine 3591-92.)

85. Generally, a firm must have more than one plant in order to gain the advantages of offering a fuller line of truck trailers, and there are distinct advantages to manufacturing and selling as full a

⁴ There was testimony that for the most advantaged potential entrants, the large fleets and body shops (Reghanti 5311), the cost would be less. For example, PIE could enter truck trailer production for "thousands of dollars." (Bell 3355-56.) Several fleets have made trailers for their own use in existing repair facilities. (Reghanti 5310-11, 5314; Thompson 3430, 3439-40; Cox 3481-82.) Other fleets are capable of doing the same. (Bell 3306; Cox 3478.)

line of truck trailers as possible. (Bachman 17; Bennett 225; Reeve 901; Rowan 1905; Reghanti 5314-15.) [28]

86. There was testimony that a full line of truck trailers:

(a) enhances the ability to sell certain customers by allowing the full-line manufacturer to satisfy all the customers' needs rather than a part of them (Bachman 17-18);

(b) enables the manufacturer to obtain manufacturing efficiencies by combining certain types of production equipment (Bachman 18); and

(c) enables the manufacturer to gain sales efficiency since his sales force can sell the broader line with little added marketing cost thus spreading distribution costs out over more items of manufacture (Bachman 17; Bennett 227; Rowan 1906).

87. Fruehauf has the most complete line of trailers in the industry, and as such has the opportunity to generate greater volume. (Rowan 1905-07; Reghanti 5314.) Trailmobile is the only other trailer manufacturer comparable to Fruehauf in size and product line. (Rowan 1905-06; Reghanti 5315.)

88. There is a labor cost advantage in producing a single type of trailer in a single plant as against producing a variety of trailers in that plant. (Flagan 5055.) Fruehauf's Avon Lake plant which produced a full line of trailers, was closed, because higher labor costs at Avon Lake as compared to other Fruehauf plants with a less broad product line made it uneconomical to produce a full line of trailers in this one plant. (Flagan 5050-55.) Subsequent to the Avon Lake experience, Fruehauf concentrated on setting up new, smaller plants specialized in the production of a single product line. (Flagan 5051.) [29]

89. There was evidence that truck trailer manufacturers typically produce different types of truck trailers in separate plants. Thus:

(a) Great Dane, primarily a van trailer manufacturer, has its tank trailers manufactured by Ohio Company at its plant in Edgerton, Wisconsin (Reeve 873, 901);

(b) Fontaine has a special plant for production of bulk commodity trailers in Birmingham, Alabama which is separate from its platform and special trailer production plant in Haleyville (Fontaine 3591);

(c) Great Dane produces van trailers in certain of its plants while its subsidiary, Arrow produces platform trailers in a different plant (Reeve 852);

(d) Fruehauf's Charlotte, North Carolina plant produces only van trailers (Dahl 4138-39); and

(e) Kentucky specializes in furniture vans in its plant (Reeve 910).

90. An additional reason for multiple truck trailer manufacturing plants is to achieve geographic dispersion. Most of the major truck trailer manufacturers have more than one plant. (Bachman 21; Bennett 274; Dahl 4059.) Fruehauf has 11 truck trailer manufacturing plants located throughout the country. (Complaint and Answer, Para. 4; CX 37M; CX 584L, Z-11; CX 660; Flagan 5170.) Heil has two truck trailer manufacturing plants; one in Milwaukee, Wisconsin and one in Lancaster, Pennsylvania. (Allen 176.) Utility has truck trailer manufacturing plants located in Utah, California and Texas. (Bennett 252.) Trailmobile has at least two truck trailer plants; one located at Cincinnati, Ohio and one at West Point, Pennsylvania. (Dahl 4059.) Great Dane has three plants located in Savannah, Georgia, Memphis, Tennessee and Brazil, Indiana. (Reeve 872.) Strick had five [30] truck trailer plants throughout the United States in 1972 but is phasing out and changing the make-up of several plants. (Bachman 20-21.) Prior to its exit from the business, Brown had at least two plants located in Hammond, Indiana and Reading, Pennsylvania. (Reeve 900-01.)

91. The ability of a truck trailer manufacturer to compete for sales in a particular geographic area may be determined by whether or not it has a plant located in that geographic area. Utility, which has plants in California, Utah and Texas sells primarily in the western United States. (Bennett 227.) Great Dane built a plant in Brazil, Indiana in order to be able to serve the midwestern market. (Reeve 872.)

92. Fleet purchasers such as PIE, UPS, Saunders Leasing Company and North American Van Lines prefer to purchase trailers from nearby plants in order to save on the cost of transporting the trailers from the manufacturer's plant to the point on the fleet's line where the trailer is to be put into service. This is a major consideration in the purchasing decision. (Bell 3353; Pfund 3389, 3400; Thompson 3419; Cox 3457.)

93. There was testimony that the building of a new plant in a particular geographic area near a fleet's line gives the trailer manufacturer an enhanced opportunity to bid on that fleet's business. For example, PIE will give Comet the opportunity to bid on bulk commodity trailer sales to it because Comet built a new plant near Chicago in close proximity to PIE's line. (Bell 3362.)

94. Accordingly, the testimony is convincing that more than a single plant at a single location is needed in order to offer effective competition to the leading firms in the truck trailer industry. The

2. Absolute Costs

95. Respondent is of the belief that the absolute cost barrier to entry into the truck trailer market is low. (Mann 5758.) Even the Commission's economic expert describes this barrier as low to moderate. (Nelson 6569.) Neither the existence of patents nor scarce natural resources, the two normally significant absolute cost barrier factors, are involved in this market. (Nelson 6567, 6811-12; Mann 5757-58.)

96. A truck trailer is a comparatively uncomplicated piece of equipment whose manufacture requires basically an assembling of components. (Stein 337; Flagan 5078; Reghanti 5297.) The components are generally available for purchase from a variety of sources (Dahl 4057; Reghanti 5310), and no great amount of labor is necessary for assembly. (Dahl 4057.) Nor is highly sophisticated equipment essential for this operation. (Flagan 5044, 5048.)

97. While opportunities for technological improvements on truck trailers can be described as somewhat limited,⁵ some patents have been obtained by Fruehauf. But, according to respondent's officials, competitors have been easily able to circumvent them, as in the case of Fruehauf's roller [32] and floor welding patents (Reghanti 5297, 5299; Flagan 5087, 5165).⁶

98. While the record discloses no scarcity of natural raw materials, shortages of necessary component parts such as wheels have in fact occurred. (Nelson 6567-68.) In such cases, it would naturally be advantageous for a trailer manufacturer to have an assured source of supply for the scarce components, such as might occur if a trailer manufacturer were vertically integrated into wheels. This would also minimize financial losses associated with discontinuance of production. (Allen 184-85, 188; Stein 342, 346; Reeve 855-56, 860-62; Smith 989; Rowan 1904; Fontaine 3578-81; Reghanti 5303.)

99. Fruehauf manufactures all of its own trailer components except wheels (excluding Kelsey-Hayes production), tires, electrical systems and some of the flooring. (Bachman 28; Rowan 1895.) Respondent has a higher degree of vertical integration than any of its competitors and its vertical integration has embraced more

⁵ Opportunities for improvement are limited by government restrictions on length, height, width, weight, load on axles, load on highway, and connection between tractor and trailer. (Flagan 5079-80; Reghanti 5297.)

⁶ Contributions to trailer technology have not been limited to Fruehauf; innovations have been made by other manufacturers such as Utility, Venema & Wiggers, Strick, Hackett, Timpte, and Theurer. (Bachman 93; Bennett 261-62, 264; Flagan 5083-84.) Strick, for example, views its innovations as one factor for its success and growth in recent years (Bachman 95); and one witness felt that in the Los Angeles area, increasingly specialized equipment produced by manufacturers other than Fruehauf has been entering the market. (Goedhart 3795-96.) Some components suppliers have also introduced improvements. (Bennett 313.)

components than anyone else in the industry. For example, Fruehauf is the only truck trailer manufacturer with its own axle and aluminum plants. And axles and aluminum are two of the major cost items in the manufacture of truck trailers. (Rowan 1898-99.) [33]

100. The component parts which Fruehauf itself manufactures include:

(a) assembled axles (CX 561A-B; Bachman 28; Dahl 4107; Flagan 5138);

(b) aluminum sheet and extrusions for body parts and other components, such as extruded aluminum rivets (CX 561A-B; Bachman 28; Dahl 4108; Flagan 5138, 5167);⁷

(c) laminated wood flooring (Bachman 28; Flagan 5139);⁸

(d) suspensions and suspension shafts (CX 547; CX 561A-B; Bachman 28; Dahl 4108; Flagan 5144);

(e) brake shoes and all other braking components on the axle except the brake drum and air chamber (Bachman 28; Flagan 5140); [34]

(f) steel stampings (Bachman 28);

(g) underconstruction (Flagan 5139; Reghanti 5298);

(h) landing gear or support leg assemblies (Bachman 28; Flagan 5138, 5144; Reghanti 5298);

(i) running gear (Bachman 28);

(j) upper couplers (Flagan 5143; Reghanti 5298);

(k) door hardware including door lock rods (CX 561A-B; Flagan 5138-39);

(l) protrusion-formed plastic components (Flagan 5138);

(m) I-beam cross members (CX 516A-B);

(n) cam shafts and cam shaft supports (Flagan 5140);

(o) slack adjustors (Flagan 5140);

(p) hitch assemblies (CX 561A-B); and

(q) sand shoes. (Flagan 5067).

101. According to its officials, Fruehauf's degree of vertical integration gives it the opportunity to better control production cycles and scheduling of materials as required, the ability to control in-plant inventories and minimize inventory levels at assembly

⁷ Sheet aluminum is the most commonly used van trailer side and top material. (CX 544A). Fifteen to 20 percent of the cost of a typical aluminum exterior post van trailer is for aluminum sheet and aluminum extrusions. (Bachman 30.) Fruehauf entered the aluminum business in the mid-50's by constructing an aluminum extrusion plant in Decatur, Alabama. Subsequent to that, Fruehauf entered into a 50-50 joint venture with AMAX (American Metal Climax) to produce sheet aluminum. (Rowan 1898.) Fruehauf obtains in excess of 90 percent of its aluminum extrusion requirements from its Decatur aluminum plant. The same is true for rolled sheet aluminum. (CX 544B; Rowan 1900.)

⁸ Fruehauf acquired Montgomery Laminating Company in 1964 or 1965. It is a manufacturer of a special type of laminated wood flooring which supplies Fruehauf with 10 to 15 percent of its flooring requirements. (Rowan

plants by maintaining one central inventory; the opportunity to control component quality, and to have additional profit centers. (Rowan 1904; Reghanti 5303.) [35]

102. There was testimony by industry witnesses that in order to vertically integrate into the manufacture of wheels and other truck trailer components, a manufacturer should have and most manufacturers do not have, both the financial resources for such production and the volume of truck trailer production necessary to support the required investment. (Bachman 34, 61; Allen 178, 185-86, 188; Stein 338, 342, 346; Reeve 855-56, 868; Fontaine 3597.)

103. Other than Fruehauf, truck trailer manufacturers including the largest ones, generally are either not vertically integrated into component parts manufacture or are only integrated to a limited extent. (Bachman 31; Allen 177; Bennett 228-29; Stein 337; Reeve 854-55; Dahl 4065-70.) Indeed, some truck trailer manufacturers merely assemble component parts which are purchased from outside sources. (Fontaine 3568.)

3. Economies of Scale

104. The expert testimony differs regarding the economies of scale barrier into the truck trailer market. Respondent's expert views this as low or unimportant (Mann 5759-60), while complaint counsel's expert places it in the moderate range.

105. Respondent contends that economies of scale can be obtained with a market share of less than 4 percent, pointing out that Fruehauf's plant built in 1969 in Charlotte, N.C. had the capacity to produce 24 trailers per shift, accounting for approximately 4 percent of trailer demand (Dahl 4138), and that both economists agreed that the Charlotte plant was efficient. (Nelson 6570-71; Mann 5759-60.)

106. To bolster its position respondent points to the fact that the top 20 firms include a substantial fraction of trailer companies in existence during the entire period 1955-73 with very small market shares of one or two percent. (RX 266.) It argues [36] that if economies of scale were a major technological characteristic of the industry, it would be unlikely that such small firms could exist over that period of time. (Mann 5759.) Notwithstanding, I find the complaint counsel's contention to be the more rational.

107. More than a single plant operation is required because of the need for a geographic dispersion of plants in order to attract the more proximate purchasers, and to obtain the competitive advantages of offering a full line of trailers. (Nelson 6571.) Accordingly, the 4 percent of industry production accounted for by one efficient plant

would not be the answer to the economy of scale question, as it would take at least two, and probably more plants of an efficient size to achieve the necessary geographic and the desirable product line coverage. (Nelson 6572.) This would place the economy of scale barrier in the 5 percent-10 percent or moderate range.

108. The existence of single plants or firms with limited production and limited market penetration does not prove that the economy of scale barrier in truck trailers is low. One or a few trailers at a time can be assembled in a small building, or a fleet maintenance facility of a manufacturer's sales and service branch operation. (Thompson 3430, 3439-40; Cox 3478, 3481; Dahl 4061; Reghanti 5306-07, 5311, 5313-14, 5430.) However, these installations cannot be efficient sized plants; otherwise, it would be illogical for trailer manufacturers to build the multimillion dollar plants which they have built. (Nelson 6570-71.)

109. Complaint counsel argue that order sizes and delivery schedules imposed on truck trailer manufacturers by the large fleet customers indicate the existence of economies of scale. A large fleet consists of anywhere from 100 to 10,000 or more truck trailers. (RX 262; RX 263; Bachman 36; Stein 329; Reeve 853; Pfund 3368; Thompson 3412-13; Cox 3455; Kortenhaus 3507; Dahl 4125; Alderson 5913.) And these customers [37] typically place orders for a substantial number of trailers at one time, often in the range of 100-700 units. (Bennett 271; Bell 3353; Pfund 3383-84; Thompson 3435; Cox 3461.) However, the fleets do not take delivery all at once; rather they establish intervals for a set number of trailers to be delivered per week or per month. (Bachman 108-10; Bell 3354; Pfund 3384, 3399-3400; Thompson 3435-36.)

110. The ability to produce the required amount of truck trailers within the set delivery period is often a major factor in a fleet's determination of which truck trailer manufacturer will obtain an order. (Bachman 107-10; Bell 3354-55, 3364; Thompson 3435-36; Cox 3494-95.)

111. There are a limited number of truck trailer manufacturers who can fill orders of the size that large fleets place within the set delivery schedules. (Bell 3354; Thompson 3436.) Unless the trailers are of a highly specialized type, the smaller trailer manufacturers are not normally looked to in the bidding because of their inability to meet delivery schedules. (Bachman 108-10; Fontaine 157-58.)

4. Product Differentiation

112. As a general rule, product differentiation as a barrier to

producers' markets, such as the truck trailer industry. (Nelson 6823-24.) And according to respondent's economist, at least, the record suggests that trailers are like any producers' goods industry; that there simply is no product differentiation advantage. (Mann 5766.) But the record discloses the existence of certain "special factors" involved in the selling of truck trailers. For purposes of analysis both expert [38] economist witnesses assigned these factors to the product differentiation entry barrier. These are (a) mass product capability, (b) vertical integration, (c) sales and service centers, (d) ability to accept trade-ins and (e) captive finance companies. (Nelson 6573; Mann 5754-55.)

(a). Mass Production

113. As noted above, some truck trailer customer demands impose a mass production requirement on manufacturers to meet large delivery schedules. Many truck trailer purchasers, including large fleets, place substantial orders for production of truck trailers with a given manufacturer and require the completion and delivery of those trailers within a set period of time. And the ability to meet these delivery schedules imposed by the purchaser is a prime factor in determining what manufacturer will receive the order.⁹

114. However, respondent maintains that sales records show that Fruehauf's penetration of sales to large fleets (those operating 500 or more trailers) is smaller than its penetration of overall trailer sales. (RX 258; see also Rowan 2005.) Complaint counsel [39] counters that there are very few fleets operating with 500 or more trailers.

115. Respondent contends that it is rarely necessary for a truck trailer manufacturer to deliver large numbers of trailers in a short period of time, as there are few very large orders.¹⁰

116. Delivery schedules are worked out on the basis of the capacity of the trailer manufacturer (Pfund 3384), and there was testimony that small manufacturers such as Alabama, Fontaine, Great Dane, Ohio Body, Monon, Dorsey and Pines have been able to meet the schedules. (Cox 3462-64; Alderson 5932). It is also not

⁹ In the early and mid-1950's, Fruehauf was engaged in the mass production of trailers at its Avon Lake, Ohio, plant. (Reghanti 5305.) The cost of producing a trailer was reduced fairly substantially at smaller plants as compared to Avon Lake, and that facility was therefore obsolete and closed. (Flagan 5051.) Fruehauf plants today are of much smaller size and are not capable of mass production in the sense Avon Lake was. (Reghanti 5306.) This does not mean, however, that respondent's present manufacturing facilities are not capable of handling the orders of large customers, only that plants of the size of Avon Lake are not required.

¹⁰ It cites statistics indicating that of the nation's 241 largest customers, 107 purchased an annual average of fewer than 100 trailers during 1969-74; 66 purchased an annual average of between 100 and 200 units; 28 purchased an annual average of 200 and 300 units, 14 purchased an annual average of between 300 and 400 units; and only 26 purchased an annual average of 400 or more units. (RX 188 A-250.) It reminds us that even these purchase averages are inflated by the aberrationally high volume of orders in 1974, when total registrations reached approximately 180,000 units. (RX 193.)

uncommon to split large orders between two or more manufacturers. (Bachman 109-10; Bennett 270-71; Cox 3461; Alderson 5933.)

117. The record shows that large fleets often do not buy standard production line trailers. (Cox 3459; Bachman 106; Bell 3312; Pfund 3371-72; Reghanti 5381-83), but usually maintain detailed service, repair and replacement records on trailers and trailer components in their fleets (R's 1st RAF - #124), and prepare specifications, such as CX 614A-C, based on this experience when ordering trailers. (Bachman 105-06; Bell 3308, 3312, 3319; Pfund 3374-78; Thompson 3419-20, 3448; 3460-61; Kortenhaus 3511-13, 3522-24, 3536-37.) This practice is often referred to as "specing." [40]

118. In specing, purchasers are concerned not merely with initial price, but with the total cost of the vehicle and its components over operating life. This overall cost includes initial price, cost of service and related downtime, and residual value when traded. (Bachman 110-11; Thompson 3445-46; Kortenhaus 3511-13; Cox 3459-60.)

119. There was testimony that smaller manufacturers are in a position to compete vigorously against Fruehauf in particular instances or circumstances involving speced sales to fleets. (Allen 203; Stein 359; Reghanti 5384-85, 5387; Pfund 3371-72; Thompson 3418-19; Cox 3455-56, 3484-85; Reeve 874.)

(b). Vertical Integration

120. Fruehauf is highly vertically integrated into the manufacture of component parts for truck trailers; its degree of vertical integration is greater than that of any other truck trailer manufacturer.

121. It manufactures a great many component parts which are unique and not interchangeable with the parts used by other manufacturers. (Bachman 24, 30; Bennett 239, 249; Stein 349-50.) Mr. Stein of Ohio Body explained that a large fleet "speced" Fruehauf parts on an order because they had always used Fruehauf and had Fruehauf repair parts. The price of the trailer had to be increased accordingly.

122. Fruehauf "ProPar" axle assemblies are a good example of this. (Bachman 30; Bennett 256-57; Rupert 815; Clem 2726-27; Bell 3321; Flagan 5149.) The brake components manufactured by Fruehauf are peculiar to Fruehauf's axle and are likewise not interchangeable with the corresponding components on other axles except in minor cases. (Flagan 5140.) [41] Fruehauf also manufactures portions of the undercarriage and a sand shoe of its own design. The sand shoe, however, is interchangeable with other manufactur-

123. Fruehauf also purchases unique components that are not used on competitive trailers. (Flagan 5162-63.) Standard wheels supplied by Fruehauf (and also by Trailmobile) on its trailers have a peculiar design which makes them non-interchangeable with wheels made by other manufacturers. (Stein 350; Mitchell 2520-21; Clem 2626-27.) The private label antiskid systems which Fruehauf supplies on its trailers have a peculiar design for application inside Fruehauf's tube type axle which make them non-interchangeable with antiskid devices made by other manufacturers. (Rowan 2036.)

124. Fruehauf's ProPar Division sells component parts which Fruehauf manufactures to other truck trailer manufacturers and to the aftermarket. (CX 547; Bennett 229; Rowan 1897; Reghanti 5491.) Fruehauf's ProPar parts are sold primarily to other truck trailer manufacturers but they are also sold through Fruehauf branches and through independent service shops. (Rowan 1897; Reghanti 5488, 5491.)

125. Fruehauf advertises its ProPar parts to prospective customers and attempts to persuade them to specify ProPar parts when purchasing Fruehauf or other makes of trailers. Fruehauf also urges trailer users to utilize ProPar parts for replacement or aftermarket requirements. (Bennett 236.) In 1975, more than 50 trailer manufacturers purchased ProPar axles for use as original equipment. (CX 660M.)¹¹

[42] 126. Because fleets desire to standardize the truck trailer replacement parts in their inventory, once a manufacturer becomes a supplier to the fleet, the fleet is likely to remain with that manufacturer's part. (Bell 3351; Stein 349-352.) Fruehauf, by selling the ProPar uniquely designed components, can control the market for replacement parts by making the components captive items which can only be purchased from Fruehauf. (Bennett 249; Mitchell 2520-21.)¹²

(c). Sales and Service Centers

127. Fruehauf has by far the largest network of sales and service facilities in the industry. It maintains approximately 100 company-

¹¹ Respondent points out that Fruehauf has been marketing ProPar parts for ten years; and that sales have reached only \$5 million including sales to overseas affiliates. (Rowan 1896-97; 1982.)

¹² Ohio Body supplied ProPar under-constructs with the truck trailers it sold to a major leasing company because the company was concerned that it would lose its inventory standardization on ProPar parts and would have to double-stock such components as spring hangers, axles, bearings, wheels and landing gear parts unless it continued to go standard on Fruehauf under-constructs. (Stein 349-50.) The reason for the customer's concern about inventory standardization was that the unique Fruehauf parts in its inventory were not interchangeable with the parts Ohio Body would normally have supplied. For example, while a wheel from an Ohio Body trailer would fit almost any other trailer made, it would not fit on a Fruehauf trailer nor would a wheel from a Fruehauf trailer fit on an Ohio Body trailer because of Fruehauf's unique design. (Stein 350.)

owned branches scattered throughout the various metropolitan areas of the United States. (Complaint and Answer, Para. 4; CX 641A-B; Bachman 23; Allen 190; Stein 347; Reeve 856; Reghanti 5230, 5293.)¹³ The number of Fruehauf [43] branches has increased over the past ten years, and Fruehauf stresses the capabilities offered by these centers in its sales pitch to potential purchasers. (Reghanti 5423, 5425.)¹⁴

128. The large capital investment required limits the number of factory-owned branches which many manufacturers can afford. (Allen 190; Fontaine 3592.) For example, Fontaine's Los Angeles branch cost an estimated \$400,000, exclusive of inventory. (Fontaine 3593.)

129. A primary advantage in having a large network of company-owned branches is that it increases the marketability of products including replacement parts, in the different areas of the country. (Allen 190-91; Stein 346-47; Reeve 856.) While trailer manufacturers can and do utilize independent distributors, there was testimony that these are not as effective. Manufacturers sometimes have difficulty in supervising sales efforts and in getting the independents to devote the necessary time and attention to the products. (Bachman 22; Allen 191.) Having company-owned branches also allows the trailer manufacturer to obtain the retail as well as the wholesale profit on the trailer sales. (Stein 347; Reeve 858.) [44]

130. While service facilities are used by and are important to the smaller fleets and individual truck trailer purchasers who cannot afford their own facilities (Rowan 1984-85; Reghanti 5292), large fleets also use both manufacturer-owned branch and independent service facilities for truck trailers in addition to their own facilities. (Thompson 3421; Cox 3499; Bell 3349.) Likewise, the availability of replacement parts at service centers is a consideration of large fleets in determining from whom they will purchase truck trailers (Bell 3350.).¹⁵

¹³ Fruehauf's branches are "full service facilities," offering new and used trailer sales, trailer repair and replacement parts sales. (Bachman 23.)

By way of numerical comparison, Great Dane has ten factory branches (Reeve 856); Strick has four factory branches (Bachman 22-23); Dorsey has two or three factory branches (Cox 3503); Heil has two factory branches (Allen 191); Ohio has no factory branches but has recently started to set up distributorships (Stein 346); and Fontaine has 11 factory branches. (RX 34D). Of course, there are many small trailer manufacturers who have none. (Fisher 1344.)

¹⁴ The importance of after-the-sale service in truck trailers is evidenced by Fruehauf's offering a five-year warranty covering everything made by the Fruehauf Division, which warranty is the longest range one in the industry. (CX 641A-B.)

¹⁵ Large fleets such as PIE, consider and give some weight to the existence of sales and service outlets in determining from whom to buy trailers. (Bell 3343). However, Mr. Cox of Saunders, a full-service leasing company with 106 locations scattered throughout the Eastern United States (3453), testified that the number of service

131. Respondent maintains that there is no record evidence to support the conclusion that possession of factory-owned or franchised sales and service centers are a necessary condition to entry into the truck trailer market. Respondent points to testimony that trailer maintenance is quite simple (Bachman 106), and that the minimum maintenance which is required can be done by a high school trained mechanic with hand tools. (Flagan 5076-77.) It points to additional testimony that trailers require very little maintenance work, much less than power units (Rowan 2010; Flagan 5074-75); that trailers are intentionally designed to require as little service as possible (Flagan 5074-75); and that in recent times, vehicles, components systems, and maintenance procedures have all improved. (Bell 3301.) [45] Nevertheless, it is clear from the record that trailers do require service or repair from time to time and that facilities exist for that purpose.¹⁶

(d). Trade-Ins

132. Sales of new trailers generally involve trading in a used trailer to the seller. (Bachman 39-40; Allen 227-28.) The ability of a truck trailer manufacturer to accept trade-ins is very important and sometimes critical in making sales. (Bachman 164-65; Allen 192-93; Reeve 868; White 4026.) The reason that many trailer customers prefer to trade in used trailers rather than dispose of the units themselves is that they are not in the used trailer business. (Allen 194; Alderson 5920.) Thus, truck trailer purchasers look for trailer manufacturers who accept trade-ins in making their purchases. (Bell 3353.)

133. It is important to a trailer manufacturer to have numerous used trailer outlets. (Bachman 38-39.) It is important for a trailer manufacturer to turn over his trade-ins or used trailer inventory because his profit from the sale of new trailers may be tied up in the traded units. (Allen 192-93.) One witness felt that by having a large number of used trailer outlets, the manufacturer is able to spread his used trailers over a series of locations in the area where the particular size and type of [46] used trailer is in demand and thus avoid having them in inventory an excessive amount of time. (Bachman 38-40.)^{16a}

¹⁶ The trend is for large fleets to have their own service centers which perform trailer maintenance and repair work. (Bachman 23; Bell 3301; Pfund 3378; Thompson 3422, 3428-29; Cox 3480-81; Kortenhaus 3513-16.) Many of these centers are capable of complete trailer assembly. (Bell 3306, 3307; Thompson 3430; Cox 3477-78, 3481-82.) While such fact may tend to diminish the significance of the manufacturer's servicing operations, it does not affect the sales factor, both as to trailers and replacement parts.

