

Complaint

106 F.T.C.

IN THE MATTER OF

WEYERHAEUSER COMPANY, ET AL.

DISMISSAL ORDER IN REGARD TO ALLEGED VIOLATION OF SEC. 5 OF THE
FEDERAL TRADE COMMISSION ACT AND SEC. 7 OF THE CLAYTON ACT

Docket 9150. Complaint, Feb. 9, 1981—Dismissal Order, Sept. 26, 1985

The Federal Trade Commission has dismissed a complaint that charged Weyerhaeuser Co.'s acquisition of a corrugating-medium mill from Menasha Corp. could substantially lessen competition in the manufacture of corrugating medium in the western U.S. The Commission based its dismissal on its findings that a number of market characteristics show that the acquisition did not lessen competition.

Appearances

For the Commission: *Dennis F. Johnson, Richard A. Wolff, Richard L. Sippel and Timothy A. Ngau.*

For the respondents: *Tefft W. Smith, James D. Sonda and George A. Joseph, Kirkland & Ellis, Chicago, Ill. and Thomas D. Yannucci, Michael E. Baumann and James D. Senger, Kirkland & Ellis, Washington, D.C.*

COMPLAINT

The Federal Trade Commission, having reason to believe that the above-named respondents have undertaken an acquisition of Menasha Corporation ("Menasha") that, if consummated, would result in a 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 said undertaking therefore constitutes a violation of Section 5(a)(1) of the Federal Trade Commission Act, as amended, 15 U.S.C. 45(a)(1), and that a proceeding by it in respect thereof is in the public interest, hereby issues its complaint, pursuant to Section 11 of the Clayton Act, 15 U.S.C. 21, and Section 5(b) of the Federal Trade Commission Act, 15 U.S.C. 45(b), stating its charges as follows:

I. DEFINITIONS

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

(a) *Corrugating medium* is unbleached paperboard used for the fluted middle layer of corrugated sheets and includes both medium pro-

duced by a semichemical process and medium produced by other processes, regardless of whether the medium contains virgin wood-pulp.

(b) The *West Coast market* is the eleven-state region West of the Rocky Mountains (the *West Coast region*). The states in the West Coast region are Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. [2]

II. WEYERHAEUSER COMPANY

2. Respondent Weyerhaeuser Company ("Weyerhaeuser") is a Washington corporation with its principal offices in Tacoma, Washington. It is a major integrated forest products firm engaged in the growing and harvesting of timber and in the manufacture, distribution and sale of forest products. In 1979, it had sales of \$4.423 billion, end-of-year assets of \$4.959 billion, contribution to earnings of \$956 million and net earnings of \$512 million. It has three principal forest product business segments: (1) building materials, including lumber, softwood and hardwood plywood and veneer, particleboard, hardboard, logs, chips and timber; (2) pulp, newsprint, paper and paper products; and (3) container and packaging products, including shipping containers and cartons. Weyerhaeuser is the largest producer of corrugated containers in the United States. Respondent Weybuy, Inc. ("Weybuy"), a Wisconsin corporation, is a wholly-owned subsidiary of Weyerhaeuser with its principal offices in Tacoma, Washington.

3. At all times relevant hereto, Weyerhaeuser and Weybuy have engaged in commerce as "commerce" is defined in Section 1 of the Clayton Act, as amended, 15 U.S.C. 12, and Section 4 of the Federal Trade Commission Act, as amended, 15 U.S.C. 44. Weyerhaeuser transacts business in this judicial district.

III. MENASHA CORPORATION

4. Menasha Corporation is a privately-owned Wisconsin corporation with its principal offices at Highway 41, Neenah, Wisconsin. A major segment of its business is the manufacture of corrugating medium and corrugated containers. It manufactures corrugating medium for its own corrugated container plants and is a net supplier of corrugating medium to other container manufacturers. Menasha's other paper businesses include the production of solid fiber containers, paper cores and specialty packaging materials. It produces wood flour, manufactures papermaking and converting equipment and buys and sells wastepaper. Another segment of its business is the production of various plastic products, including plastic material handling containers. Menasha also owns and manages timberlands in the Pacific Northwest and owns citrus grove acreage in California. In

1979, Menasha had total sales of \$239 million, net income of \$11 million and end-of-year assets of \$142.6 million.

