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COMMITTEE ON FINANCE
UNITED STATES SENATE

RUSSELL B. LONG, *Chairman*

TEXTURED YARNS

Report of the President, pursuant to section 2 of Public Law 89–229

FEBRUARY 1, 1966

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Public Law 89-229
89th Congress, H.R. 5768
October 1, 1965

AN ACT To extend for an additional temporary period the existing suspension of duties on certain classifications of yarn of silk, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That * * * * * * * * * * * * * * * * * * *.

* * * * * * *

SEC. 2. The President shall promptly cause a study to be made of the feasibility and desirability of separate classification in the Tariff Schedules of the United States for those yarns of man-made fibers commonly referred to as textured or texturized yarns. He shall report the results of such study, including any recommendations as to the appropriate rate or rates of duty for such yarns, to the House of Representatives and to the Senate not later than February 1, 1966.

Approved October 1, 1965.

LETTER OF TRANSMITTAL

To the Congress of the United States:

I am transmitting herewith, in accordance with section 2 of Public Law 89-220, a report concerning the feasibility and desirability of separate classification in the Tariff Schedules of the United States for those articles of manmade fibers commonly referred to as textured or texturized yarns.

The report concludes that such separate tariff classification for textured yarns is feasible but not desirable in view of the current situation.

Textured yarn production in the United States has been rising steadily in recent years, from 74 million pounds in 1960 to over 250 million pounds in 1965. During this period, the independent throwster industry, which processes a major portion of textured yarn, has had rising employment. At the same time, imports have been declining. The Tariff Commission has estimated that the annual imports of textured yarns declined from more than 2 million pounds in 1962 to less than 1 million pounds in 1965, representing less than one-half of 1 percent of the domestic market.

However, the representatives of the domestic industry have argued that a serious threat of injury looms in the future. In part because of this concern, the report recommends that more accurate import data for textured yarns be provided in the future, so that Congress, the executive branch, and the industry can keep close watch on import levels and consider additional measures should they be warranted. I am therefore directing that steps be taken to obtain more accurate data on imports of textured yarns.

I am also transmitting for the information of the Congress the report of the Tariff Commission on textured yarns which I requested.

LYNDON B. JOHNSON.

THE WHITE HOUSE, *February 1, 1966.*

PRESIDENTIAL REPORT ON TEXTURED YARNS OF MANMADE FIBERS

Background

Under the leadership of Christian Herter, my special representative for trade negotiations, interested agencies of the executive branch have reviewed the report of the Tariff Commission on textured yarn published on December 10, 1965, which was requested by the President, pursuant to Public Law 89-229, section 2, which reads as follows:

> SEC. 2. The President shall promptly cause a study to be made of the feasibility and desirability of separate classification in the Tariff Schedules of the United States for those yarns of man-made fibers commonly referred to as textured or texturized yarns. He shall report the results of such study, including any recommendations as to the appropriate rate or rates of duty for such yarns, to the House of Representatives and to the Senate not later than February 1, 1966.

These agencies have also had before them briefs submitted to the Tariff Commission by representatives of the domestic industry and of the importers. In addition, informal meetings were arranged with representatives of the domestic producers and of importers in order to offer further opportunity to interested parties to express their views and assist the work of the agencies.

Conclusions

The results of the discussions among the agencies have led to the following conclusions.

1. There are at present reasonably reliable estimates of imports of textured yarns, but precise statistical data on volume and value of such imports are not available. Therefore, the President is requesting, subject to the criteria for statistical annotation of the Tariff Schedules of the United States under section 484(e), Tariff Act of 1930, that additional statistical classes be provided in the Tariff Schedules of the United States, Annotated, in order to obtain accurate import data for textured yarns of manmade fibers in the future.

2. New tariff rates for textured yarns would not be desirable, and therefore it is recommended that no action be taken to reclassify textured yarns in the Tariff Schedules of the United States.

Supporting report

The basic technical and economic data are contained in the report of the Tariff Commission.

The Tariff Commission concluded that it was technically feasible to provide separate tariff classification in the Tariff Schedules of the United States (hereafter referred to as the TSUS) for textured yarns of manmade fibers.

Attention was therefore focused on the desirability of separate classification. The representatives of the domestic producers placed particular emphasis on the argument that there are at present anomalies and inequities in the tariff treatment of textured yarns, as compared with other types of yarns with similar characteristics.

Representatives of the domestic producers argued that a higher rate of duty at each higher stage of manufacture was the pattern of

duties established in the Tariff Act of 1930, and continued in the TSUS, and that the development of textured yarns provides an example of a new product line for which rates ought to be adjusted upward in accord with this pattern or theory. The Tariff Commission report paid particular attention to this argument, and concluded that no one theory or concept of tariff ratemaking is embodied in the TSUS, and that the existing concepts are often conflicting. The Tariff Commission further stated that—

> The adoption of one principle over another in any given case is rarely based purely upon economic considerations alone. More often the selection of principle is based upon a combination of both political and economic considerations.

To single out any one theory for predominant status would be to invite requests for substantial revisions of other provisions in the TSUS. In this connection there are many other examples of duty treatment in yarns, fabrics, and other textiles which are not in accord with any single theory.

Moreover, rigid adherence to the theory of rate progression with higher value added is itself almost impossible to achieve without a nearly infinite number of rate classes in the TSUS. In practice, however, further value added is at least partially taken into account by the application of ad valorem duties. Thus, as a product in any particular rate class is further processed, and the sales price rises, the actual duty paid rises with the price when ad valorem rates are applied. In the present instance, textured yarns are protected by the same ad valorem rates as raw feed yarns, but of course the duty paid on an equivalent amount of textured yarn is higher.

The definition of what constitutes an anomaly or inequity in the tariff schedules could depend in practice upon many considerations, including the particular theory of ratemaking one wished to apply. Numerous examples of inconsistencies by one or another standard can of course be found in the TSUS. With regard to textured yarns, in some cases anomalies were said to exist between products entirely dissimilar in method of production, and similar only in the fact that there was some competition in use. There is no evidence of significant trade diversion or loophole trade as a result of whatever anomalies exist.

In the absence of significant trade diversion or any other argument that the anomalies or inequities provided for undesirable access to the domestic economy, it is concluded that anomalies or inequities, even where they might conceivably exist, are inconsequential in trade impact.

The question was raised as to whether technological developments had overtaken the tariff schedules. To revise the TSUS in accord with each and every change in technology in each and every product is neither feasible nor desirable. The TSUS is designed to be comprehensive. As new products come along they are placed in one or another class. That a technological change has taken place which was not anticipated in previous years does not provide a reason per se for changing duty treatment.

One possible consideration in favor of higher duties for textured yarns would be whether there was any economic justification for a change from present practice. The 1965 level of imports of textured yarns, as estimated by the Tariff Commission, would be under 1 million pounds, as against an estimated domestic production of more than 250

million pounds. This import level, less than half of 1 percent of domestic consumption, represented a decline from 1962 and 1963 levels of more than 2 million pounds, and less than 2 million pounds in 1964. The representatives of the domestic producers agreed with the Tariff Commission estimates, but argued that there was now a threat of a flood of imports in the next few years. The industry argued that we should act now to forestall this possibility. The further argument was made that potential threat of foreign competition could be seen in a comparison of domestic with foreign costs and prices. However, the evidence on costs and prices put to the Tariff Commission and the agencies was inconclusive. The recent decline in imports does not support the contention that domestic producers are noncompetitive. Finally, in recent years employment has been rising in the throwing mills, which provide a major portion of domestic production.

Thus the available evidence does not indicate that imports are adversely affecting the domestic industry at the present time, nor does it appear to support the industry's concern over potential future economic threat. However, as a safeguard, the initiation of separate statistical tabulation of imports of textured yarns would enable the executive branch, the Congress, and the industry to watch import levels in the future for evidence of adverse impact, should a threat of a substantial rise in imports materialize.

A separate but important consideration is whether a change in classification and duty rates would affect our trade relations with other countries, and raise problems in the context of the Kennedy round of trade negotiations in the GATT. The Tariff Commission stated the issue as follows:

> * * * any increase in present import restrictions on textured yarns would be inconsistent with existing trade agreement obligations of the United States, and that such action, if taken, would no doubt require compensatory concessions by the United States with regard to imports of other products.

In this regard, even if compensatory concessions are likely to be small, it is well recognized that increases in tariff duties without clear overriding reasons could call into question the consistency of U.S. trade policy.

UNITED STATES TARIFF COMMISSION

TEXTURED YARNS

Report to the President on Investigation No. 332-46
Under Section 332 of the Tariff Act of 1930
Pursuant to the President's Request of
October 1, 1965

TC Publication 166
Washington, D. C.
December 1965

UNITED STATES TARIFF COMMISSION

Address all communications to

United States Tariff Commission

Washington, D.C. 20436

CONTENTS

(TC29127)

REPORT TO THE PRESIDENT

U.S. Tariff Commission,
December 10, 1965.