^{16a} The ability of a truck trailer manufacturer to take trades of used trailers at a number of different geographic locations is an important factor in selling new trailers since the point at which fleets drop off used trailers is

(Continued)

134. Fruehauf has more used trailer outlets than any other trailer manufacturer. Fruehauf accepts trade-ins and sells used trailers at all or most of its approximately 100 factory branches. (Bachman 39; Allen 193.)

135. Fruehauf's ability to handle trade-ins gives it an advantage over smaller truck trailer manufacturers who lack the ability to do so to the same extent. (Bachman 164-65.) Although small trailer manufacturers do accept trades (Reeve 868; Allen 192; Cox 3472; Alderson 5931-32), many are limited in their ability to accept trade-ins due to their limited number and location of used trailer sales facilities. (Allen 194.) Many trailer manufacturers are also limited because they cannot afford the capital costs of maintaining a large inventory of used trailers. (Allen 193.)¹⁷ [47]

136. As respondent points out, it is possible to dispose of used trailers in other ways besides trading. (Alderson 5934.) Some fleets have no trade-ins at all; their used units are scrapped (Pfund 3386), sold directly by the fleet for transportation or storage purposes (Thompson 3424-25; Kortenhaus 3517-18) or rebuilt and refurbished by the fleet. (Thompson 3423-24.) There are also independent companies which specialize in selling used trailers. (Bell 3363-64.) Sometimes fleets can get better prices for used trailers by not trading in to manufacturers. (Kortenhaus 3517-18; Pierce 3666-68.)¹⁸

137. However, despite the existence of such alternative means of disposal, the fact remains that trade-ins are a fact of life in the merchandising of truck trailers. Fruehauf, with its 100 branches and financial resources, is in a better position in this regard than its competitors.

(e). Finance

138. The record contains much testimony and evidence regarding the financing of truck trailer purchases. And while, as respondent points out, alternative means of financing exist and are becoming increasingly significant, the ability of a manufacturer such as Fruehauf (and some others) to finance sales through its own captive corporate finance company remains an important and advantageous competitive factor. [48]

139. In the early and mid-1950's, users of trailers had difficulty

important to the fleet's balance. (Bell 3353, 3364.) A trailer manufacturer that does not have a used trailer facility in the area where it accepts the trade-ins must pay the cost of transporting the traded units to its used trailer facilities for sale. (Allen 194.)

¹⁷ There was no testimony that Fruehauf offers better trade-in terms than other manufacturers. In fact, there was testimony that Fruehauf does not do so. (Cox 3472; Bell 3362.)

¹⁸ Mr. Cox of Saunders, a major fleet, which has traditionally traded in used units, testified that his company is looking very strongly at retailing its used trailers, as it does with tractors. (Cox 3471, 3472.)

in securing financing for the purchase of revenue-producing equipment (trucks, tractors, and trailers). (Gilliland 5499-5500; White 3962.) This was because of the uncertain condition of the trucking industry (of which the trailer industry is derivative), which was fragmented and unsophisticated; contained many small companies; was not very well capitalized; and had no publicly held companies. (Gilliland 5499, 5508; Pierce 3613.) Banks and other financial institutions simply did not believe that the motor carrier industry was creditworthy. Accordingly, vendor loans became virtually the only practical source of credit available. (Gilliland 5499-5500; White 3945, 3962, 3988.)

140. Fruehauf Finance was founded in 1948 to provide a source of capital for trailer purchasers, as an adjunct to the sales arm of the company. (Gilliland 5498-99; Reghanti 5287.) In 1955, 65 percent-75 percent of the company's trailer sales in dollars were financed by Fruehauf Finance. (Gilliland 5504-05, 5581.) In 1972, this figure amounted to 55 percent of all sales and leases. (44 percent and 11 percent, respectively.) (CX 756D.)

141. Besides Fruehauf, only a handful of the leading trailer manufacturers have or have had captive finance companies, *viz.*, Trailmobile, Strick, Gindy, Great Dane and Brown. (Bachman 24, 37; Allen 195; Bennett 253; Reeve 854; Gilliland 5566.)

142. Subsequent to the mid-1950's banks have grown increasingly active in truck trailer financing. But, as complaint counsel point out, banks are generally willing to finance only the most creditworthy purchasers because of the banks' higher credit standards and lack of ability to handle repossessions. (Bachman 159, 165; Reeve 902-03; Pierce 3680-82; White 4028-29.) Consequently, the major banks making loans to the transportation industry, such as First National Bank of Boston and Chase Manhattan, [49] while handling large transactions, deal only with a relatively few large purchasers. (Pierce 3674, 3680, 3682-83; White 4004-07.)

143. Apart from such specialized loan transactions involving the transportation sections of certain major banks and large trailer purchasers, other bank financing is sometimes available to smaller "non-bankable" purchasers.¹⁹ Other departments of such banks or local branches may lend to smaller customers. (Pierce 3686-87; White 3964-68.) And there are smaller local banks which make loans for trailer purchases, sometimes through chattel mortgage or installment loan transactions, sometimes through arrangements made by trailer manufacturers who may and do guarantee the loan.

¹⁹ The term "bankable" refers to the ability to borrow from a major bank through its transportation sections. (Gilliland 5506-07.)

(Gilliland 5510-14, 5516, 5531-32; Pierce 3621; Goedhart 3777-79; see also Cox 3465; Allen 194-95; Stein 347; Goedhart 3766.)²⁰

144. Yet, despite the existence of alternative means of financing trailer sales, financing through captive finance companies remains of significant importance. (Reeve 876-77; Goedhart 3772-73; see Bennett 254, 275-77; Bachman 99.) This is especially true as regards sales to smaller or less creditworthy customers who may have difficulty or be unable to obtain credit elsewhere. (Bachman 164-65; Allen 195-96; Reeve 854, 877.) And often large customers, such as fleets, utilize captive finance companies on occasions [50] when banks deem a purchase transaction too risky, or when a borrower has exhausted his bank line of credit, or when money is tight or limited at banks. (Bachman 35-36; Rowan 2008; tr. 5594-95, 5568-74 *in camera*.)²¹

145. In short, the record makes it abundantly clear that trailer manufacturers such as Fruehauf, which have a captive finance capability, can more effectively compete for trailer sales.²²

C. Exit and Entry

146. Although there has been some entry into the truck trailer market, the record shows that at least since 1955 no entrant penetrated to become one of the top eight firms. (RX 266.) Recent new entrants include some firms as Monon, Stainless Tank & Equipment, Polar and Bertolini. (Bachman 40-41; Allen 175, 210.) Although Monon had obtained about [51] 1 percent of the market by 1973, industry witnesses looked upon the new entrants as specialized manufacturers not in the same class with those producing a wider variety of products. (Bachman 41-44; Allen 175-76, 207; Reeve 865; Reghanti 5265-66.)

147. Two major truck trailer manufacturers, Brown and Highway, exited the market since 1969. (Bachman 20; Stein 335-36; Reeve 866; Davis 1451; Cox 3490, 3496; Kortenhaus 3536; Fontaine 3594; Flagan 5135-36; Reghanti 5260-62; Alderson 5943.)

²⁰ Finance companies not affiliated with trailer manufacturers sometimes finance trailer sales. These include General Electric Credit Corporation, CIT Corporation, General Motors Acceptance Corporation and Associates Finance. (Bennett 276; Goedhart 3776.)

²¹ But whatever the terms of bank financing may be in comparison to Fruehauf, for the large numbers of trailer purchasers to whom the banks will not make any terms available, the point seems irrelevant.

²² Fruehauf Financing Company also has a Transport Investment Division which makes loans to companies in the transportation industry for operating capital, expansion and other business needs. (Rowan 1944; Gilliland 5605.) Fruehauf Finance Corporation also has a subsidiary Transport Acceptance Corporation which finances the purchase of any product by transportation industry firms. (Gilliland 5563-64; CX 6602-6.) However, I do not believe

D. Profitability

148. Fruehauf's average return on investment on its trailer sales from 1968 to the time of trial was slightly lower than the average of all manufacturing for approximately the same period of time. (Nelson 6652, *in camera*.) Both respondent and complaint counsel agree that Fruehauf's profitability serves as a reasonable proxy for the trailer industry as a whole because they have a large share of the market. (Nelson 6650.)

149. Profitability figures were used by both economists to test previously arrived at conclusions about the industry as opposed to inferring anything about the industry solely from the data. (Mann 5730-31.) It was recognized by both parties that even though high profitability evidences high barriers, low profitability does not necessarily mean low barriers because excess profits may be consumed by inefficiencies. (Nelson 6621.)

150. Given the inexactitude (see Mann 5726) of the calculations of profitability for a firm or an industry, and that estimates for Fruehauf are not extreme either on the high or low side, the figures favored by both respondent and complaint counsel must be viewed as indeterminative. [52]

VII. HEAVY DUTY WHEEL MARKET

151. As for wheels, the complaint alleges the existence of one relevant market and two submarkets. (Complaint ¶ 12.):

- (a) Manufacture and sale of heavy duty wheels; and
- (b) Manufacture and sale of truck trailer wheels;
- (c) Manufacture and sale of cast spoke truck trailer wheels, exclusive of rims;

152. For the reasons set forth at the commencement of my Legal Discussion, *infra* at VIII, I have concluded that only the overall heavy duty wheel market is the appropriate wheel market (on this record) for examination of Section 7 effects.

A. Market Structure

153. A heavy duty wheel consists of a hub, a center member (with a non-demountable rim in the instance of a disc wheel) and a brake drum. (Allen 179; Reeve 858-59; Smith 914; Mitchell 2507-08.)

154. Most heavy duty wheels are designed for application on axles with a rated gross vehicle weight ("GVW") capacity of 19,500 pounds and above. (Rupert 776; Reeve 863; Zart 1218, 1220; Fisher 1333; Fairchild 1624; Kenney 2079; Krauss 2354.)

155. There are basically two types of heavy duty wheels, *viz.*, cast

spoke and disc, which are not freely interchangeable on the same vehicle and are generally not found in the same fleet. (CC's 1st RACF - #1; Bachman 46; Allen 179; Rupert 798-99, 802, 833; Reeve 858-59.) Cast spoke and disc wheels [53] are both useable on a given size axle, but are not mixed on the same axle. (Rupert 798.) Trucks sometimes have both types mounted on the same vehicle. (Zarella 5960.)

156. A cast spoke wheel consists of a center member called a "spider," with an integral hub, brake drum and demountable rim. (RX 200; Reeve 858; Mitchell 2507-08.) (See depiction in RX 112.)

157. The spider and drum are usually sold assembled together with the bearing cups, rim clamps, studs and spacer bands. (CX 35N-O; CX 52A; CX 49F; Rupert 769, 772, 777, 798-99; Reeve 859; Smith 914; Looney 1807; MacDonnell 2019; Vause 2239; Mitchell 2507-08.) However, some customers such as Mack Truck and International Harvester purchase some of their cast spoke spiders and drums separately and assemble them. (R's 2nd RAF - #33; Vause 2227; Mitchell 2567.) Rims are usually purchased separately and attached to the wheel and drum assembly by the OEM. (Rupert 772, 799; Smith 914; Kenney 2082; Mitchell 2508.) Rims account for approximately 10 percent of the cost of a heavy duty cast spoke wheel. (Mitchell 2526.)

158. A disc wheel consists of a hub, brake drum, disc, and rim which has been permanently attached to the disc, plus various minor parts. (RX 205; Reeve 859; Smith 914; Zart 1233, 1237; Kenney 2083, 2095, 2099; Vause 2184.) The hub of a disc wheel is similar to the integral hub of a cast spoke wheel but is smaller. (Reeve 859.) (See depiction in RX 109.)

159. The user of a disc wheel usually buys a hub and drum assembly and mounts it to a disc with its integral rim. (Rupert 799; Reeve 859; Fairchild 1634; tr. 2099, 2161-62 *in camera*; Krauss 2365-66; Mitchell 2508.) Frequently heavy duty axles are sold with attached hubs and drums when disc wheels are to be used. (Fisher 1342; Davis 1409, 1419; Phillips 1569, 1574.) A heavy duty cast spoke wheel with two rims performs the same basic function as two heavy duty disc wheels and a hub. (R's 1st RAF - #34.) [54]

160. Drum and hub assemblies account for approximately 50 percent of the price of a heavy duty disc wheel. (Krauss 2366.)

161. Heavy duty cast spoke and disc wheels compete for direct sales to vehicle producers and indirect sales to the ultimate users. (RX 130; RX 135A-B; RX 136A-B; RX 137; RX 152A-B; Rupert 825-26; Kenney 2144; Krauss 2385-86.)

162. Imports of heavy duty wheels and their components have

Fisher 1347; Krauss 2422-23; Mitchell 2515.) Imported cast spoke wheels and hubs are more expensive than those produced domestically. (Davis 1422; Mitchell 2515.) To adapt Japanese heavy duty wheels for use on domestic vehicles would require extensive changes. (Zarella 5965.)

163. While the complaint's definition of "wheels" has an inherent logic in that it encompasses all components connecting the tire and the axle (Bachman 75; Reeve 879), it should be noted that components of a wheel assembly may well be supplied by different companies. For example, disc wheel supplier Firestone, does not make hubs and drums. (Zart 1236.) Rockwell only makes hubs and drums (CC's 1st RAF - #18); some manufacturers of demountable rims for use with a cast wheel — Firestone, Motor Wheel Division of Goodyear (hereinafter "Motor Wheel") and Redco — do not make cast wheels. (Rupert 772-73, 829.) And several OEMs, such as International Harvester, Mack and Utility, purchase all heavy duty wheel components separately. (Mitchell 2567; Vause 2226-27; Zarella 5969-70; Bennett 294, 323.)

164. There are seven significant producers of the spider or disc components of finished heavy duty wheels, *viz.*, Dayton-Walther Corporation (hereinafter "DW"), Gunite Division of Kelsey-Hayes (hereinafter "Gunite" or "Kelsey-Hayes"), Webb Wheel Division of [55] Marmon Industries (hereinafter "Webb"), Erie Malleable Iron Company (hereinafter "Erie"), Firestone Tire & Rubber Company (hereinafter "Firestone"), The Budd Company (hereinafter "Budd"), and Motor Wheel. (CX 569; Rupert 768; Smith 913; Zart 1187, 1235; MacDonnell 2014; Kenney 2079, 2096; Vause 2189; Mitchell 2498, 2514.) In addition, Alcoa produces only aluminum disc wheels, the sales of which have been insignificant due to their relatively higher cost. (Bachman 50; Rupert 844; Smith 929; Rowan 1924-25; Kenney 2096; Krauss 2367; Mitchell 2514.)²³

165. The major sellers of heavy duty wheels generally produce either the spider for the cast spoke wheel or the disc for the disc wheel. (CC's 1st RACF - #5, 8, and 14; Rupert 768, 798; Smith 929; Looney 1802; MacDonnell 2032; Vause 2185, 2189; Krauss 2374-75; Mitchell 2514.) Each of the spider producers also manufacture heavy duty drums and all but the smallest, Erie, also make hubs. (CX 35A-T; CX 49A-X; CX 50A-P; Rupert 768; Smith 913, 921; MacDonnell 2014; Vause 2181-82; Mitchell 2499.)

166. There are certain common elements in the manufacture of

²³ Aluminum disc wheels represent a small percentage of the market. (Zart 1237; Krauss 2367.) They are lighter than cast spoke wheels but are much more expensive. (Zart 1243; McGroarty 3696.) Firestone's sales of aluminum discs are insignificant compared to its sales of steel discs. (Zart 1237.)

various heavy duty wheel components. Spiders for cast spoke wheels, drums and nonintegral hubs are produced by the same major competitors. (See previous finding.) These components can be and are machined (finished) in the same plant using the same equipment with modified tooling. (Smith 959-60, 983; Fisher 1316; Mitchell 2525.) Castings for nonintegral steel hubs and spiders can be produced in the same foundry. (Mitchell 2529.) [56]

167. In like manner, the disc producers, except for Alcoa, also manufacture rims. (CX 23A-D; 37Z-87; 39A-L; Rupert 773, 829; Zart 1186-87, 1230; MacDonnell 2020; Kenney 2079; Krauss 2353; Mitchell 2516, Vause 2184-85.) Three of the five disc producers make heavy duty drums and hubs. (CC's 1st RACF - #8, 18, 25, 28, 29; CX 40P; CX 41A-Z-19; CX 48A-Z-11; CX 54A-D; CX 67F; Fisher 1346-47, 1357; MacDonnell 2014, 2019, 2031; Kenney 2079, 2094-97; Vause 2181-82; Krauss 2352, 2375-76.)

168. There are four producers of cast spoke wheel spiders, *viz.*, DW, Gunite, Webb, and Erie. (CC's 1st RAF - #8; CX 35A-T; CX 49A-X; CX 50A-P; Rupert 768, 798; Smith 913, 926-27; MacDonnell 2014, 2032; Vause 2181-82, 2189; Krauss 2375; Mitchell 2507, 2514, 2522; see Looney 1802; Zarella 5954.)

169. There are 5 producers of the principal component of the heavy duty disc wheel, the disc. These firms are: Firestone, Budd, Motor Wheel, Kelsey-Hayes and Alcoa. (CC's 1st RAF - #5; CC's 1st RACF - #22, 23; CX 24A-D; CX 27A-Z-19; CX 40A-P; Rupert 798, 823; Smith 929; Zart 1187, 1235, 1239-40; MacDonnell 2016-17, 2032; Kenney 2079-80, 2096; Vause 2181-82, 2184-85, 2189; Krauss 2352, 2374-75; Mitchell 2514; McGroarty 3740; Zarella 5955.) Three firms, Firestone, Motor Wheel and Budd, dominate the production of discs. (Zart 1239-40; Kenney 2096; Krauss 2374.)

170. It was estimated that imports, chiefly of SKF and Michelin, were less than one percent of heavy duty disc wheel sales in 1974. (Zart 1242; Krauss 2422.)

171. Kelsey-Hayes produces discs for the lighter end of the market, namely 14,000-26,000 GVW. (CX 560B; MacDonnell 2016-17; Kenney 2096; Vause 2181, 2185-87.) [57]

172. Motor Rim and Wheel, Standard Rim and Wheel, Wisconsin Rim and Wheel, Southeast Rim and Wheel, Southwest Rim and Wheel, H&H Wheel Service and Oakland Wheel and Rim make disc wheels for specialty applications, do not make their own rims and accounted for less than 5 percent of the disc wheel production for all uses in 1972. (Zart 1240-41; Krauss 2421-22.) These firms produce only specialty wheels for different applications than those made by Firestone, Budd or Motor Wheel. (Zart 1241-42; Krauss 2421-22.)

173. Three of the axle producers make both heavy duty hubs and drums which are often sold attached to their axles. (CX 37Z-88; CX 92-93; Davis 1409; Fisher 1316, 1346-47; Phillips 1569.)

174. Drums used as part of heavy duty cast spoke and disc wheels are substantially the same except for machining. (Jones 1282; Fisher 1378-79; Looney 1828; Kenney 2084, 2164-66; Mitchell 2526, 2566.) The producers of heavy duty drums sometimes sell them for use as part of both cast spoke and disc wheels. (Fisher 1379; Fairchild 1650; Looney 1828.)

175. The following companies are producers of finished drums for use as part of heavy duty wheels: DW, Gunitite, Webb, Rockwell, Erie, Budd, Motor Wheel, Durametal, Reyco, Standard Forge, Truck Brake Service (Ful-Rib), Kershaw (Dana), General Foundry, International Harvester Corporation (hereinafter "IHC"), and Utility Trailer Company (hereinafter "Utility"). (CC's 1st RAF - #8, 18, 25, 28, 29; CX 35A-T; CX 37Z-51-84; CX 40A-P; CX 41A-Z-19; CX 48A-Z-10; CX 51A-D; CX 54A-D; CX 67F; RX 56A-L; Bennett 289-90; Rupert 768; Smith 913, 987-88; Fisher 1315, 1346-47; Davis 1407, 1420; Phillips 1569; Fairchild 1623, 1629, 1637; Looney 1793, 1805; McCorry 1835-36, 1841; MacDonnell 2014, 2019, 2031; Kenney 2079, 2094-95; Vause 2181-82; Krauss 2352, 2375-76, 2409; Mitchell 2498, 2508, 2516, 2524.) [58]

176. Of these producers of finished heavy duty drums, six make the spider or disc portion of the heavy duty wheel. These six include all but one of the significant producers of heavy duty wheel spiders or discs. As discussed below, of the remaining heavy duty drum suppliers who do not produce spiders or discs, three, Rockwell, Standard Forge and Kershaw, produce hubs and sell axles with attached hubs and drums, two are vehicle producers, IHC and Utility, manufacturing for in-house use only, and three are *de minimis* factors in the market, Truck Brake Service, General Foundry and Durametal. (Findings CX 37Z-87-88; Davis 1410.)

177. Of the heavy duty drum producers, Motor Wheel, Webb, Rockwell, Reyco, Kelsey-Hayes and DW offer an extensive product line. (CX 37Z-46-85; CX 41A-Z-19; CX 48A-Z-10; CX 50A-P; CX 51A-D; CX 54A-D; CX 527A-Z-31; Fisher 1342, 1345; Looney 1823-24.)

178. IHC makes roughly 30 percent-50 percent of its own heavy duty drums, but does not sell finished drums to other manufacturers. (Looney 1805; Kenney 2095; Vause 2227, 2238-39; Krauss 2409, 2423-24; Mitchell 2516.)

179. Truck Brake Service (Ful-Rib) sells to the aftermarket with very limited production. (Smith 987-88, 996-97; Fairchild 1637.) It

does not have the necessary foundry to cast brake drums and has sold some of its machining equipment to Durametal in return for drum castings. (Fairchild 1641-43.)

180. Only 1 percent of General Foundry's drum product sales are finished drums, and these are finished by subcontractors. General Foundry has restricted its activities in finished heavy duty drums because of the cost of maintaining the necessary inventory of finished drums and because of its noncompetitive prices. (McCorry 1836-38, 1841.) General Foundry does not make a full line of finished drums but offers only two or three part numbers today. (McCorry 1846.) [59]

181. Durametal sells 60 percent of its brake drums to the aftermarket and partially attributes its market survival to its insulated position in the Pacific Northwest. (Fairchild 1652, 1656.) However, although Durametal's prices are competitive in some cases, Durametal's price is 15 percent-20 percent higher than that of Gunite on drums sold to Paccar. (Fairchild 1638.) Durametal markets primarily in 11 western states due to freight costs. (Davis 1416, 1448-49; Fairchild 1633-34.)

182. J&J Casting does not presently produce heavy duty drums. (Jones 1267.) J&J Casting began production of heavy duty drums in 1970 and ceased production in 1973. It sold to the aftermarket on a very limited basis. (CX 563; see also CX 564A-D; Jones 1267, 1274-75.) Its heavy duty drums were more expensive than other heavy duty drums sold to vehicle producers. (Jones 1276.)

183. The following companies are producers of the hub component for use as part of a heavy duty wheel, specifically the heavy duty disc wheel: Rockwell, Budd, Motor Wheel, Paccar, Mack, DW, Webb, Kelsey-Hayes, Kershaw, Utility, Standard Forge, Conmetco and Kaiser Aluminum. (CC's 1st RAF - #18, 28, 29; Bennett 288; Smith 913; Fisher 1315, 1346, 1357; Davis 1407, 1409, 1420; Phillips 1563; Fairchild 1649, 1653; MacDonnell 2019, 2031; Kenney 2079, 2097; Vause 2182; Krauss 2352, 2409; Mitchell 2498, 2508, 2529; McGroarty 3738; Zarella 5955-56.)

184. Imports of heavy duty hubs are very rare and involve prohibitive costs and long delivery times. (Fisher 1347; Davis 1422; Krauss 2374.)

185. Of the above hub producers five produce the spider or disc components of a heavy duty wheel, four others produce heavy duty drums, three, Paccar, Mack and Conmetco, are vehicle producers making for [60] in-house use only, and the remaining firm, Kaiser,

has only a single customer. (Fisher 1347; Davis 1407; Fairchild 1635; Kenney 2097; Krauss 2409, 2424; Zarella 5955-56, 5969.)²⁴

186. Hubs can be cast of aluminum, malleable iron, cast iron or steel and can be forged of aluminum, malleable iron or steel. (Smith 917, 959; Fairchild 1634, 1653; tr. 2154-56 *in camera*; Krauss 2364; tr. 2412 *in camera*; Mitchell 2527; McGroarty 3746; Zarella 5956.)

187. Each type of hub has specific applications and uses. (tr. 2158-59 *in camera*; Krauss 2364; Zarella 5956.) Forged aluminum hubs tend to be used in high speed, light weight applications; forged steel in relatively light weight, low cost trailer applications; and cast, malleable or ductile iron in drive axle and some steering axle applications. (Fisher 1355-56; tr. 2159 *in camera*.)

188. It is desirable for a vehicle producer to offer hubs made of steel and aluminum castings and forgings so as to meet various customer preferences. (Tr. 2158 *in camera*; Krauss 2364.) For a given hub, the choice of material or process is dictated by the costs or feasibility of its production. (Krauss 2364; Mitchell 2528.)

189. Many of the hub producers buy the castings or forgings which they then machine. (Fisher 1367-72; Davis 1408; Phillips 1567; Kenney 2097; tr. 2154-56 *in camera*; Krauss 2357; Mitchell 2528; Zarella 5955-56.) [61]

190. There is specialization by the producers of the unfinished hubs according to each of the manufacturing processes and materials. (Fisher 1370; tr. 2157-58 *in camera*.) Generally, suppliers of castings do not make forgings and suppliers of forgings do not make castings. (Fisher 1336, 1365-66; tr. 2157-58 *in camera*; Krauss 2364-65.)

191. Producers of the rim component for use as part of a heavy duty wheel include Firestone, Motor Wheel, Budd, Redco and Kelsey-Hayes to a limited extent.²⁵ (CX 23A-D; CX 30A-B; CX 31A-C; CX 39A-L; Rupert 772-73, 829; Smith 929; Zart 1186-87, 1230; Sechrist 1865, 1873, 1880; MacDonnell 2020; Kenney 2079; Krauss 2353; 2376; Mitchell 2516.)

192. Heavy duty rims can be used as part of either cast spoke or disc wheels, and production shifts between making rims for cast spoke and disc wheels can be accomplished with little or no difficulty. (Zart 1232-33, 1259; Sechrist 1877; Kenney 2081-83; tr. 2120 *in camera*.)

193. Firestone, Motor Wheel and Budd are the leading producers of heavy duty rims. Firestone and Motor Wheel have the most

²⁴ Kaiser's only sales of finished components for heavy duty wheels are of hubs that it sells to a single customer, Paccar. (Kenney 2097; McGroarty 3738.)

²⁵ Imports of rims are few. Some were imported at a considerable price premium during the 1974 strike. These accounted for less than 5 percent of the market. Such importation has virtually ceased. (Zart 1233-34.)

complete lines of rims and Budd offers the most popular sized rims. (CX 23A-D; CX 27T-Z-4; CX 39A-L; Zart 1231.) These [62] three are considerably larger than Redco which makes only five part numbers of demountable rims which are sold for use as part of cast spoke wheels for trailers. (Sechrist 1865, 1880; see CX 30A-B; CX 31A-D; Zart 1231.)

194. Kelsey-Hayes makes rims for medium GVW truck disc wheels at its Romulus, Michigan plant. (Zart 1231-32, 1251; MacDonnell 2020.)

195. Table One summarizes the market structure of heavy duty wheels in terms of components sold. Table Two summarizes market shares.

