



Office of Inspector General | United States Postal Service

## RISC Report

# Changes in Mail Mix: Implications for Carriers' Physical Health

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# Executive Summary

In recent decades, American consumers have increasingly bought household goods, clothing, electronics, and other items online. Home package delivery demand skyrocketed during COVID-19 restrictions, and even though this demand has decreased, package delivery remains a vital segment of the nation's economy. Ecommerce has been a main driver of the U.S. package market growth, which has surged nearly 200 percent between 2010 and 2021. The increasing package volumes along with a decline in First-Class Mail have changed the composition of mail classes and products processed through U.S. Postal Service's delivery network. This composition of mail classes and products is commonly referred to as the mail mix.

In addition to more packages moving through the network, USPS's total package weight has increased. The changing mail mix directly impacts the USPS workforce, as the repetitive nature of lifting, carrying, pushing, and pulling packages and other mail can and does contribute to carrier injuries. In fact, carriers make up a disproportionate share of the Postal Service's wage and medical payments made on behalf of injured employees. To understand the impacts of the changes in mail mix on carriers' physical health, specifically changes in package volume and weight, the U.S. Postal Service Office of Inspector General (OIG) conducted quantitative analyses, document review, and interviews with postal management, carrier unions, and postmasters across the country.

## Analysis of Carrier Injuries and Changes in the Mail Mix

Our analysis revealed connections between total package weight and carrier injuries during the scope period.<sup>1</sup> Specifically, we found a correlation during quarter two (Q2) fiscal year (FY) 2020 to Q1 FY2022, between total package weight and carrier injury in all quarters studied. During the scope period, a carrier was 4.4 percent more likely to be injured on average for every 2,000 pounds of packages they delivered in a quarter. This percentage is relevant considering that each carrier handled and delivered about 8,800 pounds per quarter, on average.

We identified certain carrier sub-groups that experienced more injuries than others, including some that had an association with package weight:

- Pre-career carriers who delivered a ton or more packages in a quarter had a 10.3 percent higher injury rate than career carriers who also delivered a ton or more.

<sup>1</sup> The scope for the project as a whole was FY 2019 to Q1 FY2022. However, due to data limitations, the scope of the quantitative analysis to determine the association between total package weight and carrier injuries was Q2 FY2020 to Q1 FY2022.

- Total package weight delivered had a larger impact on newer carriers with less than one year of tenure. Carriers with less than a year tenure who delivered a ton or more of packages in a quarter were at greater risk of injury than new carriers who carried less than a ton. Overall, carriers with zero to three months of tenure had a higher injury rate than more tenured carriers.
- Carriers in low-population density ZIP Codes were least likely to be injured while those in medium-population density ZIP Codes were most likely. This is notable because most of the Postal Service's carriers (65.3 percent) work in medium-population density ZIP Codes.

## Safety Guidance, Training, and Policies for Carriers

We also assessed the Postal Service's guidance, training, policies, and procedures for carriers' handling of packages. USPS has numerous policies and written guidance, training, awareness campaigns, as well as the promotion of tools that mitigate injury risk, the utilization of joint safety committees, and other measures aimed at protecting employees. However, most of the Postal Service's policies are not geared specifically to carriers. USPS is developing and refining a new accident and injury management application called the Safety and Health Management Tool. The agency can use this system to identify groups of employees at a higher risk of injury and develop effective and targeted safety protocols to mitigate risks for those employees. Minimizing injuries, in turn, may reduce workers' compensation claims and other direct and indirect costs associated with carrier injuries, which directly impact USPS's bottom line.

Interviews with postmasters indicated that procedures for handling heavier — 35 pounds or more — and bulky packages varied by locale and that the Postal Service has no specific protocols in place on how carriers should handle and deliver these items. A standard operating procedure that outlines how carriers should handle and deliver heavier packages may reduce incidents of injury to carriers. This represents an area of opportunity for the Postal Service to adjust its procedures for instructing carriers how to safely handle and deliver heavier packages, including those above the maximum weight limit.

## What the OIG Recommends

**Recommendation 1:** We recommend the Vice President, Human Resources, develop and implement standard operating procedures outlining how a carrier should safely handle and deliver a heavy package (weighing 35 pounds or more).



# Observations

## Introduction

More than a decade ago, purchasing household products mostly meant visiting a local retail store in person. Today, American consumers order more products online that are packaged and delivered right to their doorsteps. With the rise of ecommerce, the U.S. package market grew nearly 200 percent between 2010 and 2021, and market volume is estimated to grow by 6 to 11 percent annually through 2025.<sup>2</sup> The surge in packages is primarily driven by an expansion in ecommerce that consists of business-to-business and business-to-consumer purchases, as well as online retail returns. Growth in packages was particularly pronounced during COVID-19, and although it has since decreased, the package market remains a vital part of the nation's economy. Industry analysts expect consumers to continue to increase the amount they purchase online after the pandemic.<sup>3</sup>

Expansion of the U.S. market for package services has led to logistical challenges, and opportunities, for package delivery companies. The U.S. Postal Service — the nation's largest package delivery service by volume — has experienced both an increase in package volume and a sustained drop in its First-Class Mail volume. This has changed the agency's mail mix — the composition of mail classes and products that are processed through the Postal Service delivery network, including First-Class Mail, packages, USPS Marketing Mail, and periodicals.

In addition to an increasing proportion of packages being handled and delivered by over 330,000 Postal Service letter carriers, the average weight of these packages has increased.<sup>4</sup> There has also been an uptick in the number of overweight packages. With more and heavier packages entering the mailstream, carriers face the physical rigors associated with handling and delivering this influx. Our analysis estimated that in FY 2021 each carrier delivered an

average of 61 packages per day, a 24 percent increase from the FY 2019 level of 49 packages per day. Package volume is expected to continue increasing. Considering the increased demand required to handle and deliver more and heavier packages, the risk of injury increases — especially among those carriers who are newer and less experienced.

To better understand the impact of the changes in mail mix on carriers' physical health, the U.S. Postal Service Office of Inspector General (OIG) used quantitative methods to determine whether a correlation exists between carrier injuries and changes in mail mix, specifically changes in package volume and weight. We also assessed the Postal Service's guidance, training, policies, and procedures for carriers' handling of packages. We reviewed available safety training; however, evaluating the efficacy of training was outside the scope of this paper.<sup>5</sup> See [Appendix A](#) for more details on this project's objectives, scope, and methodology.

The Postal Service has numerous policies and written guidance, training, awareness campaigns, tools that mitigate injury risk, safety committees, and other measures aimed at protecting employees. As ecommerce continues to grow, it is important for the Postal Service to consider how best to minimize and prevent carrier injuries given the expected increase in package volume and weight in the coming years. Minimizing injuries, in turn, may reduce workers' compensation claims and other direct and indirect costs associated with carrier injuries, which directly impacts the Postal Service's bottom line.

## Changes in the USPS Mail Mix

The Postal Service delivers more mail and packages than any other post in the world, serving more than 163 million addresses across the U.S. Americans have come to rely on the agency and its fleet of letter carriers to deliver a diverse mix of mail to their homes and businesses every day — ranging from items such as

<sup>2</sup> We used Kleiner Perkins data to report on 2010 package volume, and the Pitney Bowes Parcel Shipping Index for 2021 data.

<sup>3</sup> Consumer habits could change due to the potential for an economic recession, as rising unemployment or inflation reduces income and consumer spending.

<sup>4</sup> For this paper, we defined packages to include the following categories: USPS Marketing Mail parcels, Package Services Mail (Bound Printed Matter Parcels, and Media and Library Mail), Priority Mail Express, First-Class Package Service, Retail Ground Mail, Priority Mail, and Parcel Select Mail.

<sup>5</sup> The OIG's Office of Audit is assessing the effectiveness of the Postal Service's Safety and Health Program training applicable to industrial accidents, the use of Accident Reduction Plans, and efforts promoting safety awareness.

credit card bills, birthday cards, and personal letters to magazines, direct mail postcards, and packages containing essential household goods.

### Mail Mix Defined

Mail mix is the combination of mail classes and products the Postal Service processes through its delivery network. The Postal Service defines “mail mix” in two ways. First, mail mix is made up of Postal Service mail classes and products, primarily the following key categories:<sup>6</sup>

- *First-Class Mail*: anything mailable that bears either a postage stamp or indicia (also called a Mailing Permit Imprint), which can include bills and invoices, personal and business correspondence, cards or letters, and merchandise;<sup>7</sup>
- *Marketing Mail*: advertisements, circulars, newsletters, small parcels, and merchandise;
- *Periodicals*: newspapers, magazines, and other periodical publications that are mailed to an established list of subscribers or requesters; and
- *Packages*: The Postal Service has several service categories related to packages, including Priority Mail, Priority Mail Express, First-Class Package Service, Parcel Return Service, and Parcel Select.