5. At all times relevant hereto, Menasha engaged in commerce as "commerce" is defined in Section 1 of the Clayton Act, as amended, 15 U.S.C. 12, and Section 4 of the Federal Trade Commission Act, as amended, 15 U.S.C. 44. [3]

IV. THE ACQUISITION

6. Weyerhaeuser proposes to acquire, for \$66.3 million, the following assets and businesses of Menasha: (1) a corrugating medium mill in North Bend, Oregon; (2) a corrugated container plant in Anaheim, California; (3) three waste paper plants, two in Portland and one in Eugene, Oregon, and one sales office in Portland, Oregon; (4) a 710-acre unimproved mill site in North Bend, Oregon; and (5) current assets having an adjusted net book value of \$8.3 million. These assets comprise almost all of Menasha's operations in the western part of the United States.

7. Menasha's non-West Coast assets and liabilities have been transferred, through a pre-acquisition reorganization, to New Menasha, Inc., a new Wisconsin corporation established to carry on Menasha's non-West Coast businesses. New Menasha therefore operates substantial businesses in the eastern half of the United States.

8. Menasha has sought to restructure a tax-free pre-acquisition reorganization and has sought a ruling from the Internal Revenue Service that the acquisition will be tax-free. Consummation of the acquisition is conditioned upon receipt of a favorable tax ruling.

V. TRADE AND COMMERCE

9. The relevant product market is the production of corrugating medium.

10. The relevant geographic market for corrugating medium is the West Coast market.

11. The production of corrugating medium in the West Coast region is substantially concentrated. In 1979, the top four firms accounted for 53.27 percent of production, and the top eight firms accounted for 85.39 percent. Menasha and Weyerhaeuser ranked third and seventh, with 13.07 percent and 7.44 percent of production, respectively. The acquisition would make Weyerhaeuser the number one firm in the region, with 20.51 percent of West Coast corrugating medium production.

12. Barriers to entry into corrugating medium production are high. Prime mill sites are in short supply; capital costs are high and increasing; long lead time is required to construct a new mill; environmental regulations increase the difficulty of new entry; and the new entrant

may encounter shortages of raw materials. In addition, high capital costs require entry on a large scale and a new entrant would have to be prepared to operate below capacity until demand grows or until market share can be taken away from competitors. The increase in capital costs over the past several years also gives new mills a higher cost structure than efficient older mills, putting new mills at a comparative disadvantage until higher cost mills subsequently are built. [4]

VI. ACTUAL COMPETITION

13. Weyerhaeuser and Menasha both are actual competitors in the production of corrugating medium in the West Coast market. Menasha produces corrugated medium on the West Coast at its mill in North Bend, Oregon. Weyerhaeuser produces corrugating medium on the West Coast at its mill in Longview, Washington.

VII. EFFECTS OF THE ACQUISITION

14. The effect of the proposed acquisition may be substantially to lessen competition in the production of corrugating medium in the West Coast market, in violation of Section 7 of the Clayton Act, as amended, 15 U.S.C. 18, and Section 5 of the FTC Act, as amended, 15 U.S.C. 45, in the following ways, among others:

(1) It will eliminate Menasha as a competitive entity in the production of corrugating medium in the West Coast market;

(2) It will eliminate substantial actual competition in the production of corrugating medium in the West Coast market;

(3) It will significantly increase already high levels of concentration in the West Coast market, with four-firm concentration increasing from 53.27 percent to 60.71 percent and eight-firm concentration increasing from 85.39 to 91.32 percent;

(4) It will affect the availability of corrugating medium in the West Coast market.