To the President:

In accordance with the request contained in your letter of October 1, 1965, 1/ the U.S. Tariff Commission reports herein the results of its investigation of the feasibility and desirability of separate classification for those yarns of man-made fibers commonly referred to as textured or texturized yarns. 2/

Your request was made pursuant to section 2 of Public Law 89-229, which provides as follows:

> The President shall promptly cause a study to be made of the feasibility and desirability of separate classification in the Tariff Schedules of the United States for those yarns of man-made fibers commonly referred to as textured or texturized yarns. He shall report the results of such study, including any recommendations as to the appropriate rate or rates of duty for such yarns, to the House of Representatives and to the Senate not later than February 1, 1966.

The Commission's investigation (No. 332-46), which was instituted on October 6, 1965, was conducted under the authority of section 332 of the Tariff Act of 1930 (19 U.S.C. 1332). Public notice of the institution of the investigation and of a hearing to be held in connection therewith was given by publication of the notice in the Federal Register (30 F.R. 13020). The public hearing was held November 8 and 9, 1965, at which all interested parties were afforded opportunity to be present, to produce evidence, and to be heard. A transcript of the hearing and formal briefs submitted by interested parties in connection with the investigation are attached. 3/

1/ The letter here referred to is reproduced as Appendix A.
2/ Commissioner Talbot did not participate in the investigation because of illness.
3/ The transcript and briefs were attached to the original report sent to the President.

In addition to the information obtained at the hearing, data were obtained by the Commission from its files, from other agencies of the U.S. Government, from briefs submitted by interested parties, and through field visits and interviews by members of the Commission's staff with various producers and importers of textured yarns.

Conclusions of the Commission

The Tariff Commission was asked to investigate two aspects of a separate tariff classification in the Tariff Schedules of the United States (TSUS) for those yarns of man-made fibers commonly referred to as textured or texturized yarns: its feasibility and its desirability. In view of the nature and background of the investigation, the Tariff Commission, in this report, concentrates exclusively on the technical phases of the subject matter, and does not treat with desirability on the broader front of tariff rate policy and the social, political, and economic goals associated with such policy.

In this context, the Commission has concluded that it is feasible, i.e., technically possible, to establish in the TSUS separate classification of textured yarns of man-made fibers. It has further concluded that, from the technical viewpoint of nomenclature (as distinguished from rate treatment--for which no views are expressed), there are no difficulties connected with the current classification provisions for yarns of man-made fibers which render desirable the establishment in the TSUS of separate classification for textured yarns of such fibers.

The Commission has suggested drafting techniques which might be adopted for accomplishing separate classification for textured yarns in the event, and to the extent, that the President or the Congress may find it desirable to provide different tariff rate treatment for any such yarns from that applying to other yarns of man-made fibers. 1/

It should be noted that should any rate change for textured yarns be deemed to be desirable, there are several different ways in which the separate classification in the TSUS could be effected depending upon the objectives sought. No one way is without its administrative problems, but any of several can be made to work with relatively little difficulty. No one way is likely to satisfy all interested parties, nor to anticipate fully technological and industrial developments.

In the course of the investigation, a great deal has been made of the point that products should be dutiable at progressively increasing rates of duty as the product is further processed. In fact, the TSUS includes many concepts of tariff rate-making, and the selection

1/ See "Feasibility and Desirability of Separate Classification for Textured Yarns: Drafting Considerations and Techniques," beginning on page 27.

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of one over another has usually been based on a combination of political and economic considerations.

It should also be noted that any increase in present import restrictions on textured yarns would be inconsistent with existing trade-agreement obligations of the United States.

The Commission and its staff stand ready to furnish further drafting or other technical assistance if you and the Congress so desire.

Description and Uses

Prior to the advent of texturing processes, continuous filament yarns of certain man-made fibers imparted to fabrics a slick and clammy feeling; such fabrics were not absorbent and had little give or stretch. The texturing processes were developed in large part to give to the man-made fiber yarns, and products made therefrom, the bulk, softness, and pleasant feel to the hand which are inherent in certain yarns and products made from some natural fibers. Another important characteristic imparted by some of the texturing processes is "stretch," i.e., the ability to extend under tension and return to a relaxed state in a lively manner. 1/

The term "textured" is also often applied to fabrics. A fabric referred to as textured, however, is not necessarily made of textured yarn.

1/ The processes used for texturing yarns are discussed more fully in the following section of this report.

The fabrics themselves may be treated or subjected to various finishing processes to give such qualities as stretch, bulk, interesting surface patterns, and "hand" (pleasant feel); such fabrics, as well as those made of textured yarn, are usually referred to as textured fabrics.

Two terms used to describe textured yarns are stretch (elasticity) and bulk. Some of these yarns exhibit both features to a remarkable degree, while others have little, if any, stretch, or little bulk. The length of the textured yarns when extended may be as much as 5 times the length of the yarn when relaxed; further, the cross sectional dimension of the relaxed textured yarn may be as much as 3 times that of the untextured filament. Bulk in a textured yarn is evidenced by the structure and arrangement of the filaments within the yarn bundle and varying degrees of softness, resilience, or fluffiness depending upon many factors such as yarn weight, filament count, and intrinsic qualities of the filaments themselves.

Magnification of many of the textured yarn bundles reveals configuration such as coils or curls, sharp angles, or loops in the individual filaments of the yarn which give the appearance in miniature of peaks and valleys, undulating waves, or loosely extended coil springs. Further, the individual filaments may be entangled or intertwined, thereby producing the effect of disarray within the bundle. The crooked filaments are in contact with each other only at irregular intervals, thus leaving either large or small open spaces between the filaments.

Man-made fiber yarns referred to as textured yarns have been manufactured in the United States since about 1947. The general use of the term textured, however, began around 1953. Initially, the term apparently was applied to both yarns of continuous and noncontinuous (spun) fibers of all types, the physical structures of which had been modified by various means. In recent years most yarns generally referred to as being textured have been processed from continuous filament man-made fibers.

Most of the man-made fibers are thermoplastic; through the application of various mechnical processes and of heat, they can be transformed from their original smooth, parallel condition to the textured state. The majority of the texturing processes currently used involve heat-setting. The heat setting fixes the configuration of the fibers induced by twisting, crimping, etc. After cooling, if the twist is taken out or the crimp is straightened under tension, the fibers tend on relaxation, to return to the configuration existing at the time of the heating process. This quality, referred to in the trade as "memory", gives the yarn its stretch and/or bulk. The principal process of texturing without the use of heat employs a jet of compressed air to blow open the parallel continuous filaments and to form unbroken loops.

Some yarns of continuous and noncontinuous man-made fibers and some of natural fibers--although not referred to in the trade as textured--have properties similar to yarns identified as textured. A few types of continuous man-made filaments, as extruded from the spinnerette, have stretch properties because of their inherent molecular structure, e.g., the fiber known by the generic term spandex has greater extensibility and contractibility than rubber. Continuous man-made fibers also may be given bulk by

changing the width and shape (e.g., from round to tri-lobal) of the holes in the spinnerette. Filaments of varying thickness along their length are also produced. Spun yarns of natural fibers, though not having important stretch properties, may be given bulk by the use of special attachments or machinery settings on conventional spinning frames. Bi-component filaments consisting of related man-made fibers combined as extruded from the spinnerette, the two components having differing degrees of shrinkage, create a crimped configuration that gives bulk. Taut spendex as a core with a spun-yarn sheath around it, on relaxation, also forms a crinkled shape and provides stretch.

Textured continuous filament yarns of man-made fibers are used in many types of woven and knitted fabrics. The stretch yarns have been especially well received in the manufacture of ski pants, leotards, hosiery, girdles, swimwear, briefs, tights, and underwear. Modified-stretch 1/ yarns are particularly suited for use in such knit outerwear as sweaters, dresses, and swimwear; they are also used in woven fabrics ranging from industrial fabrics to fabrics for lingerie, shirts, blouses, and dress goods. The finer deniers of the textured yarns are used extensively in half-hose, women's seamless hosiery, and all types of knitted outerwear, including sport shirts and sweaters. Such yarns are also used in men's jackets; women's blouses, dresses, suits, and coats; and children's snow suits, gloves, and scarves. In the coarser deniers, the bulked yarns are used in floor coverings, upholstery fabrics, and industrial fabrics.

1/ See description of modified-stretch process in following section.

The physical differences between those man-made yarns now referred to by the trade as textured and the untextured yarns or filaments are usually quite apparent even to a nonexpert. Elasticity of the yarn, looseness of the yarn bundle, a network like pattern of many of the yarns that appears to the naked eye, and the distinctive feel of the yarn all contribute to making a distinction.

Processes

Eight processes used in producing textured yarns of man-made fibers are currently in general use in the United States. They are known as the conventional, false-twist, modified-stretch, knife-edge (or edge-crimp), stuffer-box, gear-crimp, air-jet, and knit-deknit processes.

The firms and trade names most closely identified with the various processes 1/ are as follows:

Firm	Trade name	Process
Whitin Machine Works	A.R.C.T.	False-twist
Leesona Corp.	Fluflon, Superloft, Saaba	False-twist Modified-stretch
Herberlein Patent Corp.	Helanca	Conventional Modified-stretch
Deering Milliken Research Corp.	Agilon	Knife-edge
Joseph Bancroft and Sons Co.	Textralized	Stuffer-box
Spunize Company of America, Inc.	Spunize	Stuffer-box
E.I. duPont de Nemours & Co., Inc.	Taslan	Air-jet

1/ The knit-deknit process is not associated with a particular firm. The identities of the users of the gear-crimping process are not definitely known.

