

New Balance Athletic Shoe Company

Robert W. Hall

Without hyping style or athletic stardom, New Balance (NB) is dedicated to giving each customer performance value for the money. Because the shoe itself is the star of their show, NB wants each one well-made. Nearly all the world's athletic shoes are now made in China or elsewhere in the Far East. All its competitors have given up, but NB stalwartly maintains an American manufacturing base, and so confidently that their American workers enjoy a no-layoff policy. The NB working culture: close-knit, feisty, and defiant.

Adding Value to the Shoe

NB began nearly a century ago as an orthopedic footwear shop, so creating shoes for problem feet is deeply embedded in the DNA. Along the way they began to make shoes for runners. Long before joggers were a common sight in the United States, runners began special ordering NB's original Trackster model for performance, not looks. Today of course, NB wants its shoes to have an attractive appearance, but performance still ranks first. As much as 30 percent of all adult sales are estimated to originate from a medical recommendation.

In the 21st century, athletic shoes occupy a different realm of complexity than 1950s sneakers. On average, each shoe consists of approximately 30 different parts

sewed or bonded together. For more exacting fit, NB designs shoe components to tighter tolerances than competitors; production requirements are tighter too.

Year to year, buyers may notice little difference in the performance and comfort of athletic shoes, but in the span of five to ten years, constant little improvements in design accumulate so that a buyer can see significant differences in support, cushioning, and weight. Both by computer simulation, and by on-site observation and experience, designers constantly study foot and leg kinematics of different activities of a variety of people, including those that have foot maladies or anatomic abnormalities.

Shoe development seeks to address these problems through an ongoing quest for the newest and best materials, positioned in the right geometry to assist stressed feet, but constrained by the need maintain an affordable price. Advances in

In Brief

New Balance occupies the performance segment of the athletic shoe industry. It's the only company in that industry retaining a manufacturing base in North America. Consequently, it has a unique working culture, and has arrived at an experienced-based strategy to split manufacturing between China and North America. The company is too dispersed to fairly assign an A-B-C rating based on brief evaluation.

materials science are the basis for most design improvement. NB projects do not have aerospace budgets, and commercial materials science does not race along at Moore's Law speed. This is a game of incremental change.

Shoe design contends with many trade offs. Materials should (usually) repel water while allowing the foot to "breathe." Cushioning and support must offset problems such as pronation (toe-in or toe-out), shock absorption, foot stability, and foot flexibility. To do all this simultaneously requires combining several kinds of material in one shoe. Design seeks to position just the right amount of the right material in the right place, so a modern shoe consists of many parts, and is very complex compared with the sneakers of yore. Special materials technology currently featured includes:

- Abzorb® for shock and cushioning
- Graphite roll bars for foot stability
- Stability web for arch support
- Medial post for pronation control
- Forefoot flex grooves for flexibility.

NB refers to shoe design as creating a Suspension System™ for the foot. In NB's shoe design process, the mantra is fit before fashion. Best support. Best cushioning. Best correction of kinesthetic problems (problem feet or legs). And best material, always.

Each shoe must fit just right; not tight; not loose; and not with pinch points. That depends on how a shoe is worn as well as how it is built. On www.newbalance.com you will even find tips on how to lace shoes.

Why so many different kinds of specialized shoes? Because, for example, the strike path of a foot is different when running than when walking. And in basketball, for instance, jumping and twisting present a different mix of foot actions to support. Because an NB shoe is designed first for the customer's foot, second for pleasing appearance, and third for manufacturability, product innovation sometimes requires process innovation. An NB designed shoe is not the easiest in the industry to manufacture.

About New Balance (NB)

New Balance, headquartered in Boston, makes and markets a full line of performance footwear and apparel for men, women, and children. The company began in 1906 as New Balance Arch Company. For decades it specialized in orthopedic shoes and arch supports. Working people like patrolmen and nurses who put in long days on their feet appreciated the value of a good work shoe, and paid a little extra for it.

In 1956 Paul Kidd bought the company and soon introduced a handcrafted custom-made running shoe called the "Trackster." It was the first athletic shoe made in multiple widths. At the time they cost about the same as a pair of well-made boots, but demand for these soon outstripped that for all other New Balance products.