VIII. VIOLATIONS CHARGED

15. The effect of the acquisition of Menasha by Weyerhaeuser and Weybuy may be substantially to lessen competition or to tend to create a monopoly 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.

Initial Decision

106 F.T.C.

INITIAL DECISION BY

JOHN J. MATHIAS, ADMINISTRATIVE LAW JUDGE

OCTOBER 11, 1983

PRELIMINARY STATEMENT

The Complaint in this matter was filed on February 9, 1981, and charges that the acquisition of a corrugating medium mill located in North Bend, Oregon (the "North Bend mill") from the Menasha Corporation by respondent Weyerhaeuser Company ("Weyerhaeuser") violates Section 7 of the Clayton Act and Section 5 of the FTC Act. The Complaint further alleges that [2] corrugating medium is the relevant product market (Complaint ¶ 9), and that the 11 western states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming constitute the relevant geographic market, commonly referred to throughout this proceeding as the "West Coast." (Complaint ¶¶ 1(b), 10).

At the time the Complaint was filed, Weyerhaeuser had not yet consummated the acquisition and, therefore, the Complaint proposed enjoining the acquisition, as well as seeking other forms of relief. (Complaint at 6). Because Weyerhaeuser subsequently acquired the North Bend medium mill, complaint counsel now seek divestiture in this proceeding (CB at pp. 233 *et seq.*).

On December 12, 1980, the Commission sought to enjoin the acquisition pursuant to Section 13(b) of the FTC Act. 15 U.S.C. 53(b). An evidentiary hearing was held in the United States District Court for the District of Columbia in February 1981. Portions of that record have been stipulated into evidence in this proceeding by the parties. (Stipulation and Order of January 3, 1983).

On March 25, 1981, the District Court allowed the acquisition to go forward pursuant to the terms of a hold-separate order. Specifically, the order provided that Weyerhaeuser could own and operate the mill, pending a final determination on the merits of the acquisition in this proceeding, but that it could not (1) reduce the production of the North Bend mill without cause and prior court approval, or (2) give preference to Weyerhaeuser box shops in the distribution of the North Bend mill's production. *FTC v. Weyerhaeuser Co.*, 1981-1 Trade Cas. (CCH) ¶ 63,974 at 76,049 (D.C.D.C. 1981). (WX 1415 A-G).

The Commission appealed from the District Court's order. On September 1, 1981, the United States Court of Appeals for the District of Columbia Circuit upheld the District Court's order. *FTC v. Weyerhaeuser Co.*, 665 F.2d 1072 (D.C. Cir. 1981). During the appeal process.

which included an unsuccessful petition for rehearing *en banc* by complaint counsel, proceedings in this matter were stayed.

After affirmance by the Court of Appeals, the District Court proceeded, as initially envisioned by its order of March 25, 1981, to put in place more specific terms concerning [3] Weyerhaeuser's ownership of the mill under the hold-separate order. On January 6, 1982, the District Court entered an order that implemented its March 25 order, and that order has been in operation since that time. (WX 1415A-G).

Once the appeal process was terminated, prehearing conferences were held in this proceeding. Extensive discovery occurred between the parties. In addition, third party subpoenas to various industry members were issued on behalf of both complaint counsel and Weyerhaeuser.

The hearing on the merits in this proceeding commenced on January 17, 1983, in Washington, D.C. Complaint counsel called 10 witnesses and concluded their case on January 31, 1983, with the testimony of their expert witnesses, Mr. Charles Pidano and Dr. David Kamerschen.

Respondent Weyerhaeuser began presentation of its case on February 16, 1983, in Seattle, Washington. As part of the west coast hearings, tours of Weyerhaeuser's Longview, Washington mill complex and Longview Fibre's mill complex, also in Longview, were conducted, as was a tour of Weyerhaeuser's Portland, Oregon box plant. Weyerhaeuser called 11 witnesses on the west coast, including 5 Weyerhaeuser executives and 6 third party witnesses. The west coast hearing ended on February 23, 1983.