The variations in the yarns produced by the several processes are almost limitless. Each process has certain attributes which are distinctive. In addition, by varying the fiber, heat, tension, denier, number of filaments in the yarn bundle, ply, and other factors, different results may be achieved by the same process. Quality control is most important and must be strictly observed not only during the texturing operations but must be checked constantly by laboratory analysis.

Description of processes

Conventional.--The so-called conventional method of producing textured yarns is a multistage process utilizing "conventional" throwing 1/ equipment. It is the original method for manufacturing textured yarns. Essentially it consists of twisting and winding the filaments onto a holder, removing such "package" to an autoclave for heat-setting the twist, and then after removal from the autoclave untwisting the filaments onto another holder. Because the yarn so produced has an inherent torque in either the

1/ Throwing is the process of imparting twist to singles or of doubling and twisting two or more singles into ply yarn.

"S" (clockwise) or "Z" (counter-clockwise) direction, singles yarn with "S" torque is usually doubled or plied with a singles yarn of "Z" torque to obtain a balanced (no-torque) yarn.

False-twist.--The false-twist method of producing textured yarns involves twisting, heat-setting, and untwisting grouped filaments in a continuous process. It is the most widely used technique for manufacturing textured yarns in the finer deniers. The filaments are twisted in one direction before they enter a heating chamber where the twist is heat-set; upon leaving the chamber the filaments are twisted in the opposite direction, or, in effect, untwisted. After the filaments have passed through a false-twist spindle, they reach a state wherein no twist remains. "S" and "Z" singles yarns are generally plied together to form a fully balanced yarn with the desired stretch or bulk. Less handling, machinery, and floor space are required in a plant of a given capacity designed to produce textured yarn by the false-twist method than in a plant of the same capacity designed to utilize the conventional method.

Modified-stretch.--The term "modified-stretch" refers to additional processes that are applied to filaments that have already undergone some texturing, such as overfeeding to a second heat chamber, or to modifications achieved by using special machinery settings for the texturizing equipment. These processes tend to stabilize the yarn and make it adaptable for particular end uses. These operations either reduce the stretch and increase the bulk, or produce yarn that gives a crepe (crepe-paper-like pattern and crispness of "hand") or boucle (nubby) appearance to fabrics.

Knife-edge.--The knife-edge process (also known as edge-crimping) consists essentially of passing filaments over a heated roll and then pulling them over a sharp edge at an acute angle. Upon relaxation the filaments take the form of helically coiled springs, except that the direction of spirality reverses at random producing a balanced (torque-free) yarn. This process may impart bulk and/or stretch to the filaments.

Stuffer-box.--In this process filaments are compressed into the confined space of a heated chamber, known as a "stuffer-box", wherein a wavy, random crimp is imparted and heat-set. The resultant yarns are bulky, have some stretch, and are torque-free. The stuffer-box method is second in importance to the false-twist method in the production of textured yarns of fine denier; it is also important in the production of coarse-denier carpet yarns.

Gear-crimp.--Gear-crimping consists mainly of the feeding of continuous filaments through a series of heated rollers or sets of heated gears. It is believed that this process is used mainly by the primary fiber producers. Very little technical information is available regarding this process because the methods of production are closely guarded secrets. Gear-crimping is thought to be the principal method used in the texturing of coarse-denier yarns for use in the manufacture of carpets.

Air-jet.--The air-jet process involves the blowing of a jet of air into filaments that are being fed into the jet area at a faster rate than they are being withdrawn. The filaments are spread apart by the jet of air and random loops are formed, causing the yarn to contract in length and increase in bulk.

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Knit-deknit.--In the manufacture of textured yarns by the knit-deknit process, the filaments are knit into fabric on a multi-head narrow-diameter tubular knitting machine. The fabric is heat-set in an autoclave or other heating device and the yarn is then unraveled on a winding machine. Such yarn is bulky, has a crinkled or wavy configuration, and is torque-free. This process is of minor but of increasing importance in the textured yarn field.

Processes compared

As noted, the respective processes give rise to textured yarns having materially differing properties. Accordingly, yarn textured by one process is often preferred over others for particular end uses. Because of their differing properties, some yarns are able to command higher unit prices than others. Moreover, some texturing processes are more costly to use than others--another factor contributing to differing unit prices in the market place.

A study of the manufacturing costs involved in various texturing processes was made by the Deering Milliken Corp. in 1962; the study was based on data assembled from various throwsters engaged in the respective operations. Some of the results of this study are shown in table 1 of Appendix C, which compares costs of producing textured yarn by use of five alternate types of equipment under the false-twist process, with costs under the stuffer-box process. Undoubtedly there have been subsequent changes in

some of the cost items shown, mainly decreases. The manufacturing cost involved in using the Fluflon equipment, employing one of the earlier false-twist methods, was $2.58 per pound, whereas that for similar yarn textured on a later type of false-twisting equipment (Model 553) was $2.16 per pound.

A measure of the value added by the texturing of yarn may be obtained by comparing the manufacturer's price of the untextured filaments with the manufacturer's price of the textured yarn produced therefrom. Such a comparison, by process and type of yarn, is shown in table 2. According to the trade, the differences in the prices shown largely reflect processing and distribution costs involved in texturing, plying, twisting, packaging, and royalties. The data suggest that the conventional-stretch and the air-jet processes are the most expensive methods of texturing, and the false-twist processes are the least expensive.

Unit costs of producing textured yarns also vary considerably with the denier of the yarn, and the utilization of plant capacity. Generally, the finer the denier of the yarn, the higher the texturing cost. Because of high fixed costs in the respective plants, the greater the output per unit of equipment of a given type of yarn, the lower the cost per pound.

Probably about 70 percent of the output in recent years of textured yarns for use in apparel has been made by the false-twist process; the stuffer-box process has been second in importance in the texturing of yarns for use in apparel. It is believed that most of the output of textured yarns for use in carpets and rugs has been manufactured by crimping processes.

Technological improvements

Over the years, a number of technological improvements have occurred in the manufacturing of textured yarn which have changed the character of the producing plants. The development in the United States in the 1950's of continuous-process methods for texturing yarn substantially reduced the required amount of handling of the yarn. There has also been an increase in the rate of output of textured yarn per machine. These changes have substantially increased the capacity of a given sized plant and, in spite of the rising costs of the machines, have reduced the unit costs of production. As the rates of output of the machines have increased, however, more attention has been required to insure that the desired quality of textured yarns is maintained.

U.S. Tariff Treatment

In the Tariff Schedules of the United States (TSUS), which became effective August 31, 1963, the primary provisions for "yarns of man-made fibers" (i.e., yarns wholly or in chief value of man-made fibers) 1/ are set forth in items 309.98-310.60 of part 1E of Schedule 3. 2/ Separate provisions are set forth in part 1E for chenille yarns (item 310.80) and for yarns put up for handwork and sewing threads (items 310.90-.91). Also, separate provisions are set forth for monofilaments (items 309.02-.06), plexiform filaments (item 309.10), strips (items 309.20-.25), and grouped filaments and strips (items 309.28-.35), some of which may be put to yarn uses but none of which is classifiable as yarns under items 309.98-310.60.

The textured yarns under investigation fall within--but are not specifically provided for in--the aforementioned primary provisions for

1/ See general headnote 9(f)(i) of the TSUS.
2/ Part 1E, Schedule 3, TSUS, is reproduced in Appendix B.

yarns of man-made fibers. Thus, if wholly or in chief value of glass, they are under items 309.98-.99; or, if wholly of man-made fibers (other than glass), as follows: if wholly of continuous man-made fibers, under items 310.01-.21; if wholly of noncontinuous man-made fibers, under 310.40-.50; or if wholly of continuous and noncontinuous man-made fibers combined or if in chief value, but not wholly, of man-made fibers, under item 310.60.

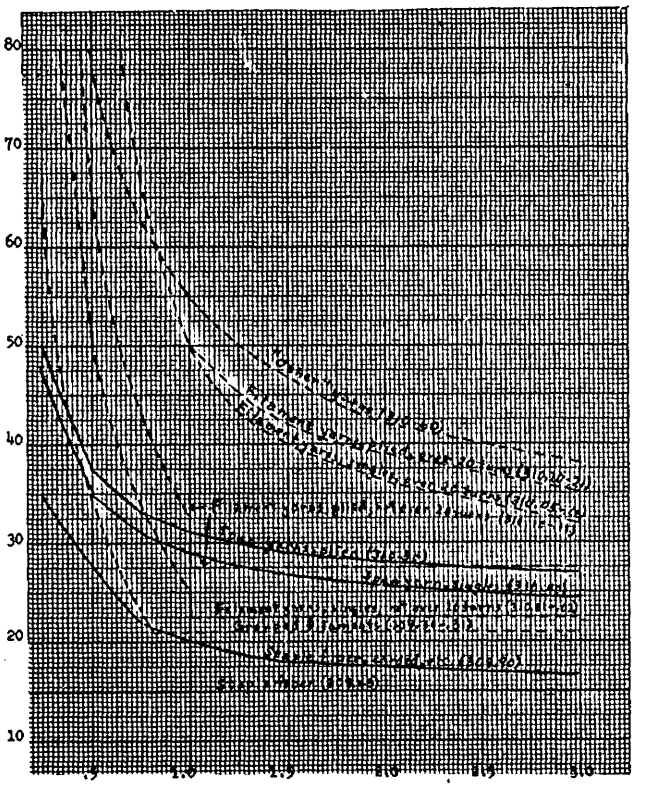
The provisions for yarns in the TSUS, like those in the predecessor provisions of the Tariff Act of 1930, 1/ for rate purposes, differentiate between yarns on the basis of one or more of the following: their composition, their value, whether they are singles or plied, and whether or not they have over 20 turns of twist per inch. In the TSUS, a series of rate differences based on denier were eliminated.