On Boston Marathon Day in 1972, Jim Davis, the current owner and CEO, bought New Balance from Paul Kidd. The company consisted of six people making 30 pairs of athletic shoes a day; annual revenue, \$100,000. Today, New Balance markets in 120 countries; 2003 global sales totaled \$1.3 billion, and 2004 is on track to beat that. However, New Balance remains the only athletic shoe company offering multiple widths across the entire shoe line; competitors have just started to offer them on part of their line. NB is generally regarded as the industry leader creating fit and comfort in performance footwear for everyone "with an active lifestyle."

NB has long offered shoes in widths in six increments from a slim 2A to a chunky 6E, although not all widths are offered in all styles. External appearance belies the internal variation in shoe construction and materials. These differ considerably depending on the application: running, basketball, tennis, walking, and adventure sports. Children's shoes present a design challenge in a different class.

New Balance does not promote using celebrity endorsements. They don't chase style fads, so they field fewer style variations than competitors, but multiple widths force NB to stock more SKUs per style than competitors. However, a just-discontinued model doesn't need be marked down to clear the shelf for a trendier one.

Marketing invests a little in advertising, and a lot in grass roots involvement. NB sponsors many, many amateur sporting events, ranging from the LaSalle Bank Chicago Marathon to programs such as Girls on the Run, a 5K training program for adolescent girls. NB representatives attend hundreds of events, and sometimes they participate in them, observing first hand how people like their shoes, how they wear them, and the foot problems they experience. The New Balance buyer tends to be slightly older, and willing to forego a fire sale price to obtain a "just right" shoe. At \$55 average, New Balance shoes are slightly above the average retail price for the rest of the industry.

New Balance is the last athletic shoe company to retain manufacturing — about 25 percent of its global production — in the United States. Plants are in Boston and Lawrence, MA; and in Maine, at Skowhegan, Norridgewock, and Norway. A plant in Maryport, England largely serves the U.K. market. A plant in Ontario, CA is a joint venture with Pou Chen, a Taiwanese manufacturing partner that operates the plant.

New Balance's 2100 American employees are about half the total number of people still employed by companies making any kind of rubber and plastic footwear anywhere in the United States. About a thousand of NB's American employees "work production." They serve mostly the North American market. Contract plants in China serve China and much of the rest of NB's world market. The company distributes both domestic and foreign produced shoes through two large, highly automated distribution centers, one in Lawrence, MA, and one in Ontario, CA. Worldwide, NB has about 2600 people. Global inventory turns about six times.

The NB brand is associated with athletic shoes, but the company also markets athletic apparel. In 1998, NB entered the outdoor market under a different brand name, acquired by buying Dunham Bootmakers. In 2001 it acquired rights to the old PF Flyer, and it is introducing 1960s retro-look athletic shoes under that brand. In 2004 it acquired Warrior LaCrosse, the Warren, MI maker of lacrosse gear for that sport. (An NB design project is improving the shoes for that sport.)

To help preserve its image, New Balance is well-known for cultivating close relations with retailers, 2100 family shoe stores and 1100 athletic shoe stores. These retailers stock a partial line of athletic shoes from numerous competitors, and thus cannot carry the entire NB offering. To offset this problem, across the country New Balance has franchised 100 stores to exclusively carry an all-NB product line.

By rough estimate, 10,000 models of athletic shoes are on the market at any given time. Only around 300 of those are NB. With almost a 40 percent share, Nike dominates the market; NB is tied with Reebok at number two with 12 percent each.

Performance Marketing

New Balance targets the serious sports minded, selling consistency of performance. They try to give customers the best affordable shoe for their activity, and they expect the customer to pay a fair price for that service. In fact, Jim Davis thinks it borders on criminality to push a high-priced cool style so hard that some kid will shoot another to steal them.

Consequently, NB's shoes are endorsed by no one. No Air Jordans; no Tiger Woods; no big mark-ups to pay endorsers. Several years back, NB took a brief fling with an endorsement by James Worthy, the NBA star, and decided that this approach "was not them." Besides, pricey athletic endorsements carry a risk, as Adidas recently found

with their star, Kobe Bryant. New Balance ads feature media-unknown athletes, putting the accent on NB shoes and not the athletes.

Grassroots marketing suits NB's strategy. New Balance is associated with at least 5000 group events a year, sponsoring some and appearing at many others. The pitch to the average athlete is to try them; you'll feel better and you'll perform better.

