

UNITED STATES TARIFF COMMISSION
Washington, D.C.

APTA-W-20

TC Publication 224

January 3, 1968

TARIFF COMMISSION SUBMITS REPORT TO THE
AUTOMOTIVE AGREEMENT ADJUSTMENT ASSISTANCE BOARD
IN ADJUSTMENT ASSISTANCE CASE PERTAINING TO
CERTAIN WORKERS OF PPG INDUSTRIES'
WORKS NO. 4, FORD CITY, PENNSYLVANIA

The Tariff Commission today reported to the Automotive Agreement Adjustment Assistance Board the results of its investigation No. APTA-W-20, conducted under section 302(e) of the Automotive Products Trade Act of 1965. The Commission's report contains factual information for use by the Board, which determines the eligibility of the workers concerned to apply for adjustment assistance. The workers in this case were employed in Works No. 4 of PPG Industries at Ford City, Pennsylvania.

Only certain sections of the Commission's report can be made public since much of the information it contains was received in confidence. Publication of such information would result in the disclosure of certain operations of individual firms. The sections of the report that can be made public are reproduced on the following pages.

U.S. Tariff Commission
January 3, 1968

Introduction

In accordance with section 302(e) of the Automotive Products Trade Act of 1965 (79 Stat. 1016), the U.S. Tariff Commission herein reports the results of an investigation (APTA-W-20) concerning the possible dislocation of certain workers engaged in the production of automobile glass at Pittsburgh Plate Glass Company's ^{1/}Works No. 4, Ford City, Pa. The Commission instituted the investigation on November 14, 1967, upon receipt on the same day that the request (dated November 13) for such investigation was received from the Automotive Assistance Committee of the Automotive Agreement Adjustment Assistance Board. Public notice of the investigation was given in the Federal Register (32 F.R. 12702) on November 21, 1967.

The Automotive Assistance Committee's request for the investigation resulted from a petition for determination of eligibility to apply for adjustment assistance that was filed with the Assistance Board on November 8, 1967, by Local No. 14 of the United Glass & Ceramic Workers of North America, AFL-CIO-CLC on behalf of a group of workers at PPG Industries' Works No. 4, Ford City, Pa. Neither the petitioners nor any other party requested a hearing before the Commission, and none was held.

The petitioners allege that the shipments of tempered glass (primarily automobile rear windows) from Works No. 4 have been reduced as a result of the fabrication of a quantity of automobile glass in Canada, and that as a result of increased imports of tempered glass from Canada there has been a loss of approximately 150 jobs at the Ford City plant.

^{1/} The Pittsburgh Plate Glass Co. adopted a new corporate trademark "PPG Industries" in 1966. The legal name of the company is scheduled to be changed to PPG Industries in April 1968. Subsequent references to the company in this report will use the briefer designation, PPG Industries.

They also allege that a substantial reduction in shipments of glass to Duplate Canada, Ltd., a majority-owned (66.4 percent) subsidiary of PPG Industries that manufactures tempered and laminated automobile glass, for further fabrication has caused additional unemployment at Works No. 4 in Ford City.

The information reported herein was obtained from a variety of sources, including PPG Industries and other manufacturers of automotive glass, the major U.S. motor-vehicle manufacturers, the United Glass and Ceramic Workers of North America, AFL-CIO-CLC and their Local 14, the Pennsylvania Employment Security Office at Kittanning, Pa., the Commission's files and through fieldwork by members of the Commission's staff.

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The automotive product involved--
tempered automobile glass

The automotive product involved is described in Section I of the petition as "auto-window glass, original equipment." To the extent that such glass is or has been produced in recent years at Ford City, it has consisted chiefly of glass cut to pattern and tempered to form automobile backlights (i.e., automobile rear windows). Some flat tempered automotive side windows have also been produced at Works No. 4.

The petitioners also imply that the glass (plate glass) produced in the main part of Works No. 4 at Ford City, when cut into block sizes and delivered to Duplate Canada, Ltd., for fabrication into windshields or windows of cars and trucks is automotive glass.

The term "automotive product" is defined in section 302(1)(1) of the Automotive Products Trade Act of 1965 as "a motor vehicle or a fabricated component to be used as original equipment in the manufacture of motor vehicles." Inasmuch as raw plate glass requires further fabrication (i.e., laminating or tempering) before it may be used on a motor vehicle, it apparently would not come within the scope of this definition. This report, therefore, is concerned primarily with tempered automobile glass.

Tempered (or toughened) automobile glass is glass that has been specially processed to increase its strength. It is used in the side and rear windows of all passenger cars manufactured in the United States and Canada and in the side and rear windows of most trucks. Tempered glass is generally less expensive to manufacture than the alternative type of safety glass, laminated glass, and is therefore used in virtually all automotive applications where State laws or Interstate Commerce Commission regulations do not require the use of laminated glass.