TABLE ONE
HEAVY DUTY WHEEL COMPONENTS SOLD BY EACH MANUFACTURER

<i>Firm</i>	<i>Spider</i>	<i>Disc</i>	<i>Hub</i>	<i>Drum</i>	<i>Rim</i>
Firestone		X			X
Dayton-Walther	X		X	X	
Kelsey-Hayes	X	X	X	X	X
Budd Co.		X	X	X	X
Motor Wheel		X	X	X	X
Rockwell			X	X	
Webb	X		X	X	
Reyco				X	
Alcoa		X			X
Redco					
Erie	X			X	
Standard Forge			X	X	
Truck Brake Service				X	
Durametal				X	
General Foundry				X	
Kershaw			X	X	
Kaiser			X		
IHC				X	
Utility			X	X	
Paccar			X		
Mack			X		
Conmetco			X		

TABLE TWO
Heavy Duty Wheels Market Shares 1970-1972
(000's)

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Initial Decision

	Firm	Source Admission Paragraph No.	1970	%	1971	%	1972	%
	Firestone	(38, 39, 40 ¹)			\$		\$	
	Dayton-Walther	(41, 42, 43 ²)						
	Kelsey-Hayes	(44, 45, 46 ³)						
Top								
Four	Budd Co.	(50, 51, 52 ⁴)	132,192	70.71	125,640	65.43	154,922	69.52
	Motor Wheel	(53, 54, 55 ⁵)						
	Rockwell	(56, 57, 58 ⁶)						
	Webb	(CX 513, Smith 921)						
Top								
Eight	Reyco	(65, 66, 67 ⁷)	177,316	94.86	179,241	93.06	223,035	93.05
	Alcoa	(59, 60, 61 ⁸)						
	Redco	(68, 69, 70 ⁹)						
	Erie	(62, 63, 64 ¹⁰)						
	Standard Forge	(71, 72, 73 ¹¹)						
	Truck Brake							
	Service	(80, 81, 82 ¹²)						
	Durametal	(77, 78, 79 ¹³)						
	General							
	Foundry	(89, 90, 91 ¹⁴)						
	Southwest							
	Wheel	(86, 87, 88 ¹⁵)						
	Kershaw	(83, 84, 85 ¹⁶)						
	Hutchins	(92, 93, 94 ¹⁷)						
	J&J Casting	(95, 96, 97 ¹⁸)						
	Kaiser	(74, 75, 76 ¹⁹)						
	Totals		186,919	99.98	192,607	99.99	239,655	99.99

¹ Complaint Counsel's Second Request for Admissions of Confidential Facts and Response Thereto, as modified at Tr. 1247-49 (Mr. Zart testified that the figure stipulated to by Counsel erroneously included sales totalling \$6.3 million in 1972).

² Complaint Counsel's Second Request for Admissions of Confidential Facts and Response Thereto.

³ Complaint Counsel's Second Request for Admissions of Confidential Facts and Second Supplemental Response Thereto.

⁴ Complaint Counsel's Second Request for Admissions of Confidential Facts and Response Thereto, as modified at Tr. 2174 (Mr. Kinney testified that the figure stipulated to by Counsel erroneously included sales totalling \$10 million in 1972).

⁵ Complaint Counsel's Second Request for Admissions of Confidential Facts and First Supplemental Response Thereto.

196. The customers for cast spoke wheels tend largely to be different from those of disc wheels. Members of the trucking industry, operating primarily in the west, and particularly those operating on the West Coast, tend to use disc wheels, while customers east of the Mississippi River tend to use cast spoke wheels. (Bachman 51, 133; Stein 339; Rupert 843; Smith 915.)

197. Generally, fleets do not have both cast spoke wheels and disc wheels in their fleets at the same time, due in part to their desire to simplify their maintenance procedures. (Smith 915.) In ordering new equipment, fleets usually specify either the cast spoke wheel or disc wheel. (Bachman 51; Stein 354; Reeve 860.) For example, fleets like Roadway, PIE, and UPS use disc wheels, while other fleets like North American, and Yellow Freight specify only cast spoke wheels. (Bell 3329, 3336; Pfund 3392; Thompson 3439; Kortenhans 3521-22; Alderson 5919.)

198. However, there is no question that both heavy duty cast and disc wheels are sold to the same *class* of customers. (R's 1st RAF - #12; Nelson 7098.) Both types of wheels have been and [65] are purchased by the same truck, truck tractor and truck trailer OEMs

and the same types of end-users. (RX 267Z-8.) And both types of wheels are used on trucks, truck tractors and truck trailers. (R's 1st RAF - #9 & #10.)

199. Heavy duty disc and cast wheels have identical channels of distribution. (McGrath 4855; RX 267Z-4, Z-8, Z-33.) Both are handled in the aftermarket by the same types of distributors and outlets. (R's 1st RAF - #14.)

200. Disc and cast wheel manufacturers actively compete. (Nelson 7098.) This competition is reflected in their respective marketing and sales efforts, their advertising, and their technological and design efforts. In recent years, Budd, Motor Wheel and Firestone, the disc wheel producers, have concentrated much of their marketing effort on OEMs and fleets that are or were standard on cast wheels. (Krauss 2385; Kenney 2144; Rupert 823.) Cast wheel producers are responding with advertising (Mitchell 2559-65), marketing and technical efforts. (Smith 963; Mitchell 2530, 2570.)

201. The disc manufacturers' marketing efforts directed at cast customers have included contacts by their field sales people of fleets, sales presentations to major OEMs (as exemplified by RX 143, Budd's presentation to Mack Truck) and extensive testing to compare the performance characteristics of disc and cast wheels to gain data for their sales efforts. (RX 143; Krauss 2385, 2394.)²⁶ [66]

202. The advertising of major disc and cast producers in recent years likewise demonstrates the head-to-head nature of competition. Budd's ads, for example, compare cast wheels and Budd disc wheels in terms of fuel savings (RX 130, RX 137, RX 152 A&B), less maintenance (RX 130, RX 135 A&B, RX 136 A&B, RX 137, RX 152 A&B; Krauss 2389), improved tire mileage (RX 137, RX 152 A&B), and better driver comfort (RX 136 A&B, RX 137). On the other hand, much of Dayton-Walther's advertising emphasizes the alleged advantages of cast over disc wheels in terms of weight savings (Mitchell 2559-60, 2562; CX 574C, CX 575C, CX 610), cooler running (Mitchell 2561-63; CX 574J, CX 571, CX 610), and tire life (Mitchell 2562, 2564-65; CX 569, CX 575). According to Mr. Mitchell, the objective of Dayton's advertisements are principally to obtain specifications for cast wheels and particularly for Dayton wheels. (Mitchell 2564.)²⁷ [67]

²⁶ The seriousness of these marketing efforts was demonstrated by the unwillingness of an official of Dayton-Walther, a cast wheel producer, to identify on the record fleets that have switched from disc to cast because "[t]he disc people would go back to see them again." (Mitchell 2431.)

²⁷ Competition between disc and cast is reflected in technological and design efforts. Webb Wheel designed and developed the three-spoke cast wheel as "a marriage between a disc and a spoke wheel" in an attempt to overcome performance and safety problems with the traditional cast wheel that Budd had exploited in the West. (Smith 963.) Dayton-Walther "intend[s] to do something" about recent disc penetration (Mitchell 2530), which would include efforts of both a technical and marketing nature. (Mitchell 2570.) Disc wheel producers, on the other hand, have

203. Alleged advantages of cast over disc include:

- a. cheaper (Bachman 50; Allen 181; Rupert 800, 802; Reeve 859; Smith 915; Zart 1243; Kenney 2177; Krauss 2429; Mitchell 2518; see also CX 575B-C);
- b. lighter (Rupert 800; Smith 915-16; Krauss 2429);
- c. stronger (Rupert 800; Mitchell 2518);
- d. easier to change the tires (Rupert 800-01; Smith 914-16);
- e. run cooler, thus giving better brake and tire life (CX 237U, CX 571, CX 574J; Mitchell 2518, 2561, 2563);
- f. last longer (Cox 3497);
- g. cheaper to run (Smith 916; Cox 3497); and,
- h. easier stocking for replacement in the field (Alderson 5919).

204. Alleged advantages of disc over cast include:

- a. easier to keep aligned (Kenney 2144; Krauss 2389; Mitchell 2519; see Rupert 825-26; Smith 916; but see CX 570);
- b. able to use an outboard mounted drum (Kenney 2145; Krauss 2404);
- c. easier to change wheel sizes (Krauss 2404), and,
- d. have a potential for weight savings (Kenney 2144). [68]

205. Although the initial purchase price of a cast wheel assembly may be lower than that of a comparable disc wheel (Allen 181; Smith 915; Reeve 859), there are some who believe that the use of disc wheels results in lower operating costs. If this is true, it would tend to negate an initial price disadvantage. (See McGrath 4959-61.)

206. There was much dispute in the record concerning whether recent years had evidenced a growing "trend" towards greater usage of disc wheels. Many witnesses testified to this effect (Bennett 295; Stein 354; Rupert 825; Smith 931; Fisher 1381-85; Kenney 2140; Krauss 2430; Mitchell 2529; Davis 1454; Dahl 4088-89). A market study commissioned by respondent estimated a disc usage increase from 15.6 percent in 1965 to 36.3 percent in 1974, and to 42 percent in 1975. (RX 267Z-33; McGrath 4742, *et seq.*) Actual data subpoenaed from manufacturers by complaint counsel showed an increase of only 1.9 percent over the 1968-1975 period. (CX 717A, *in camera.*) In view of my belief that the only valid wheel market on this record is the overall heavy duty wheel market, and the fact that both types of wheels are included in it, the existence and degree of any disc wheel "trend" appears to be of little or no consequence to the issues.

207. Cross-elasticity of supply between heavy duty drums and rims for use with disc and cast wheels is high. (Mann 5829.) Dr.

developed and emphasized in their sales efforts the outboard mounted brake drum. (Krauss 2404; Kenney 2145; RX 135 A&B.) The outboard mounted drum, which cannot be used with a cast wheel, permits easier maintenance. (Krauss 2404; Kenney 2145; RX 135 A&B.)

Nelson termed cross-elasticity with respect to drums for cast and disc application as "very high or infinite." (Nelson 7090-91; Looney 1828; McCorry 1857; Jones 1282.) Likewise, rims for disc and cast wheels can be and are made on the same equipment and in the same facilities. (Krauss 2355.) [69]

208. The same manufacturing plants and facilities employed in the production of heavy duty wheels for trucks and truck tractors can be and are used for the production of wheels for truck trailers. (R's 1st RAF - #17.) Disc wheels for truck and trailers are identical. (Kenney 2145; Krauss 2406.)

209. With respect to heavy duty cast wheels, the equipment used to make truck wheels is basically the same as that used to make trailer wheels. (Mitchell 2521.) Both truck and trailer wheels can be and are run in the same foundry (Vause 2184) with only 20 minutes to an hour necessary to convert from producing truck wheel castings to castings for trailer wheels. (Rupert 809-10; Smith 965-66.) Moreover, the machining of truck drive wheels and trailer wheels is interchangeable on the same machine line. (Vause 2225.)

210. Since heavy duty cast wheels for trucks and trailers can be and are produced in the same facilities, and heavy duty disc wheels for trucks and trailers are identical, the cross-elasticity of supply between heavy duty truck and trailer wheels is "virtually infinite."

211. Three of the four cast wheel producers make both heavy duty truck and trailer wheels. (Smith 964-65; Mitchell 2521; Vause 2184.) Erie, which presently makes only trailer wheels, formerly made truck wheels but withdrew because of the "closer pricing" nature of the truck wheel business and a reluctance to be dependent on one or two customers. (Rupert 774.) There are no technological or engineering barriers to Erie's production of truck wheels. (Rupert 817-18.) [70]

B. Barriers to Entry or to Effective Competition

1. Capital Costs

212. There is considerable disagreement between respondent and complaint counsel as to the capital costs of entering the heavy duty wheel market. Respondent suggests costs as low as under \$2 million, and complaint counsel's estimates range as high as \$20 million. However, these estimates are based upon different modes of entry into the market.

213. A company could enter the market by manufacturing the spider or various other components of a heavy duty wheel, such as drums or rims, or a combination of such components.

heavy duty wheel market could also be effected by producing disc wheels, or the drums, hubs, discs or rims attendant thereto.

214. Examining capital costs from the cast spoke standpoint, it should be observed that spiders are generally made from steel and drums from iron. Entrance into the market would probably be less expensive, as respondent points out, if the spider were also made from ductile or malleable iron.²⁸ However, only one firm in the industry was identified on the record as manufacturing non-steel (iron) wheels — Erie Malleable — and witness Rupert of Erie indicated that his manufacturing costs were slightly higher than Gunite's. (Rupert 779; see Mitchell 2533.) While it is true that one company with foundry capabilities, Ford, was investigating [71] the purchase of ductile wheels, it nevertheless appears that cast steel spiders are preferred over iron. (Greenberg 4685-96; Brosnahan 4546-47; see Looney 1820.)

215. Both respondent and complaint counsel cite the testimony of Mr. Joseph Greenberg, respondent's expert witness on foundries. (RX 280; RX 281; Nelson 7018-19.) Mr. Greenberg testified concerning entry into wheel manufacture at four different levels of plant addition and at various levels of production, ranging between 50,000 and 300,000 units per year. (He assumed the combined production, but in separate facilities, of both wheels and drums.)²⁹ His first possible entry level envisioned the use of ductile iron for wheels and cast iron for drums, and only adding some machine shop equipment to an otherwise fully capable facility. Assuming the manufacture of ductile iron wheels to be a realistic alternative, Mr. Greenberg's estimate for the cost of entry in this manner ranged between \$1.6 million and \$6 million. (RX 280A; Greenberg 4617-20.)

216. Mr. Greenberg's second entry level assumed the manufacture of cast steel wheels and cast iron drums and the probable addition of some foundry equipment to an existing plant. This mode of entry was estimated to range between \$4.1 million and \$12.7 million, depending on output levels and on whether or not new or used equipment was to be purchased. (RX 280A; Greenberg 4617-20.)

217. Mr. Greenberg's third possible entry level consisted of plant addition together with new buildings, again using cast steel for wheels and cast iron for drums. The entry was estimated by [72] Mr. Greenberg to cost between \$7.4 and \$18.7 million, again depending upon the choice of purchasing new or used equipment and desired output levels. (RX 280A; Greenberg 4617-20.)

²⁸ Cast steel spiders and cast iron drums are generally manufactured in different foundries. (Mitchell 2526.)

²⁹ As noted, six of the eight manufacturers of wheel center members also make drums.

218. This foundry expert also estimated the cost of entering the industry from scratch with a new plant on a new site. For the highest level of production considered by Mr. Greenberg, 300,000 units per year, he testified that the cost with new equipment would be \$20 million or, with used equipment \$14.7 million.³⁰ Mr. Greenberg also estimated costs of \$8-11 million for a plant producing 100,000 units per year. (RX 280A; Greenberg 4617-20.)

219. Mr. Greenberg went through a similar analysis for drum production alone. His estimates ranged from under \$1 million to \$9.2 million. (RX 280E.)

220. Other record evidence from which can be derived an estimate of capital costs for entry into heavy duty wheels is as follows:

(1) One witness estimated the cost of constructing a foundry and machine shop to produce 120,000 cast wheel spiders per year to be \$8-10 million. (Bachman 58, 135.) Another witness estimated the costs for a foundry alone (to produce 240,000 wheels and drums annually), without providing for land or startup materials, to be \$8-10 million. (Smith 938-39.) Costs of machining facilities, inventory and land would have to be added to obtain the total capital costs. Still another witness testified it would cost \$10-20 million to open a ductile foundry, or somewhat less if the foundry were dedicated to a specific product line. (Rupert 790.) [73]

(2) For a gray iron foundry intended for the production of brake drums only, the cost estimates in the record ranged from \$3-4 million (for a non-automated, high cost foundry with a semi-automated molding line) to \$13 million. (Looney 1798-1801; McCorry 1840, 1861.) One witness made an estimate of \$2 million for a machine shop to finish heavy duty drums, and another made an uncertain estimate of \$5 million. (Fairchild 1630; Looney 1799.)

(3) Another capital cost consideration involves tooling costs for the production of the various spider patterns. Each cast spoke spider pattern costs approximately \$20,000 to \$25,000. (Rupert 781; Mitchell 2511, 2520.) Dayton-Walther uses about 100 different trailer wheel patterns. (Mitchell 2511.) However, additional pattern cost is often borne by the purchasing OEM. (Clem 2749-50.)

(4) In addition, there are inventory costs, estimated at about \$2 million, which must be taken into account in the heavy duty wheel market. (Smith 955.)

(5) Witness Fisher from Rockwell estimated that duplication of Rockwell's hub finishing operation with new equipment would cost

³⁰ The witness acknowledged that "given a choice, new equipment generally would be purchased." (Greenberg

\$8.5 million for equipment alone, and that to duplicate Rockwell's drum finishing operation with new equipment would cost \$1.8 million for equipment only. (Fisher 1316-20.)

(6) Expansions and additions to existing facilities are also indicative of capital costs for entry. One company that rebuilt a foundry to cast drums and hubs spent more than \$10 million. Prior to this rebuilding the foundry alone cost \$10 million, bringing that firm's total capital costs for those particulars to \$20 million. However, as respondent [74] points out, this foundry was unsuited for producing wheels when it was purchased and another more suitable foundry might have been purchased and rebuilt less expensively. (Tr. 1324-26 *in camera*; Greenberg 4599A-4602.)

221. Respondent's own Gunitite Division completed a \$25 million expansion of its heavy duty wheel facilities in 1973. (CX 6600.) This expansion increased Gunitite's heavy duty wheel capacity by 50 percent and its drum capacity 100 percent. However, such expansion may well have been in excess of the minimum efficient scale. (MacDonnell 2033; CX 717B *in camera*.)

222. Costs for entrance into the heavy duty wheel market on the disc side appear to be somewhat lower than for entrance into the cast spoke market. The cost of one producer's plant which makes only rims and discs (and not a full line) was \$8 million. (Tr. 2359-60; tr. 2362 *in camera*.) Another firm increased its rim and disc capacity by 30 percent by building a plant which makes a partial line of discs and rims. This construction project was budgeted for \$17.5 million and something in excess of \$13 million was actually spent. (Tr. 1187-88; 1204 *in camera*, 1208 *in camera*, see CX 558E *in camera*.) Still another disc wheel producer planned to expand from producing 200,000 discs per year to 600,000 per year and budgeted for a cost between \$5-6 million. Its plans to expand its drum capacity by 20 percent was expected to cost \$1.8 million. (Tr. 2117-18, 2148 *in camera*.) Witness Sechrist of Redco estimated it would cost about \$3 million to put in a rim line. (Sechrist 1865, 1870.)

223. Based upon the above record evidence it is my considered opinion, and I find, that the capital costs of entry into the production of heavy duty wheels exist to a significant degree and are in fact substantial. [75]

2. Economies of Scale

224. The record indicates that those firms which produce a higher volume of wheels and/or wheel components have lower costs. Whether this presents an economy of scale barrier depends upon how significantly greater the cost advantages are for the high

volume producer and also what percentage share of the market a firm needs to acquire in order to operate at a minimally efficient scale. (Mann 5677.)

225. The witnesses agreed that automated equipment would lower the costs of manufacturing wheel components.

226. Witness Looney of Reyco, a drum producer, would not describe his foundry as automated and when asked whether Reyco could obtain lower overall manufacturing costs by automating, stated "on the high volume type trailer drum, I think we could, yes." (Looney 1801.) He also said that Reyco had decided not to start producing a center portion of the heavy duty wheel because feasibility studies indicated the company could not compete with existing automated suppliers costwise. "To substantiate that investment you would have to have a very high volume and a very automated type production equipment." (Looney 1802.) Witness Looney believed that DW had the lowest prices in the industry.

227. Mr. Mitchell of DW testified that "The production of high production automotive-type castings that I am familiar with require automated equipment to be competitive." "It is the most economical way to go." (Looney 1824; Mitchell 2534-35.) [76]

228. Witness Rupert of Erie did not believe that most steel foundries would have the necessary automated molding equipment required to produce heavy duty wheel castings. (Rupert 788-89.)

229. Mr. Smith, formerly of Webb, doubted that many gray iron foundries could produce competitive drum castings in the volume necessary for the heavy duty truck industry because of a lack of mechanization. (Smith 937.) Mr. Smith felt that Webb's wheels had been priced too high for the high volume purchasers such as Fruehauf because the company did not have its own source for brake drum iron castings and because it had a low production steel foundry. When he asked how his foundry compared to DW's or Gunite's, he replied, "Our foundry prior to 1969 would run roughly 50 man hours per ton of wheel castings against DW or Gunite 11-12 man hours per ton." After Webb automated a jobbing foundry in 1972, its costs dropped to a range of 18-20 man hours per ton. This was still noncompetitive, according to Mr. Smith. (Smith 943-45.)

230. The record indicates that for wheels and/or drums, the minimum efficient scale is production of between 200,000 and 300,000 units per year. Mr. Greenberg, the foundry expert, estimated that the minimum efficient scale plant should produce 300,000 heavy duty wheels a year, which would be at slightly lower unit costs than the production of 200,000 units per year. (RX 280B.)

231. Mr. Rupert of Erie testified that 10,000 wheels per month is

the minimum number required to warrant automated equipment. Apparently Erie is not operating at a minimum efficient scale, since Gunite, which has more automatic molding and machining equipment than Erie, has slightly lower costs. (Rupert 779, 790.) [77]

232. Webb had considered building a foundry in 1965 which would have had a capacity of 20,000 wheels per month and matching brake drums to support that wheel production.

233. The witness from Reyco estimated that in 1972 the Reyco plant, "all out on a 2 1/2 shift basis," could produce 30,000 drum castings a month. (Looney 1821-23.)

234. On the basis of average heavy duty wheel production for the years 1972-1974 of 3.38 million (CX 717A), the smallest estimate (Rupert's) represents approximately 3.6 percent of the heavy duty wheel market and the Greenberg estimate of 300,000 approximately 8.9 percent. If a firm must have between 5 percent and 10 percent of the market to produce efficiently, a moderate to significant economy of scale barrier exists. (Mann 5677.)

235. There is little evidence in the record in regard to unit costs for disc wheel producers. Although not conclusive, one could infer that because there are only three main producers of the heavy duty disc wheel and because each produces out of only one plant, that a high volume plant is an efficient scale plant. (Zart 1187; Krauss 2358; Nelson 6418.)

3. Absolute Costs

236. Aside from foundry know-how, entry into heavy duty wheel production presents no absolute cost problem. There are no patent impediments (Mann 5715) and there is no indication in the record that any heavy duty wheel producers control any essential raw materials. Heavy duty wheel designs either can be copied from wheels on the market or can be obtained from an OEM. (Clem 2730-31; Chieger 2274.) Product liability can be adequately handled by insurance. (Rupert 793; Mitchell 2540.) [78] Most truck tractor OEMs have their own line of wheels and wheel designs. (Mitchell 2520.) The actual testing of the wheels is usually done by the user (Rupert 791-92), although wheel testing facilities, such as those of Budd, are also available on a contract basis. (Krauss 2418-19.)

237. As to technology, a wheel spider is a very difficult casting to make. It has a core, a thin wall and a complex shape and it is difficult to feed. It is difficult "to provide a good pouring and gating practice that will give you a good casting, and people that have tried to make wheels have found this out to their sorrow. So this kind of a

casting requires a foundry of good technical capability." (Rupert 785; Greenberg 4705.)

238. In the opinion of Erie's President, "your best teacher [for new wheels] is past experience." (Rupert 792.) He believed it would take foundries going into heavy duty cast spoke wheels "a long time to perfect the system to where they would perform adequately." (Rupert 786.) Webb's former official, Mr. Smith, stated that a firm entering the market could acquire the necessary technology either through "long, hard experience" or by hiring away one of but a few experts from a competitor. (Smith 950-51.)

239. To operate a drum foundry also requires persons with considerable skill. (McCorry 1858.) Specifically, managing a heavy duty drum foundry requires supervisory personnel with experience and a knowledge of the metallurgy of these items. (Fairchild 1640-41; McCorry 1861.) Such skilled persons are difficult to find. (McCorry 1858.)

240. The record reveals instances where attempted entrance into the heavy duty wheel market has resulted in failure. Nabors Trailer Co. and Roger Brothers Corporation tried to produce cast [79] spoke wheel spiders but abandoned their attempt after experiencing problems. (Rupert 796-97; Davis 1418.) And years ago, Sterling Foundry in St. Louis, a general steel foundry, tried to produce heavy duty cast spoke wheels but made no significant penetration of the market. (Mitchell 2535.)

241. McConway and Torley, a producer of castings for the railroad industry attempted to enter the heavy duty wheel market. (Smith 932-34; Mitchell 2535; Clem 2722-35.) Before its attempt to produce heavy duty wheel castings, McConway and Torley anticipated no problems in making the wheel casting (spider). (Clem 2733.) However, despite McConway and Torley's experience with very large castings, it had severe problems in making the spider casting. (Clem 2733.) Mr. Clem of McConway and Torley testified there are "literally thousands of variables" and that "the ability to feed a wheel is unique." (Clem 2733.) McConway and Torley eventually became marginally profitable in the manufacture of cast spoke wheel castings but only after contracting to supply Webb, a firm already in the industry, with rough castings and receiving reciprocal assistance in design and production from Webb's technicians. (Clem 2734, 2736-37.) With Webb's assistance, McConway and Torley's scrap rate was cut dramatically. (Smith 933-34; Clem 2734, 2753-54.) McConway and Torley sold their heavy duty wheel equipment to Webb, who moved it, retooled it and thereafter very successfully

242. Neither McConway and Torley, nor Reyco and Durametal, heavy duty drum producers, believe that firms such as theirs have sufficient abilities to be able to make money in the manufacture of cast spoke wheel spiders. (Fairchild 1640; Looney 1802; see Mitchell 2535; Clem 2740.) However, both [80] Mr. Looney of Reyco and Mr. Brosnahan of Ford indicated their belief that their companies presently possess the technical know-how to make heavy duty wheels. (Looney 1802; Brosnahan 4547-48.)

243. While the supply of technical experience is limited (Smith 950-51), such assistance is available (Smith 950; Jones 1286; Clem 2734), either from people already in the industry or from a foundry consultant. And while compensation contests could arise, there is no evidence that such costs would be unequal or discriminatory for both the firms in the market or new entrants.

4. Product Differentiation

244. Product differentiation appears to be of relatively small importance as regards heavy duty wheels. Respondent claims that this factor is nonexistent, while even complaint counsel view it as low to moderate.

245. Brand loyalty plays no significant role in this producers' goods market. (Mann 5716-17.) However, despite the existence of independent distributors, it is important to a manufacturer and seller of heavy duty wheels to have a distribution and sales network that provides contacts at the original equipment and fleet levels. (Rupert 797; Smith 954; Fisher 1387; Kenney 2099-2100.) This permits the manufacturer to provide nationwide service in case of an accident or failure. (Rupert 797.)³¹ [81]

246. It is also important to be perceived as a reliable source of supply. (Kenney 2100.) It takes a significant period of time before a new manufacturer is accepted in the marketplace. The production of heavy duty wheels requires some testing facilities to assure product quality and performance. (Rupert 791-92; Smith 954; Fisher 1321, 1362; Krauss 2369-71.) Such tests are necessary as wheel failure is a cause of concern to vehicle producers since it exposes them to liability in case of loss of cargo or life due to wheel failure. (Rupert 792-93; Kenney 2099.)