Weyerhaeuser resumed presentation of its case in Washington, D.C. on March 14, 1983. During this phase of the hearings, Weyerhaeuser called 6 third party fact witnesses and concluded its case with the testimony of 2 expert witnesses: Mr. Thomas Clephane and Dr. Yale Brozen.

Complaint counsel presented no rebuttal testimony or evidence. Accordingly, the hearings were concluded with the record left open for purposes of admitting certain exhibits, correction of the transcript, identifying *in camera* portions of the record, and other miscellaneous matters. The record was closed on May 16, 1983.

In all, a total of 36 witnesses testified in this proceeding, 29 through live testimony at this proceeding and 7 through the stipulated introduction of the transcript of their testimony before the District Court in the Section 13(b) trial, generating a total transcript of nearly 4,000 pages. Approximately 800 exhibits have been received into evidence. [4]

This Initial Decision is based upon the entire record, including

proposed findings of fact and conclusions of law and supporting memoranda filed by the parties, as well as their replies. I have also taken into account my observation of the witnesses who have appeared before me and their demeanor. Proposed findings not herein adopted, either in the form submitted or in substance, are rejected either as not supported by the evidence or as involving immaterial matters. Any motions appearing on the record not heretofore or hereby ruled upon either directly or by the necessary effect of the findings and conclusions made in this Initial Decision, are hereby denied.

The findings of fact include references to the supporting evidentiary items in the record. Such references are intended to serve as guides to the testimony and exhibits supporting the findings of fact. They do not necessarily represent complete summaries of the evidence supporting each finding.¹ [5]

To summarize my findings and conclusions hereinbelow, I find that complaint counsel have failed to prove that the effect of respondent's acquisition may be substantially to lessen competition or to tend to create a monopoly. Accordingly, I order that the complaint be dismissed.

FINDINGS OF FACT

I. RESPONDENT WEYERHAEUSER AND THE ACQUISITION

1. Weyerhaeuser is a diversified forest products company headquartered in Tacoma, Washington and incorporated in the State of Washington. Weyerhaeuser has extensive international operations in the following areas: (1) timberlands and raw materials, which encompass the management, harvesting and distribution of timber, logs and wood chips; (2) wood products, including timber, softwood and hardwood, plywood and veneer, particleboard, and hardboards; (3) fiber products, such as containerboard, pulp, paperboard, paper, newsprint, containers and packaging; (4) real estate and home building; and (5) various diversified businesses, including personal care products, nursery products, chemicals and aquaculture. (WX 1113 H, N, R, V, Y, A2). Weyerhaeuser markets its products worldwide. In 1981, it had

¹ The following abbreviations have been used:

- Tr. - Transcript, preceded by the name of the witness and followed by the page number.
- CX - Complaint Counsel's Exhibit, followed by its number and the referenced page(s).
- RX - Respondent's Exhibit followed by its number and the referenced page(s).
- CF - Complaint Counsel's Proposed Findings.
- CB - Complaint Counsel's Brief In Support of Proposed Findings.
- RF - Respondent's Proposed Findings.
- RB - Respondent's Memorandum of Law In Support of Proposed Findings.
- CRB - Complaint Counsel's Reply to Respondent's Proposed Findings and Brief.
- RRB - Respondent's Reply to Complaint Counsel's Proposed Findings and Brief.

net sales of \$4.5 billion and total assets of \$5.7 billion. (WX 1113 C, A8).

2. Weyerhaeuser has three principal forest product business segments: (a) Building materials (including lumber, softwood and hardwood plywood and veneer, particleboard, hardboard, logs, chips and timber), with net sales in 1981 of \$2.7 billion; (2) Pulp, newsprint, paper and paperboard products, with net sales in 1981 of \$1.5 billion; and (3) Paperboard and packaging products, including containerboard² and shipping containers, [6] with net sales in 1981 of \$939 million. (Complaint and Answer ¶ 2; WX 1113A-2, A-21, A-31; Waechter Tr. 1621-22).

