Testimony of Lee Boy
Vice President of Manufacturing, Berwick Offray LLC
Before the International Trade Commission
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Good morning. My name is Lee Boy and I am the Vice President of Manufacturing at Berwick Offray. In this capacity I oversee the production of plastic decorative ribbons in our facilities in Berwick, Pennsylvania. I have served as Vice President of Manufacturing for 12 years and have 21 years of prior experience in the plastic extrusion and conversion industry.

I would like to take this opportunity to introduce you to the production process for plastic decorative ribbons. I have prepared a short slideshow to illustrate the steps in our manufacturing process. In the slideshow, for each process step shown, you will see the input, a representative example of the machinery used, and the output that goes to the next step. We hope these pictures help illustrate the amount of labor, physical capital, human capital, and value-added involved in the domestic manufacture of plastic decorative ribbons. We never stop trying to improve the efficiency and quality of Berwick ribbons and all of the employees contribute to this common goal.

SLIDE SHOW BULLETS

1. TITLE SLIDE
2. The process starts with extruding the film using a proprietary process and blend, developed over many years, that is designed to minimize our raw material costs, while still producing ribbon with the strength and softness necessary for later automatic processing.
3. The resin and ingredients are first blended in a batch process. The resin blend is then mixed with colorant in the proper proportion in the extruder. All process scrap is reground and re-pelletized in house, and these pellets are also added back on-line at this time. The output is a master roll of extruded film. The final product contains either plain, printed, or metallic ribbon.
4. For some products, the next step is metallization. BERWICK OFFRAY invested in metallizing capability in 2015. Prior to that, all metallic was produced by purchasing master rolls of metallized PET, and laminating to the PP master roll. With metallization,

a portion has shifted to metallizing directly on the PP master roll, which eliminates the laminating step and gives a deeper luster. For the remaining metallic, the PET can be metallized in house, eliminating the outside process.

5. Some of our ribbon is laminated. Lamination is accomplished in high speed coater/laminators. These machines are also used for producing label stock in-house from paper and release liner for bow-tabs and product labels.
6.
7. The ribbon can also include printed designs. Printing adds custom printed designs to the poly, laminated, or metallized film. To reduce cost and increase speed to market, we invested in digital platemaking in 2008, in-house ink mixing in 2011, added presses in 2011 and 2013, and invested in rapid prototyping equipment in 2016. Textures can be added, and the ribbon is cut to width before final processing.

The ribbon finishing processes include crimping, embossing, hot stamping, converting, and slitting. Slitting can be in-line with these processes, or a secondary operation, depending on the lot size and equipment available.

8. In this process, Crimping, we emboss, cut, and traverse wind narrow ribbons into a master roll for later processing.
9. For wider ribbons, we either emboss the ribbon with several patterns, and cut into pies in-line, or
10. Plain ribbon is cut directly into pies.
11. Ribbon can be also hot-stamped in one or multiple colors in dedicated, high speed operations.
12. Flocked ribbon is cut to width in hot cutting machines to give the best edge finish.

At this point, the ribbon can either be spooled or tied into bows. The spooling processes used depends on the number of ends and the type of spool. Ribbon can be wound on itself, in kegs, on tubes, on paperboard spools, and on molded spools. The equipment to make the tubes, spools, and other packaging components isn't included in these slides, but those processes are made in house as well. In 2007, BERWICK OFFRAY developed and built equipment to make spools and tubes. In 2006 and 2014, additional presses were bought to make flanges, cards, tags and stickers in-house, and in 2011, the investments in people and processes were made to become a certified packaging printer. In 2014, two injection molding machines were added to make plastic spools in house.

13. Auto traverse winding equipment winds one or more ends of ribbon on a tube or spool.
14. Bulk spooling equipment winds one end of ribbon on a paper or plastic spool,
15. Keg machines wind ribbon on itself,

16. One up spooling machines wind ribbon onto cores for put-ups that are too heavy for a pasted spool, with flanges applied in blocking machines.
17. Multiple ends can also be straight wound on tubes or spools.
18. Standard bows are formed and packed on cards, in boxes, or in bags. The process to make bulk bow-bags is not shown, but is a proprietary process that outputs the finished bag complete from pies of the multiple renditions. Berwick bought the company that developed the original machines in 1996, and has continued developing the machines and the process in-house since. The bow machines, conveying equipment, and packaging machines are configured into linked cells, depending on the needs for the season. Bowbags are printed in-house on a wide web, high speed, flexo press, and folding boxes are diecut in house and folded/glued in house in high speed folder gluers.
19. Mega-bows are formed on large bow machines.
20. Tiny bows are also formed on dedicated machines
21. A "pull bow" is not formed into final bow form in the manufacturing process, but formed by the end user by pulling on one end. We have two types of pull bows, each with its own production process. One is sonically welded.
22. The other, Perfect bows are formed with rings between each loop.
23. And, finally, curl swirls are formed on machines that curl the ribbon and staple to the tab.
24. As Julie will discuss shortly, the production process is designed around getting our customers Berwick plastic ribbons into their stores for the holiday season. This means production ramps up between February and July and continues through November, for shipments in September through November. To meet seasonal demand, we use a workforce of approximately 600 production workers who, on average, work on a full time basis for about eight months per year. Our workforce typically ranges from about 250 active at the seasonal low point to about 600 active at the seasonal peak. This year, the seasonal peak was 725 workers. We provide benefits for these workers while active and for up to for up to four months while inactive. The average production worker has been employed with us for about 15 years, and 30% have been with us over 20 years. This is just another way Berwick strives to meet the needs of our customers and the needs of our workers.

I will be happy to answer any questions you might have. Thank you.