³¹ Rockwell has a sales force that calls on fleets and also about 100 distributors. (Fisher 1385, 1387.) Rockwell started an aftermarket distribution system because "the vast majority of trailer manufacturers did not have a service sales outlet and Rockwell was just not getting its service parts to the end operator" and this situation still exists to some extent. (Fisher 1343-44.) DW has about 50 distributors, some with multiple branches. (Mitchell 2588.) Erie has 84-90 distributors, some with multiple branches. (Rupert 838.) Kelsey-Hayes had 208 distributors around the country in 1972. A few of these distributors were able to service both trucks and trailers. (Rowan 2059.)

5. Profitability

247. Both the respondent and Commission counsel adduced evidence concerning profitability in the heavy duty wheel market. I have studied this evidence, and the proposed findings of the parties, and have been unable to arrive at any definitive conclusions on this point. My best judgment is that the return on investment in heavy duty wheels is roughly equal to that for manufacturing in general, approximately 10 percent. (Mann 5738, 7486-7515 *in camera*; Nelson 6437-38, 6452-76 *in camera*, 6491-96 *in camera*; Smith 948-49; tr. 1874-75 *in camera*; Rowan 1954; MacDonnell 2034-35; CX 579 D, E, L, M.) [82]

C. Potential Entry

1. Market Environment

248. As spider manufacturers, DW has been in the heavy duty wheel market since World War I, Webb since 1946, and Erie since 1925. (Rupert 768; Smith 913; Mitchell 2507; see Vause 2189.) Gunite began making wood spoke wheels in 1909 for the infant automotive industry and progressed with the industry into the manufacture of cast spoke wheels. (CX 65F.)

249. No witness knew of any significant entry into the production of discs for heavy duty disc wheels or heavy duty rims within the last ten years. (Zart 1235, 1242; Krauss 2377.) Motor Wheel has been engaged in the production of discs for heavy duty disc wheels since the early 1930's. (Kenney 2081.) Budd has produced discs for heavy duty disc wheels since prior to World War II. (Krauss 2358.)

250. Firestone has made rims for cast spoke wheels since 1906, Goodyear since the 1930's, Redco since 1961. (Zart 1186; Sechrist 1870; Kenney 2081.)

251. Most of the producers of heavy duty drums have long been in the market. (Phillips 1569; Fairchild 1629; Looney 1793, 1799; McCorry 1836, 1840; Krauss 2358.) There has been some entry into heavy duty brake drums and hubs in the last ten years but such entry has been confined to entry by producers of other finished heavy duty wheel components with one exception. (Fisher 1315; Looney 1824; McCorry 1847-48; Kenney 2149.) Kershaw entered the production of finished hubs and drums in 1969; such components are produced for sale as part of its axles. (Davis 1408-09, 1429.) [83]

252. One firm has exited from the heavy duty wheel market in the last ten years, namely J&J Castings. J&J started making heavy

253. There have been periodic shortages of heavy duty wheels since World War II. These occurred in 1946, 1966, 1968-69 and 1973-74. (CC's 1st RACF - #116; Allen 184; Rupert 798; Smith 931; Zart 1233; Rowan 1926-28; MacDonnell 2032-33; Kenney 2093; Mitchell 2541; Clem 2724; Fontaine 3580; Dahl 4136; Flagan 5153-54.) The shortage in 1973-74 considerably disrupted trailer production and may have been the most severe. (Bachman 52; Allen 184; Stein 341; Rupert 798; Smith 931-32; Fisher 1337-38; Davis 1411, 1414-15; Phillips 1567; McCorry 1843; Rowan 1926-28; MacDonnell 2032; Kenney 2086; Krauss 2372-73; Fontaine 3578-81; Dahl 4078; Flagan 5160-61; Zarella 5964-65.)

254. Fruehauf, Strick, Heil, Mack Truck and others encountered shortages of wheels in 1973-74. (Bachman 52; Allen 184; Flagan 5161; Zarella 5965.) At that time, vehicle production was curtailed and even temporarily halted due to lack of heavy duty wheels. (Tr. 1226-28 *in camera*; Rowan 1928-29; Krauss 2373; Flagan 5161; Zarella 5965; see Mitchell 2544-45.)

255. During the 1973-74 shortage of heavy duty wheels, Fruehauf, Strick, Ohio Body, Great Dane, Mack Truck and others sought alternative sources of heavy duty wheels and found them difficult to locate even though they were willing to pay a premium for wheels. (Bachman 52-53; Stein 341-42; Reeve 870-71; Zart 1257; Zarella 5965; see Mitchell 2542.)

256. Foreign sources for finished heavy duty wheel components and for castings were either unavailable or were unsatisfactory due to long lead times required; communication difficulties; shipping delays due to the distance involved; quality problems; [84] premium prices; or problems in adapting the foreign wheel for U.S. use. (Zart 1233-34; Fisher 1337-39; Davis 1422; Krauss 2374; Zarella 5964-65.)

257. The record discloses the existence of firms that have attempted to enter the heavy duty wheel market in the past fifteen years and have failed. Such failures include Hutchens, McConway and Torley, U.S. Steel and A.O. Smith. (Rupert 794; Smith 955; Fisher 1391; Looney 1803; Kenney 2107-09; Vause 2190; Chieger 2313; Mitchell 2535, 2594; Fontaine 3576-78; Flagan 5151-52.)

258. Hutchens, which is one of the nation's most sophisticated welding operations, attempted but failed to successfully enter three times, once with a cast spoke wheel and twice with a fabricated wheel in the configuration of a cast spoke wheel. (Rupert 794-96, 821; Smith 955-57; Kenney 2107-08; Vause 2191; Mitchell 2535, 2594; Flagan 5151-52.) Fontaine Trailer purchased 1200 fabricated wheels from Hutchens in 1971-72 but ceased purchasing them because the price of the cast spoke wheel again became competitive. (Fontaine

3576-78; see Smith 956.) Hutchens' fabricated heavy duty wheels experienced fatigue failures which made them unsuitable for use. (Rupert 795, 821; Smith 956-57.) Hutchens does not now make heavy duty wheels. (Looney 1805; Vause 2190-91.)

259. McConway and Torley, a supplier of large castings to the railroad industry, attempted to enter with a cast spoke wheel in cooperation with Fruehauf but was unable to produce a high quality wheel at a competitive price. (Rupert 794; Smith 932-33; Kenney 2109; Vause 2191; Mitchell 2535; Clem 2722; Flagan 5152.) A.O. Smith attempted to develop a fabricated steel wheel within the past ten years but may have never sold any wheels. (Kenney 2109.) U.S. Steel attempted unsuccessfully to produce a fabricated steel design heavy duty wheel in the mid to late 1960's. (Vause 2191-92.) [85]

260. Several producers of other heavy duty wheel components have considered production of cast spoke wheel spiders.

261. Reyco considered making cast spoke wheel spiders but decided against it because Reyco could not compete cost-wise. (Looney 1801-02, 1816, 1819.)

262. Kershaw considered acquiring the cast spoke wheel spider patterns placed at Texas Foundry by Nabors Trailer. (Davis 1417-18, 1456.) Since the patterns were obsolete and production required a long lead time, Kershaw decided not to pursue it. (Davis 1417-18, 1456-57.)

263. Alcoa made cast aluminum spoke wheels at one time but ceased. (Rupert 831.)

264. To enter into cast spoke spider casting would require a steel, malleable or ductile iron foundry rather than a gray iron foundry. (Rupert 782-83, 804, 844; Smith 967.) Each of the cast wheel spider producers, save one, uses steel castings. (Rupert 781; MacDonnell 2014; Mitchell 2507; Greenberg 4657.) Erie, the only producer of nonsteel spiders, has made both malleable and ductile iron wheels but is phasing out of malleable. (Rupert 781.) Erie switched to ductile because of its superior metallurgical properties and its lower propensity to have foundry defects. (Rupert 781-82.)

265. Currently, cast spoke spider castings are produced by the finished wheel producers for their own use. (Mitchell 2516-17.) These producers generally do no casting other than for wheel spiders. (Smith 981; Mitchell 2527, 2534.) Webb purchased spider castings from 1968 to 1973 but these were purchased from DW or Gunite. (Smith 934-35; Vause 2203.) Webb also purchased spider castings from Japan in 1973-74. (Smith 969.) Such purchases from Japan have ceased as it became uneconomical to continue them. (Smith

266. Only a few steel or ductile iron foundries have the capability by virtue of their equipment and quality control and the required size of molding equipment to make a cast spoke wheel of malleable or ductile iron or of steel. (Rupert 784-87, 789; Mitchell 2533.) Steel jobbing foundries generally do not have automated equipment of a capacity to handle wheel castings economically and are unlikely candidates for entry. (Smith 937, 960-61, 988; Greenberg 4684.)

267. Very few steel foundries can economically produce a wheel due to the difficulty of the casting. (Rupert 785-86; Smith 933, 937; Mitchell 2533.) Most steel foundries produce products which do not require automated equipment. (Rupert 788-89; Smith 937; Mitchell 2534-35.) For example, Howmet Division of Crucible Steel, a large steel foundry, has produced wheel castings for Mack Truck as an accommodation for a large customer. (Greenberg 5036-37.) These castings are for off-highway use only, produced in very limited volume on a nonmechanized line and it is questionable whether Howmet considered it a profitable venture. (Greenberg 4687; Zarella 5966-68.)

268. Jobbing foundries that produce special alloys are not suitable sources of heavy duty spider castings due to contamination problems which makes machining very costly. (Smith 991-92.)

269. Prior to the expansion of the Gunitite plant, Mr. Greenberg examined existing foundries on behalf of Gunitite, such as Crane Chattanooga Foundry, White Farm Equipment in Charles City, Iowa and Waupaka Foundry, and considered acquiring one of the plants or some of the equipment but found each unsuitable. (Greenberg 4599A, *et seq.*) Therefore, Kelsey-Hayes internally expanded its Gunitite wheel manufacturing facilities at a cost of \$25 million. (CX 660Q.) [87]

270. Mr. Smith of Webb testified that, during the shortage of heavy duty wheels in 1973-74, Webb searched for an alternative supply of steel castings and found only McConway and Torley. (Smith 932.) Mr. Clem testified that to his knowledge no steel foundry has evidenced any interest in entering heavy duty cast spoke wheels since 1968. (Clem 2764.)

271. Ford, GM, Chrysler, Deere & Company, IHC, J.I. Case, White, Caterpillar, Lynchburg Foundry, Neenah Foundry, Rockwell and Waupaka do not possess the equipment to cast steel wheel spiders. (Brosnahan 4554; Greenberg 4684-4685, 4690-91.)

272. To enter production of drum castings requires a gray iron foundry, except for the production of centrifuge type drums. (Rupert 810; Looney 1798, 1800; McCorry 1835; Kenney 2084-85; Krauss 2356; Mitchell 2500, 2526; Clem 2728.) The manufacture of centrifuge

brake drums is peculiar and requires a particular type of foundry. (CX 40P; Kenney 2085, 2093.) Centrifuge type drums represent less than 10 percent of the market and have been declining in popularity, face an uncertain future and are more expensive. (Smith 914-15; tr. 2086-87; 2171, 2173 *in camera*.) Only Motor Wheel and DW make centrifuge type heavy duty drums. (CX 40P; Smith 914; Kenney 2085.)

273. Not every gray iron foundry can economically manufacture a brake drum because of required tooling, training and the necessary degree of automation. (Smith 937; McCorry 1860-61.) The manufacture of heavy duty drum castings requires proper size equipment, without which there are serious quality problems. (Fisher 1340.) Currently, almost all heavy duty drum castings are produced in foundries dedicated extensively or almost entirely to the production of such castings or hub castings. (Phillips 1563-64; Fairchild 1625-1626; Looney 1820; McCorry 1835-36, 1855.) [88]

274. Gray iron jobbing foundries are unlikely candidates for entry into heavy duty drum castings due to their lack of automated facilities and, frequently, their limited size capacities. (Smith 937; Greenberg 4686; see Fisher 1330.) Gray iron jobbing foundries also require core-making equipment and cleaning equipment not needed for heavy duty drum production. (Looney 1801.) A gray iron jobbing foundry would have higher costs in producing heavy duty drums than would a specialized drum casting foundry. (Fairchild 1625-26.) When J&J Castings sought a foundry to make its heavy duty drum castings, it was turned down by U.S. foundries because they could make more money by producing other simpler castings. (Jones 1270.)

275. J&J Castings in 1970 and 1973 and Rockwell, Motor Wheel and Webb in 1973-74 experienced difficulty in obtaining heavy duty hub and drum castings. They found that domestic producers were at full capacity and foreign producers in Japan and Europe had quality, delivery and cost problems. (Smith 931-32, 959; Jones 1269-70; Fisher 1337-39; Kenney 2094.) Webb, Reyco, Standard Forge and Budd also turned to a foreign drum casting supplier only in times of intense shortage when they could not find a sufficient supply in the U.S. (Smith 930; Phillips 1567-68; Looney 1822, 1830-31; Krauss 2374.) Foreign made hub and drum castings today are more expensive than domestic made castings.³² (Smith 930; Fisher 1341; Krauss 2374.) Kershaw found that, after Gunita returned Kershaw's heavy duty drum patterns, it had little success finding another foundry to replace Gunita as a source of these castings including the

foundries of its parent, Dana. (CX 231; Davis 1410-11, 1415-16, 1444-46, 1461.) [89]

276. Heavy duty brake drum and hub castings are both made and purchased by the producers of finished drums. (R's 2nd RAF - #145; Rupert 839; Fisher 1324, 1335-36, 1340-42; see Davis 1409-11; Phillips 1566-67, 1575-76; Fairchild 1625, 1641; Looney 1831; tr. 2090-91 *in camera*, 2093; tr. 2153 *in camera*; Vause 2203, 2231-33; Krauss 2356; Mitchell 2517.) There are a number of gray iron foundries which supply only castings to various drum producers. (Bennett 289-90; Smith 936, 967; Looney 1822; Kenney 2094; tr. 2411-12 *in camera*; Mitchell 2517-18.) Other than General Foundry, these firms generally make only a few of the required castings, namely, the odd sizes and slow movers. (R's 2nd RAF - #44, 45, 47; Fisher 1337, 1339; Looney 1831; McCorry 1847; tr. 2091 *in camera*; Krauss 2363.) Several of the suppliers of heavy duty drum castings have exited from this product market. (Phillips 1566; Fairchild 1626-27.) Thus, there are but a limited number of drum casting suppliers who would be possible entrants into the area of finished heavy duty drums.

277. So far as significant entry into the production of heavy duty wheels, Mr. Kenney of Motor Wheel testified that he does not foresee any new entry in either cast spoke wheels, disc wheels or components thereof. (Kenney 2094, 2107.) Ford Motor Company has no plans to enter the heavy duty wheel market. (Brosnahan 4554.) None of the vehicle producers including GM, Ford, IHC, Mack Truck and White Motor Company have made cast spoke wheels or discs. (MacDonnell 2017-18; Krauss 2375; Mitchell 2516; Brosnahan 4554.) Mack Truck has never considered going into the production of heavy duty wheel discs or spiders. (Zarella 5968, 5973.) These vehicle producers lack the ability to produce heavy duty cast spoke wheels as they are not equipped and designed to produce heavy duty spoke wheels. (Mitchell 2536.) [90]

2. Fruehauf as a Potential Entrant

278. Prior to the acquisition of Kelsey-Hayes, Fruehauf was dependent on outside sources for the heavy duty wheels it used on all of the trailers it built. (CX 139A.) The company was motivated to integrate into heavy duty wheels so as to ensure a source of supply of a vital commodity in times of shortage. (CC's 1st RACF - #60; Flagan 5153-54.)

279. In addition to cost savings, it would also be to Fruehauf's advantage to manufacture its own wheels because scheduling,

manufacturing and shipping would then be under its control, not subject to supplier, labor, or other problems. (CX 139B; Rowan 1904.)

280. Fruehauf has made it a practice to encourage new sources for wheels. (Flagan 5153-54). Its interest in the heavy duty wheel market has been continuous since the late 1960's. At that time, Webb proposed supply arrangements, including a joint venture, in which Webb would guarantee Fruehauf a supply of wheels. Fruehauf responded with interest but these talks were terminated due to a lack of interest at the corporate level of Webb. (Smith 941-42; 979-80.)

281. Fruehauf had sufficient research and development capability and test facilities to develop a new heavy duty wheel and it wanted to develop such a wheel for weight and cost reasons as well as to enhance the availability of wheels. (Rowan 1924, 1930; Chieger 2274; Flagan 5088.) As stated by Mr. Chieger, Fruehauf sought to develop a wheel "that would be competitive with a cast wheel with the same performance level as the cast wheel." (Chieger 2277.) [91]

(a). *Fruehauf's Fabricated Aluminum Wheel*

282. Fruehauf initiated development of an extruded aluminum wheel prior to March of 1967. The company sought to develop an aluminum spider and hub assembly as well as a compatible drum assembly. This project did not seek the development of the rim necessary to complete a heavy duty wheel. (CX 168, CX 176, CX 183B.)

283. The purpose of the aluminum wheel project was "to provide a trailer wheel of our design, made from Decatur [Fruehauf] extrusions and allowing fabrication in our manufacturing plant. Wheel assembly to be lower in cost and lighter in weight than existing product." (CX 161A; see CX 104B; CX 163A.) This project also was to produce a heavy duty wheel that was true running, had a minimum tooling cost, had improved method of brake drum or disc attachment and provided an additional source of supply. (CX 135C). Fruehauf envisioned that the program would provide an 80 pound per axle weight saving and a \$12.00 per axle cost saving. (CX 166; Flagan 5115.)

284. In May of 1970, Fruehauf prepared analyses of the cost of production of 100,000 wheels per year on a two shift basis for equipment and tooling, overhead, manpower, depreciation and facilities requirements, with the resultant cost per wheel estimated at \$19.71 for an investment of \$778,000. (CX 145; CX 148A-C; CX 149A-B; CX 150; CX 151; CX 153A-B; CX 154; CX 155; CX 156; CX 157A-B; CX 158A-B; Flagan 5116-17.) To produce 200,000 wheels per

year was estimated to require about \$1,500,000 of investment for facilities and equipment. (CX 154.) [92]

285. Testing on the aluminum wheel was performed during 1970-71 by Fruehauf in order to assure that the wheel would perform satisfactorily. (CX 124A-B; CX 125; CX 126; CX 127; CX 128; CX 129; CX 130; CX 131.) The testing included running the wheel through 2 million cycles at 22,270 foot pounds of side pressure without cracks, executing brake stops on the extruded aluminum wheel and brake drum assembly, assessing the effect of stress risers, assessing whether there was heat checking and determining fatigue strength. (CX 125, CX 126, CX 127, CX 128, CX 130, CX 131.) The testing also included a cornering fatigue test and abuse with hand tools. (CX 177; CX 178.) Fruehauf's extruded aluminum wheel satisfactorily passed the testing program to which it was subjected, including the cornering fatigue test. All technical aspects of the system design indicated that it could service the trailer industry but it was felt the manufacturing costs would exceed costs of purchased cast wheels. (CX 160D-F; CX 179.)

286. Fruehauf's plans called for it to produce the wheel either with a large extrusion press purchased from Dow Chemical or by running the wheel at the Fruehauf Decatur plant as a series of extrusions later to be welded together. (Flagan 5141.)

287. The program included development of a drum as well as an extruded aluminum spider. (CX 146A-C; CX 168; Flagan 5118, 5167.)

288. Fruehauf's aluminum wheel project succeeded in reducing weight by about 80 pounds per axle, (CX 160B) which was a weight advantage over the cast spoke wheel Fruehauf was then using. (Flagan 5174.)

289. In early 1971, Fruehauf concluded that the aluminum wheel would cost \$3.68 more than the cast steel wheel then being purchased. (CX 147A-B; CX 152; CX 188A; Flagan 5121-22.) [93]

290. Even at this price, the projected cost of Fruehauf's extruded aluminum wheel was substantially lower than that of Alcoa's aluminum disc wheel. (Flagan 5174.) The weight savings may make an aluminum wheel desirable to the user even at a premium price as users desire weight savings which enable them to carry greater payloads and reduce their fuel costs. (Kenney 2176.)

291. Fruehauf admittedly would consider making a higher cost item with a superior feature if that feature were worth it to the customers. (Flagan 5175.)

292. In 1971, Fruehauf decided to close out the aluminum wheel project due to its higher cost, but to maintain the project's files to introduce the wheel into the market if market

conditions should change. (CX 160E-J; CX 162; CX 180; CX 181; Flagan 5123.)

293. Fruehauf's Mr. Flagan testified that if the price of wheels to Fruehauf were to rise (50 percent), "it would change the whole picture" as to its entry into heavy duty wheels. (Flagan 5159-60.) Since 1970 the prices of heavy duty wheels have risen substantially. (Rupert 793, 832; Kenney 2097-98; Mitchell 2541.) However, Mr. Krauss of Budd was of the opinion that because of the large amount of labor involved, a fabricated wheel would still be uneconomical. (Krauss 2416.)

(b). *Fruehauf's Fabricated Steel Wheel*

294. In the late 1960's, Fruehauf began a project to develop a heavy duty fabricated steel wheel similar in appearance to a disc wheel. It was composed of a hub center and rim band, two flat discs, thus differing somewhat in design from a traditional disc wheel. (Chieger 2331-32; Flagan 5102-03.) [94]

295. The purpose of developing the fabricated steel wheel was to develop a wheel that passed all physical and economic requirements for Fruehauf for possible replacement of the present cast wheel. (CX 135B.) The steel fabricated wheel was envisioned as having the characteristics of light weight; heavy duty construction; true running, demountable rims; and improved method of brake drum or disc attachment; easily automated steel design; and a savings of \$4.00 per wheel. Such wheel was also envisioned as a source of supply for Fruehauf. (CX 135C.)

296. Fruehauf developed several prototype fabricated steel wheels in early 1969. (Flagan 5103-04.) Such prototypes incorporated the "tru-track principal" which was a patentable feature unique to this fabricated steel wheel. (CX 123; CX 136.)

297. The fabricated steel wheel developed by Fruehauf was given several performance tests and passed a dynamometer test. (CX 117A-B; CX 118A-B; CX 210; Flagan 5105.)

298. In May 1970, it was reported with respect to the steel fabricated wheel that the "final design achieves all goals established at outset of project. We have a fabricated steel wheel suitable for Fruehauf production that is within one pound of the cast wheel weight with a cost advantage of approximately \$6.00 per wheel; that can be used with or without the tru-track principal for run out control; that has more than adequate fatigue life and looks good." (CX 132C; Flagan 5108.)

299. As part of the steel fabricated wheel project, Fruehauf developed manufacturing costs. (CX 137A; CX 211.) However, ...

costing neglected to include the necessary bearing cups, and after several costing adjustments the fabricated steel wheel was estimated to cost \$1.95 more than Fruehauf was paying at the time for cast spoke wheels without any allocation for profit. (CX 188A; Flagan 5109, 5122.) [95]

300. Fruehauf stopped work on the steel fabricated wheel as of March 1, 1970 in order to pursue development of the weight-saving aluminum wheel as "the most logical first Fruehauf wheel." (CX 135F.) It was believed that the aluminum wheel had better potential to achieve its goals. (Flagan 5107-08.)

301. However, Fruehauf maintained sufficient records to resurrect the fabricated steel wheel project. (CX 135F.) As Fruehauf's Mr. Flagan reported, "I want to be in a position to resurrect these programs, should the economic conditions change in the future to where the programs can be competitive. Therefore, make sure that everyone involved in the project does a thorough job of summarizing past results and present position, as well as future needs of the program, so that we do not have to try to reconstruct the program complete from bits and pieces, should we desire to resurrect it." (CX 162.)

(c). *McConway and Torley Wheel*

302. In 1967-68, on the occasion of a strike against DW's wheel operations, McConway and Torley made a market study and decided to diversify into the wheel business. (Clem 2724-25.) McConway and Torley sought out Fruehauf, a leading heavy duty wheel purchaser anxious to add an additional source of supply. (CX 597A-J; Clem 2724-26, 2748-49; Flagan 5152; see Mitchell 2542.) Fruehauf's backing was sought as it was the largest trailer manufacturer and therefore "could provide us (McConway and Torley) with the type of volume that we were seeking." (Clem 2725-26.) Fruehauf encouraged McConway and Torley in its new endeavor. (Clem 2726; Flagan 5152.) [96]

303. McConway and Torley had entered the steel foundry business in 1884 and at the time of its entry into the wheel market was involved in casting 450 pound railroad freight car couplers and coupler yokes. (Smith 933-34; Clem 2722-23.)

304. McConway and Torley began the production of cast spoke trailer wheels in 1969 and ceased production in 1974. (CX 600A-E; CX 602A-J; CX 604A-B; CX 605; CX 608; CX 609; Clem 2723-24; Flagan 5152-53.) From 1969 through late 1973 McConway and Torley produced finished spiders for Fruehauf and acquired the balance of the parts necessary to produce a complete wheel assembly first from

DW and subsequently from Webb. (CX 600A-E; CX 602A-J; CX 604A-B; Smith 932; Clem 2723-24, 2728-29, 2735, 2753.) From 1973 until McConway and Torley exited from the market in 1974, McConway and Torley's involvement in heavy duty wheels consisted solely of supplying unmachined spider castings to Webb to whom it had sold its equipment for machining wheels. (CX 605; CX 606; CX 607A-B; Smith 934, 983; Clem 2724, 2735, 2738.)

305. McConway and Torley did none of the original engineering on the cast spoke wheel including its components (Clem 2729-2731), nor did it have any engineering staff for the cast spoke wheel. (Clem 2731.) Fruehauf furnished McConway and Torley with the design and prints as well as the money to buy patterns and equipment. (Clem 2731.) McConway and Torley was restricted in its use of the Fruehauf tooling and thus could produce wheels only for Fruehauf because the tooling was designed for the unique Pro-Par axle. (Clem 2725-27.) McConway and Torley did not have any facilities to test the design of the wheel; instead, Fruehauf had the testing equipment and performed all of the tests. (CC's 1st RACF - #50, 55; Clem 2731; Flagan 5152, 5155.) [97]

306. Fruehauf provided McConway and Torley with numerous suggestions as to improvements in the design and manufacture of the wheels. (CC's 1st RACF - #50; CX 106A-B; CX 107; CX 108; CX 110A-B; CX 111A-B.)

307. McConway and Torley's wheels were tested favorably against those of Gunitite and DW (CX 112Q; CX 113) but as Fruehauf's engineers noted, "the placement of chills and vent holes in the mold is another long tedious hand operation that makes one wonder if they make a wheel economically and consistently from mold to mold." (CX 105A.) Furthermore, during its association with Fruehauf, McConway and Torley was experiencing an extremely high scrap rate on its wheel castings and other productivity problems. Thus the operation was only marginally profitable at the time of the company's departure from the market. (Smith 933; Clem 2732-34, 2736-37.)

308. The project ended because the McConway and Torley wheel was no longer competitive. (Chieger 2276.) McConway and Torley could not successfully produce a good casting and do so economically. "They ran very high scrap." (Smith 933.)

(d). *U.S. Steel Wheel*

309. A few months following the termination of its internal wheel efforts, Fruehauf entered into a program with United States Steel Corporation (hereinafter "U.S. Steel") in which Fruehauf was

to test and evaluate for U.S. Steel a steel fabricated wheel designed by an outside engineering firm. (CX 219; Flagan 5157.) The project was undertaken at Fruehauf's suggestion to have an opportunity to participate in the development of a steel wheel and, if the wheel proved to be successful, to have an alternative supply source for a steel wheel. (CX 216; CX 217; CX 218; CX 219; Flagan 5157.) U.S. Steel was [98] looking for a development program to aid in marketing steel and Fruehauf encouraged U.S. Steel to look at wheels. (Flagan 5157.)