Second, the Postal Service considers mail mix based primarily on types of mail shapes, which determines whether mail is machinable, irregular, or nonmachinable. Mailpieces that can be processed on postal equipment are considered machinable. These items must meet specific standards for size, shape, content, and weight, with several exceptions. All other mailpieces are either irregular or nonmachinable, both of which do not meet the dimensional criteria to be processed on postal equipment. An extra charge is applied to these mailpieces because they cost the Postal Service more to process manually (see Figure 1).

**Figure 1: Key Mail Classes and Products that Make Up the USPS Mail Mix**



Source: USPS

### First-Class Mail is the Bulk of Total Mail Volume, but Package Volume has Risen

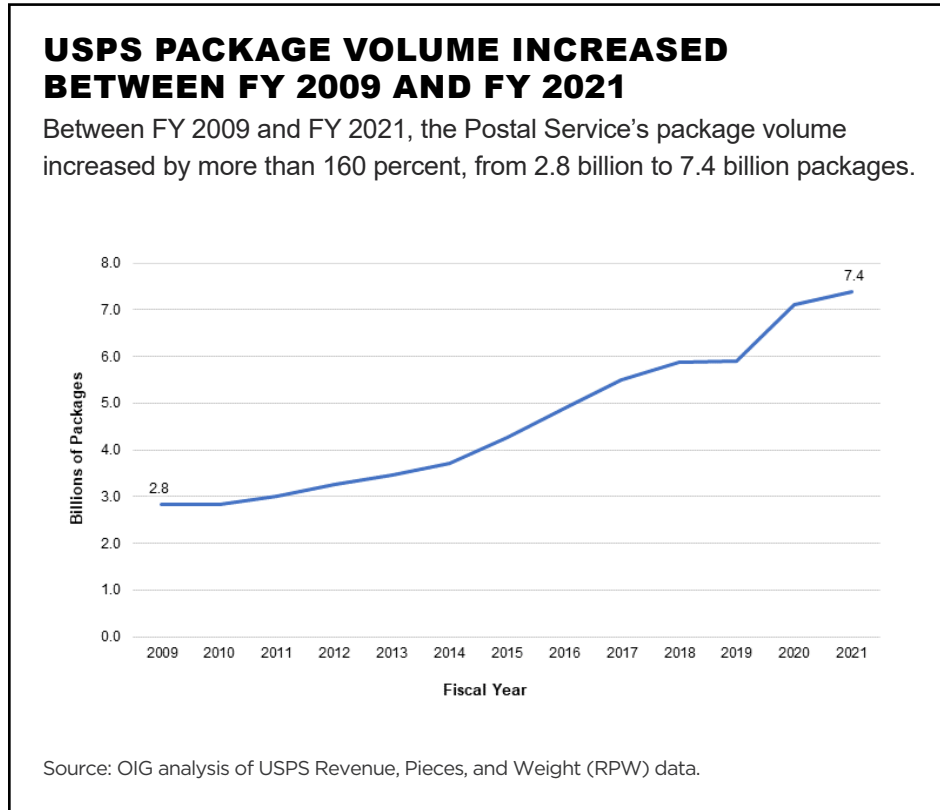
Over the past 12 years, the mix of mail — including packages being handled and delivered by Postal Service carriers — has shifted considerably. Between FY 2009 and FY 2021, Postal Service package volume increased by more than

<sup>6</sup> In addition to these four key categories, mail mix also includes: international mail and other USPS Extra Services such as Certified Mail and Registered Mail.

<sup>7</sup> First-Class Mail includes two subcategories: Commercial First-Class Mail Presorted, and First-Class Mail single-piece letters.

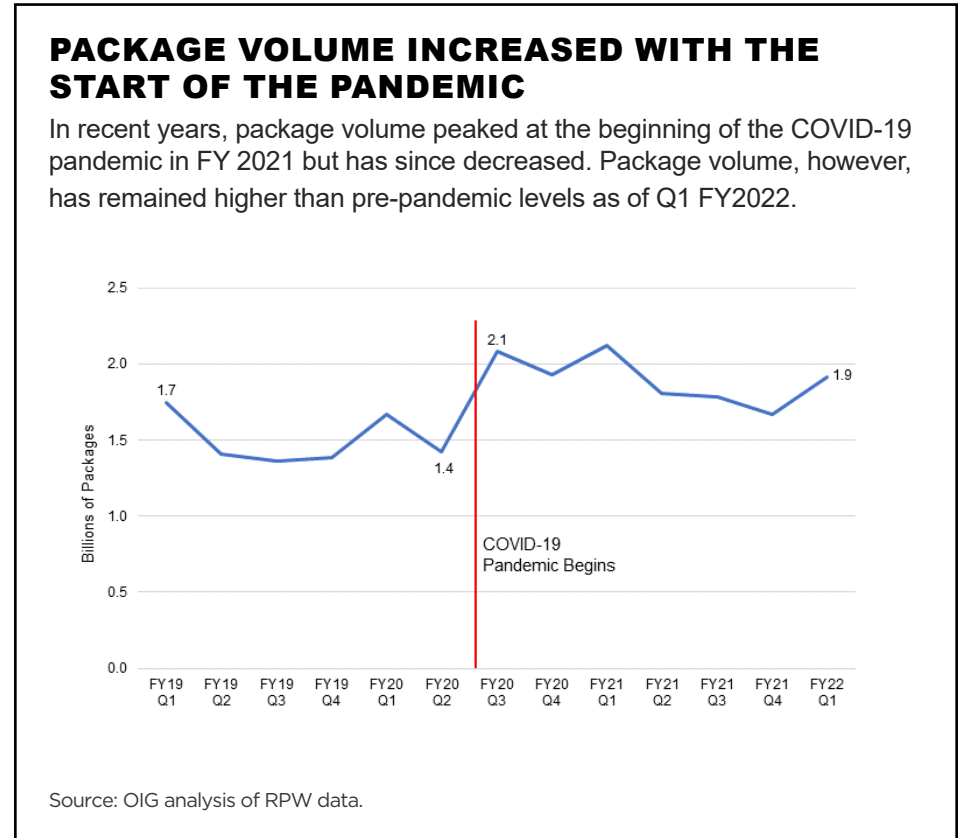
160 percent, from 2.8 billion to 7.4 billion packages (see Figure 2). Over the same period, First-Class Mail volume shrank nearly 39 percent, from 83.2 billion to 50.9 billion mailpieces annually.<sup>8</sup>

**Figure 2: Rising Package Volumes, FYs 2009 - 2021**



Package volume has decreased from a peak at the beginning of the COVID-19 pandemic but remained higher than pre-pandemic levels as of Q1 FY2022 (see Figure 3).

**Figure 3: Total Quarterly Package Volume, Q1 FY2019 - Q1 FY2022**



**Total Package Weight Has Also Increased**

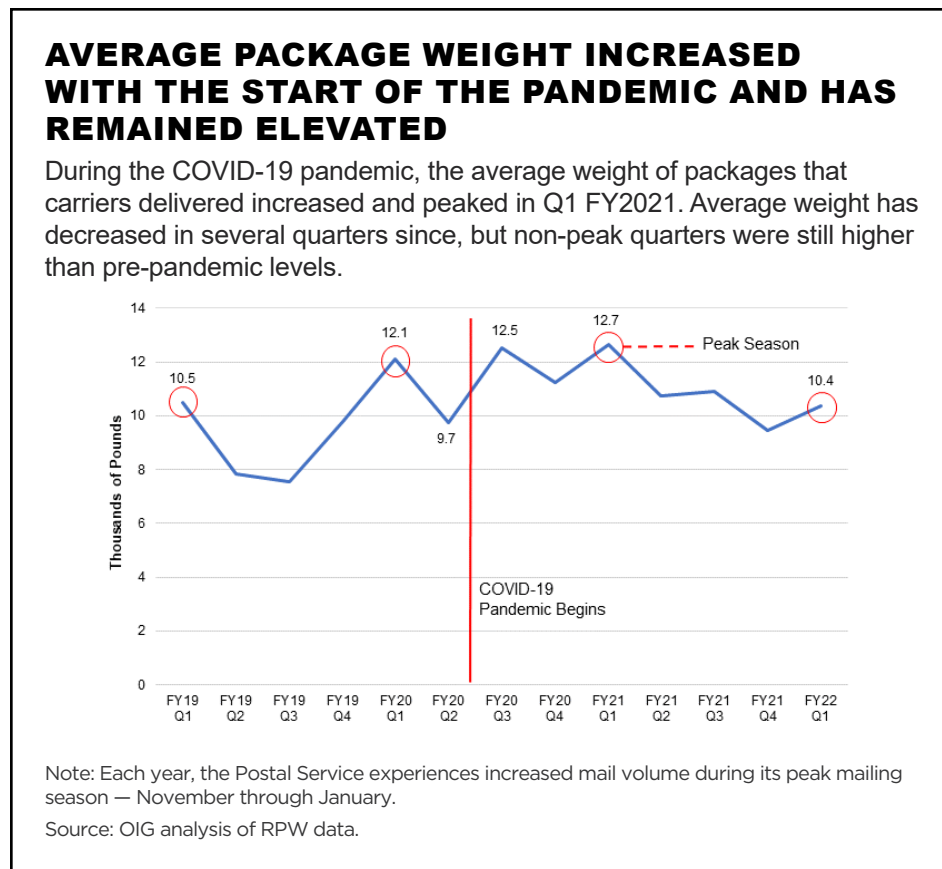
In addition to the rise in package volumes, the Postal Service's total package weight has increased.<sup>9</sup> Total package weight could increase with heavier packages, a higher volume of packages, or a combination thereof. Between FY 2009 and FY 2021, for instance, there was a 221 percent growth in total

<sup>8</sup> Total mail volume (mailpieces processed by the Postal Service) has declined in recent years. Between FY 2009 and FY 2021, total mail volume fell more than 37 percent, from 176.7 billion to 128.9 billion mailpieces. This drop can largely be explained by the prevalence of Internet connectivity and access to other communications technology such as email.

