

**MULTICHANNEL
MERCHANT**

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**EXECUTIVE
SUMMARY:
DIM WEIGHT PRICING**

Merchants Adjusting to Change in Dimensional Weight Pricing

BY MIKE O'BRIEN

The decision by UPS and FedEx to expand dimensional weight pricing in January 2015 to parcels under three cubic feet – known widely as the DIM rule – was one of the biggest changes to hit retail shippers in years. It has forced them to rethink their entire approach to packaging and shipping, as millions of items that had been billed based on weight alone are now subject to a calculation based on weight and package dimensions.

Industry experts estimate that retail shippers are seeing an average increase of 17% in their 2015 ground shipping costs from the major carriers on parcels affected by DIM.

The rationale from UPS and FedEx for the DIM change is simple: As a byproduct of the explosive growth in ecommerce orders in recent years, many products – often small, single-order items – were being shipped inside large packages filled with void space, so their trucks were basically transporting lots of air. This meant they were “cubing out” – maxing out on space – long before “weighing out” or hitting their weight limit, causing inefficient and not-as-profitable runs.

In addition, the so-called “Amazon effect” also means many of those ecommerce orders are being shipped singly to residential addresses, not in bulk to retail distribution centers, another increased cost. Carrier networks were not designed to handle such a huge load of residential delivery.

“Dimensional weight enables UPS to more appropriately align rates with cost, which are influenced by both size and weight of packages,” said Andy McGowan, UPS’s director of global media relations and reputation management. “Shipping trends in ecommerce have resulted in a decrease of package density. Dimensional weight pricing encourages shippers to op-

imize packaging, reducing excess materials and overall package sizes. This will lead to related reductions in fuel use, vehicle emissions and transportation costs.”

“Dimensional weight pricing is a common industry practice which allows us to make the best use of space in our vehicles,

and encourages our customers to utilize efficient packaging,” said FedEx spokesperson Bonny Harrison. “Ultimately, more efficient packaging is good for our customers and increases the sustainability of our operations.”

The expansion of DIM pricing has led to a land rush of consultants and companies

Table 1: Impact of UPS, FedEx DIM Pricing on Top 25 Box Configurations

L	W	H	Cubic Inches	Dimensional Weight	Impact
4	4	4	64	1	Min Weight, no impact
5	5	5	125	1	Min Weight, no impact
6	6	4	144	1	Min Weight, no impact
8	6	4	192	2	Subject to new DIM
6	6	6	216	2	Subject to new DIM
12	6	6	432	3	Subject to new DIM
10	8	6	480	3	Subject to new DIM
8	8	8	512	4	Subject to new DIM
12	12	4	576	4	Subject to new DIM
12	12	6	864	6	Subject to new DIM
10	10	10	1,000	7	Subject to new DIM
12	12	8	1,152	7	Subject to new DIM
12	12	12	1,728	11	Subject to new DIM
16	12	12	2,304	14	Subject to new DIM
18	12	12	2,592	16	Subject to new DIM
14	14	14	2,744	17	Subject to new DIM
24	12	12	3,456	21	Subject to new DIM
16	16	16	4,096	25	Subject to new DIM
18	18	16	5,184	32	Already subject to DIM
18	18	18	5,832	36	Already subject to DIM
18	18	24	7,776	47	Already subject to DIM
24	18	18	7,776	47	Already subject to DIM
20	20	20	8,000	49	Already subject to DIM
22	22	22	10,648	65	Already subject to DIM
24	24	24	13,824	84	Already subject to DIM

Source: Shipware, LLC

offering products and services to help merchants deal with the increased costs. This includes services like carrier negotiation strategies, regional shipping operators and systems that allow the creation of custom or on-demand boxes fitted more closely to the contents. There are also advances like a Bluetooth-enabled tape measure which sends box dimensions to a shipping software system, and boxes with barcodes which, when scanned, alert shippers through their freight manifesting or warehouse management system if a package will be assessed at its DIM weight or actual weight.



“We’re in the market for packaging machinery, particularly apparel baggers,” said Peter Reno, general manager of distribution for online health-care catalog company Dr. Leonard’s. “As I go through their demonstrations and hear sales pitches, there’s a lot of focus and side conversations on DIM. The representative will tell me ‘we also sell box sizers that deal with DIM.’ We’re looking at bag machines, not box sizers, but

they’ll send us the videos because they assume everyone is interested in that.”