310. The U.S. Steel fabricated steel wheel project began at Fruehauf in February of 1973 and ended in September of 1973. (CX 114A-C.) U.S. Steel supplied fabricated steel wheel prototypes to Fruehauf for testing. Fruehauf tested these prototype wheels at a discount from what it would have charged others to encourage U.S. Steel to continue the program. (Flagan 5157-59.)

311. Tests conducted showed that the U.S. Steel wheel was inadequately designed and was unacceptable for commercial use. (CX 115A-E; CX 116; Flagan 5157.)

312. Based in part on its tests, Fruehauf made design recommendations to U.S. Steel. (CX 114A-C; CX 220). Subsequent to its tests of the U.S. Steel wheel, Fruehauf proposed to U.S. Steel that it may be "to our mutual advantage to get together and develop a program using as a basis their efforts to date as well as our past effort and experience on fabricated wheel design." (CX 223.)

(e). *Perception of Fruehauf as a Potential Entrant*

313. Fruehauf's interest in entering the heavy duty wheel market was known to several of the heavy duty wheel suppliers, including at least four of the leading suppliers. (Zart 1244; Looney 1831; Vause 2204; Mitchell 2592.) Firestone's rim and disc wheel plant was visited in 1971 by Fruehauf personnel "to see how we [Firestone] made rims with the possibility of their [Fruehauf] making their own rims." (Zart 1244.) DW, Fruehauf's principal wheel supplier, was aware that Fruehauf was encouraging the entry of McConway and Torley. (Mitchell 2542.) DW also has been aware [99] for over ten years that Fruehauf has been working on a fabricated heavy duty wheel design. (Mitchell 2592.) Mr. Mitchell of DW believed that such a design could be made to perform successfully. (Mitchell 2592.) Prior to its acquisition, Kelsey-Hayes was aware that Fruehauf was working with other companies to develop heavy duty wheels. (Vause 2204.) Webb felt that Fruehauf would be interested in some arrangement (possibly a joint venture) with Webb to produce heavy duty wheels. (Smith 941-42; 979-80.)

Webb viewed Fruehauf's involvement with McConway and Torley as "a venture by Fruehauf to supply wheels for Fruehauf trailers." (Smith 932.) "Fruehauf negotiated an agreement with a contract with McConway and Torley at Pittsburg to set up McConway and Torley in the wheel business to supply Fruehauf." (Smith 942.)

D. Potential for Vertical Foreclosure

1. Size of the Market

314. Complaint counsel and respondent disagree on the size of the heavy duty wheel market (as depicted in Table 1) in the following respects: Respondent contends that OEM producers of heavy duty wheel components who use all of their in-house output should be included in the market for the determination of market shares and percentages of potential vertical foreclosure.³³ Logically however, for purposes of [100] assessing the potential for vertical foreclosure, these in-house producers need not be considered since suppliers foreclosed from selling to Fruehauf cannot readily expect to sell, at regular prices, their wheels and components to purchasers who possess captive supplies.

315. Respondent also contends that imported European heavy duty wheel products, such as those of Michelin and SKF, should be included in the market. (Krauss 2408-09; 2423.) As complaint counsel point out, Michelin and SKF accounted for probably less than one percent of disc wheel sales and thus, less than .3 percent of the overall heavy duty wheel market. (Zart 1242; Krauss 2422-23.) Moreover, the small disc wheel producers were considered by the witnesses to be specialized suppliers and thus to have a *de minimis* effect in the market. Their exclusion from the market universe does not render the statistics misleading.³⁴ (Krauss 2421-22; Zart 1241-42.)

2. Foreclosure

316. Fruehauf's heavy duty wheel purchases amounted to \$12,177,536 or 6.5 percent of the heavy duty wheel market in 1970;

³³ IHC produces 30-50 percent of its drum requirements. (Vause 2238-39.) GM's Truck and Coach Division machines heavy duty drums. (McCorry 1849.) Freightliner, Mack Truck, PACCAR and Utility, all produce heavy duty hubs and Utility produces both hubs and drums for in-house supply. (Bennett 289-90; CX 717C *in camera*.) If all of Utility's drum use was machined in-house, its share of the heavy duty wheel market would be very slight due to Utility's small share of the trailer market. (CX 254B; CX 632X *in camera*.) IHC's share of the heavy duty wheel market would also be small as its drum production is between 7.5 percent and 12.5 percent of truck drum usage and trucks use only 67 percent of the total heavy duty wheel market. (CX 254B; CX 632X *in camera*.) Total hub production by Freightliner, Mack, PACCAR, and Utility, all for in-house use, represented only about 10 percent of all hubs produced in 1972. (CX 717C *in camera*.)

³⁴ Small specialty disc producers include Motor Rim and Wheel, Standard Rim and Wheel, Wisconsin Rim and

\$11,599,934 or 6.0 percent in 1971 and \$13,262,419 or 5.5 percent in 1972. The three year average is 5.8 percent. (CX 1B, CX 1I, CX 1G; Mann 5700-01.) [101]

317. Respondent contends that because, at the time of trial, Kelsey only produced cast wheels and drums for the trailer market (Vause 2225), Fruehauf's purchases of rims and/or discs should be disregarded for purposes of computing the potential for vertical foreclosure. This would reduce Fruehauf's average purchases to 3.9 percent for 1970-72. (Zart 1187; Nelson 6962-63; Mann 7519; CX 1D & I.) This view disregards Kelsey's ability to make discs and rims for the trailer market if they were assured a sales outlet.

318. Historically Kelsey-Hayes' principal heavy duty wheel customers have been truck and truck tractor manufacturers, which in 1972-73 included such OEMs as General Motors, Ford, IHC and Mack. (R's 1st RAF - #68; CC's 1st RACF - #12.) Kelsey's sales to trailer OEM's represented only 6.6 percent of Kelsey's total heavy duty wheel sales in 1970-72. (CC's 2nd RACF - #46; CX 45B, D-F.) Nonetheless, the cross-elasticity of supply between truck tractor and trailer wheels is "virtually infinite" (Mann 5699), a fact which lessens the importance of Kelsey's past sales in determining the potential for vertical foreclosure.

319. Trailer manufacturers testified that they believe Kelsey-Hayes would favor Fruehauf at their expense, if heavy duty wheels were in tight supply. (Rupert 803; tr. 2198 *in camera*; see also Reeve 862; Mitchell 2549.)

320. Manufacturers of heavy duty wheels expressed their opinion that there could be a curtailment of outside sales of wheels to Fruehauf as a result of the acquisition of Kelsey-Hayes. (Smith 940; Looney 1809; Fisher 1351; Kenney 2112; Mitchell 2549.) [102]

321. In 1974, Reyco sold \$600,000 to 700,000 worth of drums to Fruehauf. In 1975, Reyco's sales of drums to Fruehauf were less than \$50,000. Reyco perceived this decline as due primarily to a slump in the trailer market but in part to the fact that Fruehauf, through Kelsey-Hayes, was capable of supplying its own needs at the low rate of truck trailer production in 1975. (Looney 1808-09.)

322. In the past Fruehauf has relied on Dayton for cast spoke wheels and drums. Gunitite's sales to Fruehauf have been small and Fruehauf purchased only 7 percent of its truck trailer wheel requirements from Kelsey in 1972. (R's 1st RAF - #72; Stipulation 8/5/75; CX 1D.) Dayton, upon learning of the Kelsey acquisition, contacted Fruehauf about the possibility that Fruehauf would cease buying from Dayton the same percentage of wheel requirements as

they had in the past. Fruehauf granted Dayton a five year renewable contract for the purchase of wheels. (Rowan 1934; Mitchell 2545-47.)

323. Expansions of facilities in the industry for the production of wheel components has taken place. (Rupert 841; MacDonnell 2034, 2062; Mitchell 2571; Krauss 2420; Looney 1822.) Therefore, respondent contends that capacity in the heavy duty wheel market is sufficient to preclude shortages for the next five years, which would minimize the effects of any vertical foreclosure. In the past, shortages of heavy duty wheels have not been foreseen. (Reeve 860; Fairchild 1659; McCorry 1843; Rowan 2033; Kenney 2093-94; Krauss 2428.) There is no foolproof method for predicting shortages. (Rowan 2033; Mitchell 2590.)

324. There is no convincing evidence in the record — beyond the statements of Fruehauf's employees — that, should there be another heavy duty wheel shortage, Kelsey-Hayes will allocate its production on a pro-rata basis among its customers. (Vause 2226; MacDonnell 3189; CX 242C, *in camera*.) [103]

325. Fruehauf has demonstrated its propensity to source in-house after vertical integration, and it would be clearly advantageous for Kelsey-Hayes to be assured of volume heavy duty wheel sales to make full use of recent expansions and to thus lower unit costs. These two factors make it reasonably probable that the full potential for vertical foreclosure (around six percent) will be realized.

VIII. LEGAL DISCUSSION

A. *Market Definition*

An indispensable initial step in any Section 7 case is the determination or definition of an appropriate "line of commerce" or relevant market. In the instant case, the existence of three relevant product markets are not in dispute. These are heavy duty antiskid braking devices, truck trailers and heavy duty wheels.

Three submarkets of the heavy duty wheel market have been alleged or proposed at one time or another in the proceeding: truck trailer wheels; cast spoke truck trailer wheels (exclusive of rims); and cast spoke wheel spiders. The truck trailer wheel submarket was alleged in the complaint (Para. 12(b)), but complaint counsel elected not to present evidence concerning it (trial brief at p. 3). The cast spoke wheel spider submarket was not alleged in the complaint, and was not litigated with the express or implied consent of respondent as required by Rule 3.15(2).³⁵ Thus, it is not being

³⁵ In fact, the cast spoke wheel spider submarket was not proposed in this case until the filing of complaint

considered in this opinion. This leaves only the cast spoke truck trailer wheel (exclusive of rims) submarket for determination. [104]

The complaint alleges (Para. 12(c)), and complaint counsel contend, that cast spoke truck trailer wheels (exclusive of rims) constitute an appropriate submarket within which to judge the probable competitive effects of the merger. Counsel cite various *Brown Shoe* criteria, i.e., (1) industry recognition that these types of wheels are generally distinct from cast spoke wheels for trucks; (2) the existence of specialized producers; and (3) distinct characteristics of the truck and truck trailer wheels. Respondent argues, *inter alia*, that such a submarket cannot be found because of the high degree of cross-elasticity of supply between cast wheels for trucks and cast wheels for trailers.

In fact, the equipment used to manufacture cast truck wheels is the same as that used to make cast trailer wheels. (Mitchell 2521.) Both truck and trailer wheels can be and are run in the same foundry (Vause 2184), with only 20 minutes to an hour needed to convert from producing truck wheel castings to castings for trailer wheels. (Rupert 809-10; Smith 965-66.) Moreover, the machining of truck drive wheels and trailer wheels is interchangeable on the same machine line. (Vause 2225.) And three of the four leading cast wheel producers make both truck and trailer wheels. (Smith 965; Mitchell 2521; Vause 2184.)

In its decision in the *Budd* case, the Commission was similarly faced with the question of delineating submarkets in the presence of high supply cross-elasticity. There it held (86 F.T.C. 518 (1975) at 571-72):

The ALJ, in accepting complaint counsel's argument that "closed-top" and "open-top" van trailers each constitute a relevant submarket, mechanically relied on the fact that several of the submarket criteria referred to in *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962) [105] were applicable, such as peculiar characteristics and uses, distinct prices, and industry recognition of open-top van trailers as a category of truck trailers. But as the Court observed in a later case, "[T]hese [Brown Shoe] guidelines offer no precise formula for judgment and they necessitate, rather than avoid, careful consideration based upon the entire record" *United States v. Continental Can Co.*, 378 U.S. 411, 449 (1964). Cross-elasticity of supply can also be an important consideration in defining markets. See *Brown Shoe*, *supra* at 325 n. 42. The interchangeability of production and distribution facilities between two products is a strong indication that in measuring the relevant market and the degree of market power held by firms, the output of both products should be included since the manufacturer of one can shift readily to the production and sale of the other in response to profit opportunities. Cf. *Sterling Drug, Inc.*, 80 F.T.C. 477 (1972). See also *United States v. Columbia Steel Co.*, 334 U.S. 495, 510-11 (1948). Because the record establishes such a high degree of cross-elasticity of production, and identical marketing ease, among van trailers, we conclude that "open-top" and "closed-top" van trailers do not constitute separate submarkets.

[106] See also *Twin City Sportservice, Inc. v. Charles O. Finley & Co.*, 512 F.2d 1264, 1271 (9th Cir. 1975) and *Calnetics Corp. v. Volkswagen of America, Inc.*, 532 F.2d 674, 691 (9th Cir. 1976).

The rationale of the Commission in *Budd* is applicable to the instant case and dispositive of the proposition that cast spoke truck trailer wheels constitute a valid submarket, in view of such a high degree of cross-elasticity of production, which was described by respondent's economist as "virtually infinite." (Mann 5699.)

B. Anticompetitive Probabilities

The acquisition of Kelsey-Hayes by respondent Fruehauf can be termed a "backward vertical" merger, *viz.*, the acquisition by a customer of a supplier. In analyzing the probable competitive effects of this merger, we must be mindful of settled legal precedent. In *Ford Motor Co. v. United States*, 405 U.S. 562, 570-71 (1972), the Supreme Court reaffirmed its holding in *Brown Shoe*, 370 U.S. 294, 323-24 (1962) that:

The primary vice of a vertical merger or other arrangement tying a customer to a supplier is that, by foreclosing the competitors of either party from a segment of the market otherwise open to them, the arrangement may act as a "clog on competition," *Standard Oil Company of California v. United States*, 337 U.S. 293, 314, which "deprive[s] . . . rivals of a fair opportunity to compete." H.R. Rep. No. 1191, 81st Cong., 1st Sess. 8. Every extended vertical arrangement by its very nature, for at least a time, denies to competitors of the supplier the opportunity to compete for part or all of the trade of the customer-party to the vertical arrangement.

[107] The Supreme Court further stated in *Brown Shoe* that (370 U.S. at 328):

* * * the diminution of the vigor of competition which may stem from a vertical arrangement results primarily from a foreclosure of a share of the market otherwise open to competitors* * *.

It is thus necessary to consider the extent of vertical foreclosure in this case, noting (1) that in *Brown Shoe* the Supreme Court invalidated a vertical merger which foreclosed only 1.7 percent to 2.1 percent of the relevant market, and (2) that in *Ash Grove* the Commission did not consider as *de minimis* a foreclosure of only 3.1 percent.³⁶ Both cases, of course, recognize that while the degree of foreclosure is an important consideration, it is necessary to further consider the market setting in which the merger occurred. As detailed *infra*, the evidence in this case leads me to conclude that, with respect to antiskid devices and heavy duty wheels, the

³⁶ *F.T.C. v. Ash Grove Cement Co.*, 85 F.T.C. 1123 (1975).

foreclosure percentages involved are not *de minimis*, and that the merger occurred in a setting where concentration was high and where barriers to entry or effective competition were generally significant.

1. Antiskid

In 1975 Fruehauf's purchases of antiskid braking devices totalled 4.7 percent of the dollar universe and 5.4 percent of the unit universe. In that year Kelsey-Hayes ranked number one in the industry and its sales of the device totalled 28.6 percent of the dollar universe and 32.5 percent of the unit universe. In 1975, Fruehauf purchased 42 percent of their antiskid requirements from Kelsey-Hayes. But in assessing the full potential [108] for vertical foreclosure in the antiskid market it must be kept in mind that Fruehauf is the most vertically integrated of all trailer manufacturers, and has a corporate policy in favor of "in-house" buying and utilization of its internally generated products. Thus, the degree of foreclosure or potential foreclosure cannot be considered *de minimis* under the ruling case law.³⁷

There is a high degree of concentration in the heavy duty antiskid device market. At the time of the hearings, there were only seven active suppliers of antiskid systems. The top two firms accounted for over 50 percent of dollar and unit sales in 1975, and the top four firms for nearly 75 percent.

The barriers to entry or effective competition are significant. Economies of scale are high in this market. Capital costs estimates ranged from high to moderate, *i.e.*, from several million dollars to \$14.6 million.³⁸ While the absolute cost [109] barrier does not appear to present much problem, elements of product differentiation are present, although this barrier is not insurmountable.

Respondent argues that the antiskid market is in its infancy, and that the data concerning it is simply too unreliable upon which to make a judgment as to probable competitive effects of the acquisition. However, there is no exemption in Section 7 based upon the newness of a market. In fact the statute is designed to curb anticompetitive behavior in its incipency. Accordingly, we must make the best judgment we can based upon the material at hand.

³⁷ It would not be reasonable, in my opinion, to use Fruehauf's 1975 purchases from Kelsey-Hayes, made during the pendency of this litigation, as the appropriate measure of foreclosure.

Additional foreclosure exists in the industry by virtue of General Motors ownership interest in AC, one of the seven suppliers. In 1975, AC provided approximately 90 percent of GM's requirements for its truck and truck tractor production. (Finding 55.)

³⁸ In *British Oxygen Co.*, 86 F.T.C. 1241, 1350 (1975), it was found that an initial capital investment of \$7 to \$8 million for a small plant and up to \$16 million for a larger plant constituted a substantial entry barrier. *Rev'd on* *International Ltd. v. F.T.C.*, 2d Cir., No. 76-4044, slip. op., May 19, 1977.

Under the authorities there is no alternative to holding that a sufficient degree of foreclosure or threatened foreclosure exists in a sufficiently unhealthy market climate.

2. Wheels

Fruehauf purchased 6.5 percent of all heavy duty wheels sold in 1970, 6 percent in 1971 and 5.5 percent in 1972. On the supply side, Kelsey-Hayes was the fourth largest supplier of wheels in 1971 and 1972 with 15 percent of the market in each year. Heavy duty wheels are an essential product for the manufacture of trailers and shortages of wheels periodically curtail trailer production. There is substantial probability that Fruehauf in the future will be supplied with all or virtually all of its heavy duty wheel requirements by Kelsey-Hayes because of Fruehauf's well-established policy of buying in-house to the fullest possible extent. Thus, under ruling case law, the degree of foreclosure or reasonably likely foreclosure cannot be considered *de minimis*.

There is likewise a high degree of concentration in the heavy duty wheel market. The top four firms accounted for between 65 percent and 71 percent of the market in the years 1970 through 1972. The top eight firms accounted for between 93 percent and 95 percent of the market during that period. [110]

Barriers to entry or effective competition in the heavy duty wheel market are on the whole substantial. Entry at meaningful volume levels of production requires a capital outlay of some millions of dollars, with \$10 million or more not unreasonable amounts. Economies of scale are significant; to be minimally efficient a plant should manufacture between 200,000 or 300,000 units per year. A salient feature of the absolute cost barrier is the fact that the manufacture of wheels requires a high degree of technology and that expertise is limited. The product differentiation barrier is not of great significance, although it is necessary that a supplier have an established reputation for product reliability. The existence of an adequate and dispersed distribution and service system is also of significance, for the furnishing of efficient on-the-spot assistance in the event of an accident or wheel failure.

Thus, as in the case of antiskid devices, the acquisition of Kelsey-Hayes by Fruehauf is reasonably likely to foreclosure a non *de minimis* segment of the heavy duty wheel market in a market setting in which this should not be allowed to occur

C. Potential Competition in Heavy Duty Wheels

There are two theories under which the elimination of potential competition in a market may be held to violate Section 7: (1) the so-called "actual" potential entrant, and (2) the so-called "perceived" potential entrant. Under the former, an acquisition may be held unlawful if it eliminates the entry into a market of an actual potential competitor, *i.e.*, a firm that, but for the acquisition, would likely have entered the market on either a *de novo* basis or by way of a "toehold" acquisition. Under the latter, an acquisition may be held unlawful if it eliminates a firm which is positioned on the "edge" of a market and is a threat to enter that market, a fact which exerts a procompetitive influence upon the competitive behavior of the companies already in the market. See [111] *U.S. v. Falstaff Brewing Corp.*, 410 U.S. 526 (1973); *Ford Motor Co. v. U.S.*, 405 U.S. 526 (1972); *F.T.C. v. Procter & Gamble Co.*, 386 U.S. 568 (1967); *U.S. v. Penn-Olin Chemical Co.*, 378 U.S. 158 (1964); *U.S. v. El Paso Natural Gas Co.*, 376 U.S. 651 (1964).

The Supreme Court has fully endorsed the theory of "perceived" potential entry, but has specifically reserved ruling upon the question of violation based upon the "actual" potential entry theory. *U.S. v. Falstaff Brewing Corp.*, *supra*, at 537; see also *U.S. v. Marine Bancorporation*, 418 U.S. 602, 625, 639 (1974). However, the Commission and lower courts have on a number of occasions embraced this theory of violation, and I take it as binding at the ALJ level. (See decided cases listed in n.23 of the Commission's opinion in *British Oxygen*, 86 F.T.C. at 1361.)

1. Fruehauf as an Actual Potential Entrant

As noted, the heavy duty wheel market is highly concentrated. The procompetitive effect of actual entry on the part of Fruehauf would serve to decrease that concentration. And in determining the question of such entry, guidance should be placed less upon the subjective testimony of respondent's officials, than upon objective factors concerning Fruehauf's capabilities and incentive to enter. *U.S. v. Penn-Olin*, *supra*, 378 U.S. at 174.

It is reasonable to infer that, but for its acquisition of Kelsey-Hayes, Fruehauf would have entered into wheel production either now or in the near future. Fruehauf has an established policy of vertical integration; it is in fact the most heavily vertically integrated trailer manufacturer. It manufactures virtually all of the higher cost components for its trailers except for wheels (excluding -- production). Fruehauf, [112] like other trailer manu-

facturers, has been plagued from time to time with shortages of wheels, which have interfered with or curtailed trailer production.

The record demonstrates Fruehauf's efforts to insure a certain source of supply for this vitally needed commodity. To be sure, the company has not attempted *de novo* entry through the conventional cast spoke or disc wheel route. But it has succeeded in developing feasible alternatives, *viz.*, a fabricated aluminum and a fabricated steel heavy duty wheel. After thorough testing, both types of wheels were rated as satisfactory in performance. However, because of somewhat higher costs, both wheel projects were shelved in the early 1970's. But in doing so, Fruehauf was careful to direct that thorough files and records be maintained for resurrection of these projects in the event that rising prices for conventional wheels should permit effective competition. Fruehauf wheels, of course, could be distributed through the same channels used to market other Fruehauf Pro-Par brand products.

The record also demonstrates Fruehauf's interest in encouraging others to enter the heavy duty wheel market. It participated in wheel projects with McConway and Torley and with U.S. Steel. While these programs did not become viable, they do demonstrate Fruehauf's interest in developing sources alternative to existing wheel suppliers. Fruehauf therefore has the interest, incentive and the available means for entry into the heavy duty wheel market when future economic conditions permit.

2. Fruehauf as a Perceived Potential Entrant

To reiterate the findings to some extent, Fruehauf's interest in entering the market was known to the major wheel suppliers. (Zart 1244; Looney 1831; Vause 2204; Mitchell 2592.) Firestone's rim and disc wheel plant was visited in 1971 by Fruehauf personnel [113] "to see how we [Firestone] made rims with the possibility of their [Fruehauf] making their own rims." (Zart 1244.) Dayton-Walther, Fruehauf's principal wheel supplier, was aware that Fruehauf was encouraging the entry of McConway and Torley. (Rupert 802; Mitchell 2542, 2545.) Dayton-Walther has been aware for over ten years that Fruehauf has been working on a fabricated heavy duty wheel design. (Mitchell 2592.) Dayton-Walther believes such a design could be made to perform successfully. (Mitchell 2592.) Prior to its acquisition, Kelsey-Hayes was aware that Fruehauf was working with other companies to develop heavy duty wheels. (Vause 2204.) Webb knew Fruehauf had been interested in a joint venture with Webb to produce heavy duty wheels. Webb viewed Fruehauf's involvement with McConway and Torley as "a venture by Fruehauf to enter the heavy duty wheel market."

to supply wheels for Fruehauf trailers." (Smith 932.) "Fruehauf negotiated an agreement with a contract with McConway and Torley at Pittsburgh to set up McConway and Torley in the wheel business to supply Fruehauf." (Smith 942.) This awareness on the part of wheel suppliers presently in the market together with demonstrated incentives and capabilities of Fruehauf is sufficient to establish that Fruehauf as a perceived potential entrant had a procompetitive "edge" effect on the highly concentrated heavy duty wheel market. *U.S. v. Falstaff Brewing Corp.*, *supra*, 410 U.S. at 534-35, n.13; *U.S. v. Phillips Petroleum Co.*, *supra*, 367 F. Supp. 1226, 1239 (C.D. Cal. 1973), *aff'd*, 418 U.S. 906 (1974).³⁹

D. Entrenchment in Heavy Duty Wheels and Antiskid

1. Entrenchment of Fruehauf

As noted, the truck trailer market is highly concentrated, with Fruehauf the leading company by far. Since the mid-1950's Fruehauf's share of this market [114] has stabilized at approximately 25 percent, with its nearest competitor enjoying only half that amount. The remaining companies, with only a few exceptions, have market shares in the neighborhood of 3 percent, 2 percent, 1 percent or less. Fruehauf is already heavily vertically integrated into most major trailer components. Its acquisition of Kelsey-Hayes will permit it to vertically integrate into heavy duty wheels and antiskid devices, both essential components of a trailer (with wheels having been periodically in short supply).

Barriers to entry or to effective, meaningful competition are substantial. Fruehauf, with its full line of trailers, its geographically dispersed plants and almost 100 service centers, and its demonstrated capabilities regarding trade-ins and financing, without Kelsey already enjoys significant advantages over its competitors, major and marginal. Fruehauf's acquisition of Kelsey will permit secure access to the manufacturing and distribution resources of that company, and will serve to further entrench Fruehauf's leadership in the trailer industry and render it that much more difficult for its smaller competitors or prospective entrants to compete or to effect deconcentration.

The Commission and the courts have not hesitated to declare mergers unlawful, where, in an oligopolistic setting, the result of a merger is to confer a competitive advantage on a dominant

³⁹ Fruehauf's position as a volume wheel purchaser enabled it (along with other major purchasers) to keep pricing levels down in the heavy duty wheel industry. (Smith 943-44; Rupert 778.) Another beneficial factor regarding present competition in the wheel industry was Fruehauf's efforts to encourage the entrance of additional suppliers.

competitor which creates a reasonable probability of entrenching or increasing that company's market position. *F.T.C. v. Procter & Gamble Co.*, 386 U.S. 568 (1967); *General Foods Corp. v. F.T.C.*, 386 F.2d 936 (3d Cir. 1967). See legal analysis set forth in *U.S. v. ITT Corp.*, 324 F. Supp. 19, 24 (D. Conn. 1970), and in the court's earlier opinion in that case, 306 F. Supp. 766, 775-76 (1969). [115]

2. Entrenchment of Kelsey-Hayes

As for Kelsey-Hayes, the record shows that its position in the highly concentrated antiskid and heavy duty wheel markets has been enhanced by its merger with Fruehauf. In antiskid, in 1975 Kelsey-Hayes had a market share of approximately 30 percent. Its nearest competitor had about 20 percent, with the remaining five suppliers having about 10 percent of that market.

It is at least reasonably probable that Fruehauf's established policy of using in-house components will strengthen Kelsey-Hayes' position in the antiskid market by securing Fruehauf's substantial purchases as a captive account for Kelsey-Hayes. This effect is magnified in light of the high economy of scale barrier to entry. The result of removing Fruehauf's substantial purchases from open competition is that the ability of existing competitors to meet the significant economy of scale level and thus, their ability to effectively compete, is injured. Moreover, the economy of scale barrier to entry in antiskid is raised since potential entrants also would have greater difficulty in meeting scale economies without the opportunity to compete for increased volume from Fruehauf's purchases. Moreover, having Fruehauf as a substantial account will assist Kelsey-Hayes in weathering the "shake down" period in this still young industry.