<sup>9</sup> The Postal Service did not indicate to the OIG that it actively monitors trends in total package weight for safety purposes. Management suggested improvements in mail transportation equipment likely offset the increased risk of injury due to more heavier packages.

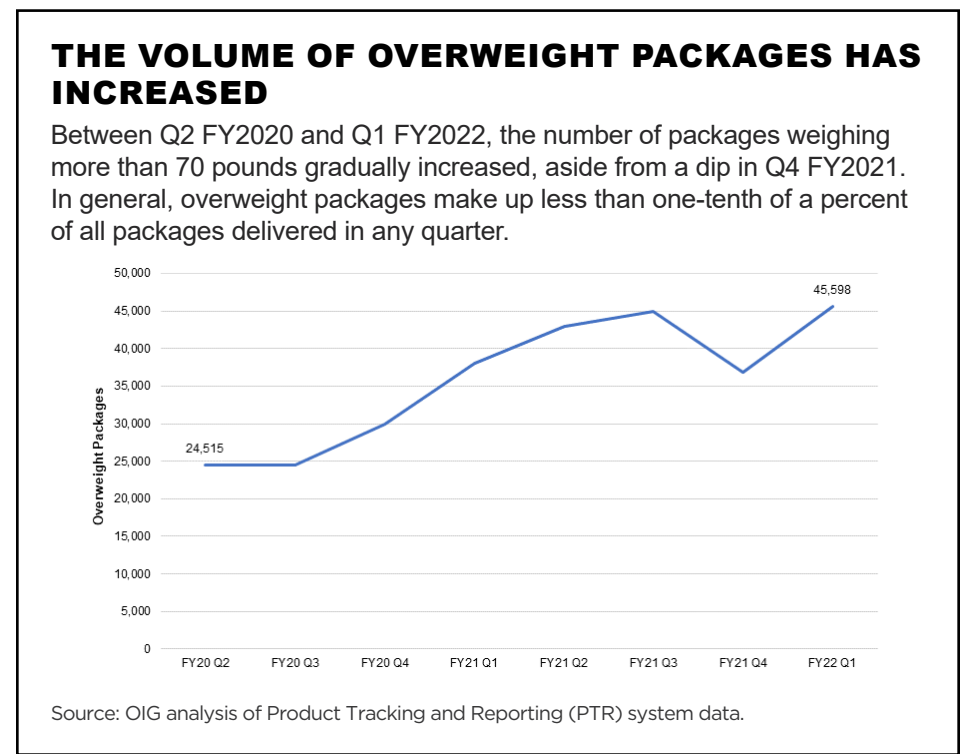
package weight. In addition, individual carriers are carrying more weight on average. During the COVID-19 pandemic, the average weight of packages that carriers delivered increased and peaked in Q1 FY2021, at approximately 12,700 pounds on average for a carrier during the quarter.<sup>10</sup> Average weight decreased in several quarters since, but non-peak quarters — generally quarters 2, 3, and 4 — were still higher than pre-pandemic levels (see Figure 4).<sup>11</sup>

**Figure 4: Average Package Weight Per Carrier, Q1 FY2019 – Q1 FY2022**



Beyond increasing average weight, carriers are delivering more overweight packages. These are packages that exceed the maximum allowable shipping weight of 70 pounds. According to the Domestic Mail Manual, any overweight or oversized item is nonmailable, and if found in the postal network must be secured for pick-up by the mailer or addressee and will be assessed a \$100 fee. Between Q2 FY2020 and Q1 FY2022, the number of packages weighing more than 70 pounds increased 86 percent, despite a dip in Q4 FY2021 (see Figure 5).<sup>12</sup> Overweight packages made up 2.5 of every 100,000 packages delivered during the scope period.

**Figure 5: Count of Packages Greater Than 70 Pounds, Q2 FY2020 – Q1 FY2022**



<sup>10</sup> Total package weight is the sum of the package weight that all carriers delivered during that period, whereas average weight of packages is the mean weight that each carrier delivered.

<sup>11</sup> Between Q1 FY2020 and Q1 FY2022, 3.4 percent of all packages lacked weight data on average.

<sup>12</sup> Our analysis of injuries is limited to Q2 FY2020 and later because we could not obtain sufficiently granular package data for earlier quarters.



**Carriers are delivering more overweight packages. These are packages that exceed the maximum allowable shipping weight of 70 pounds.**

In addition, although the Postal Service has a policy that restricts the size of most packages to 108 inches in combined length and girth, some postmasters indicated

oversized packages arrived at their delivery units — a post office, station, branch, or carrier annex that has mail delivery functions.<sup>13</sup>

## Analysis of Carrier Injuries and Changes in the Mail Mix

Compared to other federal employees, Postal Service employees — and carriers in particular — are at an increased risk of injury, primarily due to the physical nature of their jobs. Between Q1 FY2020 to Q1 FY2022, Postal Service workers accounted for over half of workers' compensation cases across the federal government, though they made up only 22 percent of the federal workforce.<sup>14</sup> Carriers represented 52 percent of all Postal Service employees during the scope period but were 69 percent of the agency's claims.

The primary tasks of a carrier are casing, transporting, and delivering mail and packages

(see Figure 6).<sup>15</sup> While increasing package volumes have not changed a carrier's daily tasks, they have changed the frequency of certain tasks. For example, carriers now spend less time casing mail and more time on their delivery routes compared to when package volume was lower. Serving the delivery route involves many physical tasks, such as dismounting their vehicle more frequently or bringing packages to customers' doors. For example, according to an analysis by the Government Accountability Office (GAO), the most common injuries experienced by carriers overall are dog bites, repetitive motion injuries, and slip, trip, and fall injuries.<sup>16</sup>

## The OIG Found Connections Between Total Package Weight and Carrier Injuries

The OIG used quantitative methods to examine the strength of association between the change in package volume and weight and certain types of carrier injuries recorded by the Department of Labor's Office of Workers' Compensation Programs (OWCP), on a quarterly basis.<sup>17</sup> Due to limitations in data availability, the scope for this analysis was Q2 FY2020 to Q1 FY2022. See Methodology in [Appendix A](#).

We found connections between total package weight and carrier injuries. Specifically, the analysis found a

**Figure 6: Letter Carrier Responsibilities**

### A CARRIER'S DAY INVOLVES MANY PHYSICAL TASKS



#### CASING MAIL

In the morning, carriers place packages into a container associated with the route. They similarly place letters and flats into a case for the route.



#### TRANSPORTING MAIL

After casing mail, carriers load the day's mail and packages into mail transport equipment (MTE) and move it to their delivery vehicle. MTE can include wheeled hampers or other equipment.



#### DELIVERING MAIL AND PACKAGES

After loading their vehicle, carriers depart for their routes where they deliver mail and packages. Delivering large or heavy items may require walking up to a customer's front porch with the item.

Photo sources: U.S. Postal Service

statistically significant, positive relationship between total package weight and carrier injury in all quarters

<sup>13</sup> An exception is USPS Retail Ground for which pieces may measure up to 130 inches in combined length and girth.

<sup>14</sup> To calculate the percentage of Postal Service employees in the entire federal workforce, we used the most recent USPS and Department of Labor's Occupational Safety and Health Administration (OSHA) federal workforce employee counts available, from FY 2021.

<sup>15</sup> Both City and Rural Carriers must meet the physical requirements of the job, which include the ability to handle items weighing the maximum allowable weight of 70 pounds. While job descriptions for City Carrier Assistants and Rural Carrier Associates do not specify lifting requirements, there is no indication that those jobs are substantially different from their full-time career counterparts.

<sup>16</sup> For more information, see: GAO, *U.S. Postal Service: Further Analysis Could Help Identify Opportunities to Reduce Injuries Among Non-Career Employees*, GAO-21-556, September 16, 2021, <https://www.gao.gov/products/gao-21-556>.