The following chart graphically illustrates the existing rate relationships between the various yarns of man-made fibers provided for in items 310.01-310.80, 2/ and also the existing rate relationships between such yarns and the man-made fiber materials (grouped filaments and strips, fibers in noncontinuous form, fibers processed but not spun) from which they are produced:

1/ For convenience of reference, there is reproduced in Appendix B, an excerpt from United States Import Duties (1963) showing paragraphs 218(f), 230(d), 1301 to 1305, 1312, and 1313 from which the provisions for yarns, etc., in part 1E, Schedule 3, TSUS, were derived.

2/ Yarns of glass provided for in items 309.98-.99 are omitted to avoid confusion. See Appendix B for rates on such yarns and the glass textile materials from which they are made.

Relation of the ad valorem equivalent of the current rates of duty on certain yarns and filaments to their foreign unit value based on imports in 1964



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It will be observed from the foregoing chart that for a number of the tariff classes applicable to products of man-made fibers, the duties, on an ad valorem basis, decline as the foreign unit values of the imports rise. Further observation reveals that the rate structure is such that, in general, such products of a given unit value are dutiable at progressively higher rates as the products are further processed, the principal exception being that grouped filaments (items 309.30-.31) are dutiable at higher rates than the staple fibers (item 309.43) produced therefrom. Generally, filament yarns with over 20 turns of twist per inch, for example, are dutiable at higher rates than those with not over 20 turns of twist per inch and plied filament yarns are dutiable at higher rates than singles. On the other hand, as indicated previously, a yarn is generally dutiable under the same tariff class whether textured or not textured. Most of the textured yarns imported in recent years have been dutiable under item 310.02 at the rate of 22.5 percent ad valorem.

U.S. Consumption

The U.S. annual consumption of textured yarns increased from less than 5 million pounds in 1950 to about 75 million pounds in 1960 and to nearly 230 million pounds in 1964. The trade anticipates that consumption may reach half a billion pounds by 1970 and that it will continue to increase thereafter. In 1964, the consumption of textured yarns was equivalent to approximately 7 percent of the total consumption of man-made fibers, compared with about 4 percent in 1960. Nearly all of the textured yarns consumed in the United States are supplied by domestic producers.

U.S. Producers

It is estimated that textured yarns are produced by about 80 firms in some 100 to 125 U.S. establishments. The firms that do the texturing include a few large companies which, in addition to producing the bulk of the textured yarn of coarse-denier for use in carpets, manufacture an important part of the U.S. output of man-made fibers and yarns. Most of the firms, however, buy the filaments, process them, and sell textured yarns. Until recent years, these firms were engaged primarily in the throwing of silk and certain man-made fiber yarns; currently, however, the texturing of yarns--principally fine-denier yarns--constitutes a very substantial part of their operations. The bulk of the output of the fine-denier textured yarns is produced by these throwsters; they also produce a small part of the coarse-denier textured yarn for carpets and rugs.

It is believed that 12,000 to 14,000 production and related workers are currently engaged in texturing operations (including texturing, plying, twisting, packaging, shipping, etc.) in throwsters' plants and in fiber-producers' plants. Because of the substantial increase in the production of textured yarn in recent years, it is probable that the number of production and related workers is markedly greater at the present time than it was five years ago.

The establishments producing textured yarns are located mainly in the Middle-Atlantic and Southern States. North Carolina and Pennsylvania have the largest number of such establishments. Some are also located in Rhode Island, Georgia, New Jersey, South Carolina, and Connecticut.

Most of the domestic producers of textured yarns are licensees of other U.S. companies which hold patents on processes for making textured yarns. The patent holders include some producers of textured yarns as well as some manufacturers of the machinery used. Some licensees pay royalties for the use of a patented process amounting to as much as a fifth of the value added by texturing. Technical services are, however, often provided to the licensees by the patent holders. Licenses are generally granted to domestic producers on the same terms as those offered foreign users. Only a small percentage of the foreign producers of textured yarns are licensed by U.S. companies.

Although most of the equipment used by the U.S. producers of textured yarns is manufactured in this country, some is imported from Europe, chiefly France. Domestic machinery manufacturers, on the other hand, have sold equipment to licensees of U.S. companies located throughout the world.

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U.S. Production

The U.S. annual production of textured yarns increased from 74 million pounds in 1960 to 151 million pounds in 1962 and 227 million pounds in 1964 (table 4). The value of such output in 1964 was roughly half a billion dollars. The domestic producers plan to increase their output substantially in the next few years. About ninety percent of the output of textured yarnsin each of the years 1961-64 consisted of nylon yarn; the remainder consisted of rayon, acetate, polyester, olefin, and glass yarns.

In 1964, about 80 percent of the production was for sale, 10 percent was consumed by the producing companies themselves, and 10 percent was produced on commission. More than half of the production was used in manufacturing carpets and rugs; the remainder was used largely in weaving or knitting (table 5).

U.S. Exports

No official statistics are available on the U.S. exports of textured yarns. According to the trade, however, sizable quantities were exported to Europe and South America in the late 1950's; the United States was a net exporter of textured yarns in those years. More recently, however, foreign production has increased and the U.S. exports have decreased; in 1963 and 1964 less than 1 percent of the domestic output was exported.

U.S. Imports

It is estimated that the U.S. annual imports of textured yarns declined from more than 2 million pounds in 1962 and 1963 to considerably less than 2 million pounds in 1964; imports in 1965 will probably amount to less than 1 million pounds. The imports in recent years have consisted principally of textured acetate yarns made by processes developed in Europe whereas the domestic production has consisted largely of textured nylon yarns. The decline in the imports of textured yarns in the past few years reflects largely an increase in the domestic production of the textured acetate yarns. The principal sources of the imports have been Italy and France.

The short supply of textured acetate yarns in the U.S. market in 1962 and 1963 was reflected in high prices for such yarns. As the domestic production grew, both U.S. prices and imports declined. The prices f.o.b. New York for 70 denier, acetate yarn textured by the false-twist method (which are representative of the prices for imported textured yarns) have declined from $3.50 per pound in 1962 and early 1963, when the imports were at the peak, to from $1.85 to $2.00 per pound at the present time.

Almost all of the textured yarn imported in recent years has consisted of singles, wholly of continuous man-made fibers, with not over 20 turns twist per inch, and valued at more than $1 per pound; such imports are dutiable at the rate of 22.5 percent ad valorem. Some of the imported textured yarns had been processed by twist-untwist methods and as many as 75 turns of twist per inch may have been put into the yarn, even though the twist was removed before the yarn was shipped to this country. The

final product, therefore, having less than 20 turns twist per inch, was dutiable at the rate shown above rather than at the higher rate applicable to yarns having over 20 turns of twist per inch.

The principal foreign producing countries are England, France, Germany, Italy, Switzerland, Scandinavian countries, and Japan. The techniques used in these countries to texture yarns are in general comparable at present to those used in the United States. A number of the important developments in the technology of texturing yarns were initiated in Europe but were refined in the United States for more efficient operation.

U.S. Prices

The prices received in recent years for the U.S. output of textured yarns have primarily reflected the competition among domestic producers. Improvements in technology introduced over the years have resulted in lower costs of production in this country and in lower prices for textured yarns. Imports have influenced the U.S. prices only minimally.

Data collected by the Commission from trade sources indicate that in the period 1962-65, the prices of coarse-denier textured yarns, largely for use in carpets, upholstery, etc., declined about 20 percent (table 6). Although data on the prices of fine-denier textured yarns are not available for the same period, it is believed that such prices also declined somewhat.

The decline in the prices of textured yarns occurred despite the fact that the list prices of standard nylon filaments for texturing have been fairly stable at $1.71 per pound for 70-denier, 2-ply. It should be

noted, however, that sales have been reported at less than list prices. Testimony was presented to the effect that untextured 70-denier nylon filaments have sold for as little as $1.33 per pound when intended to be textured for the export market. 1/

Contentions of Interested Parties 2/

The Congressional directive to the President to cause a study to be made with respect to textured yarns was an outgrowth of consideration by House and Senate conferees of an amendment made by the Senate to H.R. 5768. This amendment would have added a new item to the TSUS, separately providing for certain of such yarns at rates of duty higher than most of the rates currently applicable. 3/ The Senate amendment was sponsored by the domestic producers of textured yarns.

Domestic producers' contentions

A basic premise of the domestic industry in requesting a separate tariff classification for textured yarns of man-made fibers is that in general both the Tariff Act of 1930 and the TSUS provide higher rates for more highly processed yarns. Considerable weight is attached to the

1/ See pages 238-240 of the transcript.

2/ This section includes the gist of the testimony at the hearing which related both to the technical aspects of the matter with which this Commission report deals, and to other issues of an economic nature which are not discussed.