In heavy duty wheels, it is similarly true that the competitive position of Kelsey-Hayes is greatly improved by its prospects of supplying the requirements of Fruehauf. The recently completed \$25 million expansion of the Gunit facilities should greatly assist in that endeavor. [116]

Nevertheless, I cannot conclude that Kelsey-Hayes has been "entrenched," as that term has heretofore been used in Section 7 cases. The teaching of *U.S. v. ITT, supra*, is that in order to prevail on an entrenchment theory, the government must prove that the acquired company was — prior to the merger — a "dominant" competitor in the relevant market.⁴⁰ In heavy duty wheels in 1972 Kelsey-Hayes held a market share of only approximately 15 percent.

⁴⁰ But see *Allis-Chalmers Mfg. Co. v. White Consolidated Industries*, 414 F.2d 506 (3d Cir. 1969), cert. denied 396 U.S. 1009 (1970).

This is not dominance. In the antiskid market, as stated above, Kelsey's 1975 market share was approximately 30 percent. But it seems clear to me that Kelsey did not "dominate" that market (although it could conceivably do so in the future with additional Fruehauf purchases). Unlike Fruehauf in the case of trailers, the record does not reveal that Kelsey had "special" advantages over its competitors in manufacturing, selling and distributing its antiskid products.⁴¹ There simply is no record evidence that Kelsey "dominated" the antiskid or the heavy duty wheel market, and violation of Section 7 is not found on that basis.

IX. REMEDY

Complaint counsel have requested the total divestiture of Kelsey-Hayes together with a ten year ban on future acquisitions by Fruehauf of manufacturers and distributors of heavy duty wheels, heavy duty antiskid braking devices and truck trailers.

Total divestiture is considered to be the most effective antitrust remedy and is particularly appropriate in cases of stock acquisitions which are found to violate Section 7. *United States v. [117] duPont & Co.*, 366 U.S. 316, 326, 328 (1961); *Ford Motor Co. v. United States*, 405 U.S. 562, 573 (1972). Even where the violation relates to but a single aspect of the company acquired, total divestiture is still appropriate in order to reinstitute meaningful competition. *OKC Corp. v. F.T.C.*, 455 F.2d 1159, 1163 (10th Cir. 1972).

Moreover, the Commission's power to order a ban on future acquisitions is clear. In recent years, in many instances in which the Commission has ordered substantial divestiture of stock or assets, the order has included a ban on future acquisition in the offending lines of commerce. *Avnet Corporation*, 82 F.T.C. 391 (1973), *aff'd* 511 F.2d 70, 79 (1975), *cert. denied*, 423 U.S. 833 (1976); *Seeburg Corp.*, 75 F.T.C. 561 (1969), *aff'd as modified*, 425 F.2d 124 (6th Cir.), *cert. denied*, 400 U.S. 866 (1970); *American Brake Shoe Co.*, 73 F.T.C. 610 (1968), *aff'd as modified*, 420 F.2d 928, *cert. denied*, 406 U.S. 865 (1970); *Liggett & Myers, Inc.*, 86 F.T.C. 1074 (1976); *RSR Corporation*, 88 F.T.C. 800 (1976).

Respondent suggests that hearings are necessary on the question of relief. To the extent that this constitutes a request that such hearings be scheduled, it is denied, unless so ordered by the Commission.

⁴¹ I am referring to factors such as, *inter alia*, having a full line of products, geographically dispersed plants and branches, ability to handle trade-ins and financing capability.

X. CONCLUSIONS

1. The Commission has jurisdiction over the subject matter of this proceeding and of respondent Fruehauf.

2. On October 31, 1973, Fruehauf acquired all of the common stock of Kelsey-Hayes. [118]

3. At all times relevant to this proceeding, Fruehauf and Kelsey-Hayes were corporations engaged in commerce, as "commerce" is defined in the Clayton Act, as amended.

4. The effect of the acquisition by Fruehauf of the stock of Kelsey-Hayes may be substantially to lessen competition or to create a monopoly in any line of commerce in any section of the country, in violation of Section 7 of the Clayton Act, as amended (15 U.S.C. 18).

5. The manufacture and sale of the following product lines constitutes a "line of commerce" within the meaning of Section 7 of the amended Clayton Act:

- (a) Heavy duty antiskid braking devices;
- (b) Truck trailers; and
- (c) Heavy duty wheels.

6. The appropriate section of the country within which to test the effect of the acquisition is the United States as a whole.

7. In each of the lines of commerce, prior to the merger, there were high levels of concentration and substantial barriers to entry or to effective competition.

8. In the heavy duty wheel line of commerce, prior to the merger, Fruehauf was one of the few most likely potential entrants.

9. The effect of the acquisition by Fruehauf of Kelsey-Hayes has been or may be to lessen competition substantially or tend to create a monopoly in violation of Section 7 of the Clayton Act, as amended, in the following ways: [119]

(a) actual and potential producers of antiskid braking devices, other than Kelsey-Hayes, have probably been foreclosed from selling to Fruehauf, a substantial purchaser of such antiskid braking devices;

(b) actual and potential producers of heavy duty wheels other than Kelsey-Hayes may be foreclosed from selling to Fruehauf, a substantial purchaser of heavy duty wheels;

(c) Fruehauf's competitors have been or may be foreclosed from a significant source of supply for heavy duty wheels and antiskid braking devices;

(d) Fruehauf has been eliminated as a potential entrant into the manufacture and sale of heavy duty wheels.

virtue of its secure source for heavy duty wheels and antiskid braking devices; and

(f) barriers to entry in each of the relevant markets have been raised.

10. Divestiture of the acquired stock is both necessary and appropriate to remedy the probable anticompetitive effects of the unlawful acquisition. [120]

XI. ORDER

Accordingly:

I

It is ordered, That respondent, Fruehauf, a corporation, and its officers, directors, agents, representatives, employees, subsidiaries, affiliates, successors and assigns, shall divest all stock, assets, title, properties, interest, rights and privileges, of whatever nature, tangible and intangible, including without limitation all buildings, machinery, equipment, raw material reserves, inventory, customer lists, trade names, trademarks and other property of whatever description acquired by Fruehauf as a result of its acquisition of Kelsey-Hayes together with all additions and improvements to Kelsey-Hayes which have been added to Kelsey-Hayes subsequent to the acquisition. Such divestiture shall be absolute, shall be accomplished no later than six (6) months from the service of the order, and shall be subject to the prior approval of the Federal Trade Commission. [121]

II

It is further ordered, That such divestiture shall be accomplished absolutely to an acquirer approved in advance by the Federal Trade Commission so as to transfer Kelsey-Hayes as a going business and a viable, competitive, independent concern.

III

It is further ordered, That pending any divestiture required by the order, Fruehauf shall not knowingly cause or permit the deterioration of the assets and properties specified in Paragraph I in a manner that impairs the marketability of any such assets and properties. Fruehauf may but shall not be required to make capital expenditures for the improvement of any such assets and properties.

IV

It is further ordered, That pursuant to the requirements of Paragraph I, none of the stock, assets, properties, rights, privileges and interests of whatever nature, tangible or intangible, acquired [122] or added by Fruehauf, shall be divested, directly or indirectly, to anyone who is at the time of the divestiture an officer, director, employee or agent of, or under the control, direction or influence of Fruehauf, or anyone who owns or controls, directly or indirectly, more than one (1) percent of the outstanding shares of the capital stock of Fruehauf or to anyone who is not approved in advance by the Federal Trade Commission.

V

It is further ordered, That for a period of ten (10) years from the date this order becomes final, Fruehauf shall cease and desist from acquiring, or acquiring and holding, directly or indirectly, through subsidiaries or otherwise, without the prior approval of the Federal Trade Commission, the whole or any part of the stock, share capital, assets, any interest in or any interest of, any concern, corporate or noncorporate, engaged in the business of manufacturing, distributing, or selling, heavy duty wheels, heavy duty antiskid [123] braking devices, or truck trailers, nor shall Fruehauf enter into any agreement, understanding or arrangement with any such concern by which Fruehauf obtains the market share, in whole or in part, of such concern in the above-described product lines.

VI

It is further ordered, That on the first anniversary date of the effective date of this order and on each anniversary date thereafter until the expiration of the prohibitions in Paragraph V of the order, Fruehauf shall submit a report in writing to the Federal Trade Commission listing all acquisitions, mergers and agreements to acquire or merge made by Fruehauf; the date of each such acquisition, merger or agreement; the products involved and such additional information as may from time to time be required.

VII

It is further ordered, That within thirty (30) days from the effective date of this order and every sixty (60) days thereafter until it has fully [124] complied with Paragraph I of this order, Fruehauf shall submit a verified report in writing to the Federal Trade Commission

setting forth in detail the manner and form in which it intends to comply, is complying or has complied therewith. All such reports shall include, in addition to such other information and documentation as may hereafter be requested, (a) a specification of the steps taken by Fruehauf to make public its desire to divest Kelsey-Hayes, (b) a list of all persons or organizations to whom notice of divestiture has been given, (c) a summary of all discussions and negotiations together with the identity and address of all interested persons or organizations, and (d) copies of all reports, internal memoranda, offers, counteroffers, communications and correspondence concerning said divestiture.

VIII

It is further ordered, That Fruehauf shall notify the Commission at least thirty (30) days prior to any proposed changes which may affect compliance [125] obligations arising out of the order, such as dissolution, assignment or sale resulting in the emergence of successor corporations, and that this order shall be binding on any such successor.

OPINION OF THE COMMISSION

By DIXON, *Commissioner*:

This case involves a challenge under Section 7 of the Clayton Act to the legality of a merger between the nation's largest manufacturer of truck trailers and a leading maker of automotive components, including two that are needed for the manufacture of truck trailers. The Commission's complaint challenging Fruehauf's 1973 acquisition of Kelsey-Hayes Company was issued on June 21, 1974. A lengthy trial was held before Administrative Law Judge (ALJ) Thomas Howder, who entered an initial decision finding that the merger violated the law and recommended entry of an order requiring divestiture by Fruehauf of Kelsey-Hayes. This matter is before the Commission upon the appeal of respondent from Judge Howder's decision.

Respondent Fruehauf registered sales and rentals of \$550.4 million and assets of \$556.6 million in 1972, derived principally from the sale, maintenance and service [2] of truck trailers. (I.D. 2-3)¹ Kelsey-

¹ The following abbreviations are used herein:

I.D. — Initial Decision (Finding No.)
I.D. p. — Initial Decision (Page No.)
Tr. — Transcript of Testimony (Page No.)
CX — Complaint Counsel's Exhibit No.
RX — Respondent's Exhibit No.

(Continued)

Hayes for the fiscal year ending August 31, 1972 had net sales of \$454.7 million and assets of \$243 million. (I.D. 7) Kelsey-Hayes manufactures various component parts for the automotive industry, including automobile wheels, brake drums and drum brake assemblies. It also manufactures heavy duty wheels for use on trucks and truck trailers and in 1975 was the leading supplier of heavy duty AntiSkid Braking Devices (hereinafter on occasion for the sake of brevity ASBD) to heavy duty truck, truck tractor, and truck trailer manufacturers. (I.D. 8)

The complaint alleged and Judge Howder found that Fruehauf's acquisition of Kelsey-Hayes had restrained competition in three national markets—heavy duty wheels, antiskid braking devices, and truck trailers. Illegality was premised upon the conclusion that the merger had foreclosed competitors of Kelsey-Hayes from selling to Fruehauf, a substantial purchaser of heavy duty wheels and antiskid braking devices, while foreclosing competitors of Fruehauf [3] from access to a major source of wheels and ASBD. The Judge further found that Fruehauf had been eliminated as a potential entrant into the manufacture and sale of heavy duty wheels, that its dominant position in the truck trailer market had been entrenched by acquisition of a secure source of two components, and that barriers to entry in all three relevant markets had been raised by the acquisition. The ALJ rejected complaint counsel's argument that cast spoke truck trailer wheels (exclusive of rims) constituted a relevant submarket within which to test effects of the merger, and further rejected the suggestion that an unlawful effect of the merger had been to entrench Kelsey-Hayes in any relevant markets. These contentions have not been pursued on appeal.

While most of the judge's findings of fact are not contested, respondent quarrels with the ALJ's interpretation of those facts and his ultimate conclusions, and complaint counsel urge that we modify and augment various factual findings. We believe the initial decision reflects a conscientious attempt to resolve the issues presented by a massive trial record, but based upon our own review of this record and of the contentions of the parties on appeal we have modified certain findings and conclusions of the ALJ, as will shortly appear.

CPF — Complaint Counsel's Proposed Finding of Fact at Trial Before the ALJ (No.)

RPF — Respondent's Proposed Finding of Fact (No.)

RAB — Respondent's Appeal Brief Before the Commission (Page No.)

CAB — Complaint Counsel's Answer Brief Before the Commission

GENERAL OBSERVATIONS

We count it our blessing that there is essentially no disagreement between the parties at this stage of the proceeding over the relevant markets in which the effects of this merger are to be judged, they being the nationwide markets for heavy duty wheels, antiskid braking devices, and truck trailers. To compensate there is ferocious dispute as to the way in which the Commission should go about answering the ultimate question in this case, whether the effect of the challenged acquisition in any of the relevant markets "may be substantially to lessen competition. . . ."

Respondent argues that the query may be recharacterized as "will the merger maintain or enhance, in any line of commerce, 'market power', i.e., the ability to maintain a serious and persistent monopolistic deviation of price from cost." (RPF 4, 16) Such market power in respondent's [4] view can exist only in a market environment in which there are (1) sufficiently few sellers that all recognize their joint interest in pursuing coordinated pricing strategy, and (2) sufficiently high barriers to entry to insulate firms in the market from the competitive pressure of potential entrants. [Tr. 5664, 6807, 6829]

Respondent contends, therefore, that illegality from the vertical effects of a merger may be found only in the presence of *both* high market concentration (whose existence in at least some of the markets involved here is not challenged) *and* high barriers to entry (existence of which is the subject of vigorous disagreement).

Not surprisingly, much of the lengthy trial record in this case is devoted to an assessment of the barriers to entry into the relevant markets. Drawing on the line of analysis elaborated by Professor Joe Bain in *Barriers to New Competition*, the parties have defined these barriers to include (1) capital costs² (2) absolute costs³ (3) economies of scale⁴ and (4) product differentiation⁵.

[5] Before accepting this schema we believe that several important

² The amount of money needed to build and equip a production facility of minimum efficient size, including inventory, working capital, (and research and development, see n. 19 infra.) I.D. 32.

³ Advantages, such as patents, which impose upon new entrants a cost penalty such that the entrant would have a higher unit cost at the same level of output as existing firms. I.D. 37.

⁴ The level of output or market share that a prospective entrant would need to achieve so as not to be at a unit cost disadvantage compared to existing competitors. I.D. 38. Where economies of scale are high (which some economists define as 10 percent or more, i.e., a firm needs 10 percent or more of the market to produce at minimum unit cost) entry will prove more difficult, because the entrant must either wrest significant market share from other firms or significantly expand industry output, either of which endeavors is likely to depress price, perhaps to a point at which the potential entrant will decide that it does not desire to enter after all. Lesser economies of scale may raise formidable barriers for the same reason.

⁵ The barrier existing when a new entrant must charge lower prices or spend extensively on sales promotion in order to divert buyer loyalties from an established seller, I.D. 41, (because buyers perceive differences in essentially fungible products.)

qualifications are in order. The analysis of barriers to entry in antitrust is useful only insofar as it provides a measure of the difficulty which potential competitors will experience upon seeking to enter a market in the event that firms already in the market should happen to set prices at supra-competitive levels. In a market with high barriers to entry, market participants will presumably enjoy great leeway to depart from competitive norms without having to face the restraining force of new entry. Conversely, it is argued that even in a highly concentrated industry, if entry barriers are low, there is little danger of market abuse because such abuse will quickly elicit new entry to restore prices to competitive levels.

But these are not "either/or," "all or nothing" propositions and we expressly reject the notion that they are. Barriers to entry may be arrayed along a continuum from high to low, measuring the difficulty which outsiders will experience in becoming insiders and conversely the ease and safety with which insiders may raise prices without fear of outsiders. It does not make sense, we think, to assume that there exists some magic dividing line between "high" and "low" barriers such that industries on one side are immune to anticompetitive infection by vertical mergers while industries on the other side are able to offer no resistance.⁶ Rather, the magnitude of barriers to entry is only one factor to be weighed in any assessment of the likely effects of a merger. The presence of lower barriers to entry may serve to moderate the anticompetitive effects of a merger or ensure that they are shorter lived, but it will not necessarily ensure that such effects do not arise. This point, which has great force in the analysis of horizontal mergers, *e.g.*, *RSR Corp.*, 88 F.T.C. 800, 899 (1976); *Ekco Products Co.*, 65 F.T.C. 1163, 1208 (1965), *aff'd*, 347 F. 2d 745 (7th Cir. 1965); *Jim Walter, Inc.*, Dkt. 8959 slip op. p. 46 (December 20, 1977) [90 F.T.C. 671 at 730], is not wholly irrelevant with respect to vertical [6] acquisitions. Determination of whether a vertical merger is likely substantially to lessen competition should depend upon an analysis of the interaction of various factors. That barriers to entry do not attain some necessarily arbitrary level called "high" should not, as it were, "foreclose" further analysis.

A closely related point is that high concentration, (and the opportunities for interdependent conduct that accompany it) may itself constitute a barrier or deterrent to entry. If the number of firms in an industry is sufficiently small that they are able to act in tacit concert to *raise* prices, why should they also not be able to act in

⁶ Professor Bain himself makes this rather obvious point, *e.g.*, Bain, *supra*, pp. 4-5, 203-204, and we do not mean to imply that respondent is not fully cognizant of it (*e.g.* RPF 42). But occasionally the point gets lost in the argument, where it is suggested that the absence of "high" entry barriers precludes any exercise of market power or finding of anticompetitive effects.

similar fashion to *lower* prices predatorily in the face of a competitive threat from a new entrant? Recognition of this possibility may deter outsiders from attempting entry into a concentrated industry notwithstanding that other barriers, such as the costs of necessary capital, are low. In turn, industry members are spared the necessity to make good on their implicit threat to discipline new entrants, and prices remain at supra-competitive levels. It follows from this that a merger, simply by enhancing concentration in an industry⁷, may also enhance the barriers to entry into it, or the market power of its members, notwithstanding that other barriers to entry remain low.⁸

[7] In similar fashion, vertical integration itself may constitute, or enhance a barrier to entry, by restricting the outlets to which a prospective entrant may be able to turn (or will view itself as able to turn) if it attempts to compete.⁹ For example, if a firm needs 20 percent of a market in order to realize an acceptable profit on its investment, and if 20 percent of the market comes under control of various suppliers through purchase of customers, the potential entrant may be viewed as needed 25 percent (20/80) of the remaining market in order to enter. Mergers between customers and suppliers thus serve to make it more difficult for would-be competitors of the supplier to enter.¹⁰

[8] In sum, no matter what the extent of barriers to entry into a highly concentrated industry, a merger between a major customer and a major supplier may restrain competition in the market for the *supplier's product* (in the case before us ASBD and heavy-duty wheels) by foreclosing competitors of the supplier from the possible patronage of the customer and thereby (1) increasing the market share of the leading firm, increasing industry concentration, and thus enhancing the industry's capacity to act in concert; (2)

⁷ Whether a vertical merger will actually heighten concentration within an industry is, of course, problematical. It may well have such an effect by diverting the patronage of the merging customer to the merging supplier where such supplier might not otherwise have obtained it. Where such patronage is diverted from the smaller members of the industry, to those with dominant market position, the result may be to enhance concentration.

⁸ Professor Bain himself addresses this point, *Barriers to New Competition*, pp. 94ff though with what resolution is unclear. There are obviously other possible scenarios in which a concentrated industry might not respond to new entry by seeking to keep out the entrant. See generally, Scherer, *Industrial Market Structure and Economic Performance*, pp. 219 ff.

⁹ The necessity for vertical integration, by increasing the necessary cost of capital, is recognized as a barrier to entry under the rubric of capital costs. We refer to a slightly different effect.

¹⁰ Respondent suggests, and some economists argue, that it would be irrational for a customer to favor in-house supplies over less costly outside sources, so that a new entrant offering a cheaper product should not be deterred by its competitors' ownership of the new entrant's potential customers. In this case there is evidence that respondent favored in-house procurement, even where outside procurement might be cheaper. (I.D. 51) Moreover, it seems hardly unreasonable to postulate that given rough equality of offerings, the in-house supply will be favored, as it might where the desire is to deter or discipline a new entrant. Moreover, the expectation that captive customers will not bestow their patronage nondiscriminatorily upon outsiders (whether well-founded or not in a particular case) is what operates as the deterrent. That expectation is well illustrated in this record as well. (e.g., I.D. 50)

rendering more difficult continued market participation by smaller firms which may depend on the possible patronage of the foreclosed customer to remain in the market; or (3) rendering more difficult, and thus less likely, entry by other firms which are discouraged by the diminished opportunity to secure patronage of the foreclosed customer.¹¹

With the foregoing qualifications in mind we proceed to consider the particular markets in which anticompetitive effects of this merger are alleged. [9]

HEAVY DUTY ANTISKID BRAKING DEVICE MARKET

An antiskid braking device is safety equipment installed on the braking systems of air-braked vehicles to monitor and if necessary override the driver's action during braking to prevent wheel lock-up and possible skidding. (I.D. 11) ASBD consists principally of three matched components: a sensor which determines the speed at which a wheel is rotating; a computer or logic module which calculates the speed at which the wheel should rotate in order to achieve maximum braking efficiency; and a valve which regulates the air pressure so as to release the brakes momentarily in the event of an impending skid. (I.D. 11)

Development of the antiskid braking device was largely the result of Federal Motor Vehicle Safety Standard (FMVSS) 121 (49 C.F.R. 571.121, as amended), promulgated by the National Highway Traffic Safety Administration of the United States Department of Transportation. Although the performance standard does not specify the use of ASBD, the device is the only product presently available which satisfies the standard. (I.D. 12) The standard required ASBD for most heavy-duty air-braked truck trailers manufactured after January 1 and air-braked trucks and truck tractors manufactured after March 1, 1975. The market is accordingly a young one whose future, however, enjoys a measure of governmental support. (I.D. 15)

As the ALJ observed, concentration in the manufacture and sale of

¹¹ Compare two highly concentrated industries, in one of which barriers to entry are of sufficient height that industry members are able to raise prices 25 percent above competitive levels without attracting new entry, in the other of which firms can depart by only 2 percent from competitive levels before new entry is called forth. A vertical merger in the first industry would substantially lessen competition if it raised barriers even further and enhanced market power so that industry members could now raise prices by, say, 28 percent before attracting entry. But the same substantial lessening of competition would be done in the low-barrier industry if a vertical merger raised those low barriers so that firms were able to depart by 5 percent (instead of the former 2) from competitive levels before facing a threat from outside. (Needless to say, the state of economic learning does not permit, nor does the Clayton Act require, probable effects of mergers to be measured with such precision.)

Again, we do not suggest that respondent's able counsel are unaware of this point: "If they [entry barriers] are low and are not increased by reason of the merger, then there is no market power conferred upon the acquiring company; and, in the absence of market power, Your Honor, there is no probability of a substantial injury to

ASBD is very high. Only seven companies competed in the market in 1975 and 1976, with the top two firms accounting for over 50 percent of total 1975 unit sales, and the top four firms carrying off 74 percent of the business. (I.D. 16) The leading firm in the market, Kelsey-Hayes sold 32.5 percent of all ASBD units and took in 28.6 percent of total dollar volume. Fruehauf's 1975 purchases of ASBD units were \$1,938,614, or 4.7 percent of the dollar universe and 5.4 percent of unit volume. (I.D. 46, Tr. 6530 *in camera*) Because FMVSS 121 was modified to eliminate antiskid devices on the front axles of trucks and truck tractors, it is likely that in years after 1975 Fruehauf's purchases of ASBD did and will constitute a significantly larger percentage than 4.7 or 5.4 because Fruehauf manufactures only trailers, whose need for ASBD has not been changed. (I.D. 47; Tr. 6534 *in camera*) [10]

Capital Costs and Scale Economies

Judge Howder further concluded that barriers to entry into the ASBD market are significant. His conclusion as to entry barriers is based principally on evidence of moderately high¹² capital costs, ranging up to 13 to 14.6 million dollars for some initial entrants and high scale economy requirements. (I.D. p. 108) Respondent notes in reply that the ASBD market is in a state of flux and that a trend may be discerned toward standardization and simplification of the three braking components which at some unspecified future time may permit entry on a less costly basis than that which occurred initially. Respondent further contends that even firms which might enter now on a "systems" basis will likely be able to do so without incurring the same magnitude of research and development costs experienced by the pioneers, (I.D. 35) and that evidence of scale economies cited by the ALJ is inapposite because it is based merely on assessments by industry members of market shares needed to realize a satisfactory rate of return on existing plants, not on the hypothetically most efficient plant which a new entrant might be able to build.

On balance we believe that the ALJ's conclusions with respect to the significant barrier created by capital costs and scale economies in this market are correct. The market for antiskid braking devices is not a large one. Sales of the product in 1975 measured approximately \$41 million. (I.D. 46, CX 612A-B *in camera*) Sales may well have declined in later years because of the previously noted

¹² At I.D. p. 108 the judge refers to "high to moderate," i.e., from several million dollars to \$14.6 million. Opposing expert witnesses classified these barriers as "moderate" and "on the borderline between moderate and

change in FMVSS, eliminating the need for ASBD on the front axles of trucks and truck tractors. (I.D. 47)¹³ Given a market size [11] of \$40-\$50 million, capital costs in the vicinity of \$8-\$10 million obviously loom exceedingly large.¹⁴ It is no wonder that industry witnesses testified that their companies hoped, expected, anticipated, and *needed* to capture 20 percent or more of the market in order to reap a satisfactory return on their investments. (I.D. 39; Tr. 2606-07 *in camera*, 1144, 2450 *in camera*, 1017-18)

Nor is it clear that this situation is likely to change appreciably for would-be second generation entrants, if there are any. While future entrants may be able to improve upon the \$13 and \$14.6 million capital costs experienced by certain of the pioneers, the record nevertheless reflects costs faced by the earliest entrants that future potential competitors will be unable to avoid, for example, the costs of tooling, machinery and related facilities, and necessary [12] inventory, which alone have aggregated nearly \$5 million for some cases. (Tr. 1015; cf. 2444-45)¹⁵ Moreover, while *some* diminution of research and development costs may be effected by second-generation entrants, it is likely that firms entering today will face additional costs, including the burden of paying Original Equipment Manufacturers (OEM's) to test and obtain certification for their product, in contrast to the situation facing initial entrants where OEM's, under the pressure of impending federal requirements, shared and often paid in full the costs of product certification testing. (CX 83, 99, 199C; RX 89; Tr. 1699, 2213, 2459-60 *in camera*, 2475 *in camera*, 2603, 2611, 5853)

For these reasons, then, we think that an estimate of capital barriers approaching \$8-\$10 million for some new entrants would not be unreasonable, and given the small size of this industry, even a capital barrier half that amount would pose a formidable impedi-

¹³ A factor tending to increase the estimate of market size is that not until March 1, 1975 was ASBD required on trucks and truck tractors, as noted above. Elimination of the front-axle requirement, however, would seem to more than offset this factor in terms of expected demand for post-trial years.