<sup>17</sup> For the purposes of our analysis, package-related injuries were associated with 12 Department of Labor (DOL) cause of injury codes that related to handling or delivering more and heavier packages. We initially identified three other relevant cause of injury codes, but we excluded these from our analysis because they were not covered by three DOL injury type descriptions we determined were related to handling packages.

studied. To gain a more comprehensive picture of the impact of volume and weight on carriers, we used descriptive statistics below to tease out that impact.

### As Package Volume and Weight Increased During the Pandemic, Carrier Injuries Peaked Early On, But Have Since Decreased

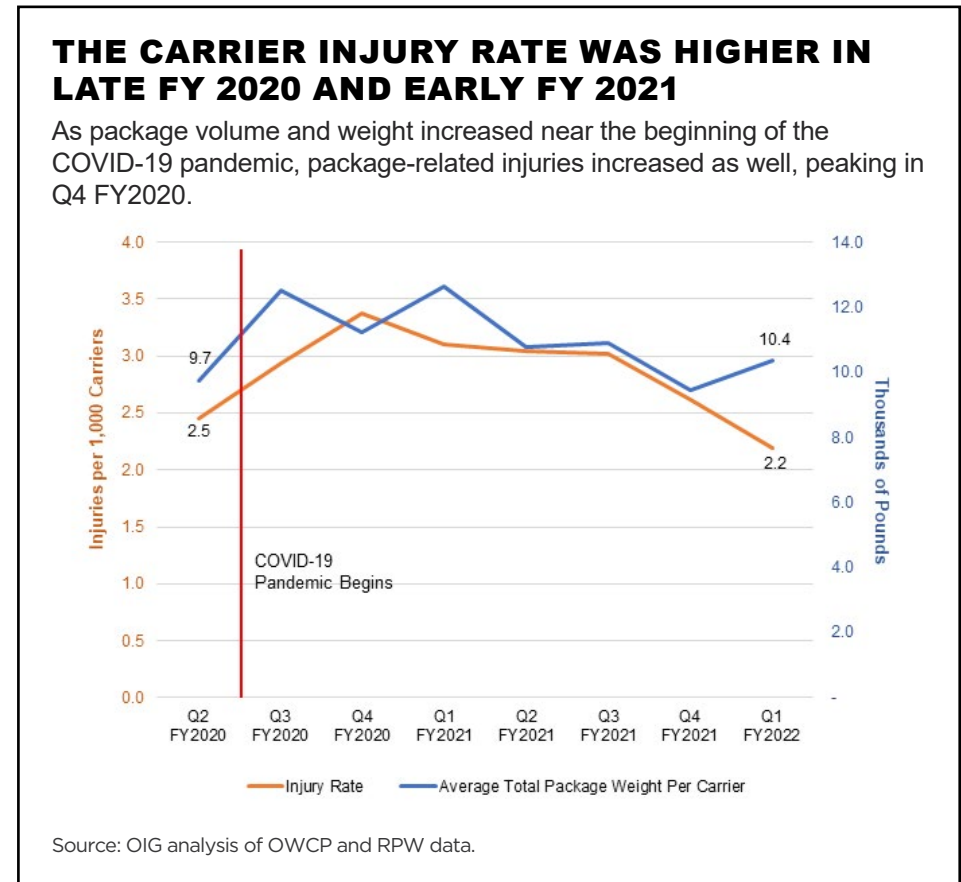
Near the beginning of the COVID-19 pandemic in Q3 FY2020 through Q4 FY2021, package volume, weight, and carrier injuries each trended in the same direction. Among the approximately 335,000 carriers who were recorded as handling and delivering packages, 2.8 carriers in every 1,000 experienced new package-related injuries on average each quarter between Q2 FY2020 and Q1 FY2022. As package volume and weight increased, package-related injuries increased as well. Specifically, new package-related injuries peaked at 3.4 per 1,000 carriers in Q4 FY2020 but decreased to 2.2 per 1,000 carriers in Q1 FY2022 (see Figure 7). The number of overweight packages also increased during this period.

### Total Package Weight Posed Risk of Injury for Pre-Career Carriers

As noted, carrier injuries during the scope period peaked in Q4 FY2020 but have since decreased. However, our analysis indicated a consistent relationship between total package weight and carrier injuries. Between Q2 FY2020 and Q1 FY2022, we observed that more total package weight delivered was associated with an increased likelihood of injury.<sup>18</sup> Specifically, our regression analysis showed that a carrier was 4.4 percent more likely to be injured on average for every additional 2,000 pounds they delivered in a quarter.<sup>19</sup> This percentage is relevant considering that each carrier handled and delivered about 8,800 pounds per quarter on average.

**Between Q2 FY2020 and Q1 FY2022, we observed that more total package weight delivered was associated with an increased likelihood of injury.**

**Figure 7: Carrier Injury Rate and Average Total Package Weight Per Carrier, Q2 FY2020 - Q1 FY2022**



Pre-career carriers and career carriers both perform the same functions, including casing, delivering, collecting mail along a prescribed route, and providing customers along the route with a variety of services. However, pre-career carriers

<sup>18</sup> We define statistical significance as reaching the 95-percent confidence level. Based on this, the positive association between total package weight and injury status was statistically significant in all eight quarters studied.

<sup>19</sup> Injured carriers from three carrier types delivered significantly more package weight than their non-injured counterparts: City Carrier Assistants (CCAs), Rural Carrier Associates (RCAs), and Rural Carriers. We also identified a statistically significant difference in the mean weight of packages delivered by injured versus non-injured carriers, regardless of carrier type. However, the effect of this difference is so small as to not have practical significance for carriers overall.

are entry-level, supplement the Postal Service's regular workforce, and reduce staffing costs. We found that between Q2 FY2020 and Q1 FY2022, injured CCAs and RCAs — pre-career carriers — delivered on average 39.7 percent and 55.5 percent more weight than their non-injured counterparts, respectively. Looking more closely at the relationship between injuries and total package weight, we found that pre-career carriers who delivered over 2,000 pounds of packages in the previous quarter had a 10.3 percent higher injury rate than career carriers who similarly delivered more than 2,000 pounds.<sup>20</sup>

Finally, to further investigate injuries among pre-career carriers, we compared the percentage of injured carriers who were pre-career with the percentage of carriers overall (injured and non-injured) that were pre-career. We found that CCAs represented a larger percentage of injured carriers (14.8 percent) than they were of carriers overall (11.2 percent), on average (see Table 1). That amounts to 31.7 percent more injuries than would be expected for this group. However, RCAs represented a smaller percentage of injured carriers (11.7 percent) than they were of carriers overall (15.2 percent).

**Table 1: Average Percentage of Injured and All Carriers by Occupation, Q2 FY2020 - Q1 FY2022**

Occupation	Injured Carriers	All Carriers
City Carrier	40.4%	42.9%
Rural Carrier	25.4%	22.0%
City Carrier Assistant	14.8%	11.2%
Rural Carrier Associate	11.7%	15.2%
Carrier Technician	7.2%	6.9%
Other Carrier	0.4%	1.7%

Source: OIG analysis of OWCP data.

<sup>20</sup> Overall, however, the opposite is true when not accounting for weight. Specifically, career carriers were, on average, 5.3 percent more likely to have been injured than pre-career carriers. We compared carriers who delivered a substantial amount of weight, which is 2,000 pounds for the purposes of this analysis. This was done to ensure an even comparison between career and pre-career carriers, who may work fewer days per week each quarter and thus handle and deliver less weight on average.

## Testing the Association Between Carrier Injuries and Other Variables

To gain further insight into carrier injuries, the OIG explored the association of injuries with carrier tenure, population density, and carrier age. Examining these other relationships revealed that carriers with less tenure or who delivered in medium-density population areas were more prone to injuries. In addition, the injury rate was lower among the youngest and oldest employees compared to those in between.