3. Weyerhaeuser is a leading integrated producer of containerboard and corrugated boxes. (WX 1113; Findings 4-6, below). Containerboard mills are large, capital-intensive facilities. (Waechter Tr. 1635; Locke Tr. 978).

4. Prior to the acquisition here in issue, Weyerhaeuser operated three medium mills in the United States, located in Longview, Washington; Valliant, Oklahoma; and Plymouth, North Carolina. (CX 651, Stip. 1).

5. Weyerhaeuser also operates three liner mills in the United States, located in Springfield, Oregon; Valliant, Oklahoma; and Plymouth, North Carolina. (CX 651, Stip. 2).

6. Corrugated boxes are manufactured in shipping container plants ("box plants" or "box shops"). Weyerhaeuser operates approximately 30 box plants in the United States. On the west coast, it operates 9 box plants which are located in Alameda, Anaheim, Colton, Modesto, Salinas and Santa Paula, California; Olympia and Yakima, Washington; and Portland, Oregon. (CX 651, Stip. 3, 8). The Anaheim box plant was obtained by Weyerhaeuser in the 1981 acquisition discussed below, but is not at issue in this proceeding. (CX 651, Stip. 8; CB pp. 231-39).

7. During 1981, Weyerhaeuser acquired the following assets from Menasha Corporation:³ (1) a medium mill located in North [7] Bend,

² Containerboard refers to two different products: corrugating medium ("medium") and linerboard ("liner"). (CX 651, Stip. 42). These two products are the raw materials used to manufacture corrugated shipping containers ("corrugated boxes" or "boxes"). (CX 651, Stip. 43, 47). Medium is the inner fluted portion of the wall of a corrugated box, while liner is the flat facing comprising each side of the wall. (CX 651, Stip. 15, 41; Johnson Tr. 404; Countryman Tr. 1044.)

³ Menasha Corporation is a Wisconsin corporation with its principal offices at Neenah, Wisconsin. A major portion of its business is the manufacture of corrugating medium and corrugated containers (Complaint and Answer, ¶ 4). Prior to the acquisition, Menasha Corporation owned and operated the North Bend medium mill that was acquired by Weyerhaeuser, and a second medium mill in Otsego, Michigan, which it retained. (CX 651, Stip. 70; CX 332 B, C & E).

Weyerhaeuser West Coast, Inc., a wholly-owned subsidiary of Weyerhaeuser with its principal office in Tacoma, Washington, is the corporation surviving the merger of Weybuy, Inc. (a Weyerhaeuser subsidiary formed solely to facilitate this acquisition) into the acquired Menasha Corporation. The complaint originally named Weybuy as a co-respondent. By order of February 1, 1982, Weyerhaeuser West Coast, Inc., was substituted for Weybuy to reflect the merger and change of name.

Oregon ("North Bend mill"); (2) a 710-acre unimproved mill site located in North Bend, Oregon; (3) three wastepaper collection facilities, two in Portland, Oregon, and one in Eugene, Oregon (and one sales office in Portland, Oregon) which collect wastepaper, principally old corrugated containers, to be recycled as a raw material in the manufacture of medium and other types of paper; (4) the box plant located in Anaheim, California; (5) an interest in Valley Crate Corporation which markets some of the corrugated containers produced at the Anaheim plant; and (6) \$8.3 million of net working capital. (CX 651, Stip. 8). This acquisition was pursuant to an Agreement and Plan of Merger and Reorganization dated December 24, 1980 by which Weyerhaeuser acquired a corporate entity owned by Menasha Corporation's shareholders in exchange for approximately 2 million shares of Weyerhaeuser stock. (JX 25A-A60).

8. The Complaint challenges only the acquisition of the North Bend mill. (Complaint ¶ 9, 13; CB pp. 231-39). (See also, *FTC v. Weyerhaeuser Co.*, 665 F.2d 1072, 1074 (D.C. Cir. 1981).