Reno said the DIM rule change has meant more merchant planning around the volume of shipments that can be dinged by it, including weighing and measuring product lines, and entering the data into the packaging system.

“What we’re doing now is making dimensional information that had been passive or unused into active information,” he said. “For us it was always there, but we were only using weight to direct what labels were printed out. We’re looking more at the cube of those smaller packages. So we’ve created an algorithm to handle those packages, which we’ve never done before.”

Reno said even though Dr. Leonard’s uses FedEx’ less expensive SmartPost service for most of its orders, which doesn’t use DIM weight pricing, “we’re just gearing up in case they follow suit with that service level and add a DIM factor.” UPS’s similar SurePost service does use dimensional weight pricing on parcels above 1 cubic foot, although large-volume shippers often get an exception; both it and SmartPost utilize the U.S. Post Office for last-mile deliveries.

How DIM Weight Pricing Works

Dimensional weight reflects the density of a package, i.e. the amount of space it occupies in relation to its actual weight.

Once you have the package dimensions in inches (rounded to the nearest whole number), multiply the length by the width by the height to get the volume in cubic inches.

For domestic shipments, divide the cubic size in inches by 166 to determine the package’s dimensional weight in pounds. Any fraction is increased to the next whole pound.

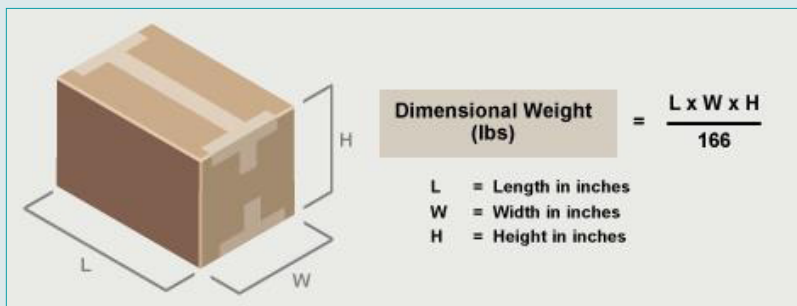


Illustration courtesy of UPS

For international shipments, use the same calculation, with 139 as the divisor.

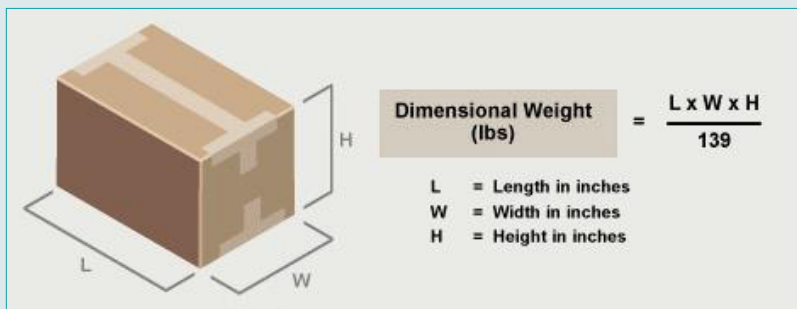


Illustration courtesy of UPS

Both UPS and FedEx charge the greater of the actual weight or DIM weight, which then becomes the billable weight for the shipment.

A Variety of Packaging Solutions

From on-demand boxing systems and fully automated custom box machines to polybags and mailers, DIM weight analysis and freight bill validation, there are no lack of solutions available on the packaging side to address the impact of the pricing changes.

“Packaging providers through the years have been consolidating, offering economies of scale and better prices for merchants,” said Mike VanZetta, corporate director of corrugated for Shorr Packaging. “What’s going on now (with DIM) is we’re adding more choices, depending on an individual customer’s situation, including their rate structure, the weight of their average package, and how far it’s being shipped. There are lots of small pieces of an overall solution that can be individualized to their needs.”

VanZetta said on-demand box sys-

tems, such as those from Box on Demand and Packsize, make the most sense as part of an overall packaging system for some merchants, especially ecommerce companies, who are picking and packing a wide variety of items with different weights and dimensions. “Those types of companies are more likely to see a fit for some type of on-demand system,” he said. These systems can scan and input a product’s dimensions, and use a continuous feed of corrugated stock to create about seven custom-sized boxes per minute.