### Newer Carriers Were at Greater Risk of Injury

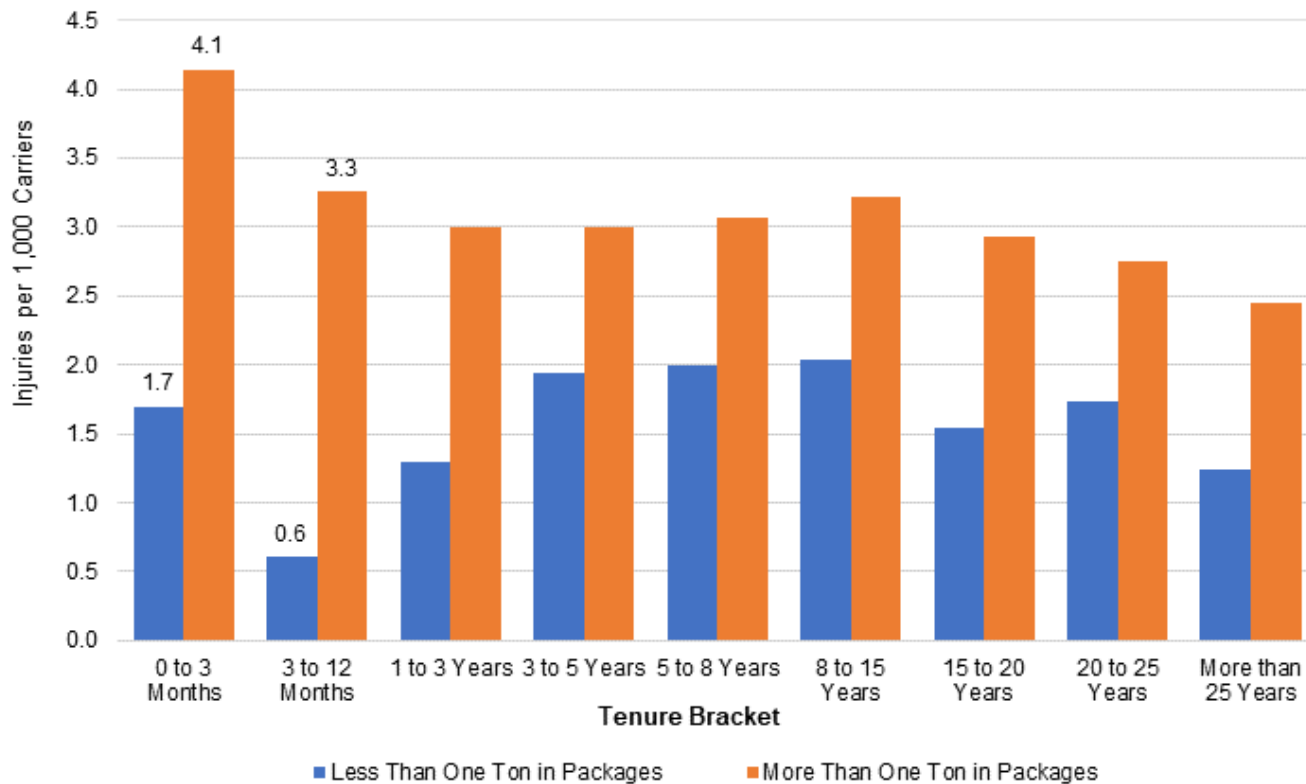
As part of this analysis, we compared injury rates across different tenure brackets. Although the youngest carriers were not most prone to injury, the newest carriers experienced a higher injury rate. Specifically, the injury rate was highest among carriers with zero to three months tenure on average (3.5 injuries per 1,000 carriers) between Q2 FY2020 and Q1 FY2022. The injury rate among newer carriers was even more pronounced among those who delivered more than 2,000 pounds in packages in the previous quarter. Between Q2 FY2020 and Q1 FY2022, carriers who delivered more than a ton and had between zero and three months of tenure experienced 4.1 injuries per 1,000 carriers, 144.9 percent greater than their counterparts with the same tenure who carried less than a ton (see Figure 8). There was an even greater difference for carriers with three to 12 months of tenure, who had a 437.3 percent higher injury rate than their counterparts. In contrast, carriers with more tenure generally experienced a lower injury rate, particularly after 15 years.



Figure 8: Carrier Injury Rate by Tenure Bracket, Q2 FY2020 - Q1 FY2022

**NEW CARRIERS WHO DELIVERED MORE THAN A TON OF PACKAGES IN THE PREVIOUS QUARTER WERE MOST LIKELY TO BE INJURED**

Between Q2 FY2020 and Q1 FY2022, carriers within their first year of tenure were more prone to injury when they delivered more than 2,000 pounds in the prior quarter, compared to carriers with longer tenure. Among carriers who delivered more than a ton, those between zero and three months tenure experienced over twice the injury rate (144.9 percent greater) as their counterparts who carried less than a ton. There was an even greater difference for carriers with three to 12 months of tenure, who had a 437.3 percent higher injury rate.



Source: OIG analysis of OWCP and PTR data.

## Carriers In Medium-Density Population Areas Were More Likely to be Injured

We also observed that geography may influence carriers' likelihood of injury. Our analysis showed that carriers in low-density ZIP Codes were least likely to be injured while those in medium-density ZIP Codes were most likely.<sup>21</sup> This is notable because most carriers (65.3 percent) work in medium-density ZIP Codes, and carriers in these ZIP Codes made up an even greater percentage of injured carriers (69.9 percent) from Q2 FY2020 to Q1 FY2022, on average (see Table 2). Carriers in high-density ZIP Codes, however, made up the expected proportion of injuries, as these carriers comprised nearly 17 percent of both injured carriers and total carriers regardless of injury status. Carriers in low-density ZIP Codes made up a lower percentage of injured carriers (13.4 percent) than carriers overall in these ZIP Codes (17.9 percent).

**Carriers in low-density ZIP Codes were least likely to be injured while those in medium-density ZIP Codes were most likely.**

**Table 2: Average Percentage of Injured and Total Carriers by Population Density, Q2 FY2020 - Q1 FY2022**

Population Density Group	Injured Carriers	All Carriers
Low Density (≤ 125 people per square mile)	13.4%	17.9%
Medium Density (126 - 5,000 people per square mile)	69.9%	65.3%
High Density (> 5,000 people per square mile)	16.7%	16.8%

Source: OIG analysis of OWCP data.

<sup>21</sup> These results were statistically significant in all eight quarters analyzed.

<sup>22</sup> Employees may be able to receive workers' compensation benefits for a range of work-related medical conditions, such as repetitive strain, problems caused by job stress, and occupational illness. As part of the Federal Employees' Compensation Program, the Department of Labor identifies two categories of work-related injuries: 1) Traumatic injury: defined as injuries that can be pinpointed to have occurred during a single work shift, such as falling down the steps; and 2) Occupational diseases: defined as medical conditions that have developed due to work activities performed over more than one work shift, such as back strain from unloading trucks over the course of two weeks.

## Carrier Injury Rates Peaked Between the Ages of 40 and 55

Overall, the average age of injured carriers did not appear meaningfully different than that of non-injured carriers. However, differences between age brackets emerged in the data. Specifically, the average carrier injury rate was highest for carriers between the ages of 40 and 55, between 3.1 and 3.2 injuries per thousand. On average, four in 10 injured carriers (39.8 percent) were between the ages of 40 and 55, which was slightly higher than the percentage of all carriers in that age range (36.0 percent). In contrast, the injury rate was lower for carriers younger than 40 years of age and older than 55.

## Costs of Carrier Injuries Directly Impact USPS Bottom Line

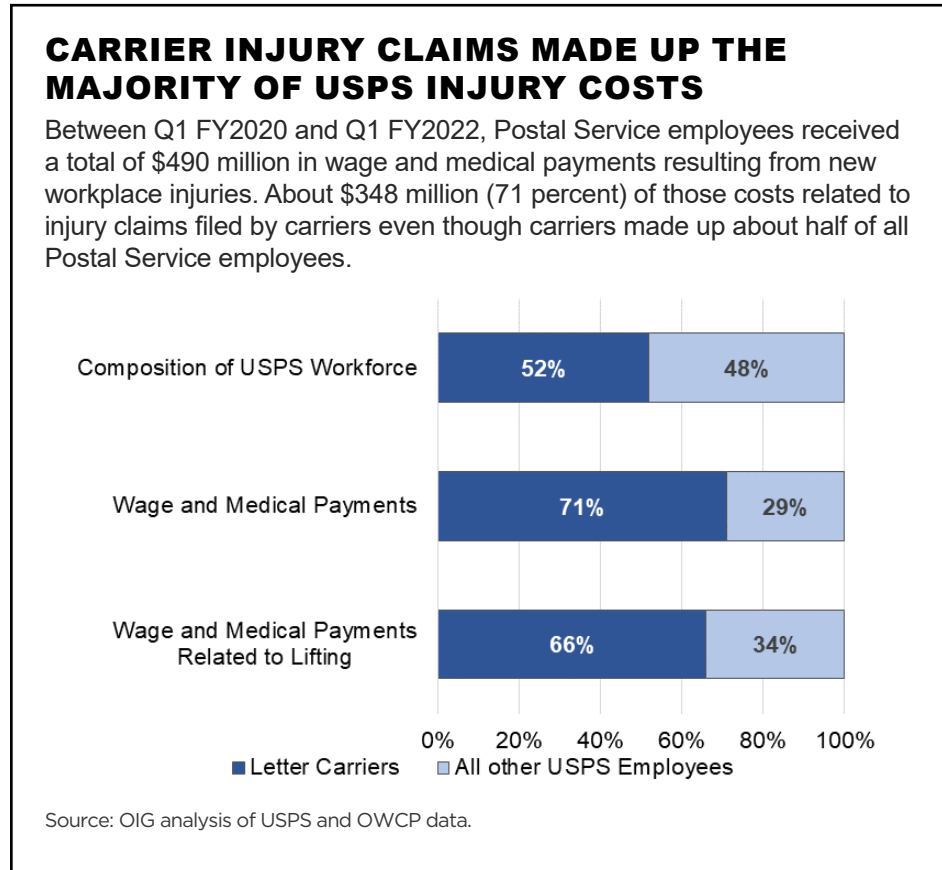
Workers' compensation claims, which cover most injuries that occur on the job, are a significant cost to the Postal Service. Carriers represent a disproportionately high share of the agency's annual claims, even though they make up only one-half of the Postal Service workforce.<sup>22</sup> Between October 1, 2019, and

**Reducing the number of workplace injuries, especially for carriers, would lower the annual cost of workers' compensation claims and lessen its future liability.**

December 31, 2021, new workers' compensation claims from all Postal Service employees cost the agency \$490 million, of which \$348 million (71 percent) was paid to carriers (see Figure 9).