¹⁴ We are not attempting here to obscure Professor Bain's distinction between the "absolute capital requirement effect" and the "percentage effect" of scale economies on the condition of entry. Bain, *supra*, p. 55. As Bain notes, the absolute amount of capital required for entry may be significant because it is so large that relatively few individuals or groups could secure it. [We would modify this observation by noting that the absolute amount of capital required for entry is also important as a rough measure of the *risk* faced by a new entrant. Even where a firm is able to raise a certain sum, it may be reluctant to *risk* that money in an untried market. That is why capital costs of \$10 million pose a greater barrier to entry than costs of \$5 million, even though as a practical matter there may be many firms capable of raising either amount. That is also why we reject the suggestion at p. 16 of Respondent's Appeal Brief that even \$100 million is not a serious obstacle to firms with access to the money markets.]

On the other hand, even where the amount of capital needed to enter is within the reach of many firms, it may be so large in relation to the size of the market that it can only be invested profitably if the firm is able to secure a large share of the market. While \$10 million may be a "moderate" impediment in absolute terms, it is clearly an enormous barrier when matched against a potential market of only \$40-50 million in sales.

¹⁵ The comparable figure for Kelsey-Hayes exceeds \$3.1 million. (CX 43, CX 242L *in camera*; CX 248B)

ment to any firm whose goals in entering are other than philanthropic.¹⁶

[13] Respondent urges that we acknowledge the newness of this industry (which we do), gaze into our crystal ball, and foretell the day when the industry, rather than consisting of sellers of systems, will consist of a larger number of sellers of the components of ASBD (principally the sensor, logic, and valve) all having entered at minimal cost. On the basis of the record before us we believe such a prediction is unwarranted. While it is clear that some standardization of the sensor (which accounts for 15-30 percent of the price of ASBD, Tr. 716, 1126, 1294, 2648, 4341 all *in camera*) has occurred (I.D. 22) a similar result for the logic and valve is less easy to discern.¹⁷ The market involved here is one of *systems* manufacturers which sell to manufacturers of trucks, truck trailers, and truck tractors. Some systems manufacturers may purchase various components from one or more suppliers, but these suppliers cannot realistically be regarded as potential market entrants for reasons detailed by the ALJ at I.D. 57-59.¹⁸ If forced [14] to make a prediction about this market, we think it more likely that the future will find it even more concentrated than it is already, as some of the seven firms already present conclude that they cannot realize the profit most seem to feel they need to reap an adequate return on their investments. (Cf. Tr. 2222)

Respondent argues that testimony by industry members regarding "breakeven" points is not probative of the existence of high scale economies. In essence it is respondent's position, as amplified by its expert witness at Tr. 7541 ff. that merely because all the existing

¹⁶ The record also reflects a substantial time component to entry. It has taken many firms four or more years to develop an ASBD and prepare to market it. (CX 190B, 191Q, 194B, 556B, Tr. 442, 1027, 1069-70, 1077, 1080-81, 1105, 1670-71, 2444 *in camera*, 5849) although evidence also indicates that one entrant was able to effect entry in a shorter period (Tr. 669, 727-31, late 1971 to mid. 1974). The time required for entry is obviously a barrier because the greater the time needed for entry, the more likely it is that the market conditions which make entry attractive will change.

¹⁷ There is presently little interchangeability of logic modules and valves between ASBD producers (Tr. 1080, but see Tr. 4179, 4181 *in camera*) and the economic incentives to standardize or make interchangeable logics and valves are apparently less than those existing for wheel end hardware. (Tr. 2452-53) Some manufacturers combine the logic and valve into a single unit, which is thought to simplify installation by OEM's, although opinions differ as to whether this matters. (e.g., Tr. 692 *in camera*, Tr. 2672-73; see also I.D. 24) Moreover, the desire for single source responsibility militates against a components market. (I.D. 27) Standardization of the sensor alone apparently does not vitiate this consideration. (Tr. 1025-26)

¹⁸ Moreover, even on a components basis, the record indicates substantial scale economies that would tend to discourage entry. (e.g., Tr. 4384 *in camera*, 4318) With respect to logic modules, one manufacturer was able to grant a per-unit price concession of 10 percent as volume was increased from 30,000 to 100,000 units. (Tr. 4296-7, 4318) In the case of valves, testimony indicated that at least 50,000 units of production might be needed to allow entry at costs comparable to existing competitors. (Tr. 4377 *in camera*) 50,000 units would represent nearly 13 percent of the 1975 unit universe. Complaint counsel suggest a figure of 72,000; but the witness stated "you could probably go as low as 50,000. . . ." Tr. 4377. While existing competitors may not be producing at minimum efficient cost, they are surely (by definition) not producing below it; hence the 50,000 figure, if anything, understates the volume needed to achieve minimum efficient scale. (See CPF 73; Respondent's *In Camera Reply to Complaint Counsel's Proposed Findings*, p. 1).

members of the industry have chosen to enter with capital investments that require capture of 15 percent, 20 percent, 25 percent or more of the market to realize an adequate rate of return does not prove that some new firm could not produce ASBD equally as cheaply with a smaller capital investment that required only a tiny fraction of the market to make the investment profitable.¹⁹

[15] We agree that as a theoretical proposition the percentage of a market which an existing plant requires to "break even" is not necessarily indicative of that percentage of the market which a new entrant would need to capture in order to enter at the minimum efficient scale, because the existing plant may be larger than necessary to operate at minimum efficient scale. But merely because the testimony of industry witnesses is not as valuable as a more detailed economic analysis (of the sort that neither side has proffered and the industry's youth probably precludes) is, we believe, no reason to disregard such testimony in this case.

Each of the firms which entered this market presumably had to make a judgment as to the level of investment necessary to permit production at the lowest possible cost. While it is understandable that a firm may choose to enter an industry with greater capacity than needed to ensure minimum cost production (because the firm desires a larger market share and larger profits²⁰) we must presume that the decision to enter reflects some balancing of risks against competitive necessities. A firm may not confine itself to the minimum efficient plant size, but neither would it seem likely to make an *initial* investment in an *untried* industry that is grossly in excess of what it believes necessary to compete on an equal footing with other industry members. Each of the firms now competing in ASBD was, only a short time ago, in the position of entering *de novo* into ASBD. One firm, whose representatives testified, had failed to make successful entry after substantial expenditures (Tr. 2444). Each of the witnesses testifying with regard to scale economies expressed their belief that scale economies are high, as reflected by the fact that a large percentage of the market was deemed necessary to permit their firms to enter the market or to remain in it once

¹⁹ Respondent also objects to the seeming inclusion by industry witnesses of research and development expenses as part of necessary investment when estimating what market share they needed to break even. RB 21. The experts disagree on the relevance of R&D expenditures in the measurement of economies of scale. (Compare Tr. 7562-64 with Tr. 7264.) In our view R&D is relevant in estimating economies of scale to the extent that a new firm may have to invest in R&D in order to enter on an efficient basis. Because R&D expenses may be slightly lower for second-generation entrants in this industry is some reason for assuming that efficient entry may be possible at a lower cost in the future, just as added certification costs (see p. 12 *supra*) may increase the necessary minimum investment.

²⁰ In this regard it also appears that the original entrants may have overestimated the likely size of the market, e.g., CX 244D, Tr. 2208 *in camera*; 2220.

having entered. (I.D. 39) Allowing, as we do, for some exaggeration, uncertainty, and imprecision in the estimates of these witnesses, (who gave figures ranging from 16 percent to 50 percent) we nevertheless believe it is correct to conclude that scale economies in this small market are "high" (i.e., 10 percent or more) and that firms are not likely to contemplate entry in the foreseeable future [16] except on the supposition that they must capture 10 percent or more of this market to get in. This is obviously a formidable barrier to entry because, as acknowledged by both sides, where a firm needs a substantial share of the market to enter profitably and efficiently, the struggle to obtain such a share can be anticipated to reduce prices below the level which attracts entry in the first place. (see n. 4 *supra*)

Product Differentiation Barrier

We think the ALJ's conclusions with respect to the effects of product differentiation in this market are well-balanced and properly reflect the record, although we would amplify them in a few respects. Product differentiation is generally less significant in the case of producer goods than it is for some consumer goods. (I.D. 41) Nevertheless, given the safety-related character of the product in question, the record suggests that firms are at an advantage if they have a reputation for high quality and reliability, both with respect to other automotive components and with respect to ASBD. In part because ASBD is a safety-related item, purchasers have shown reluctance to try any new supplier for fear of new problems and major consequences if failures occur. (Tr. 561-62, 1082-83, 1181, 2611-12, 4359 *in camera*) Reluctance to switch suppliers also stems from the long lead time required to engineer a given ASBD system into a truck tractor. (Tr. 1180-81) For these reasons it is likely that a new entrant would find itself at a modest disadvantage compared to existing competitors, necessitating some additional promotional expenditures.²¹ While this barrier is, as Judge Howder concluded, hardly "insurmountable" it is cause for concern, particularly in combination with the more significant barrier posed by capital costs and scale economies. [17]

In light of the considerations above we believe that the ALJ's characterization of the competitive climate in ASBD as "sufficiently unhealthy" (I.D. p. 109) to warrant condemnation of the merger is

²¹ Each current ASBD producer spent "a lot of money" on advertising through direct mail and brochures so as to enhance their reputation with the OEM's and their fleet customers. (Tr. 2220-21) Such advertising stressed the firms' reputation in ASBD related fields as well as their reputations in the heavy duty vehicle field. (CX 47C, 190B, 191P-Q, 198N, 199C, 200, 201, 550G)

apt. The effect of this merger will most likely be to remove from the competitive reach of potential entrants into the ASBD market (or existing fringe competitors in the ASBD market) the possible patronage of a major purchaser whose business may be necessary to permit entry into, (or survival in) the market by such firms. One would not, of course, necessarily expect the full effects of this merger to be felt while the trial of the case is pending, since whether or to what extent the respondent chooses to patronize Kelsey-Hayes is a matter solely within its own control. Nevertheless, even such evidence on this point as now exists suggests cause for concern. As Judge Howder found, Fruehauf purchases roughly half of its ASBD requirements from Kelsey-Hayes, a development that appears to have surprised some industry observers. As of August 1973, shortly before the merger, competitors of Kelsey-Hayes did not consider it a likely candidate to become a standard supplier of ASBD to Fruehauf, due primarily to its lack of an in-axle sensor design. As of that August, shortly before the merger, Kelsey-Hayes was not and knew it was not an approved ASBD supplier to Fruehauf because of its lack of such a sensor. (I.D. 49) Because of Fruehauf's acquisition of Kelsey-Hayes in October 1973, the latter's competitors believed that it would get at least a part of Fruehauf's patronage, particularly given Fruehauf's well-recognized policy of buying in-house, notwithstanding that it may sometimes be more economical to purchase from outside sources. (I.D. 50-51) In fact, Fruehauf eventually selected Kelsey-Hayes to supply ASBD for its dry freight vans, comprising 50 percent of production. (I.D. 53)

The reaction of one participant in this market, a competitor with a small market share, regarding the effects of the merger upon his company was as follows:

... we thought we had an opportunity for half the business at Fruehauf, which we no longer have. Beyond that, we would have smaller volume, and as I mentioned earlier, the business is volume sensitive. It would have some impact, and I have not calculated the amount, but some impact on our cost. (Tr. 1153)

[18] Now it is not the role of the Federal Trade Commission to determine from whom Fruehauf Corporation should purchase the components for its truck trailers. It is to be hoped that it will make such decisions upon the basis of which supplier offers it the best product for the lowest cost, thereby inducing all suppliers to strive to improve their products and lower their costs. A major difficulty with vertical mergers, however, is that they make it less likely with respect to the merging customer that this process will occur, because the incentive of other firms to compete for the patronage of the

merged customer is diminished and this incentive may be the one that is needed to ensure entry into a market or continued participation in it by a small firm.²²

In this highly concentrated industry, given the difficulty of entry and the necessity for firms to capture significant market share in order to compete, we believe that the acquisition by a major customer of the largest firm in the market can only serve as a substantial deterrent to competition and a solidifier of existing market power, by (1) enhancing the market share of the largest firm, (2) increasing already significant barriers to entry, and (3) making more difficult continued participation in the market by firms with smaller market shares. For each of these reasons we believe that Judge Howder correctly found that the merger is likely substantially to lessen competition in the market for heavy duty antiskid braking devices. [19]

Precedent in this area is not inconsistent with our conclusion. As respondent observes, there are no *per se* rules with regard to vertical mergers, and each one must be judged in light of existing market conditions. For this reason prior cases involving different markets and different market conditions give at best imperfect guidance.²³ We would, however, observe that the degree of vertical foreclosure threatened by this merger in ASBD, 4.7 percent of dollar volume and 5.4 percent of unit volume in 1975 and most likely somewhat more in later years (p. 9 *supra*.) is hardly *de minimis* and exceeds the amounts of foreclosure found in vertical mergers that have been previously condemned, e.g., *Brown Shoe Co. v. United States*, 370 U.S. 294 (1962); *Ash Grove Cement v. FTC*, 85 F.T.C. 1123, 1164-65 (1975); *United States v. Kimberly Clark*, 264 F. Supp. 439, 462-3 (N.D. Cal. 1967). Moreover, while this case does not involve certain of the conditions which troubled the Court in *Brown Shoe*, in other respects it presents greater cause for alarm, because the industry in which this merger's harmful effects are predicated is much more concentrated and difficult to enter than those involved in *Brown Shoe*.

Respondent highlights the fact that in *Brown Shoe* a major

²² In this regard it should be noted that a major segment of the ASBD market is already foreclosed to competitors because General Motors is largely supplied by its subsidiary AC. (I.D. 54) It is also noteworthy that no claim is made that this merger will promote greater efficiency and lower costs in the production of ASBD or in any of the other markets involved. Thus, one oft-proclaimed justification for vertical integration is not present here.

²³ This observation applies with equal force to the Department of Justice "Merger Guidelines," 1 CCH Trade Reg. Rep. ¶4510 at 6881. These Guidelines indicate that the Department will ordinarily challenge vertical mergers in which the supplying firm accounts for more than 10 percent of its market (here Kelsey-Hayes accounts for about 30 percent) and the acquiring firm accounts for more than 6 percent of purchases (here Fruehauf accounts for 4.7 percent of dollar volume purchases and 5.4 percent of unit volume in 1975, and probably more thereafter). These Guidelines are merely a public statement of intended allocation of prosecutorial resources; where the relevant statistics depart slightly in either direction we fail to see how the Guidelines can be of much comfort to either side.

purpose of the merger was to force the acquirer's product upon the acquired customer, whereas here the acquisition was purportedly intended purely as a business investment. The purpose of a vertical merger, to the extent that it can be reliably discerned (and quite often it cannot be) may be of some assistance in predicting the merger's probable effect. But where the asserted purpose of a merger is benign, it must take a back seat to more objective evidence of what is likely to result. [20]

Moreover, while a major reason for Fruehauf's acquisition of Kelsey-Hayes was arguably Kelsey-Hayes' perceived value as an investment, the opportunities for strengthening Kelsey's position in at least one relevant market were not lost on Fruehauf management. An August 16, 1973 memorandum to the Fruehauf Board of Directors cited as one advantage of the merger that:

... making the Kelsey unit standard on our trailers will have a beneficial effect on Kelsey's sales of anti-skid control systems to other trailer manufacturers. . . . CX 244D.

This is, of course, precisely the effect that Section 7 was intended to prevent. There is a great advantage in the ASBD market, as we have observed, in having experience and reputation, and being supplier to the nation's largest truck trailer manufacturer is obviously an important selling point for any ASBD producer. But whether or not a firm is entitled to claim this selling point should depend upon whether it offers Fruehauf the best bargain, and not upon whether it is in Fruehauf's interest to bestow patronage upon the firm because Fruehauf owns it.

We hasten to add our acknowledgment that the reasons offered by a subordinate for taking action cannot necessarily be cited as reasons for the action, but clearly Fruehauf did not undertake this merger unaware that it might yield certain anticompetitive results. For this reason as well we are unpersuaded that evidence of other, competitively neutral motivations for the merger should lead us to discount solid record evidence of its probable substantial anticompetitive effects. [21]

HEAVY DUTY WHEEL MARKET

A heavy duty wheel consists of a hub, a center member, and a brake drum. (I.D. 153) There are basically two types of heavy-duty wheels, (1) cast spoke and (2) disc, which are not freely interchangeable on the same axle or vehicle and are not even generally found in the same fleet. (I.D. 155) Nevertheless, both types of wheels compete

for direct sales to vehicle producers and for indirect sales to ultimate users. (I.D. 161)

The *cast spoke wheel* consists of a center member (called a "spider") with an integral hub, plus a brake drum and a demountable rim. The spider (with hub) and drum are usually sold assembled together. Rims are usually purchased separately and attached to the wheel and drum assembly by the OEM. (I.D. 157)

The *disc wheel* consists of a center member (called, unsurprisingly, a "disc") with an attached rim, plus a brake drum and a hub. The OEM generally purchases the hub and brake drum assembly separately and attaches it to the disc (with attached rim). (I.D. 158-159) A heavy duty cast spoke wheel (which includes a hub) plus two rims, performs the same basic function as two heavy duty disc wheels (which include rims) plus a hub. (I.D. 159)

The major sellers of heavy duty wheels generally produce either the spider for the cast spoke wheel or the disc for the disc wheel. Each of the spider producers (Dayton-Walther, Kelsey-Hayes, Webb, and Erie) also manufactures heavy duty drums, and all but the smallest, Erie, also make hubs. (I.D. 165-66) Similarly, the disc producers (Firestone, Budd, Motor Wheel, Kelsey-Hayes, Alcoa) with one exception (Alcoa) also manufacture the attached rims. Three of the five disc producers also make heavy duty drums and hubs. (I.D. 167, 169) Firestone, Motor Wheel, and Budd dominate the production of discs, while Kelsey-Hayes produces discs for the lighter end of the market, 14,000-26,000 tons Gross Vehicle Weight. (I.D. 169, 171) [22]

As the foregoing suggests, the key components of a wheel assembly may well be manufactured by different companies. Moreover, some OEMs purchase all heavy duty wheel components separately. (I.D. 163) As a result, there are some companies which do not produce a center member (spider or disc), or sell a complete wheel assembly, which may nonetheless be considered as being in the wheel market by virtue of their production of heavy duty hubs or brake drums.²⁴ (I.D. 173 ff; I.D. p. 63) However, as noted above, the major factors in the industry are those firms which manufacture the center member as well as other components. (I.D. 165) Four of these firms, Firestone (disc), Dayton-Walther (cast), Kelsey-Hayes (principally cast) and Budd Co. (disc) accounted for 69.52 percent of dollar volume of sales in 1972, and two others, Motor Wheel and Webb, together with Rockwell and Reyco (which do not manufacture the center member) brought the market share of the top eight firms to 93.05 percent. (I.D. p. 64)

²⁴ For example, make both hubs and drums which may be sold attached to the axle. (I.D.

Successful new entry into the heavy duty wheel market appears to be an uncommon occurrence. The existing spider manufacturers have been in the market for many years, with Webb (entry 1946) the most "recent" entrant among existing manufacturers. (I.D. 248) No witness could identify any significant entry into the production of discs for heavy duty disc wheels or heavy duty rims within the last ten years. (I.D. 249) Similarly, nearly all producers of heavy duty drums are longstanding market participants. Entry into heavy duty brake drums and hubs in the last ten years has been confined, with one exception, to diversification by producers of other finished heavy duty wheel components. (I.D. 251)

Respondent generally ascribes this situation to the stellar performance of the market, arguing that entrants have been discouraged by the low rates of return achieved by existing competitors which are under "tight competitive pressure." Complaint counsel contend to the contrary, that profits are above normal, and that the absence of new entry [23] may be ascribed rather to significant entry barriers.²⁵

Much of the disagreement in the briefs regarding the magnitude of barriers to entry into the heavy duty wheel market appears to stem from disagreement over how "entry" should be defined. It is clear that "entry" on a level approaching that of the industry leaders is not a simple matter, and barriers thereto are significant. Entry at more modest levels, that may be insufficient to challenge the dominance of industry leaders, is correspondingly easier.

The most detailed record evidence regarding costs of entry into cast wheels was provided by respondent's expert witness on foundries, Mr. Joseph Greenberg. He prepared a study estimating costs of entry for production of spiders and drums at four different levels of plant addition and at various levels of production, ranging from 50,000 to 300,000 units per year. Mr. Greenberg's study indicates first of all that unit costs of production decline at least up to levels of 300,000 units, (CX 280A-F; CX 281J, O) which constitutes 8.9 percent of average heavy duty wheel production for the years 1972-74. His study further indicates that entry via production of cast steel wheels and cast iron drums at a level of 300,000 units using new equipment would cost \$12.7 million where some foundry equipment was added to an existing plant, \$18.7 million for plant addition

²⁵ Like Judge Howder we find ourselves unable to reach any definitive conclusion with respect to overall profits in the heavy-duty wheel market. (I.D. 247) Demand for the product is somewhat cyclical, and it appears that there have been lengthy periods during which at least some of the larger and possibly more efficient industry members have enjoyed profits substantially above the norm for all industry. (e.g., CX 347A-C, *E in camera*, CX 746-748 *in camera*) Moreover, the industry has experienced numerous periods of severe shortages, I.D. 253, to which the response has sometimes been expansion of capacity by existing firms, I.D. 323, (suggesting that it was profitable to do so) rather than entry by new firms, which may have been deterred by entry barriers, see textual discussion *infra*.

together with new buildings, and \$20 million for "scratch" entry with a new plant on a new site. (RX 280A) Each of these estimates [24] would be lowered by the use of used equipment (an inferior alternative for reasons explained by the witness at Tr. 4998), or production at lower levels of output.²⁶

Respondent contends that Mr. Greenberg's estimates of scale economies are unreliable because they are merely "engineering" estimates and do not take account of the effect of cyclicalities of demand, which *under certain circumstances* may allow a smaller plant to produce more cheaply when operating below capacity over a business cycle than a larger plant which would be more efficient if able always to operate at full capacity. As Professor Bain himself observed, however, a primary reason why this result *may* occur is that "smaller scale operations may frequently be 'less capitalistic,' in the sense of using a smaller proportion of labor and materials than larger-scale operations," thus giving the smaller plant an advantage in adjusting costs to fluctuations in production. (Bain, *supra*. p. 63) While a theoretical possibility, it has not been shown that this phenomenon operates here.²⁷ In our view Judge Howder [25] properly took into account the estimates of witness Greenberg in assessing scale economy barriers, and we believe his conclusion at I.D. p. 110 that these barriers are significant is supported by the preponderance of the evidence, reviewed in more detail at I.D. 224-235.

Similarly, we believe that Judge Howder properly concluded that capital barriers to entry into the heavy duty wheel market are substantial and significant. (I.D. p. 110) As Mr. Greenberg's estimates indicate, entry at an optimal level of production for spider and drums is likely to cost from \$12.7 million to \$20 million; entry with facilities capable of producing 200,000 units instead of 300,000 would cost from \$9.1 to \$15.2 million (RX 280A). The deployment of used equipment might lower these estimates somewhat, but would represent a less reliable, efficient, and therefore likely mode of entry. (Tr. 4998)

In an effort to summarize fairly the evidence of record, Judge Howder also cited evidence respecting other, sub-optimal modes of

²⁶ Production costs might also be lower for ductile iron wheels as opposed to steel spiders, but the record indicates that iron wheels comprise a very small percentage of industry production and steel wheels are widely preferred. (I.D. 214) We thus believe that Judge Howder properly disregarded evidence regarding the cost of entry via production of cast iron spiders.

²⁷ Respondent's second reason for disagreeing with its witness's estimate of scale economies, *i.e.*, that wheel assembly lines may be used for more than one product (a proposition for which there is only limited record support) in some ways undermines its first, since it suggests that a 300,000 unit wheel line could be utilized for other products during periods of slack demand for wheels, thereby allowing realization of the full cost advantage which

entry, including entry into ductile iron wheels (I.D. 215) and entry by substantially sub-optimal plants (I.D. 218-219). While we see no need to "strike" these findings, as complaint counsel urge, we must simply reiterate that in our view they do describe sub-optimal modes of entry, which would be likely eschewed by any firm which sought to provide significant competition to the long-established dominant firms. Accordingly we conclude that capital costs of heavy duty wheel production constitute a not insubstantial barrier to entry into that market.

The heavy duty wheel market has been characterized by recurring periodic shortages since World War II, and particularly within the past twelve years (*i.e.*, 1966, 1968-69, 1973-74; I.D. 253). The shortage in 1973-74, possibly the most severe, substantially disrupted trailer production, as various equipment manufacturers found themselves unable to locate alternative sources of supply despite their willingness to pay premium prices. (I.D. 255)

Fruehauf's role in the heavy duty wheel industry must be understood in light of its position as a major purchaser of the product, accounting for nearly 6 percent of industry purchases in the 1970-72 period. Dependent upon outside sources for its supply of heavy duty wheels, Fruehauf had strong motivation to integrate into wheels or otherwise expand their [26] supply to ensure itself a source of the product. The record reflects efforts by Fruehauf within the past decade to produce first fabricated aluminum (I.D. 282 ff.) and then fabricated steel wheels, (I.D. 294 ff.) as substitutes for those it was currently purchasing. Alternatively, Fruehauf has sought to encourage production by others as a source of supply for itself. In the late 1960's Fruehauf considered a joint venture with Webb in which Webb would guarantee Fruehauf a supply of wheels. (I.D. 280) In 1967-68, when the wheel operations of Dayton-Walther were struck, McConway and Torley decided to diversify into heavy duty wheels and sought out Fruehauf, a leading purchaser desirous of securing an additional source of supply. Fruehauf encouraged McConway and Torley in its endeavors, which are described by the ALJ at I.D. 304-305. McConway and Torley ultimately proved unable to remain profitably within the market, and it exited entirely in 1974. Fruehauf also engaged in a joint effort with U.S. Steel leading toward the production of a fabricated steel wheel, which was abandoned in September 1973. (I.D. 309-312)

It requires no feat of imagination to suppose that the foregoing pro-competitive ventures on the part of Fruehauf and those it encouraged are much less likely to be repeated now that Fruehauf has acquired a major producer of heavy duty wheels. No longer

Fruehauf possess any incentive to encourage entry by others into heavy duty wheels. No longer does it possess any incentive to produce wheels on its own. And no longer can potential entrants into wheel production view Fruehauf as a likely source of patronage. We think that these circumstances precisely illustrate the evils of "foreclosure." In a market in which entry is no easy matter, the possible patronage of a major buyer may constitute the difference between a firm's deciding to enter and deciding not to, or between a firm's remaining within a market or leaving it. Fruehauf's ownership of Kelsey-Hayes, and the likelihood that it will turn to it for supply, means there exists one less source to which a possible entrant may look in the search for customers needed to render its entry attractive. The record suggests that a firm may require as much as 8.9 percent of the market to enter on a cost-competitive basis with the leading firms. Acquiring even part of the custom of Fruehauf can take one a long way toward that goal. [27]

While the record reflects at most a small shift of Fruehauf's patronage to Kelsey-Hayes during the pendency of this litigation (e.g., I.D. 321), we agree with the ALJ that given Fruehauf's propensity to purchase in-house it is likely that at such time as this merger is no longer under a cloud Fruehauf will turn to Kelsey for supply. Certainly that is the widespread fear of competing wheel producers (I.D. 320; Tr. 2546-47) and it cannot be said to be at all unreasonable under the circumstances.²⁸

A further likely anticompetitive effect of this merger may be felt in the truck trailer market, which, as observed hereinabove has suffered from periodic shortages of heavy duty wheels, at times necessitating curtailment of production. During periods of shortage

²⁸ Respondent argues notwithstanding Fruehauf's 5.8 percent average share of wheel purchases for 1970-72, that the actual amount of likely foreclosure should more properly be assessed as 3.9 percent of the market, representing Fruehauf's total cast wheel purchases. The ALJ concluded that while Kelsey-Hayes does not manufacture disc wheels for heavier truck trailers, it could readily shift production to such wheels if guaranteed an outlet for them, and he, therefore, rejected respondent's argument.