NB also doggedly protects margins. They will not undercut retailer prices, not even at factory stores, and there are only five — at real factories. They sell and ship direct to retailers, not to middlemen who may discount if overstocked. NB has battled FTC sanctions for disciplining retailers that "dump" unsold shoes to discounters. NB accepts returns and replenishes retailer stock if a style sells better than expected

during its "life cycle." These practices contrast with NB's competitors, who are more likely to "move volume." NB also ships special orders to customers direct from the distribution centers. These marketing policies, in addition to carrying three to five different widths in each style, differentiate NB from competitors. They also present NB's operations with more complexity to manage, both in production and in distribution.

North American Production

NB's largest, and oldest, American plant is at Lawrence, MA, which makes all the styles exclusive to the North American market. It's a historical site subject to restoration — and home to R&D. R&D is co-located there so that R&D personnel have access to the latest manufacturing processes as well as ability to travel to all those grass roots athletic events. Besides, Jim Davis, CEO and owner, is loyal to his people, called "shoe dogs" in the industry, on whose accumulated experience the success of New Balance was built. As Davis puts it, "a thousand people help R&D create a good shoe design." Most new designs are first made at Lawrence, then transfer out. Production methods at all of NB's American plants are similar to those at Lawrence.

During the past few years, NB migrated away from the shoe industry's traditional batch and queue toward small lot cellular flow production. For example, a typical stitching cell may have seven to ten workers rotating around in a "bump" system. However, rapid progress toward one-piece flow is inhibited by a few "rocks in the shoe." Some production steps remain manual, and the dimensional specs for good fit require people to be attentive to their craft. NB automates wherever the process permits.

Production begins in the cutting room. Here up to 60 upper parts per pair are cut from flat stock. Downstream, shoes are assembled in lot sizes of 12 of the same style; same size. (A lot is called a "case".) Until recently, material handling in cutting dictated that a cutter process about 50 percent of daily production before moving a lot

to the next operation. By using lean concepts and techniques, lot sizes in cutting (and throughout the whole factory) now have been reduced by 8X. Overall, the U.S. plants are heading to a reduction of manufacturing cycle time from "cut to pack" by 4X. They are at the continuous flow stage of lean; variance from the craft work doesn't make it easy.

Geometric analysis software is used to suggest maximum yield patterns, and some cutting is by CNC, but the state of the art is still cutter experience; knowing how to interleave patterns, and knowing how many plies of material to cut at once while retaining dimensional tolerances. A skilled cutter easily beats computer programs for many of the shoe designs.

After cutting, some of the cut parts are skived — thinned at the edge or elsewhere for better fit. Some of the parts are embossed or embroidered with details or logos, using up to nine thread colors.

Next, parts are assembled in uppers in the first stage of stitching, which is automated; a machine guided by computer vision joins up to 20 parts into each upper. Parts that can't be automated are added in a classic manual stitching cell. Then the nearly-complete uppers are stretched on a form (the shoemaker's "last"), which usually determines the shoe's width. Care here is important for proper fit. All operators know never to pass on a defect, and to check prior operators' work as well as their own.

At New Balance, the term assembly usually refers to joining uppers to the soles. Heat quickly cures the joining adhesives.

Deciding how many shoes of each style and size to schedule is projected from past sales experience, and how fast sales of each style are moving. The shoe industry has tables of size distribution of the general population, but NB's customer base is not the general population. Herb Spivak, executive VP, notes that in the past ten years the average men's shoe size purchased has increased a half size, from nine to nine and a half. To avoid overstocking the market so that retailers feel an urge to discount for clearance, NB personnel think

"sales orders," not "production orders." The drive is on to cut lot sizes and to be market responsive, not to push shoes to the market.

After each pair of shoes is packed in a retail shoe box, they go to one of New Balance's two new, highly automated distribution centers. Most of the volume shipped is in bulk direct to a retailer, but NB is unique in the industry by shipping several hundred special customer orders each day to individual customers, ordered through retailers or on-line. Distribution centers hold plenty of stock, but order processing on belts resembles a FedEx terminal.

Company Culture

In 32 years, New Balance has grown from a small, specialty footwear producer to a global company. At times, growth was tumultuous; one momentous development after another. The company has always been a bit of a contrarian in the shoe industry, its lean manufacturing journey just being the latest evidence of it. Change became part of the culture, which Jim Davis describes as a big organization attempting to think and act as if it were still small. When small, NB's culture evolved for years with minimal conscious attention, but at NB's present size it has to be propagated more deliberately.