The OIG's analysis focused on carrier injuries related to lifting and carrying heavy packages. Between Q1 FY2020 and Q1 FY2022, these types of injuries cost the Postal Service more than \$79 million, or about 16 percent of the total claim amount. Of the total monetary amount claimed during the scope period, carrier injuries accounted for 66 percent of injury costs related to lifting and carrying heavy items.

**Figure 9: Carrier Proportion of Injury Claims**



Each year, the Postal Service forecasts the costs of future workers' compensation claims. As of September 30, 2021, the Postal Service estimated the future cost of claims to be about \$18 billion. Therefore, reducing the number of workplace injuries, especially for carriers, would lower the annual cost of workers' compensation claims and lessen the future liability for the agency.

In addition to the monetary cost of workers' compensation payments, workplace injuries can result in indirect costs to an employer such as decreased employee

morale and lost productivity. Postmasters identified several potential indirect costs that occur when an employee is out with an injury, such as delayed mail delivery. Other carriers may need to pick up the slack for the injured carrier, and mail may be delivered later in the day than customers expect.

### Safety Guidance, Training, and Policies for Carriers

The OIG's assessment of the Postal Service's safety initiatives found that the agency promotes safety through its policies and training, ergonomic tools, and joint safety committees. Although the Postal Service has updated its training, policies, and procedures since FY 2020, none of these changes appear to be directly in response to the growing number of packages in the mail mix.

### Legal Obligations and Managerial Expectations for Carrier Safety

The Postal Service is subject to occupational safety requirements established through federal law. These requirements inform expectations for how Postal Service management should ensure carrier safety. Federal law has also shaped the safety guidance, training, and policies designed around protecting carriers.

### The Postal Service is Legally Obligated to Ensure Carrier Safety

Since 1998, federal law has required the Postal Service to follow the same occupational safety standards that cover most employees in the private sector and some in the public sector. The Williams-Steiger Occupational Safety and Health (OSH) Act of 1970 established the Department of Labor's Occupational Safety and Health Administration (OSHA), which sets standards and regulations to ensure safe and healthful working conditions. The Postal Employee Safety Enhancement Act, which Congress passed in 1998, amended the OSH Act and required the Postal Service to follow OSHA standards and regulations to ensure carrier safety. For example, the agency must record and report work-related fatalities, injuries, and illnesses.<sup>23</sup>

### Postal Management Commitment, Engagement, and Accountability

The Postal Service has developed an occupational safety and health program. Postal executives and managers at every level in the field are responsible for

<sup>23</sup> 29 CFR 1904.0



overseeing safety programs, including developing accident reduction plans, conducting inspections, investigating accidents and occupational injuries. Local managers are required to report all accidents and occupational injuries within 24 hours of the date of the incident.<sup>24</sup> These managers also use the Safety and Health Management Tool (SHMT) to record accidents and injuries, as well as near misses and potential hazards.<sup>25</sup> SHMT also has a reporting feature that notifies postal managers about accident and injury trends, as well as provides forecasts that allow safety programs to be tailored to address hazards and prevent recurrences.

Since 2017, the Postal Service has measured its safety performance using a total accident rate metric, which yields an annual accident frequency per 100 employees. The total accident rate contains accidents that do not result in medical expenses, days away from work, or restrictions from performing full work duties. This rate is adjusted annually. In FY 2021, the Postal Service was successful in meeting its target accident rate of 13.75 accidents per 100 employees, as its total rate was 13.48. In FY 2022, the total accident rate target was adjusted to 13.45.

### **Postal Service Efforts to Prevent and Reduce Carrier Injuries**

The Postal Service's efforts to prevent and reduce carrier injuries related to handling packages cover three main components: 1) building awareness of injury and safety risks; 2) emphasizing safety engineering; and 3) assessing safety through collaborative joint labor-management safety committees.

#### **Building Awareness of Safety and Injury Risks**

The first component used by the Postal Service to prevent and reduce carrier injuries involves building awareness of potential injury risks. To accomplish this, the Postal Service provides both mandatory and optional carrier training, publishes policy manuals and other written guidance, and hosts awareness campaigns to address specific injuries and potential preventive measures.

#### **Carrier Training Emphasizes Safety**

Carriers engage in both required and voluntary training and development activities that emphasize safety in the workplace. New carriers, regardless of career status, participate in a mandatory 40-hour training, which includes an eight-hour orientation, and a 32-hour Carrier Academy that cover health and safety topics. In addition, new City Carriers must spend one eight-hour day shadowing an experienced City Carrier. Carriers can also participate in several optional safety courses available on the Postal Service's training platform, including training on sprains and strains, back injury and safety prevention, and avoiding slips, trips, and falls.

Postal Service policy requires at least one weekly Safety Talk, though some delivery units conduct them daily.<sup>26</sup> Safety Talks are 5- to 10-minute talks given by a postmaster or supervisor to employees, including carriers, typically in the morning before carriers leave for their delivery routes. Postal areas or districts assign Safety Talk topics such as uniforms, black ice, or slips, trips, and falls. However, interviews with postmasters indicated that pre-career carriers — who are at higher risk of injury — start their shifts later in the morning and may not be able to participate in Safety Talks.

We also heard from postmasters and union representatives that, after a carrier completes the mandatory orientation and Carrier Academy, continued training for new carriers at the local level is not standardized. As a result, new carriers could be expected to perform at the same level as experienced carriers — in some cases, working 60 to 80 hours per week and being assigned to multiple routes. If new carriers are still unfamiliar with certain aspects of their work, they may be more likely to experience an injury under these conditions.<sup>27</sup> One potential solution is to extend safety training after new carriers begin working at their assigned facility, which may result in fewer carrier injuries among newer carriers. One postmaster noted that local management could provide this additional training through hands-on instruction for carriers. For example, management

<sup>24</sup> As part of the safety and health program, the Postal Service is required to keep records of all occupational accidents and illnesses, and to submit an annual report with these statistics to the Secretary of Labor.

<sup>25</sup> Launched in October 2021, SHMT replaced the Employee Health and Safety system and the previous version of the Safety Toolkit. SHMT is intended to identify where process failures and errors have occurred, to help prevent accidents in the future. It will also make it easier for the Postal Service to report regulatory obligations to OSHA and OWCP.

<sup>26</sup> USPS, *Handbook EL-801 – Supervisor's Safety Handbook*, Chapter 1 - Accident Prevention, Section 1-7 - Safety Talk Requirements, July 2020.

<sup>27</sup> The Postal Service's New Employee Retention Program (NERP) is designed to help address this issue by limiting new carriers to working only 40 hours per week, with a day off, and giving them dedicated routes.

could host periodic roundtables with carriers to check on their safety and obtain feedback on what tools and other support they need to ensure their safety.

### ***Policies and Procedures Promote Safe Lifting***

The Postal Service publishes various handbooks and manuals that detail and promote safe lifting practices and techniques for employees. For example, the Employee and Labor Relations Manual (ELM 52) outlines the responsibilities of managers and safety staff and identifies common musculoskeletal disorder (MSD) risk factors for mail personnel. The ELM 52 also outlines the Postal Service's Ergonomics program. However, according to Postal Service management, the program is currently being revamped and streamlined. Forthcoming changes in the program do not relate specifically to the growing number of packages in the mail mix.

The Postal Service also issues Job Safety Analyses (JSAs) for carriers that break down carrier duties into individual tasks, such as collecting mail, transporting hampers, or refueling vehicles. JSAs identify potential risks associated with each task and describe safe work practices to prevent injury. For example, in the JSA assessing the task of loading and unloading hampers, a carrier may need to handle a heavy load when removing heavy trays or packages from the hamper. Safe work practices to prevent injury include keeping the back straight, avoiding twisting with the load, and wearing fabric or leather gloves to improve grip.