Tempered glass is dutiable under item 544.31 of the Tariff Schedules of the United States at the rate of 19.5 percent ad valorem; however, if it is a Canadian article for use as original motor-vehicle equipment (OEM) it enters duty free under item 544.32.

Two basic processes are used for tempering glass---thermal and chemical. In thermal tempering the glass is heated to just below its softening point--it must be rigid enough to avoid serious deformation yet fluid enough to relax internal stresses rather quickly--then rapidly quenched by jets of air. As the glass cools the core remains in tension and the outer surfaces are in compression. The resulting product is 3 to 5 times stronger than ordinary glass of the same thickness and surface area. In chemical tempering, which is just beginning to have a significant commercial impact, surface compression is brought about by making a chemical change in the glass surface. Chemical tempering can produce stronger and more flexible glass than thermal tempering but it is far more expensive. The only chemically tempered glass used in automobiles is used in the

backlights of several models of convertibles (because such glass is flexible). None of the major manufacturers of automotive glass produce chemically tempered glass on a commercial basis. This glass is supplied to the automobile manufacturers by Corning Glass Works, a specialty glass producer.

At least four different methods are used in forming thermally tempered glass:

1. The conventional vertical furnace (used for flat tempered glass only);
2. The horizontal gravity mold furnace (used primarily for curved backlights);
3. The press-form process (used primarily for curved sidelights); and
4. The gas hearth process (used for flat tempered glass and curved sidelights).

The last of these four processes is generally recognized as the most efficient for forming curved sidelights. It was developed by PPG Industries and has been licensed to the Ford Motor Company and several foreign manufacturers as well. PPG Industries uses only the first two forming processes in its Ford City tempering plant.

The nature and structure of the automobile glass industry in Canada and the United States

The manufacture of automobile glass involves two different phases: (1) the production of the raw flat glass, which may consist of plate glass, float glass, or sheet glass; and (2) the fabrication (e.g., laminating, tempering, and/or bending) of the raw flat glass into the completed automotive glass product. The manufacturing functions are divided variously between the

major producers of flat glass, the automobile manufacturers, and independent fabricators of automobile glass. * * *

Since the introduction of domestically produced float glass ^{1/} to the United States market in early 1964, the production of flat glass for automotive use has undergone a major technological transformation. Before 1964 plate glass had been used exclusively in the windshields of all automotive vehicles and in the side and rear windows of all automobiles produced by General Motors. Sheet glass, the less expensive product, had been used in all side windows and in some rear windows by other automobile manufacturers.

Float glass, which is comparable in quality to plate glass but which is substantially cheaper to produce, was first used by General Motors in automobile side windows late in the 1964 model year and was first used in windshields in the 1966 model year. Six facilities for producing float glass are now operating in the United States (PPG Industries, Libbey-Owens-Ford Glass Co., and the Ford Motor Co., each operating two plants). * * *

The first Canadian float glass facility was officially opened in Toronto, Ontario, in June 1967. Before the completion of

^{1/} The technique of manufacturing float glass was developed by a British firm--Pilkington Bros., Ltd. It was first produced in commercial quantities in 1959 and first imported into the United States in 1960.

that facility, Canada (which has no plate glass facilities) was primarily dependent on imports from the United States for its plate glass for automotive use. The new float facility has a substantially greater capacity than Canada's present requirements--both automotive and non-automotive--for high quality (plate or float) glass.

The second major phase of the process of manufacturing automobile glass is performed by a few independent fabricators and Chrysler Corp., as well as by the basic flat glass manufacturers (which classification includes the Ford Motor Co.). When automobile glass is fabricated by a basic flat glass producer, the fabrication usually takes place in or near the plant where the raw flat glass is manufactured.

PPG Industries and its facilities used in
the production of automobile glass

PPG Industries, with headquarters in Pittsburgh, is a large diversified corporation (its sales in 1966 were \$942 million) which operates about 60 domestic plants. Domestic sales of flat glass and flat glass products (including automobile glass) accounted for 34 percent of the value of its total sales in 1966. The company also produces fiber glass, chemicals, oil and gas, coatings, and resins.

Glass-producing facilities.--PPG Industries operates plate-glass plants at Ford City and Creighton, Pa., Cumberland, Md., and Crystal City, Mo. Its sheet-glass plants are located in Clarksburg,

W. Va.; Mt. Vernon, Ohio; Henryetta, Okla.; Mt. Zion, Ill.; and Fresno, Calif. To the extent that sheet glass has been used in fabricating automobile glass, which is mainly in tempered side windows, it has come chiefly from the Clarksburg, Mt. Vernon, and Mt. Zion plants. PPG has float glass facilities at Cumberland and Crystal City (both contiguous to the plate glass facilities at those locations) and is currently constructing a float glass plant at Meadville, Pa.