II. COMMERCE

9. Weyerhaeuser, Menasha, and Weyerhaeuser West Coast, Inc. were, at the time of the acquisition of the North Bend mill, and continue to be, engaged in commerce as "commerce" is defined in Section 1 of the Clayton Act, as amended, 15 U.S.C. 12, and Section 4 of the Federal Trade Commission Act, as [8] amended, 15 U.S.C. 44. (Complaint and Answer ¶¶ 3, 5; CX 651, Stip. 76).

III. MARKET OVERVIEW

A. *The Forest Products Industry*

10. Many of the firms in the containerboard industry are, like Weyerhaeuser, integrated forest products companies that manufacture and market a broad line of products. (Cassidy Tr. 734-35; Locke Tr. 910-11; Price Tr. 2187; Diforio Tr. 2096; Perry Tr. 2312; Brown Tr. 2442-43).

11. The operations of forest products firms frequently "are international in scope," and "a number of the companies are major exporters," with "some . . . hav[ing] operations in Canada" and other foreign countries. (Clephane Tr. 2621; See also Waechter Tr. 1643, 1729; CX 147 Z2-Z15 IC).

12. In general, forest products companies have integrated operations in (1) timber and raw materials management, (2) primary con-

B. *Timberlands and Raw Materials Management*

13. Timberland operations are concerned with managing a company's timber assets, including the long-term replenishment of those assets, and insuring that the basic raw materials for downstream products are provided in a streamlined and efficient fashion. (Waechter Tr. 1624-25; WX 1113H-L).

14. For purposes of this proceeding, timber can be roughly classified as being either hardwood or softwood. Softwoods are found mainly in the south in the form of southern pine, and in the Pacific Northwest in the form of Douglas fir. (Brown Tr. 2515). Hardwoods are abundant in the north central portion of the United States and are heavily mixed in with southern pine softwoods in the southeast, but are relatively scarce in the Pacific Northwest. (Brown Tr. 2470; CX 147 Z62-Z63 IC).

15. Weyerhaeuser owns timber throughout the country, primarily in the Pacific Northwest, and in the southeast portion of the United States running from the Carolinas through Oklahoma and Arkansas. (Waechter Tr. 1628-29).

16. Numerous companies besides Weyerhaeuser own substantial timberlands in various parts of the country. For instance, [9] International Paper, which is one of the largest private timber owners in the United States, has the bulk of its timber in the southeast, as does Continental Forest. (Brown Tr. 2443; Perry Tr. 2312-13). On the other hand, Owens-Illinois and Champion International have substantial holdings of hardwood timber in the north central portion of the United States in states such as Wisconsin, Minnesota, and Michigan. (Cassidy Tr. 773-74, 839; Diforio Tr. 2098; *See also* WX 1702 Y-Z, A9-A12, A14-A17).

C. *Primary Facilities*

17. Primary facilities refer to mills that produce basic products derived from a company's timber base. These operations are basically divided into two broad product categories: wood and fiber. On the wood products side, the operations include saw mills, plywood mills, and other lumber producing facilities. (Waechter Tr. 1625, 1632). The fiber side includes facilities for the production of containerboard, market pulp, newsprint, fine paper and other similar types of products. (Waechter Tr. 1625). In total, Weyerhaeuser has 66 primary facilities, with 53 on the wood products side and 13 on the fiber side. (*Id.*).

18. The raw material for a wood products primary facility is harvested timber or logs, which are cut up into lumber or plywood. For fiber products, the raw material is sometimes the residual wood chips

that result from wood product manufacturing. Otherwise, whole logs may be cut up or "chipped" expressly for use as the raw material needed for the fiber mill. (Presson Tr. 1538; Locke Tr. 967).

19. Primary mills typically are large facilities that consume vast amounts of raw material. Weyerhaeuser's Valliant, Oklahoma mill, for instance, produces "3,000 tons of containerboard a day" and will consume "something in excess of a million tons of wood chips" annually. Weyerhaeuser's Plymouth, North Carolina facility produces "in excess of 2,000 tons a day of fiber products" and also consumes "close to a million tons of wood chips a year." (Waechter Tr. 1635).