### ***Other Safety Initiatives Increase Awareness of Injury Risk and Prevention***

In addition to training and policy guidance, the Postal Service raises awareness of injury risks and preventive measures through awareness campaigns which can occur at the national or local levels. Past awareness campaign topics include dog bites and heat injury. While these were not directly related to changes in mail mix, some campaigns covered topics related to ergonomics. For instance, in February 2022, the Postal Service completed its second annual Ergonomics Awareness Month campaign, which focuses on postal jobs that “require lifting heavy items, bending, reaching overhead, pushing and pulling heavy loads, working in

awkward body postures and performing the same or similar tasks repetitively” — all of these can lead to MSD injuries.<sup>28</sup>

### **Safety Engineering and Mail Transport Equipment Reduce Injury Risk**

The second component of the Postal Service's approach to safety is safety engineering — the design of equipment to reduce injury risk. The Postal Service is required to incorporate safety engineering techniques when it introduces or changes equipment used to process and deliver mail. To accomplish this, safety personnel must be consulted to ensure this equipment protects employees' health.

Carriers lift heavy packages more often now than in the past, but we learned from postal management that delivery units now have access to better tools (for example, hand trucks) which help to prevent injuries. Within a postal facility, carriers use mail transport equipment (MTE) and other devices to help limit the manual handling of heavy loads of mail and packages. These tools help carriers avoid bending over, reaching, pushing or pulling, twisting, or awkward positions that increase the risk of injury. However, we learned from postmasters that not every tool or MTE is available at each delivery unit, as it is up to postmasters or supervisors to purchase the items locally. In addition, the use of various tools can vary depending on carrier preference.

Common ergonomic devices found in Postal Service guidance or highlighted by postal personnel include:



Source: USPS

**Hampers:** These are four- or six-wheeled carts used to transport mail and packages from the casing area to the loading dock. Some hampers have spring-platform inserts which depress under a heavy load and elevate as the load decreases. The spring-loaded bottom is effective in reducing awkward bending and reaching down into the hamper, thereby reducing injuries.<sup>29</sup>

<sup>28</sup> For more information, see: USPS, “Pain Points – Ergonomics Awareness Month Observed,” USPS News Link, January 31, 2022, <https://link.usps.com/2022/01/31/pain-points/>.

<sup>29</sup> Due to the increase in package volume, the Postal Service recently began using wire containers, also called “lobster cages,” to move mail in some facilities. This informal practice came about because the containers — which are intended to move mail between processing facilities — can hold more packages than standard hampers. These containers can be heavier and more awkward to handle than hampers, requiring significant force to push, which could potentially lead to injury.



Source: USPS

**Hand carts or dollies:** Folding hand carts (also called hand trucks) are two-wheeled carts that a carrier may keep in their vehicle to help deliver heavy items. These carts reduce the number of times a carrier must manually carry an item. Dollies are slightly smaller than hand carts and are also used to help carriers move packages.<sup>30</sup>



Source: USPS

**Mail hooks:** Mail hooks — also known as utility hooks or extendable boat hooks — are 3-foot plastic rods with a hooked end. Carriers can use this tool to extend their reach to push or pull mail containers and packages when loading or unloading their delivery vehicle. The hook may prevent the carrier from over-extending, which can help them avoid back, neck, and shoulder injuries.



Source: USPS

**Mail elevation units (“milk crates”):** Milk crates are plastic containers used to create an elevated work surface, which reduces the lifting distance required for postal workers. Such a platform can reduce the wear and tear on the employee’s back from lifting packages, mail trays, and mail bundles.

In response to changes in the mail mix, the Postal Service also has purchased new equipment and delivery vehicles with ergonomic features. For instance, as part of its 10-year plan, the agency is purchasing more than 185 new package sorters to manage increased package volume. Each sorter processes up to 3,000 packages per hour, which is expected to improve delivery efficiencies and eliminate ineffective and repetitive work practices that can lead to injuries. Additionally, in 2016, USPS also began introducing Dodge Ram ProMaster cargo vans on thousands of ‘park and loop’ delivery routes. The vans are large

enough for a carrier to stand in and feature shelving to make accessing packages easier, without the need for reaching or awkward movements. As of 2017, more than 12,400 vans had been purchased. In addition, the Postal Service plans to introduce Next Generation Delivery Vehicles in late 2023, which will also be large enough to stand in, include ergonomic features, and accommodate more packages than the current fleet of delivery trucks.

### **National Agreements and Safety Committees Help Protect Carriers’ Safety**

Finally, the Postal Service also follows safety-related provisions outlined in its National Agreements with labor unions, as well as assesses and analyzes safety through various collaborative joint labor-management safety committees.

Through collective bargaining, carrier unions — the National Association of Letter Carriers (NALC) and the National Rural Letter Carriers’ Association (NRLCA) — each reached an agreement outlining responsibilities and cooperation to ensure carrier safety and health.<sup>31</sup>

For instance, NALC’s National Agreement mandates the establishment of national, area, and local safety committees at all postal facilities with 50 or more employees.<sup>32</sup> The committees, which are designed to implement the Postal Service’s safety and health program described above, are responsible for reviewing and enforcing local safety and health rules, monitoring progress of accident prevention and health activities, determining if all employees receive appropriate ergonomics training, assisting with ergonomic improvements, and participating in on-the-spot inspections.<sup>33</sup> In addition, both unions’ National Agreements require postal management to provide carriers with forms they can use to report unsafe and unhealthful conditions. If a carrier believes they are being required to work under unsafe conditions, they may report this to their supervisor or file a grievance if no corrective action was taken in their eight-hour

30 Two postmasters said dollies are not as sturdy as hand trucks. We also heard from postmasters that not all carriers are given hand carts or dollies to use because they are earmarked for routes with more packages. Other types of carts used by carriers include a small, portable satchel cart and a nutting truck — a flat cart with four wheels — both of which may relieve carriers from heavy loads.

31 As of FY 2021, NALC and NRLCA represented about 173,000 active city carriers and 75,000 active rural carriers, respectively. Article 14 in both unions’ most recent National Agreements outlines the agreed-upon safety requirements.

32 Smaller facilities are encouraged to establish a safety committee when requested by the union. All committees are made up of at least one union representative and one postal representative and meet quarterly to collaborate with the Postal Service on matters concerning City Carriers’ safety, health, and ergonomics.

33 NRLCA’s National Agreement does not require creation of joint labor-management safety committees. Instead, it allows for safety and health to be discussed during labor-management meetings at the national, area, district, and local levels. This includes reviewing the Postal Service’s overall progress in preventing accidents, deciding which program areas need more attention, and investigating major accidents.



tour.<sup>34</sup> The Agreements also indicate postal management may meet with each union about safety-related issues.

### Protocols for Delivering Heavy or Bulky Packages Vary by Locale

While the Postal Service publishes numerous handbooks, policy manuals, training materials, and other guidance on safe lifting, there is no specific policy in place outlining how a carrier should deliver a heavy package. According to the Postal Operations Manual (POM), heavy or bulky items are simply “delivered as addressed.”<sup>35</sup>

In interviews with the OIG, postmasters confirmed the absence of a specific procedure for handling heavy items and described several different approaches for delivering these packages:

- **Customer pick-up at post office:** Postmasters said that if a package is too heavy, the carrier will leave a notice with the customer to pick up the item at the post office.
- **Requesting help from customer:** Postmasters reported that carriers may ask the customer for help with a heavy item.
- **Assistance from supervisor:** Postmasters reported that in some circumstances, the postmaster or other supervisor will deliver the item themselves.
- **Use of dollies or other equipment:** Postmasters said their carriers have access to dollies to help transport heavy items from the vehicle to the door, or spring-loaded hampers to handle packages at the delivery unit.
- **Assistance from another carrier:** Postmasters said that a second carrier may be sent out with the primary carrier to help deliver a heavy package, or the second carrier may meet the primary carrier at a specified time to make the delivery.

In addition to delivery protocols that vary by locale, postmasters also explained that the Postal Service does not have a label that calls for the “team lift” of a package. Any label indicating that a package should be handled by two people was applied by the merchant or manufacturer of the item. In addition, while the Postal Service issues stickers that should be applied to items weighing 35 pounds or more, postmasters the OIG interviewed were unfamiliar with the sticker (see Figure 10). Given the absence of consistent practices for delivering heavy items, the Postal Service should develop a standard operating procedure describing the proper delivery method for safely handling and delivering heavy packages in order to reduce and prevent injuries.

### OIG Recommendation

**Recommendation 1:** We recommend the Vice President, Human Resources, develop and implement standard operating procedures outlining how a carrier should deliver a heavy package (weighing 35 pounds or more).

Figure 10: Label for Heavy Packages

#### **LABEL FOR HEAVIER ITEMS USED INFREQUENTLY**

The Postal Service issues Label 035CH, a brightly colored sticker for packages weighing 35 pounds or more. However, postmasters we interviewed were unfamiliar with the sticker, suggesting it is used infrequently.



Source: USPS

<sup>34</sup> The 2019–2023 NALC National Agreement, for example, enables carriers to notify their supervisors of unsafe conditions directly or via their union steward or union representative. Under the OSH Act, carriers may also file safety complaints directly with OSHA.