3/ The amendment added to H.R. 5768 by the Senate would have inserted after item 310.60 a new item 310.70 for "Yarns of continuous man-made fibers having special characteristics of bulk or elasticity imparted to the yarns or the fibers by heating, twisting and untwisting, crimping, curling, or other processing" at the rate of 25¢ per lb. + 30% ad val. (rate column numbered 1) and at the rate of 45¢ per lb. + 65% ad val. (rate column numbered 2).

fact that the rates of duty are higher for high-twist and plied yarns than for low-twist and singles yarns; that the rate of duty on such specialty products as plexiform filaments (item 309.10), chenille yarns of man-made fibers (item 310.80), yarns made by combining a spun (non-continuous) yarn with a continuous filament yarn (item 310.60), and core-spun spandex yarns (item 310.60) is higher than on most types of man-made fiber yarns. The claim is made that textured yarns are also specialty items and should be dutiable at the rate applicable to the above-mentioned specialty products (25 cents per pound and 30 percent ad valorem).

The assertion has been made that zero-twist textured yarns are presently produced in substantial quantity in the United States and that if imported this yarn should be dutiable at the foregoing rate under item 310.60. The present rate provisions, it is said, provide a loophole in that the foreign producer can make his yarn eligible for a substantially lower rate of duty by the simple expedient of applying a slight amount of twist to the yarn. It is also claimed that the treatment of false-twisted textured yarns as not being twisted for tariff purposes is anomalous since the filaments have, in fact, been twisted not once but twice.

Representatives of the domestic industry testified; that the technical skills, labor cost, and machinery costs are higher for texturing yarns than for twisting or plying yarns; that the foreign industry is able to produce textured yarns more cheaply than U.S. producers; that there presently is over-capacity among producers in the foreign countries;

and that imported textured yarns are being offered here at lower prices than those for textured yarns produced in this country.

The domestic producers claim that the provisions of the Tariff Schedules have not been adapted to changes in the industry that have occurred since 1930; that texturing has now become an important function of the throwsters, and that that portion of their operations is without adequate tariff protection; and that Congress intended that the throwster industry should be protected and should prosper in the face of foreign competition.

Importers' contentions

In testimony made on behalf of importers of textured yarns, on the other hand, virtually all the foregoing claims made by the domestic producers were either disputed or denied. The importers disagreed with the premise that higher rates of duty should apply to man-made fiber products that are further advanced or processed and asserted that "scientific" rate-making in terms of "cost of production" is long outmoded. Rates are currently agreed upon, it was stated, at the trade-agreement bargaining table. It was asserted that for every example, under existing tariff law, of progressively higher rates for additional processing, numerous other rate provisions belie that approach. Attention was called to the fact that the ad valorem rates presently applicable to textured yarns under items 310.02 and 310.06 result in larger duty assessments as the value of the yarn increases.

The importers claim that it does not follow that because zero-twist textured yarns of man-made fibers and those not wholly of continuous or

noncontinuous fibers may be dutiable under the higher rate provision of item 310.60, that all textured yarns should therefore be dutiable at that rate. They contend that it would be strange to apply the higher rate to all imports of man-made textured yarns when the two types of yarn just mentioned account for only a minor part of imports or production of textured yarns. They suggest that, counter to the producers' claims, provision should be made in the Tariff Schedules for all textured yarns to be dutiable at the lower rates. The importers also emphasize that although textured yarns and high-twist yarns both involve further processing, the two items are not similar. That an industry should receive the same quality of protection regardless of the products they manufacture, the importers stated, was an anomaly.

It is claimed that the foreign costs of production are comparable to the domestic, but that even if they were lower the additional expenses for freight, insurance, and higher import duties would make it unprofitable to export to the United States. Current imports, it is argued, consist largely of textured yarn innovations and specialties not available in the United States. The importers disagree with the producers' contention that there is over-capacity in the European plants. They characterize the domestic industry as healthy and growing rapidly. With imports equivalent at most to one or two percent of domestic production it is reasoned that the domestic industry has neither been injured nor is there a likelihood of future injury, and that domestic producers need no additional protection through higher rates of duty.

Feasibility and Desirability of Separate Classification for Textured Yarns; Drafting Considerations and Techniques

Feasibility

As indicated under Description and Uses, textured yarns are identifiable by their characteristic bulk and/or elasticity. Although the trade in textured yarns is comprised for the most part of yarns wholly of continuous man-made fibers within the scope of items 310.01-.02 and 310.10-.11, it is quite possible to produce yarns with similar characteristics of bulk and/or stretch of glass filaments or fibers (items 309.98-.99); wholly of noncontinuous man-made fibers (items 310.40-.50); of combinations of continuous and noncontinuous man-made fibers, or of either or both such man-made fibers blended with cotton, wool, or other textile fiber (item 310.60).

Inasmuch as bulk and/or elasticity are the only distinctive physical characteristics common to all the yarns in question, the Commission believes that any separate provision would necessarily have to describe such yarns of man-made fibers in terms of these distinctive or special characteristics. Moreover, since these characteristics are manifest in the textured yarns of man-made fibers regardless of the process by which produced, or the specific filaments, fibers, or combinations thereof employed, the Commission believes that any such separate provision could be all-embracing and not limited by reference to particular processes, filaments, or fibers. It is not meant to say, however, that a description so based would be free of administrative difficulties. The terms

"bulk" and "elasticity" are relative and, although the yarns wholly or in part of continuous man-made fibers presently produced can be readily distinguished on the basis of such characteristics, the distinction is less clear with respect to spun yarns. In addition technological developments could in the future introduce new problems of differentiation. Nevertheless, such problems are not uncommon in many areas of nomenclature, and the Commission is satisfied that, all things considered, it would be feasible (i.e., technically possible) to establish separate classification for such yarns. 1/

Desirability

Neither the current primary superior heading or article description, "Yarns of man-made fibers", nor the subordinate description thereunder (items 309.98-310.60) present technical problems which are peculiar to textured yarns alone. 2/ The current provisions are no more complex than the legislated and

1/ During the course of public hearings held by the Tariff Commission in 1958 in connection with the Tariff Classification Study, the Man-Made Fibers Producers Association proposed separate classification for textured yarns at rates derived from the provisions in paragraph 1301, Tariff Act of 1930, for yarns wholly of continuous filaments with over 20 turns of twist per inch. (See pages 394, 406-9, 520-1, 534, and 571-3 of Schedule 3, Tariff Classification Study (1960). The proposals were not accepted, principally because the Commission was not satisfied at that time that textured yarns could practically be distinguished from other yarns, and because the significant rate increases proposed were not considered to be "incidental" rate changes required to carry out the purposes of the study.

2/ That is not to say that the current provisions do not have undesirable features. For example, the use of the "chief value" concept is not the most desirable classification concept. As explained in the Submitting Report of the Tariff Classification Study (p. 13), "From the point of view of practical customs administration and industry practice, it would be most desirable if descriptions based on component material of chief value with its confusion and uncertainties could be abandoned in favor of descriptions based on the relative quantities by weight of the various textile fibers used in textile products".

proclaimed rate differences dictate. It is relatively simple to determine at the present time that a yarn (whether or not textured) is or is not made of glass; is or is not wholly of continuous (or noncontinuous) man-made fibers; is singles or plied; has over or not over 20 turns of twist per inch; is valued over or not over $1; or is wholly or in chief value of man-made fibers. Moreover, although the foregoing yarn distinctions do not serve in any significant degree to segregate textured yarns from untextured yarns, 1/ such distinctions are for the most part compatible with physical differences between varieties of textured yarns. In other words, the technical aspects of tariff nomenclature and schedule design offer no compelling or persuasive reasons for concluding that separate classification in the TSUS for textured yarns is desirable.

It is possible, therefore, and perhaps desirable, subject to the criteria for statistical annotation of the TSUS under section 484(e), Tariff Act of 1930, to subdivide the appropriate existing rate classes for yarns of man-made fibers to obtain accurate import data for textured yarns. Such annotation, of course, would not require action either by you or the Congress, nor would it affect the rates of duty.

On the other hand, if you should decide, after consideration of this report and the views of other interested agencies, that rate treatment different from that currently provided in the TSUS for textured

1/ In a negative sense, some separation of textured and untextured yarns is made in the current provisions. It is not likely, for example, that textured yarns would have over 20 turns of twist per inch (items 310.05-.06 or 310.20-.21) or would be valued not over $1 per pound (item 310.01 or 310.10).

yarns of man-made fibers is desirable, the enactment of legislation establishing separate classification for textured yarns would be required.

In the TSUS, many concepts of tariff rate-making are embodied, and such concepts are often conflicting. Many products are dutiable at rates of duty which progressively increase as the processing of the product advances; many products are dutiable at the same rate regardless of the degree of processing; and for still other products the rates decrease as the product is further processed. The adoption of one principle over another in any given case is rarely based purely upon economic considerations alone. More often the selection of principle is based upon a combination of both political and economic considerations.

It is noted that any increase in present import restrictions on textured yarns would be inconsistent with existing trade-agreement obligations of the United States, and that such action, if taken, would no doubt require compensatory concessions by the United States with regard to imports of other products.