D. Secondary Facilities

20. Secondary operations or facilities refer to plants that typically refine or further convert basic wood or fiber products provided by primary mills. Thus, Weyerhaeuser's box plants take containerboard manufactured by Weyerhaeuser's primary fiber mills and convert it into boxes. (Presson Tr. 1539). [10]

E. The Relationship Of Timber To Converting Operations

21. For any forest products company, timber plays a central role. Indeed, Weyerhaeuser views its timber as its basic asset. (Waechter Tr. 1631). The desire to maximize the value of their timber holdings has led forest product firms to develop and expand primary and secondary facilities. Weyerhaeuser's initial involvement in the containerboard industry was a result of its "desire to utilize the residual flow of wood chips" stemming from its other operations. (Waechter Tr. 1645). Similarly, in planning new primary facilities, it seeks to match "the raw material flow available in a vicinity . . ." (Waechter Tr. 1641). Accordingly, forest products companies generally locate their primary mills in the areas where their timber holdings are located. (Waechter Tr. 1641; Cassidy Tr. 839; Perry Tr. 2313; Countryman Tr. 1069, 1096; Locke Tr. 969; Brown Tr. 2444).

IV. CONTAINERBOARD PRODUCTION

A. General

22. Corrugating medium (often referred to simply as "medium") is a wood fiber-based paper product that is used almost exclusively to form the fluted inner layer of corrugated board, which in turn is cut into corrugated sheets which are used almost exclusively in the manufacture of corrugated containers. (CX 651, Stips. 14, 15, 43; CX 13A; CX 251; CX 45P, X; Waechter, CX 64Z58; CX 186K; CX 190B; Hudson, JX 8J; Johnson Tr. 404-05; Campbell Tr. 645; Countryman Tr. 1044;

side the manufacture of corrugated containers.⁴ (Waechter Tr. 1652, 1754; Johnson CX 63Z103; Presson CX 65Z56-Z57; CX 167A).

23. Corrugated board typically consists of two sheets of linerboard (a different wood fiber-based paper product) with a fluted sheet of medium in between. (CX 651, Stip. 42; Johnson [11] Tr. 404, 409; Wollenberg Tr. 527-28; Campbell Tr. 645; Countryman Tr. 1044; CX 190B).

24. Linerboard (sometimes referred to simply as "liner") is a wood fiber-based paper product that is used as the flat outer facings of corrugated board. (Johnson Tr. 404, 409; Wollenberg Tr. 527; Campbell Tr. 644; Countryman Tr. 1044; CX 651, Stips. 38, 41, 42; CX 25I; CX 190B). Linerboard also is used for a number of other applications, such as fiber drums, carrier stock, and some folding cartons. (Waechter Tr. 1652, 1754-55; see WX 1334K, L). Both medium and linerboard are sometimes referred to generically as "containerboard." (CX 651, Stip. 42; Johnson Tr. 464).

25. Corrugated containers (often referred to as "corrugated boxes" or just "boxes") are strong, lightweight and relatively inexpensive shipping containers that are made from corrugated sheets and that are produced in a variety of shapes and sizes. (CX 44D, Z9-Z28; Lamm Tr. 1004, 1015; Nordstrom Tr. 1127, 1146). They are used for packaging and shipping a wide variety of products, such as canned and bottled goods, agricultural products, meats and other foods, clothing, drugs, appliances, and numerous other products. (CX 44D, E, Z; CX 186J; CX 13A-B; CX 109Z1; Johnson Tr. 404-05; Wollenberg Tr. 528-29).