PPG Industries operates facilities for fabricating automobile glass at Ford City, Creighton, Greensburg, and Tipton (all in Pennsylvania), at Crestline in north-central Ohio, and at Crystal City, Mo. ^{1/} * * *

Duplate Canada, Ltd., PPG Industries' Canadian subsidiary, operates three plants in which it produces automobile glass. These plants are located at Windsor, Oshawa, and Oakville, all in Ontario (the two latter plants are near Toronto).

Facilities used in the production of tempered automobile glass.--
 PPG Industries fabricates tempered automobile glass at Ford City, Pa.; Crestline, Ohio; and Tipton, Pa. PPG Industries formerly operated a tempering facility at Crystal City, Mo., but, with the construction of

^{1/} Fabricating operations at the Crystal City plant have been minimal for several years and are being gradually phased out.

the Crestline plant in 1959, tempering activities at Crystal City were gradually phased out; the last significant production occurred in 1964.

The tempering plant at Tipton, which was activated for production in May 1966, is PPG Industries' principal tempering facility serving the eastern automobile assembly plants. The Crestline plant is the principal tempering facility serving the automobile assembly plants in other parts of the country. Prior to the attainment of full operations at Tipton, the Ford City plant accounted for over half of the tempered rear windows produced by PPG Industries. It also produced a small quantity of flat tempered automotive glass (which is used in the side and rear windows of trucks). The Ford City plant, however, does not have the capability of producing curved tempered sidelights--which have virtually replaced flat tempered sidelights in passenger cars since the 1965 model year.

Both the Tipton and Crestline plants have the capability of producing a full line of tempered automotive glass parts. All three plants produce limited quantities of tempered glass for the replacement market. * * *

Duplate Canada, Ltd., produces curved tempered glass parts at its Windsor plant and a wide range of tempered glass parts (flat and curved) at its Oshawa plant.

The Ford City operations

PPG Industries' Works No. 4 is located in Ford City on the Allegheny River approximately 35 miles northeast of Pittsburgh. Ford City is a small community of 5,500 persons near the center of Armstrong County. PPG Industries, with approximately 2,000 employees in its two Works at Ford City is the largest employer in the county. The next largest employer, Elger Pottery, with approximately 500 employees, which is also located at Ford City, is the only other significant industrial employer in the area. The unemployment rate in Armstrong County in September 1967 was 5.7 percent. ^{1/}

Works No. 4 is one of the oldest plate glass plants in the country, having begun operations in 1883, the year the present PPG Industries was organized. A tempering operation was started at Ford City during the 1930's.

Adjacent to Works No. 4 are Shop 2, a machine shop that services all of PPG Industries' plate glass plants, and Works No. 6, a plant where optical glass and specialty flat glass products (e.g., opaque colored polished plate glass) are produced. The statistical data in this report relate only to Works No. 4.

^{1/} Interview with Mr. Edmond Manganeli, Manager of the Employment Security Office, Kittanning, Pa.

The activities at works No. 4 are divided among three major areas, which are described briefly below:

1. Plate glass department.--This department, which produces the raw plate glass, consists of the batch handling facilities, furnace, grinding and polishing line, and wareroom (i.e., cutting, inspecting, packing, and shipping). * * *

2. Automotive tempering department.--This is the smallest department in the plant, accounting for less than 10 percent of total plant employment, and the only department in the plant engaged in the production of automotive glass. * * *

3. Miscellaneous specialties.--This grouping includes the activities of several smaller departments engaged in a variety of fabricating activities such as decorating and non-automotive tempering.

Operations of Duplate Canada, Ltd.

Duplate Canada, Ltd., tempers automotive glass at two of its three plants. It produces curved tempered glass (along with laminated windshields) at the Windsor plant and it produces a wide range of tempered (and laminated) glass parts at its Oshawa plant, which is located just outside Toronto.

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Production and trade between the
United States and Canada

The Tariff Commission obtained information from the major North American motor-vehicle producers respecting the production of, and trade between, the United States and Canada in tempered glass for use as original equipment in the assembly of motor vehicles.

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Production of automotive tempered glass in the United States increased from 196 million square feet in model year 1964 to 231 million square feet in model year 1965 and then declined to 224 million in model year 1966 and to 197 million in model year 1967. In the first 4 months of model year 1968 U.S. production was 78 million square feet, compared with 66 million in the corresponding period of model year 1967 (table 4).

U.S. exports of OEM tempered automotive glass to Canada, which were small in model years 1964 and 1965, increased to 0.6 million square feet in model year 1966 and to 2.8 million square feet in model year 1967. The upward trend continued in the first 4 months of model year 1968 with exports to Canada of 1.1 million square feet of such glass, compared with 0.8 million square feet in the corresponding period of model year 1967. Such exports represented 0.5 percent of U.S. production in the 1964 model year and 1.4 percent in model year 1967.

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