Drafting considerations and techniques

In the event that legislation establishing separate classification for textured yarns is to be recommended, the Commission believes that the new provisions should be subordinated to the existing principal heading for "Yarns of man-made fibers", and suggests that the legislation might incorporate (1) an appropriate definition of the term "textured", as used with reference to yarns, in a new provision to be added at the end of headnote 3 of part 1E of Schedule 3, and (2) one or more subordinate

article descriptions for such yarns appropriately positioned under the existing provisions for such "Yarns of man-made fibers".

In determining what the headnote definition should be and how to assimilate the subordinate article description, a decision would have to be made as to whether the new classification is to encompass all yarns of man-made fibers having pronounced bulk and/or elasticity, or whether such provision is to be circumscribed or limited in some respect.

The decision as to the scope of the new classification should take into account, to the extent practicable, factors such as customs administration and both actual and foreseeable technological developments. Tariff language, whether of broad or narrow scope, should be specific enough to enable customs officials (whose decisions are subject to court review) to classify articles correctly and consistently, and, hopefully, to do so objectively and with administrative economy. Tariff language which, of necessity, tends to be and oftentimes is static, cannot be expected, in every case, to distinguish between products on the basis of characteristics which will be universally acceptable for all time. The dynamics of industrial and technological growth preclude such possibility.

As the testimony at the Tariff Commission hearing and the original Senate amendment indicate, texturing, at the moment, is generally thought of as process (or a group of alternate processes) which imparts certain characteristics to a yarn. The same or similar characteristics, however, may be developed or imparted to yarns by ways not currently called texturing. The question arises, therefore, whether the new provision is to

be based more on product characteristics or processing methods (or industry patterns) and, if the latter, whether on current processing methods or those likely to emerge.

Most of the present business (and trade) in what is commonly called textured yarns is in continuous filament yarns of man-made fibers. Should any new classification be limited to the major article currently dominating, and thereby miss some yarns with the physical characteristics of textured yarns? Should it attempt to encompass all yarns having textured characteristics, and thereby include some which are not currently known as textured yarns? Should it attempt to use language now which will encompass the future developments (which it, no doubt, will also affect)?

To illustrate the possible drafting techniques: If you should decide that a single separate provision for all textured yarns of man-made fibers is desirable, the legislation might provide for--

(1) adding to headnote 3 of part 1E of Schedule 3 a new provision, as follows:

> (j) the term "textured", as used with reference to yarns, means such yarns having special characteristics of bulk or elasticity, or both.

(2) deleting the heading "Of glass:" immediately preceding item 309.98 and inserting in lieu thereof new language so that the article description for yarns of man-made fibers would begin as follows:

Item	Articles
	Yarns of man-made fibers:
309.95	Textured yarns .....
	Of glass (except textured yarns):
309.98	Not colored .....
309.99	Colored .....
	Other:
	* * *

It would be possible to subdivide this provision for textured yarns, if desired for rate purposes.

On the other hand, if provisions of lesser scope were to be recommended as being desirable, this result could be accomplished by limiting the proposed headnote definition and/or by selective assimilation of one or more new article descriptions for textured yarns in the present rate provisions. For example, the proposed headnote definition might be limited to yarns in which the characteristics of bulk or elasticity have been imparted by additional processes after the filaments have been extruded from the spinnerette, and the article descriptions might be assimilated in a position subordinate to yarns "wholly of continuous man-made fibers" provided for in items 310.01-.21.

There are, of course, a number of different ways in which the foregoing drafting techniques can be used, depending upon what is decided to be desirable with respect to the rate treatment of, and the scope of, any separate treatment for textured yarns of man-made fibers.

As previously indicated, the identification of textured yarns presently made wholly or in part of continuous man-made fibers is more easily accomplished than is identification of the textured yarns wholly of noncontinuous fibers. Thus, the inclusion of provisions limited in scope to such yarns wholly of continuous fibers would be somewhat easier to administer than would a broader provision applicable to all textured yarns of man-made fibers. Any provisions of limited scope, however, if reflecting significantly higher rates of duty, would have the tendency to invite the importation under the lower rate provisions of yarns comparable to textured yarns (i.e., with characteristics of stretch and/or bulk).

Appendix A

THE WHITE HOUSE
WASHINGTON

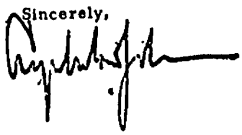
October 1, 1965

Dear Mr. Bent:

Today I approved H. R. 5768, a bill dealing with the tariff treatment of certain yarns.

In order to carry out my responsibilities under section 2 of that bill, I request that the Tariff Commission investigate the feasibility and desirability of separate classification for those yarns of man-made fibers commonly referred to as textured or texturized yarns and that the results of this investigation and the views of the Commission on this subject be given me no later than December 10, 1965.

Sincerely,



Mr. Donn N. Bent
Secretary
United States Tariff Commission
Tariff Commission Building
Washington, D. C.

Appendix B

Part 1E, Schedule 3, TSUS
and
Excerpts from U.S. Import Duties (1963)

SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS
Part 1. - Textile Fibers and Wastes; Yarns and Threads

Item	Articles	Rates of Duty	

Subpart E. - Man-made Fibers

Subpart E headnotes:

1. The provisions of this subpart do not cover—
(i) metal filaments, strips, or fibers;
(ii) paper filaments, strips, or fibers;
(iii) natural rubber filaments, strips, or fibers;
(iv) synthetic rubber strips (in continuous or noncontinuous form);
(v) nonmetallic mineral filaments, strips, or fibers, except as set forth in 2(c) infra;
(vi) sterile surgical sutures and suture materials, provided for in part 13C of schedule 6;
(vii) strings for musical instruments (see part 5B of schedule 7);
(viii) fishing line put up and packaged for retail sale (see part 5B of schedule 7);
(ix) racket strings put up and packaged for retail sale (see part 5D of schedule 7); or
(x) brush bristles provided for in part 12C of schedule 7.

2. (a) For the purposes of the tariff schedules, the term "man-made fibers" refers to the filaments, strips, and fibers covered in this subpart.
(b) Subject to the limitations set forth in headnotes 1 and 3 of this subpart, the respective provisions in this subpart for filaments, strips, and fibers cover such articles whether they are formed by extrusion or by other processes from substances derived by man from cellulosic or noncellulosic materials by chemical processes, such as, but not limited to, polymerization and condensation;
(c) the provisions of this subpart applicable to grouped filaments and fibers include grouped glass filaments and glass fibers produced therefrom, suitable for the manufacture of yarns, cordage, or woven fabrics. For the purposes of the provisions of the tariff schedules applicable to articles of man-made fibers, glass filaments and glass fibers shall be treated as man-made fibers only if they have been made into yarns or cordage, or if they are present in fabrics or other articles in the form of yarns or cordage.

3. For the purposes of this subpart —
(a) the term "filaments" embraces monofilaments, plexifilaments, and grouped filaments, however produced;
(b) the term "monofilaments" embraces single filaments (including single filaments of laminated construction or produced from two or more filaments fused or bonded together), whether solid or hollow, whether flat, oval, round, or of any other cross-sectional configuration, which are not over 0.06 inch in maximum cross-sectional dimension;
(c) the term "plexiform filaments" embraces flexible filaments each of which consists of a network or plexus of fine fibers and which are suitable for the manufacture of textiles;

SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS
Part 1. - Textile Fibers and Wastes; Yarns and Threads

Item	Articles	Rates of Duty	
		1	2
	(d) the term "strips" embraces strips (including strips of laminated construction), whether or not folded lengthwise, twisted, or crimped, which in untwisted, untwisted, and uncrimped condition are over 0.06 inch but not over one inch in width and are not over 0.01 inch in thickness; (e) the term "grouped filaments and strips" embraces two or more filaments or strips, as defined in (a), (b), (c) and (d) of this headnote, grouped together with the filaments or strips substantially parallel and not twisted, but the term does not include grouped filaments which have been subjected to processes such as twisting and untwisting, false twisting, crimping, and curling, and which are useable as yarns; (f) the term "fibers" includes filaments and strips, as defined above, in noncontinuous form, and any other fibrous structure suitable for the manufacture of textiles; (g) the term "in continuous form", as used with reference to filaments and strips, refers to such articles when over 30 inches in length; (h) the term "in noncontinuous form", as used with reference to filaments and strips, means such articles when 30 inches or less in length; and (i) the term "denier" means the weight in grams for a length of 9,000 meters.		
	Monofilaments (in continuous form), with or without twist, whether known as monofils, artificial horsehair, artificial straw, yarns, or by any other name:		
	Not over 150 denier:		
309.02	Valued not over 80 cents per pound	40¢ per lb.	40¢ per lb.
309.03	Valued over 80 cents per pound	50% ad val.	50% ad val.
	Over 150 denier:		
309.05	Valued not over 85 cents per pound	30¢ per lb.	45¢ per lb.
309.06	Valued over 85 cents per pound	35% ad val.	50% ad val.
309.10	Plexiform filaments (in continuous form), whether known as yarns or by any other name	25¢ per lb. + 30% ad val.	45¢ per lb. + 65% ad val.
	Strips (in continuous form), whether known as artificial straw, yarns, or by any other name:		
	Not laminated:		
309.20	Valued not over $1 per pound	25¢ per lb.	45¢ per lb.
309.21	Valued over $1 per pound	45% ad val.	45% ad val.
309.25	Laminated	25¢ per lb. + 30% ad val.	45¢ per lb. + 65% ad val.
	Grouped filaments and strips (in continuous form), whether known as toy, yarns, or by any other name:		
	Wholly of grouped filaments (except laminated filaments and plexiform filaments):		
	Of glass:		
309.28	Not colored	21% ad val.	50% ad val.
309.29	Colored	30% ad val.	60% ad val.
	Other:		
309.30	Valued not over 80 cents per pound	17¢ per lb.	40¢ per lb.
309.31	Valued over 80 cents per pound	21% ad val.	45% ad val.
309.35	Other	25¢ per lb. + 30% ad val.	45¢ per lb. + 65% ad val.

SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS
Part 1. - Textile Fibers and Wastes; Yarns and Threads

Item	Articles	Rates of Duty	
		1	2
	Fibers (in noncontinuous form), whether known as cut fiber, staple, or by any other name, not carded, not combed, and not otherwise processed:		
	Wholly of filaments (except laminated filaments and plexiform filaments):		
309.41	Nylon, over 2 but not over 8 inches in length, essentially round in cross section and over 0.008 but not over 0.020 inch in maximum cross-sectional measurement, not crimped	3¢ per lb. 15% ad val.	3¢ per lb. 25% ad val.
309.43	Other	25¢ per lb. + 30% ad val.	45¢ per lb. + 65% ad val.
309.50	Other		
	Waste, and advanced waste, of man-made fibers:		
	Not advanced:		
309.60	Noils	12.5% ad val.	25% ad val.
	Other:		
309.63	Of cellulose acetate	7.5¢ per lb. 5% ad val.	5¢ per lb. 10% ad val.
309.66	Other		
	Advanced:		
309.70	Garnetted fibers	5¢ per lb. + 12.5% ad val.	10¢ per lb. + 25% ad val.
309.73	Other	15% ad val.	25% ad val.
	Textile fibers, of man-made fibers, carded, combed, or otherwise processed but not spun:		
309.80	In chief value, but not wholly, of man-made fibers	25¢ per lb. + 30% ad val.	45¢ per lb. + 65% ad val.
309.90	Wholly of man-made fibers	5¢ per lb. + 15% ad val.	10¢ per lb. + 30% ad val.
	Yarns of man-made fibers:		
	Of glass:		
309.98	Not colored	21% ad val.	50% ad val.
309.99	Colored	30% ad val.	60% ad val.
	Other:		
	Wholly of continuous man-made fiber (multifilament yarns):		
	Singles:		
	With twist but not over 20 turns per inch:		
310.01	Valued not over $1 per pound	25¢ per lb. 27.5% ad val.	50¢ per lb. 50% ad val.
310.02	Valued over $1 per pound		
	With over 20 turns per inch:		
310.05	Valued not over $1 per pound	50¢ per lb. 22.5¢ per lb. + 25% ad val.	$1 per lb. 45¢ per lb. + 50% ad val.
310.06	Valued over $1 per pound		
	Plied:		
	With not over 20 turns per inch in the final twist:		
310.10	Valued not over $1 per pound	32.5¢ per lb. 27.5% ad val.	65¢ per lb. 55% ad val.
310.11	Valued over $1 per pound		
	With over 20 turns per inch in the final twist:		
310.20	Valued not over $1 per pound	50¢ per lb. 22.5¢ per lb. + 27.5% ad val.	$1 per lb. 45¢ per lb. + 55% ad val.
310.21	Valued over $1 per pound		
	Wholly of noncontinuous man-made fibers:		
310.40	Singles	6.25¢ per lb. + 22.5% ad val.	12.5¢ per lb. + 45% ad val.
310.50	Plied	6.25¢ per lb. + 25% ad val.	13.5¢ per lb. + 50% ad val.
310.60	Other	25¢ per lb. + 30% ad val.	45¢ per lb. + 65% ad val.
310.80	Chenille yarns, of man-made fibers	25¢ per lb. + 30% ad val.	45¢ per lb. + 65% ad val.

TARIFF SCHEDULES OF THE UNITED STATES

SCHEDULE 3. - TEXTILE FIBERS AND TEXTILE PRODUCTS
Part 1. - Textile Fibers and Wastes; Yarns and Threads

Item	Articles	Rates of Duty	
		1	2
	Yarns put up for handwork, and sewing threads, of man-made fibers:		
310.90	Valued not over 90 cents per pound	20¢ per lb.	50¢ per lb.
310.91	Valued over 90 cents per pound	22% ad val.	55% ad val.

Excerpt from U.S. Import Duties (1963)

Par. No.	Description	Full rate	Reduced rate
218(f)	* * * all articles of every description not specially provided for, composed wholly or in chief value of glass, * * * colored, * * * painted, * * * in any manner, * * *..	60% ad val.	30% ad val.
230(d)	* * * manufactures of glass, or of which glass is the component of chief value, * * *, not specially provided for, * * * ..	50% ad val.	21% ad val.

Excerpt from U.S. Import Duties (1963)

Par. No.	Description	Full rate	Reduced rate
1301	Filaments of rayon or other synthetic textile:		
	Single:		
	Artificial horsehair, weighing per length of 450 meters --		
	Under 150 deniers, and valued per pound --		
	Under 80 cents.....	40¢ per lb.	30¢ per lb.
	80 or more but under 85-5/7 cents.....	50% ad val.	30¢ per lb.
	85-5/7 cents or more.	50% ad val.	35% ad val.
	150 deniers or more, and valued per pound --		
	Under 85-5/7 cents...	40¢ per lb.	30¢ per lb.
	85-5/7 or more but under 88-8/9 cents	40¢ per lb.	35% ad val.
	88-8/9 cents or more	45% ad val.	35% ad val.
	Other, weighing per length of 450 meters --		
	Under 150 deniers, and valued per pound --		
	Under 80 cents.....	40¢ per lb.	
	80 cents or more.....	50% ad val.	
	150 deniers or more, and valued per pound --		
	Under 88-8/9 cents...	40¢ per lb.	34¢ per lb.
	88-8/9 or more but under 89-9/19 cents	45% ad val.	34¢ per lb.
	89-9/19 cents or more	45% ad val.	38% ad val.
	Grouped, weighing per length of 450 meters --		
	Under 150 deniers, and valued per pound --		
	Under 80 cents.....	40¢ per lb.	17¢ per lb.
	80 cents or more but under 80-20/21 cents.....	50% ad val.	17¢ per lb.
	80-20/21 cents or more....	50% ad val.	21% ad val.
	150 deniers or more, and valued per pound --		
	Under 88-8/9 cents.....	40¢ per lb.	17¢ per lb.
	88-8/9 or more but under 89-9/19 cents.....	45% ad val.	17¢ per lb.
	89-9/19 cents or more.....	45% ad val.	19% ad val.

Excerpt from U.S. Import Duties (1963)

Par. No.	Description	Full rate	Reduced rate
1301 (con.)	Yarns of rayon or other synthetic textile, nspf:		
	Not having over 20 turns twist per inch:		
	Singles, weighing per length of 450 meters --		
	Under 150 deniers, and valued per pound --		
	Under 90 cents.....	45¢ per lb.	25¢ per lb.
	90 cents or more but under $1.11-1/9	50% ad val.	25¢ per lb.
	$1.11-1/9 or more....	50% ad val.	22-1/2% ad val.
	150 deniers or more, and valued per pound --		
	Under $1.....	45¢ per lb.	22-1/2¢ per lb.
	$1 or more.....	45% ad val.	22-1/2% ad val.
	Plied, weighing per length of 450 meters --		
	Under 150 deniers, and valued per pound --		
	Under 81-9/11 cents..	45¢ per lb.	32-1/2¢ per lb.
	81-9/11 cents or more but under $1.18-2/11.....	55% ad val.	32-1/2¢ per lb.
	$1.18-2/11 or more...	55% ad val.	27-1/2% ad val.
	150 deniers or more, and valued per pound --		
	Under 90 cents.....	45¢ per lb.	25¢ per lb.
	90 cents or more but under $1.....	50% ad val.	25¢ per lb.
	$1 or more.....	50% ad val.	25% ad val.
	Having over 20 turns twist per inch:		
	Singles, weighing per length of 450 meters --		
	Under 150 deniers, and valued per pound --		
	Under 90 cents.....	90¢ per lb.	50¢ per lb.
	90 cents or more but under $1.10....	45¢ per lb. and 50% ad val.	50¢ per lb.
	$1.10 or more.....	45¢ per lb. and 50% ad val.	22-1/2¢ per lb. and 25% ad val.
	150 deniers or more, and valued per pound --		
	Under $1.....	90¢ per lb.	45¢ per lb.
	$1 or more.....	45¢ per lb. and 45% ad val.	22-1/2¢ per lb. and 22-1/2% ad val.