26. Corrugating medium is designed to provide corrugated board (and hence, corrugated boxes) with stiffness, rigidity, crush strength, and compression strength. (CX 25I; CX 190S, Z24; Johnson Tr. 405, 406; Wollenberg Tr. 528, 533, 547; Campbell Tr. 651; Cassidy Tr. 779-81). Crush strength refers to the ability to keep the two sheets of linerboard apart to form a rigid structure (Cassidy Tr. 779; Johnson Tr. 405; Wollenberg Tr. 528), while compression strength refers to the top to bottom stacking strength. (Johnson Tr. 405; Cassidy Tr. 780).

27. Medium must weigh at least 26 pounds per thousand square feet and be at least nine thousandths of an inch thick⁵ in order to meet the requirements of Rule 41 of the Uniform Freight Classification (for rail) and Item 222 of the National Motor Freight Classification (for trucks), which prescribe [12] carrier requirements for corrugated con-

⁴ "Off-grade" medium may occasionally be used for wrapping or padding purposes, but such uses are *de minimis*. (Johnson Tr. 405).

⁵ Thus, medium of this thickness is sometimes referred to in the industry as "nine-point" or ".009." (Wollenberg Tr. 530).

tainers.⁶ (CX 29I; CX 44Z39-Z54, Z64-Z68; CX 109Z182; CX 190Z32; Johnson Tr. 409; Wollenberg Tr. 530; WX 1201; WX 1202). In addition, medium must meet certain established specifications, including "concora," which is the industry's measure of crush strength. (CX 186Z11; CX 44X, Z29-Z30; WX 1105H-J; WX 1104A; CX 190S, Z24, Z26; Johnson Tr. 407-08; Wollenberg Tr. 530-31).

28. Linerboard, in contrast to medium, is designed to provide corrugated board with burst strength and tear strength rather than with stiffness, rigidity, crush strength or compression strength. (Johnson Tr. 409; Wollenberg Tr. 531-33; Cassidy Tr. 780-81). Linerboard must also meet certain requirements established by Rule 41 and Item 222. (CX 44Z39-Z54, Z63-Z68; Johnson Tr. 409; CX 107G). In particular, linerboard must meet certain established specifications with respect to "mullen," which is the industry measure of burst strength. (Johnson Tr. 409-10; Wollenberg Tr. 533; CX 44Z39). Since linerboard is used for the outer facings of corrugated boxes, it also is designed to have a smooth surface and desirable printing characteristics. (Campbell Tr. 651).

29. Medium is produced in standard "basis weights," which are measured in pounds per thousand square feet of product. (CX 190Z21; CX 651, Stip. 56; Cassidy Tr. 775). The most common basis weight for medium is 26 pounds per thousand square feet; the second most common is 33 pounds. (CX 651, Stip. 33; Johnson Tr. 437-38; Cassidy Tr. 775-76; Countryman Tr. 1044-45; Presson Tr. 1541, 1610; Diforio Tr. 2120; Perry Tr. 2376; CX 190S; CX 1B; CX 26V). Other weights (such as 36 pound or 40 pound) and types (such as "wet strength" medium that is specially treated for moisture resistance for use under high humidity conditions) (Cassidy Tr. 745) are generally considered to be specialty items. (Countryman Tr. 1044; Presson Tr. 1541; Diforio Tr. 2120). According to the American Paper Institute ("API"), an industry trade association, there were approximately 5.7 million tons of medium produced domestically during 1981. (WX 1334H). Of this amount, 79.5% was classified as "regular" 26 pound, 12.7% was "regular" 33 pound, 3.7% was other "regular" grades, [13] and 4.1% was classified in various "wet strength" categories. (Calculated from WX 1334H).

30. Linerboard is also produced in standard basis weights. (E.g., CX 190Z21). The most common basis weight for linerboard is 42 pound, which according to API accounts for about one-half of total domestic linerboard production. (WX 1334E). The next most common weight is 69 pound, which accounts for nearly 22% of total linerboard production. (WX 1334E).

⁶ Failure to comply with the requirements could subject a shipper to substantial penalties, such as increased transportation charges, refusal of shipments by the carrier, or denial of freight damage claims. (CX 44Z-32).