The next step up is fully automated single-dimension boxing systems. I-Pack from French supplier B+ Equipment creates custom-sized “trays” that are sent along

a conveyor to packing stations that are subsequently fulfilled. As the filled trays enter the machine, the system scans and measures the product in the box, scores and folds the material to eliminate void space, applies glue and attaches a lid. It can create about 12-16 finished shippers per minute.

Cartonwrap, an Italian-built system sold by Bell & Howell, goes a step further with a three-dimensional automated system that feeds products to be shipped into machinery that scans the dimensions, wraps the corrugated packaging around them and seals them.

Another product that deals with DIM weight pricing is CubiScan. This system scans and measures both the dimensions

and weight of an item, even if it’s irregularly sized and shaped, and feeds the data into a WMS or freight manifesting system to calculate the billable weight based on DIM.

DIM weight analysis involves helping merchants determine the optimal carton size to get the best fill rate and reduce freight charges, including conducting an audit of their carton inventory. It also involves understanding a company’s particular challenges, their shipping rate structure, where they’re shipping and what their product mix is.

DIM weight validation helps merchants deal with a carrier’s reclamation bill, an additional invoice that can come 30 days later asking for the difference between the original freight manifest and the actual charge based on DIM. “We’re able to automatically capture a carton’s dimensions and weight and enter it into a database, and if they get a reclamation bill we can verify if it’s accurate or not,” said Joseph Searcy, director of business development for Shorr Packaging. “We’re seeing a lot of interest in that service.”

DIM Boosts Business for Regional Carriers, USPS

Regional parcel carriers such as On-Trac, Pitt Ohio, LaserShip, LSO, Eastern Connection and Lone Star report they have been picking up business from UPS and FedEx, based not only on DIM but also general rate increases, accessorial charges and fuel surcharges. UPS has also said it will impose some type of holiday peak season surcharge this year; FedEx has not signaled this as of yet.

“The DIM change has really hurt B2C shippers who tend to have a lot more air in their packaging, creating lighter and bulkier shipments for UPS and FedEx,” said Paul Steiner, vice president of logistics for shipping consultancy Spend Management Experts. “As a result, there has been a turn to the regional carriers for more economical solutions. Regionals mainly use a higher and less costly DIM factor of 194 instead of 166. Some also exempt customers from DIM adjustments for any-

Table 2: Impact of USPS DIM Pricing on Common Box Configurations

L	W	H	Cubic Inches	Actual or Dimensional Weight	USPS Impact
8	6	4	192	Actual Weight	Not Subject to Dimensional Rating
6	6	6	216	Actual Weight	Not Subject to Dimensional Rating
12	6	6	432	Actual Weight	Not Subject to Dimensional Rating
10	8	6	480	Actual Weight	Not Subject to Dimensional Rating
8	8	8	512	Actual Weight	Not Subject to Dimensional Rating
12	12	4	576	Actual Weight	Not Subject to Dimensional Rating
12	12	6	864	Actual Weight	Not Subject to Dimensional Rating
10	10	10	1,000	Actual Weight	Not Subject to Dimensional Rating
12	12	8	1,152	Actual Weight	Not Subject to Dimensional Rating
12	12	12	1,728	Actual Weight	Not Subject to Dimensional Rating
16	12	12	2,304	14	Subject to Dimensional Rating*
18	12	12	2,592	16	Subject to Dimensional Rating*
14	14	14	2,744	17	Subject to Dimensional Rating*
24	12	12	3,456	21	Subject to Dimensional Rating*
16	16	16	4,096	25	Subject to Dimensional Rating*
18	18	16	5,184	32	Subject to Dimensional Rating*
18	18	18	5,832	36	Subject to Dimensional Rating*
18	18	24	7,776	47	Subject to Dimensional Rating*
24	18	18	7,776	47	Subject to Dimensional Rating*
20	20	20	8,000	49	Subject to Dimensional Rating*
22	22	22	10,648	65	Subject to Dimensional Rating*
24	24	24	13,824	84	Subject to Dimensional Rating*

* Uses 194 DIM factor vs. 166 for UPS and FedEx
Source: Shipware, LLC

thing under 1, 2 or 3 cubic feet, and offer volume-based exemptions.”