There is a certain inconsistency in respondent's position, inasmuch as it has maintained that the only relevant wheel market in this case is that for all heavy duty wheels, and that (trailer) cast wheels alone are not a separate submarket.

Nevertheless, we think that perhaps the most realistic way to characterize the situation is to say that the percentage of likely foreclosure here is a "weak" 5.8 percent or a "strong" 3.9 percent. Because of differences in disc and cast wheel production methods, Fruehauf is arguably less likely to purchase all its wheel requirements from Kelsey than otherwise. But because of similarities in both production methods and in end use of cast and disc wheels, Fruehauf is more likely to purchase in excess of 3.9 percent of all purchased wheels from Kelsey than it would be were disc and cast in fact two separate markets.

Respondent also suggests that the relevant market shares should be diluted because the ALJ failed to consider in-house production of wheel components by OEM's in tabulating the size of the market. Evidence regarding in-house production is fragmentary and suggests at most occasional machining of wheel components other than the center member by various producers to satisfy a small part of requirements. It does not appear, nor has respondent adduced any evidence to suggest that addition of such production would significantly increase the size of the market, or, thereby, significantly reduce the relevant market shares. Moreover, exclusion of in-house capacity does not in any way alter the significance of the percentages derived by the ALJ as a measure of previously unforecasted demand for wheels which is now subject to foreclosure by virtue of the challenged merger. [28]

one would generally expect a supplier to allocate supply among its customers, or to favor customers based upon the willingness of each to pay. With a major wheel producer now owned by a major purchaser, however, and a purchaser which has previously made strenuous efforts to find sources of supply so as to avoid the debilitating effects of shortages, we think it likely that any future shortages will find Kelsey-Hayes favoring Fruehauf, the industry's largest member, at the expense of other customers. (I.D. 319, 324) Accordingly, we believe the record warrants the conclusion that this merger may tend to substantially lessen competition by foreclosing competitors of Fruehauf from at least a portion of the supply of Kelsey-Hayes which they might require and would otherwise obtain during times of shortage. Given that output-curtailling shortages of wheels have not been an uncommon occurrence, we believe the law does not require that its likely harmful effects be shown to have occurred in fact before the merger may be condemned.²⁹

For the foregoing reasons, then, we conclude that respondent's acquisition of Kelsey-Hayes runs afoul of Section 7 by foreclosing Fruehauf as a source of patronage of heavy duty wheels in a market setting in which such foreclosure is likely to increase barriers to entry, make new entry more difficult and less likely, and thereby enhance the market power conferred by a highly concentrated market structure into which entry was previously difficult to begin with. Additionally we believe that the merger is likely to lessen competition substantially by foreclosing Kelsey-Hayes as a source of supply to truck trailer manufacturers should shortages of supply recur. [29]

As in the market for antiskid braking devices, our conclusion is consistent with existing precedent, albeit such precedent involves somewhat different factual situations and economic realities. The percentages of foreclosure here exceed percentages found to warrant condemnation in *Brown Shoe, supra* in a market setting involving greater concentration and equivalent or greater barriers to effective entry. The observations we have made at p. 19 *supra* with regard to ASBD apply here generally as well. [30]

²⁹ As a practical matter it will always rest within the power of respondent to prevent the occurrence of anticompetitive foreclosure during the pendency of a merger challenge and accordingly the non-occurrence of such effects cannot be probative of whether they are likely to occur in the future, *Federal Trade Commission v. Consolidated Foods Corp.*, 380 U.S. 592, 598 (1965).

We note that even absent evidence of persistent shortages, a violation in a vertical merger may, under appropriate circumstances, be proven in the market for the end-product made by the merging customer, by virtue of foreclosure of competitors of the merging customer from access to production of the merging supplier. *e.g., Ash*

POTENTIAL COMPETITION AND ENTRENCHMENT COUNTS

Like the gladiator who thrusts a second and third time towards his opponent, having first struck him directly through the heart, complaint counsel have sought to show this merger triply condemned by asserting, in addition to the traditional allegations of vertical foreclosure that the merger removed Fruehauf as a potential competitor into the heavy duty wheel market and entrenched it as the dominant firm selling truck trailers.³⁰ We address these contentions below.

Potential Competition

The complaint alleged as a separate theory of violation that Fruehauf, prior to its acquisition of Kelsey-Hayes, was likely to enter the heavy duty wheel market on its own, and that by virtue of its acquisition it was removed as such an entrant. Complaint counsel assert, and the ALJ concluded, that Fruehauf was one of a few, and perhaps the most significant potential entrant into the heavy duty wheel market. Fruehauf's entry, it is hypothesized, would likely have occurred at such time as wheel prices rose by a certain amount (perhaps 50 percent), but by virtue of its acquisition of a wheel supplier it is no longer likely to attempt *de novo* entry under any circumstances, thereby depriving the market of the pro-competitive influence of a significant potential entrant.

We have no quarrel with complaint counsel's legal theory, but, while a close question, we do not believe it is supported by a preponderance of the evidence. To some degree this count overlaps with the vertical foreclosure allegation. Clearly Fruehauf did exert a valuable procompetitive effect upon the heavy duty wheel market because of its status as a dissatisfied, unintegrated *customer*, eager to secure, and willing to encourage, new sources of supply by third parties as well as itself. These activities are summarized *supra* at pp. 25-26 and in the initial decision at I.D. 280-312. [31]

Viewed solely as a potential *entrant* into heavy duty wheel production, Fruehauf looms somewhat less impressive. As respondent observes (and complaint counsel do not contest) Fruehauf had no evident intention and was most unlikely to enter the market by either of the conventional means, production of cast spoke or disc wheels. Rather, Fruehauf had experimented with production of fabricated aluminum and steel wheels, but abandoned the experi-

³⁰ A fourth thrust was intercepted at trial by Judge Howder, who dismissed the charge that the merger had entrenched Kelsey-Hayes as a dominant firm. Respondent, understandably, appears to see its adversary as more nearly like the andabata, flailing about in hopes that at least one of its blows will prove telling.

ments as being economically unfeasible given then-prevailing prices. (I.D. 289, 292, 299) In rejecting fabricated wheels Fruehauf was not alone; they constitute but a very tiny fraction of the wheel market, and other companies have failed in efforts to produce them economically. (I.D. 257-259) While Fruehauf retained the plans of its aborted ventures to enable it to reinstitute production in the future, it is not clear to us that it was likely to do so, barring some very large increase in prices of the sort that might well have induced other vehicle producers to consider entry themselves.³¹

In our view then, the evidence does not demonstrate that Fruehauf was one of a few significant potential entrants into the heavy duty wheel market. Under no circumstances was it likely to attempt to breach the rather formidable barriers to entry into this market via traditional means.³² [32] And only given very sharp price increases was Fruehauf likely to re-attempt entry via the sub-optimal means it had previously adopted. To be sure, we think it quite clear that but for its acquisition of Kelsey-Hayes, Fruehauf would have continued to agitate in procompetitive fashion for increased wheel production. But, as noted above, we think that this unfortunate effect of its merger is most properly analyzed as the consequence of its being foreclosed as a source of patronage for other wheel manufacturers and potential manufacturers, rather than exclusively as the consequence of its being removed as a potential manufacturer itself.

In dismissing the potential competition count we hasten to add that we do not find it fatal to complaint counsel's case that they have failed to prove that Fruehauf was likely to enter the market in some "near future" defined without reference to the level of prices in the market. To the extent that potential entrants, lurking on the edge of a market ready to enter serve any procompetitive function at all, it is to ensure that those already in the market do not take liberties in setting prices or other terms of sale which their market positions may allow but which are inconsistent with competitive norms. Potential entrants, when perceived as such by those already in the market, may deter anticompetitive mischief by the mere threat that they will enter should prices get out of hand. [The so-called "edge" effect. *United States v. Falstaff Brewing Corp.*, 410 U.S. 526, 534-35 n. 13 (1973); *United States v. Phillips Petroleum Co.*, 367 F. Supp. 1226, 1239 (C.D. Cal. 1973), *aff'd*. 418 U.S. 906 (1974).]

³¹ Judge Howder cites testimony by a Fruehauf employee that if the price of wheels to Fruehauf were to rise by 50 percent "it would change the whole picture" as to its entry. (I.D. 293; Tr. 5159-60)

³² Respondent properly points to an inconsistency in complaint counsel's arguments regarding potential competition and vertical foreclosure. In seeking to measure barriers to entry, complaint counsel have done so with reference to the most desirable, efficient modes of entry. Fruehauf, of course, sought to enter in a somewhat different, less expensive way. Complaint counsel have convinced us that entry barriers into heavy duty wheels are

Even when largely unrecognized by industry members, however, potential competitors may, as such, serve the public good by actually entering a market *at such time as* sufficiently supra-competitive price levels should make it worth their while. Should competition break out for some sustained period (as it has been known to do in even the most intensely concentrated industries) the actual potential entrant may remain just that—*potential*. But its removal via merger as an actual potential entrant may be no less a loss for competition, because such removal renders it that much more likely that once the internal impulses to competition are contained, and tacit collusion or inefficiency holds sway, there will be no firm outside the market to enter and drive prices down. [33]

From the foregoing we think it follows that the inability of enforcement authorities to demonstrate that a potential entrant is likely to enter a market in the “near future” should constitute no bar to undoing its merger with a substantial market participant, because the purpose of the law, to preserve competition and increase the likelihood that it will persist, may be satisfied whether or not the potential entrant becomes actual within some brief period of time. To require that the likely time of entry be specified in absolute terms, rather than in contingent ones, will render the law useless to preserve the beneficial effects of potential competition, because mergers by potential competitors during periods when prices approach competitive levels (and *de novo* entry is not imminently contemplated) will be immune to challenge.³³ [34]

Entrenchment

The ALJ found that Fruehauf was the dominant firm in its market and that its acquisition of Kelsey-Hayes conferred on it a significant competitive advantage, by virtue of Kelsey's manufacture of two critical components of truck trailers, ASBD and heavy duty wheels. (I.D. p. 114) Drawing on a line of cases in which “conglomerate” mergers involving dominant firms have been condemned because the mergers entrenched those firms as leaders in their market, *e.g.*, *FTC v. Procter & Gamble Co. (Clorox)* 386 U.S. 568 (1967), the ALJ

³³ We do not mean to suggest that inquiry need or should necessarily be made, as it was here (Tr. 5159-60), into what prices or profit margins would induce the acquiring firm to contemplate entry. Subjective evidence such as managerial testimony that an acquiring firm would have entered *de novo* or by toehold acquisition only under highly improbable circumstances may be either too elusive or too unreliable to shed much light on the true propensity for future entry. Instead, objective evidence regarding a firm's likelihood of entering a market (*e.g.*, technological, marketing, and managerial capability, capital availability, corporate history and prior growth) may permit the inference that it would be likely to enter given a shift in market conditions. And, in turn, the likelihood of such a shift may, under appropriate circumstances, be reasonably inferred from the record. We do not believe this position need prove inconsistent with *BOC International Ltd. v. FTC*, 557 F. 2d 24 (2d Cir. 1977) since the Court there recognized that “near future” could be defined in terms of objective evidence such as lead time and entry barriers.

concluded that a similar effect could be found here and assigned it as a further reason for finding a violation of law.

Once again this count overlaps considerably with the vertical foreclosure allegation. We agree that in one major respect its acquisition does give Fruehauf, the long-time leading firm in the concentrated truck trailer market, a significant advantage over its rivals. That, of course, pertains to the sure source of heavy duty wheels—a necessary product, often in short supply—that Fruehauf has acquired. This source of injury has previously been addressed in our discussion of the vertical foreclosure count. Whether, with respect to Fruehauf's leading position in the truck trailer market, this merger presents any further cognizable danger is a question that we need not and do not reach. [35]

REMEDY

Judge Howder, at complaint counsel's urging, recommended entry of an order requiring total divestiture of Kelsey-Hayes. Respondent has suggested on appeal that, assuming a violation is found, some form of partial divestiture, involving only assets devoted to production of ASBD and heavy-duty wheels, be imposed.³⁴

The purpose of relief in Section 7 cases is to undo the probable anticompetitive effects of the unlawful merger. Restoration of competition to the state in which it existed at the time of the merger, or to the state in which it would be existing at the time relief is ordered, is the goal. Ordinarily this goal may be approached (if not altogether achieved) by restoring the acquired entity as a viable competitor in the markets in which competition has been restrained.

In pursuing this objective, we think a strong presumption favors total divestiture of the unlawfully acquired entity as the surest means of accomplishing it, *Ford Motor Company v. United States*, 405 U.S. 562 (1972); *United States v. E.I. duPont de Nemours & Co.*, 366 U.S. 316, 334 (1961); *United States v. Continental Can Company, Inc.*, 1964 Trade Cases, ¶71,264 at p. 80,338 (S.D.N.Y. 1964). The government will rarely be in a position to knowledgeably carve up a company into viable components. The most that can generally be asserted with any degree of confidence is that the acquired entity was a viable competi[36]tor before its acquisitions, and is thus likelier than any of its possible parts to be a viable competitor in the

³⁴ Respondent's "Memorandum on Issues of Relief" also suggests that limitations upon purchases by Fruehauf from Kelsey-Hayes would be a satisfactory remedy. In our view, allocation of supply, while sometimes necessary, is hardly a desirable function for the government to perform. As far as we are concerned, Fruehauf should at any given time be free to buy *all* of its requirements of ASBD or heavy-duty wheels from Kelsey-Hayes if it determines, on the basis of arms-length dealing, that Kelsey is offering the best deal. Such arms-length dealing is likely to occur, however, only if ownership of the two companies is separated.

future. While the acquiring company may be in a better position than the government to know whether a viable partial divestiture is feasible, it is unlikely, particularly in the usual horizontal merger case, to be the most reliable arbiter, because its own self-interest favors leaving its divested competitor in a weaker, rather than stronger position.

Respondent observes that this argument may have less force in the context of a vertical merger, because the respondent, rather than being required to divest a competitor which it may well wish to leave weaker, is being required to divest a customer or a supplier, which it will presumably have some interest in restoring in as strong competitive condition as possible. While there may be some theoretical validity to this observation, it nonetheless remains likely that a respondent in any merger will be desirous of retaining as large a segment of the unlawfully acquired entity as possible, and this desire will inevitably conflict with the divestiture of a viable entity if the task is left, in effect, to respondent.

In an effort to explore respondent's contention that partial divestiture in this case would be appropriate should a violation be found, the Commission ordered submission by both sides of supplemental memoranda on the issue of relief. Having reviewed these briefs we conclude that respondent has not shown that the partial divestiture it suggests would be sufficient to restore Kelsey-Hayes to its former position of strength as a seller of ASBD and heavy-duty wheels independent of Fruehauf. To the contrary, we believe that the evidence indicates that only total divestiture, or divestiture of the Kelsey-Hayes Auto Truck-Group, which comprises a major portion of the assets of Kelsey-Hayes, is likely to offer the greatest likelihood of restoring competition to its pre-merger (or "but for the merger") vigor.

Respondent suggests divestiture solely of the assets at Kelsey-Hayes' Brighton plant devoted to ASBD production, and at Kelsey-Hayes' Rockford or Gunita plant devoted to heavy duty cast spoke wheel and drum manufacture. Such partial divestiture, however, would exclude the Kelsey Products Division of the Auto-Truck Group which serves as the replacement selling and servicing arm for the Group, and is thus important in the marketing of the relevant product lines, nor would it include central corporate research and development capabilities which have played a critical [37] part in the development and refinement of ASBD. (CX 90M) In addition, while complaint counsel have perhaps somewhat overstated the extent to which certain plants in the Auto-Truck Group impinge upon the markets involved in this case, it does seem clear that some

diversity of product offerings is likely to be desirable for sellers of ASBD (all but one of those currently in the market sell other braking components) and heavy-duty wheels, and certain components (such as rotors, produced at the Kelsey Kingsway plant) may be necessary in the sale of wheels (Kelsey sells wheels to a major customer in which a Kelsey spider made at Gunite is attached to a disc brake rotor made at Kingsway, Tr. 2014, 2227-2228).

Given these and other interrelationships among the segments of the unlawfully acquired corporation, we find ourselves unable to conclude that there exists a way to separate the product lines on which a finding of violation is predicated so as to preserve or restore Kelsey-Hayes, or some new entity, as a viable manufacturer and marketer [38] on a basis comparable to its pre-merger status.³⁵ It does appear, however, that there exists no need to require divestiture of those assets unique to Kelsey-Hayes' Aerospace [39] Group or its R-V Agriculture Group, should Fruehauf desire to retain these. Divestiture of the bulk of Kelsey-Hayes appears to be the surest way to effect the reconstitution of a viable entity independent of Fruehauf and capable of operating as a full-fledged producer of ASBD and heavy-duty wheels on the same basis as Kelsey-Hayes is now and was prior to this merger. In the event that a suitable purchaser cannot be located (or if Fruehauf prefers) the order leaves room to accomplish the required goal by means of spin-off, an alternative that would not be feasible were we to require the more limited divestiture proposed by respondent. We have, accordingly, entered an order requiring divestiture of Kelsey-Hayes except for assets unique to the Aerospace and Agriculture Groups. We have also enlarged the time in which Fruehauf must accomplish

³⁵ The Commission's decision ordering partial divestiture in *Warner Lambert Company*, 88 F.T.C. 503 (1976) in no way compels a comparable result here. In *Warner Lambert*, having alleged violations in more than 50 submarkets, and an overall drug market, the Commission found violations in only five submarkets accounting for less than 5 percent of the acquired firm's sales. Because Parke-Davis was a minor factor in all of the submarkets in which a violation was found, and given the large number of drug companies without positions in these markets, the Commission concluded that it was very likely that the relevant Parke-Davis market positions could be transferred to other companies with no loss of viability or restraint of trade, and without the need for divestiture of corporate-wide distribution or managerial functions, 88 F.T.C. at 504-505.

In this case the markets involved account for a much greater proportion of Kelsey-Hayes' assets (see below) and Kelsey-Hayes is the leader in one market and one of the top four producers in the other. Under these circumstances we find it impossible to conclude that piece-meal divestiture of plants and production lines will suffice to preserve Kelsey-Hayes' competitive position in the hands of any acquirer which itself is not a producer or significant customer in the relevant markets.

[The parties differ on the share of sales and assets ascribable to the affected markets. Taking only Brighton and Gunite as the measure, which excludes other plants and overhead functions that may also be relevant, it appears that in 1975 Gunite accounted for \$41 million of assets (CX 747M *in camera*) and Brighton for somewhere from \$3 to \$7 million, for a total of 17.5-19 percent of 1975 Kelsey domestic assets of \$251.5 million. On a sales basis, Gunite in 1973 accounted for 7.80 percent of Kelsey's sales (CX 746A), in 1974 for 10.5 percent of sales (CX 746B, 478S *in camera*), and in 1975 for 7.5 percent of domestic sales (CX 746C, 748V *in camera*). Over a business cycle the foregoing sales percentages might be expected to rise to reflect the capital expansion which had occurred at Gunite by 1975. Brighton in 1975 accounted for 2.38 percent of Kelsey-Hayes' domestic sales. (RX 260 *in camera*)]

divestiture from six months to one year, in accord with general Commission practice in cases of this magnitude.³⁶

An appropriate order is appended.

FINAL ORDER

This matter has been heard by the Commission upon the appeal of respondents' counsel from the initial decision and upon briefs and oral argument in support thereof and opposition thereto, and the Commission, for the reasons stated in the accompanying Opinion, has denied the appeal in major part.

It is ordered, That pages 1-110 of the initial decision of the administrative law judge, and Conclusions 1-7, 9(a)-(c), 9(f) and 10 at pp. 117-119 of the initial decision, are hereby adopted as the Findings of Fact and Conclusions of Law of the Commission except as qualified and modified by the accompanying Opinion. Other Findings of Fact and Conclusions of Law of the Commission are contained in the accompanying Opinion.

It is further ordered, That the following order to cease and desist be hereby entered: [2]

ORDER

I

It is ordered, That respondent, Fruehauf, a corporation, and its officers, directors, agents, representatives, employees, subsidiaries, affiliates, successors and assigns, shall divest all stock, assets, title, properties, interest, rights, and privileges, of whatever nature, tangible and intangible, including without limitation all buildings, machinery, equipment, raw material reserves, inventory, customer lists, trade names, trademarks and other property of whatever description, excluding the operations unique to Kelsey-Hayes'

³⁶ While the record permits no conclusion other than that divestiture of the bulk of Kelsey-Hayes is necessary to undo the effects of the unlawful acquisition, we do observe that Section 3.72 of the Commission's Rules of Practice permits a party under order to seek reopening of the order if it can demonstrate that changed circumstances so warrant. If Fruehauf, contrary to what now appears likely from the record, is able to secure a purchaser of the Gunita and Brighton plants, which is not itself a manufacturer or purchaser of ASBD or heavy-duty wheels, and which appears likely to be able to operate these plants so as to maintain the leading position in the sale of ASBD and heavy-duty wheels now held by Kelsey-Hayes, the Commission will consider reopening of its order.

The filing of such a petition to reopen will, under no circumstances, constitute grounds for delay of Fruehauf's obligation under the order we have entered to divest the bulk of Kelsey-Hayes. Given that the record indicates that sale or spin-off of the bulk of Kelsey-Hayes is the only approach that is likely to remedy the violation of law, the Commission believes that the law would be disserved by permitting delay in implementation of the indicated remedy while respondent made what presently appear likely to be vain attempts to effect a different remedy. However, the Commission does not wish to preclude Fruehauf from making a clear and convincing showing (via production of a suitable purchaser) that the remedy it has proposed would suffice, provided Fruehauf desires and is able to attempt such a showing without imposing delay in effectuation of the remedy that the record before us indicates is warranted.

Final Order

91 F.T.C.

Aerospace Group and its R-V Agriculture Group, acquired by Fruehauf as a result of its acquisition of Kelsey-Hayes together with all additions and improvements to Kelsey-Hayes which have been added to Kelsey-Hayes subsequent to the acquisition (excluding those improvements unique to the Aerospace Group and the R-V Agriculture Group). Such divestiture shall be absolute, shall be accomplished no later than one year from the effective date of this order, and shall be subject to the prior approval of the Federal Trade Commission.

II

It is further ordered, That such divestiture shall be accomplished absolutely to an acquirer approved in advance by the Federal Trade Commission so as to transfer Kelsey-Hayes as a going business and a viable, competitive, independent concern.

III

It is further ordered, That pending any divestiture required by this order, Fruehauf shall not knowingly cause or permit the deterioration of the assets and properties specified in Paragraph I in any manner that impairs the marketability of any such assets and properties. Fruehauf may, but shall not be required to make capital expenditures for the improvement of any such assets and properties.

IV

It is further ordered, That pursuant to the requirements of Paragraph I, none of the stock, assets, properties, rights, privileges and interests of whatever nature, tangible or [3] intangible, acquired or added by Fruehauf, shall be divested, directly or indirectly, to anyone who is at the time of the divestiture an officer, director, employee or agent of, or under the control, direction or influence of Fruehauf, or anyone who owns or controls, directly or indirectly, more than one (1) percent of the outstanding shares of the capital stock of Fruehauf or to anyone who is not approved in advance by the Federal Trade Commission.

V

It is further ordered, That for a period of ten (10) years from the date this order becomes final, Fruehauf shall cease and desist from acquiring, or acquiring and holding, directly or indirectly, through subsidiaries or otherwise, without the prior approval of the Federal Trade Commission, the whole or any part of the stock, shares, or

assets, any interest in or any interest of, any concern, corporate or noncorporate, engaged in the business of manufacturing, distributing, or selling, heavy duty wheels, heavy duty antiskid braking devices, or truck trailers, nor shall Fruehauf enter into any agreement, understanding or arrangement with any such concern by which Fruehauf obtains the market share, in whole or in part, of such concern in the above-described product lines.

VI

It is further ordered, That on the first anniversary date of the effective date of this order and on each anniversary date thereafter until the expiration of the prohibitions in Paragraph V of the order, Fruehauf shall submit a report in writing to the Federal Trade Commission listing all acquisitions, mergers and agreements to acquire or merge made by Fruehauf; the date of each such acquisition, merger or agreement; the products involved and such additional information as may from time to time be required.

VII

It is further ordered, That within thirty (30) days from the effective date of this order and every sixty (60) days thereafter until it has fully complied with Paragraph I of this order, Fruehauf shall submit a verified report in writing to the Federal Trade Commission setting forth in detail the manner and form in which it intends to comply, is complying or has complied therewith. All such reports [4] shall include, in addition to such other information and documentation as may hereafter be requested, (a) a specification of the steps taken by Fruehauf to make public its desire to divest Kelsey-Hayes, (b) a list of all persons or organizations to whom notice of divestiture has been given, (c) a summary of all discussions and negotiations together with the identity and address of all interested persons or organizations, and (d) copies of all reports, internal memoranda, offers, counter-offers, communications and correspondence concerning said divestiture.

VIII

It is further ordered, That Fruehauf shall notify the Commission at least thirty (30) days prior to any proposed changes which may affect compliance obligations arising out of the order, such as dissolution, assignment, or sale resulting in the emergence of successor corporations, and that this order shall be binding on any such successor.

Complaint

91 F.T.C.

IN THE MATTER OF

REICHOLD CHEMICALS, INC.

ORDER, ETC., IN REGARD TO ALLEGED VIOLATION OF THE
FEDERAL TRADE COMMISSION ACT AND SECTION 7 OF THE
CLAYTON ACT

Docket 9076. Complaint, March 11, 1976 — Final Order, Feb. 22, 1978

This order, among other things, requires a White Plains, N.Y. manufacturer and distributor of various products, including fiberglass reinforced panels (frp panels) to divest itself completely, within one year from service of this order, of The Corrulux Corporation, a Houston, Tex. producer of frp panels. Further, the firm is prohibited, for a two-year period, from soliciting (for the purpose of selling fiberglass reinforced plastic panels) those customers who had purchased such panels from Corrulux during the year prior to its acquisition by RCI. Additionally, the order prohibits RCI from acquiring, for ten years, any domestic company engaged in the production, sale or distribution of frp panels.

Appearances

For the Commission: *Charles W. Corddry, III, Steven A. Newborn and Max C. Dorian.*

For the respondent: *John Boyer and Adrian C. May, Jr., Cadwalader, Wickersham & Taft, New York City and Washington, D.C.*

COMPLAINT

The Federal Trade Commission having reason to believe that Reichhold Chemicals, Inc., a corporation subject to the jurisdiction of the Commission, has acquired Corrulux Corporation, a corporation subject to the jurisdiction of the Commission in violation of Section 7 of the Clayton Act, as amended, (15 U.S.C. 18) and Section 5 of the Federal Trade Commission Act, as amended, (15 U.S.C. 45), and that a proceeding in respect thereof would be in the public interest hereby issues this complaint, stating its charges as follows:

I. Respondent

1. Respondent, Reichhold Chemicals, Inc. (hereinafter "RCI") is now and was at the time of the acquisition a publicly held corporation chartered and operating under the laws of the State of Delaware, with a principal place of business at the RCI Building, 525 North Broadway, White Plains, New York.

2. RCI is a leading manufacturer and marketer of a wide range of