Excerpt from U.S. Import Duties (1963)

Par. No.	Description	Full rate	Reduced rate
1301 (con.)	Yarns of rayon, etc. (con.)		
	Having over 20 turns, etc. (con.)		
	Plied, weighing per length of 450 meters --		
	Under 150 deniers, and valued per pound --		
	Under 81-9/11 cents..	90¢ per lb.	55¢ per lb.
	81-9/11 cents or more but under $1.18-2/11.....	45¢ per lb. and 55% ad val.	55¢ per lb.
	$1.18-2/11 or more...	45¢ per lb. and 55% ad val.	22-1/2¢ per lb. and 27-1/2% ad val.
	150 deniers or more, and valued per pound --		
	Under 90 cents.....	90¢ per lb.	47-1/2¢ per lb.
	90 cents or more but under $1.....	45¢ per lb. and 50% ad val.	47-1/2¢ per lb.
	$1 or more.....	45¢ per lb. and 50% ad val.	22-1/2¢ per lb. and 25% ad val.
1302	Rayon or other synthetic textile:		
	Carded or garnetted.....	10¢ per lb. and 25% ad val.	5¢ per lb. and 12-1/2% ad val.
	Filaments not over 30 inches long (not including waste), whether known as cut fiber, staple fiber, or by any other name.....	25% ad val.	15% ad val.
	Noils.....	25% ad val.	12-1/2% ad val.
	Roving, sliver, and tops.....	10¢ per lb. and 30% ad val.	5¢ per lb. and 15% ad val.
	Waste (except waste wholly or in chief value of cellulose acetate).....	10% ad val.	5% ad val.
1303	Spun yarn of rayon or other synthetic textile:		
	Singles.....	12-1/2¢ per lb. and 45% ad val.	6-1/4¢ per lb. and 22-1/2% ad val.
	Plied.....	12-1/2¢ per lb. and 50% ad val.	6-1/4¢ per lb. and 25% ad val.

Excerpt from U.S. Import Duties (1963)

Par. No.	Description	Full rate	Reduced rate
1304	Yarn of rayon or other synthetic textile put up for handwork, and sewing thread of rayon or other synthetic textile, valued per pound --		
	Under 81-9/11 cents	45¢ per lb.	20¢ per lb.
	81-9/11 or more but under 90-1/11 cents	55% ad val.	20¢ per lb.
	90-1/11	55% ad val.	22½ ad val.
1305	Rayon or other synthetic textile in bands or strips not over 1 inch wide, suitable for the manufacture of textiles, and valued per pound --		
	Under $1	45¢ per lb.	25¢ per lb.
	$1 or more	45% ad val.	25% ad val.
1312	Manufactures of fibers, filaments, threads, or yarns, of rayon or other synthetic textile, and textile products made of bands or strips not over 1 inch wide of rayon or other synthetic textile; all the foregoing wholly or in chief value of rayon or other synthetic textile, nspf:		
	Gill nets or netting	45¢ per lb. and 65% ad val.	25¢ per lb. and 35% ad val.
	Other	45¢ per lb. and 65% ad val.	25¢ per lb. and 30% ad val.
1315 1/	As used in this title, the term "rayon or other synthetic textile", means any fiber, filament, or fibrous structure, and any band or strip (suitable for the manufacture of textiles) not over one inch in width, all the foregoing whether formed by extrusion or by other processes from substances derived by man from cellulosic or noncellulosic materials by chemical processes, such as, but not limited to, polymerization and condensation, but the term does not include fibers, filaments, fibrous structures, or bands and strips of glass or other nonmetallic mineral, or of metal, paper, or natural rubber.		

1/ This provision does not change the customs classification of nylon monofilament fishing line, nylon surgical sutures, nylon tennis racket strings, or nylon brush bristles existing on August 14, 1958. See Public Law 85-645, 72 Stat. 602, TD 54676.

Appendix C

Tables

Table 1.—Textured yarn: Reported costs of producing 2-ply, 70-denier nylon on selected types of equipment at standard rates of output

Item	False-twist 1/					Stuffer box
	Fluflon	550	552	553	A.R.C.T.	
Labor:						
Texturing	$0.1137	$0.0919	$0.0879	$0.0801	$0.0863	$0.1526
Plying	.0377	.0377	.0377	-	.0377	.0377
Coning	.0313	.0313	.0313	.0313	.0313	.0313
Packing	.0049	.0049	.0049	.0063	.0049	.0049
Total labor	.1876	.1658	.1618	.1177	.1602	.2265
Total overhead and warehouse	.5042	.3350	.2160	.2003	.2310	.1433
Indirect material	.0319	.0319	.0319	.0390	.0319	.0319
Raw material	1.7100	1.7100	1.7100	1.7100	1.7100	1.7100
Waste	.0299	.0299	.0385	.0342	.0299	.0513
General administrative	.1211	.0876	.0661	.0557	.0685	.0647
Total manufacturing cost	2.5847	2.3602	2.2243	2.1569	2.2315	2.2277

1/ Respective columns relate to differing types of equipment used in producing textured yarn by the false-twist process.

Source: Deering Milliken Research Corp.; from cost survey in 1962 of various throwsters engaged in the respective operations.

Table 2.--Untextured filaments and textured yarns: Prices 1/ per pound, by process, 1965

Process	Price of untextured filaments 2/	Price of textured yarn 3/	Difference
Conventional-stretch	$1.71	$3.25	$1.54
False-twist (Helanca)	1.71	2.30	.59
False-twist (Superloft)	1.71	2.20	.49
Modified-stretch (Saabe)	1.71	2.35	.64
Knife-edge (Agilon)	1.71	2.65	.94
Stuffer box (Textralized)	1.71	2.45	.74
Knit-deknit (Antron)	1.70	2.35	.65
Air-jet (Taslan)	1.71	2.96	1.25

1/ Manufacturer's list prices f.o.b. shipping point.
2/ 70-denier, continuous filament nylon, except for knit-deknit (Antron) which is 140 denier and air-jet (Taslan) for which the denier was not furnished.
3/ 2-ply, 70-denier continuous filament nylon, except as noted above.

Source: Duplan Corp.

Table 3.--Textured yarn and man-made fibers: U.S. production, 1960-64

Year	Textured yarn	Man-made fibers	Ratio of textured yarn to man-made fibers
	Million pounds	Million pounds	Percent
1960	74	1,883	4
1961	112	1,995	6
1962	151	2,435	6
1963	172	2,697	6
1964	227	3,078	7

Source: Textile Economics Bureau, Inc.

Table 4.--Textured yarn: U.S. production and type of outlet, by fiber, 1960-64

(In thousands of pounds)

Fiber and outlet	1960	1961	1962	1963	1964
Nylon:					
For sale	48,858	81,646	115,078	125,348	169,715
For own use	4,924	9,422	10,973	14,825	12,045
On commission	7,425	9,176	9,809	14,264	21,203
Total	61,207	100,244	135,860	154,437	202,963
Rayon and acetate: 1/					
For sale	7,451	7,489	8,146	8,382	8,020
Total	9,807	8,643	10,509	10,563	11,303
Other: 1/ 2/					
For sale	920	583	886	1,685	3,928
Total	3,145	2,683	5,002	6,878	12,474
All fibers:					
For sale	57,229	89,718	124,410	135,415	181,663
For own use	8,639	12,318	16,800	21,696	22,186
On commission	8,291	9,534	10,161	14,767	22,891
Total	74,159	111,570	151,371	171,878	226,740

1/ Data on quantities produced for own use and produced on commission have been withheld to avoid the disclosure of information respecting individual companies.

2/ Mainly polyester, olefin, and glass yarns.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 5.--Textured yarns: Industrial use of domestic output, by fiber, 1960-64

(In thousands of pounds)

Use and fiber	1960	1961	1962	1963	1964
Carpet and rug yarns:					
Nylon	1/	1/	1/	1/	119,573
Total	25,951	49,298	83,820	90,713	122,675
Knitting yarn, except carpet:					
Nylon	29,571	46,469	46,454	48,891	61,844
Rayon and acetate	-	2/	2/	3/	1,758
Other 4/	601	2/	5/	2/	1,154
Total	30,172	47,037	47,374	50,211	64,756
Weaving yarn, except carpet:					
Nylon	6,709	5,636	7,222	17,433	20,220
Rayon and acetate	8,535	7,032	7,422	6,205	6,408
Other 4/	2,484	2,149	4,112	5,936	10,815
Total	17,728	14,817	18,756	29,574	37,443
All other uses:					
Nylon	2/	2/	3/	3/	1,326
Total	308	418	1,421	1,380	1,866

1/ 2,500 thousand pounds and over.
2/ Under 500 thousand pounds.
3/ 1,000 thousand- 2,499 thousand pounds.
4/ Mainly polyester, olefin, and glass yarns
5/ 500 thousand- 999 thousand pounds.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 6.--Textured nylon yarn: Selected list prices in September of the years 1962-65

Producer	Characteristics of the yarn				Price per pound			
	Denier	No. of filaments	Twist	Package	1962	1963	1964	1965
Allied Chemical Corp-	2100	140	3/4 S turn per inch	cone	-	$1.50	$1.21	$1.21
	3150	210	3/4 S turn per inch	cone	-	1.47	1.17	1.17
American Enka Corp---	1250	83	1/2 Z turn per inch	cone	-	1.53	1.47	-
	2500	166	1/2 Z turn per inch	cone	-	1.51	1.47	-
	3750	249	1/2 Z turn per inch	cone	-	1.47	1.47	-
Chemstrand Co---------	1230	68	---------S----------	tube	$1.53	1.53	1.53	1.21
E.I. duPont de Nemours and Co-----	3700	204	---------O----------	tube	1.47	1.47	1.17	1.17

Source: Modern Textiles.