Mark Magill, vice president of business development for regional carrier OnTrac, said many retail shippers are just now waking up to the impact of DIM as first-quarter freight bills are coming in over budget and CFOs are asking questions. “Most companies are only now seeing the huge impact and reaching out to regional carriers,” he said. “It may not be a fit for everyone, but for big ecommerce companies it can make a huge difference in mitigating the DIM rate increase.”

The USPS has also been a beneficiary of the DIM changes as its Priority Mail service employs dimensional weight billing for parcels that are greater than 1 cubic foot and ship to zones 5 through 9, using a more favorable 194 divisor to calculate the charge. It has also kept its overall rates lower. By all accounts, these factors have contributed to an increase in USPS’s parcel business. For the second quarter of 2015, the USPS saw a 14.4% increase in shipping and parcel volume, nearly double the 7.3% gain in 2014.

How Shippers are Addressing the Impact of DIM

While many shippers grumble about the DIM adjustment – pointing to things like UPS and FedEx first-quarter earnings calls where results from the increased revenue were touted by executives – it has in fact forced them to economize what were in many cases bloated packaging operations, especially in ecommerce.



Michael DeFabis, vice president of fulfillment/warehousing sales at 3PL Integrated Distribution Services, said some ecommerce companies he works with had nothing in place prior to this year that allowed

them to capture dimensional data on smaller parcels, catching them off-guard when the DIM change went into effect.

“It was hard to run a true analysis because they didn’t have the technology, it wasn’t needed before,” said DeFabis. “For us, a lot of it was manually going out and measuring their packages and coming up with a DIM weight and cost for this box or item. For a lot of small to midsize businesses, they didn’t run any analysis, and come January, they were shocked because they didn’t realize it would have such an effect.”

DeFabis said using barcoded cartons from Shorr helps IDS quickly and easily figure out the DIM weight and thus the cost of items being shipped.

“Now we can capture the data prior to sending them off to FedEx or UPS,” he said. “So before they get the bill, they know which shipments are affected by DIM. We can analyze shipments and know which items have the biggest effect and which don’t, in order to optimize packaging. In some cases, it might come down to polybags vs. corrugated. We’re refining the process down. You can never get DIM out of the equation entirely, but there are ways to limit your exposure.”



Chris Groseclose, senior director of distribution operations at stereo and electronics retailer Crutchfield Corp., said even though his company has a favorable agreement with UPS that limits DIM exposure, “it’s definitely a concern. As the years go by, costs continue to increase.” With ecommerce business continuing to expand rapidly, Groseclose said he could see DIM calculations and pricing rising along with it as carriers look to rein in expenses. Crutchfield is mainly an ecommerce seller, but does have two physical stores in Virginia.

To address DIM, Groseclose said Crutchfield has partnered with Packsize for on-demand boxing and overall optimization. “It’s significantly dropped the overall dimensions on our shipping boxes,” he said.

“We used to have 18-20 pre-made boxes and a lot of wasted space. Now we’re shipping the smallest box possible. We’re also looking at envelopes if possible – what can we get out of a box and into an envelope or sleeve?”



Scott Van Den Berg, director of engineering and ecommerce operations for specialty footwear seller DSW Inc., said the DIM change has caused him to consider alternatives like renegotiating certain parts of the company’s FedEx agreement as well as looking at the USPS for parts of the business. He said only 15%-20% of DSW’s shipping is done by FedEx Ground, representing less than 1 million packages a year so the effect is not huge but “it is forcing us to look at things differently.”

Van Den Berg said DSW got ahead of the curve on packaging optimization back in 2009, a year after opening up its ecommerce distribution center, so a lot of efficiencies have been gained. He also said the company’s products are fairly uniform, making packaging more uniform as well, which is another plus.

“We do a tremendous amount of FedEx SmartPost volume and that hasn’t been hit by DIM yet, but we’re cautious because we know it can come, so we’re preparing ourselves for the inevitable,” he said. “We also know the USPS is still losing money even though their parcel business is growing, but that service has improved in recent years. Still our customers are good with SmartPost for now.”

Asked how the DIM change has affected how his company conducts its fulfillment operations, Van Den Berg said not a lot has changed. “It doesn’t affect how we market to our customers – we’re not trying to drive larger order sizes,” he said. “It’s all about efficiency and the cost of fulfillment, packaging and shipping. It’s just another angle to that equation that’s always been there, another thing to consider as we work to create the most efficient, cost-effective service for our customers.” ■