NB is privately held by Jim and his wife, Anne, executive vice president for administration. They remain very visible within NB as role models, but in a far-flung organization, two people cannot be physically present everywhere. Over the years the other 11 members of NB's executive committee became the secondary carriers of the cultural principles wherever they travel.

The executive committee is exceptionally close-knit. Every member is a New Balance "lifer." Promotions from within are the rule. There's no politicking; Davis won't tolerate it. Teamwork is real, and focused on New Balance. Herb Spivak, executive vice president is an exception. He's the newcomer, having arrived "only" ten years ago. He notes that NB's working environment is a pleasure compared with

the backbiting experienced at previous employers.

The executives work at keeping the boundaries between departments and teams broken down. For example, the supervisors at the Lawrence plant meet daily at 12:35 p.m. to review how things are going and make mid-day corrections. At the corporate level NB is finishing a training program to educate all employees much more broadly in how the whole company works, and how NB's philosophy should function in practice.

Another notable aspect of NB's working culture is that what you see is what you get. The company wants its market image backed by reality. Don't over-promise; don't over-promote. When performance is short of aspiration, keep going until it is; when enjoying success, consider what more can be done. Becoming complacent is unacceptable. The executives try to live by the mission in the box copy on the next page, and demonstrate it to everyone else in the company.

Along with the grassroots marketing, New Balance employees are encouraged to become involved in amateur athletic activities and community programs. Active lifestyle events predominate, but NB's corporate citizenship extends to gestures such as giving shoes to children's hospitals.

China Problems

Since 2002, New Balance has been the only athletic shoe company still making shoes in the United States, but it retains six contract plants in China. Chinese labor rates are only about three percent of the hourly rate in U.S. plants, but workers in the American plants are four times more productive. Chinese plants do not use inferior equipment; they cannot build quality into the shoe without it. However, labor productivity is not a major concern. Chinese plants assemble shoes in traditional long lines, while American workers work in cells. Add in all the other expenses and the landed cost of a shoe from China is less than ten percent below that of a shoe made in the United States.

New Balance Athletic Shoe Mission

To Be Recognized as the World's Leading Manufacturer of High Performance Footwear and Apparel

We support this mission by conducting our internal and external relationships according to these core values:

Teamwork

Total Customer Satisfaction

Integrity

NB started contracting shoes to Chinese plants in the 1990s because it seemed the quickest way to meet fast-growing world demand. Nearly all sales outside North America are supplied from China, but retaining a big base of production inside the United States has benefits that cost figures can't capture, starting with the ability to publicize that fact. NB thinks it also gives them a leg up in speed-to-market of new designs.

Production in China has been quite an adventure. NB has been through almost every problem that can occur, beginning with one of the suppliers selling unauthorized production to discounters in many parts of the world. That battle was such a classic that it was covered in the *Wall Street Journal*.¹

The partner was Horace Chang, a Taiwanese entrepreneur fluent in English, who both made NB shoes and sold them in China. In 2001 he simply refused to abide by NB's pricing markup policy and began making extra shoes, exporting them anywhere he could find a discount market. New Balance took the case to the Chinese intellectual property regulatory agency, and then to court in China. In both venues, New Balance lost. By 2003 Mr. Chang was enjoined from any more production under the NB name, but the design appropriation problem lingers on. New Balance has much more confidence in their remaining China partners, but they've learned the hard way to "China proof" agreements made there and the products made there.

The Chinese Joint Venture in California

Perhaps NB's most innovative China move was to establish a small joint venture plant in Ontario, CA with their Taiwanese partner, Pou Chen, which also operates plants in mainland China making New Balance shoes. With a total headcount of about 200, this plant finishes shoes by assembling and joining kits sent from China. This gives NB more flexibility mixing and matching to meet changing U.S. demand for styles. The Ontario plant does not operate in cells like NB's New England plants. Instead, they assemble shoes on lines, about 30 people to a line, more like the Chinese method.

Interestingly, the reduced inventory and the added flexibility make up for the added labor cost in California. Having tried several China strategies with outcomes from great to disastrous, NB has settled on a strategy that seems to work. Fortunately, NB did monitor working conditions in their partners' mainland China plants. Conditions were not ideal, but NB escaped being caught up in the "sweatshop" scandals that beset Nike and several other shoe companies.

Robert W. Hall is editor-in-chief of Target and a founding member of AME

References

1. "A Sneaker Maker Says China Partner Became Its Rival," *The Wall Street Journal*, Dec. 19, 2002.

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