<sup>35</sup> U.S. Postal Service, *POM Issue 9 - Postal Operations Manual*, Section 617.2 - Delivery of Parcels, 617.21 - Heavy or Bulky Items, April 30, 2022.

## Data Analysis Can be Used to Target Safety Improvements

The Postal Service's commitment to employee safety is evidenced by numerous policies and written guidance, the promotion of tools that mitigate injury risk, utilization of joint safety committees, and other measures aimed at protecting employees. However, most of these policies are not specific to carriers. Further, there are currently no safety protocols or practices in place that target pre-career or newer carriers. Our analysis showed that these carriers are more prone to injury than other carriers. As the Postal Service continues to develop and refine its new Safety and Health Management Tool, the agency can use this system to identify groups of employees at a higher risk of injury and develop effective and targeted safety protocols aimed at reducing injury risks for those employees.

## Conclusion

As a result of changes in mail mix — and more specifically, an increase in package volume and weight — our analysis determined that Postal Service carriers handled and delivered more and heavier packages, including more overweight packages that exceeded the Postal Service's maximum allowable weight. There was a statistically significant, positive association between this growth in package volume and weight and carrier injuries.

A more detailed story emerged from our analysis which revealed that, while a carrier was 4.4 percent more likely to be injured on average for every

2,000 pounds of packages they delivered in a quarter, pre-career carriers who delivered a ton or more were more likely to be injured than their career counterparts. In addition, new carriers and those who worked in medium-population density ZIP Codes were most likely to be injured.

The Postal Service has numerous policies, procedures, guidance documents, and training resources in place that relate to safety; however, we found no specific protocols in place related to carriers' more frequent handling and delivery of heavier and overweight packages. As such, this represents an area of opportunity for the Postal Service to update its procedures.

Given that rising ecommerce may continue to increase package volume and weight in the coming years, it is important for the Postal Service to focus on the safety of its employees by minimizing and preventing carrier injuries. For instance, as the Postal Service continues to develop and refine its new Safety and Health Management Tool, the agency can use this system to identify groups of employees at a higher risk of injury and develop effective and targeted safety protocols aimed at mitigating risks for those employees. Minimizing injuries, in turn, may reduce workers' compensation claims and other direct and indirect costs associated with carrier injuries, which directly impact the Postal Service's bottom line.

# Appendices

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# Appendix A: Additional Information

## Objectives, Scope, and Methodology

The objectives of this paper were to:

1. Determine whether there is a correlation between carrier injuries and changes in mail mix, specifically changes in package volume and weight, and
2. Assess the Postal Service's guidance, training, policies, and procedures for carriers handling of packages.

This paper examined the changes in the Postal Service mail mix — with a focus on packages — and how this may have impacted carriers' physical health from FY 2019 to Q1 FY2022.

The OIG used the following three methods to meet these objectives:

### 1. Document Review

We reviewed U.S. package market trends, ecommerce trends, federal workers' compensation policies, carrier job duties, and external reports such as from the GAO. We also reviewed the Postal Service's legal obligations to provide safe and healthful working conditions for all its employees as well as postal policies, procedures, training requirements, and guidance materials related to safety. Our review covered the Postal Service's efforts to prevent and reduce carrier injuries related to handling packages. However, evaluating the efficacy of training was outside the scope of this paper.

### 2. Interviews

Between April 2022 and June 2022, we conducted 15 interviews with the following groups:

- **Postal Service leadership and management** in Occupational Safety and Health; Labor Relations, Policy & Programs; and Revenue & Volume Reporting, who oversaw the safety and health of postal employees, postal service policy, and package data.
- **Postal labor unions** — the National Association of Letter Carriers (NALC) and National Rural Letter Carriers' Association (NRLCA) — which collectively bargain on behalf of carriers.
- **Postmasters**, who spoke about their experience with the increased package volume and weight in recent years as well as how that has affected carriers' physical health. We spoke to eight postmasters in total — two from each Retail and Delivery Area.<sup>36</sup>

### 3. Data Analysis

The OIG obtained Postal Service package volume and weight data and used various quantitative methods to examine those data, including the following analyses:<sup>37</sup>

- **Logistic regression analysis** was used to evaluate the strength of association between our outcome variable — carrier injury — and possible explanatory variables, including total weight of packages delivered, career status, tenure, and population density of the ZIP Codes associated with carriers' delivery units.<sup>38</sup> The injuries included in the regression model were limited to a set of 12 cause of injury codes related to injuries plausibly sustained by handling packages. Total weight delivered by the carrier during the quarter and the average weight per package were offset by one quarter, meaning that the model tested the association between injury during one quarter and the weight of packages in the quarter immediately preceding.

<sup>36</sup> To identify postmasters to interview, we randomly selected two delivery units from each Retail and Delivery Area (one high injury rate and one low injury rate) that met the following criteria: (1) they had at least 50 employees and, therefore, were in the top 10 percent of post offices by employee count; and 2) had either an injury rate in the top 25 percent of all post offices, equating to an injury rate greater than or equal to 6 percent (high), or an injury rate of zero percent (low) from Q1 FY2020 to Q1 FY2022.

<sup>37</sup> We used two Postal Service data sources for package volume and weight data: 1) for package count totals by mail class, we used Revenue, Piece, and Weight (RPW) data between FYs 2009 and 2022 (published on the PRC website); and 2) for analysis by weight bracket and in the statistical analyses (regression and t-test), we used more granular Product Tracking and Reporting (PTR) data covering Q1 FY2020 to Q1 FY2022. For carriers' career status and tenure, we used a Postal Service employee database. Finally, for population density of the ZIP Codes associated with the carriers' delivery units, we used U.S. Census Bureau data.

<sup>38</sup> The regression analysis additionally included a categorical variable grouping by carrier age at hiring, categorical variable specifically for CCAs with three to 12 months tenure, and a categorical variable grouping average weight per package carried.



For Q2 FY2020, as an example, the model used the total package weight each carrier delivered during Q1 FY2020 but the carriers' injury status for Q2 FY2020.

Due to limitations in data availability, the scope for the regression analysis testing the association between the change in package volume and weight and certain types of carrier injuries was Q2 FY 2020 to Q1 FY2022. The

regression model was run individually for each of the eight quarters during our scope period, testing for the significance of each variable during each of those eight quarters. The summary table below shows the minimum, mean, and maximum effect sizes across the eight quarters along with the number of quarters that the explanatory variable was either significant (p value < 0.05) or near significant (p value < 0.10) (see Table 3).

**Table 3: Explanatory Variable Estimates and Significance**

Variable	Min Estimate	Mean Estimate	Max Estimate	Significant Quarters	Near Significant Quarters
(Intercept)	-6.709	-6.351	-5.883	8	8
AgeAtHiring<25	-0.349	-0.199	-0.046	4	4
AgeAtHiring>45	0.042	0.157	0.264	2	4
CCA3_12TRUE	0.025	0.289	0.616	3	4
IsCareerTRUE	-0.113	0.201	0.373	5	5
LbsPerPkgBracket<1.5	-0.315	-0.172	-0.033	4	5
LbsPerPkgBracker>2.0	-0.245	-0.040	0.182	2	3
PopDensityGroup(125,5000)	0.198	0.324	0.435	8	8
PopDensityGroup>5000	0.139	0.269	0.389	4	5
Tenure	-0.013	-0.009	-0.002	6	6
WeightLag1	0.016	0.022	0.024	8	8

To determine how well our model performed overall in explaining the likelihood of carrier injury, we computed the McFadden's pseudo-R<sup>2</sup> and performed a X<sup>2</sup>-test for each quarter. Based on these computations, we determined that the statistical significance of the relationship makes the result worth reporting, as there is associative power between variables. While this model is inadequate for the purposes of prediction, the model adequately answers the research question: *what relationship does the weight and volume of a carriers' package deliveries have with their likelihood of injury?*

- **T-Test analysis** was used to determine if a statistically significant difference exists between the average total package weight carried by injured and non-injured carriers of the same occupation type per quarter.
- **Descriptive statistics** were also produced from data from the Postal Service, Census Bureau, and Office of Workers' Compensation Programs (OWCP) to examine the association between carrier injuries and trends in package volume and weight, age, career status, carrier type, tenure, occupation, and

population density of the ZIP Codes associated with carriers' delivery units. Separate from the package volume and weight, we also produced descriptive statistics about workers' compensation and OSHA-reported injury rates.<sup>39</sup>

This research was conducted in accordance with the Council of the Inspectors General on Integrity and Efficiency's Quality Standards for Inspection and Evaluation. We discussed our observations and conclusions with management on September 7, 2022 and included their comments where appropriate.

## Prior Coverage

Title	Objective	Report Number	Final Report Date	Monetary Impact
<i>Accident Reporting</i>	Review and assess the effectiveness of management's controls over reporting accidents.	21-015-R21	August 27, 2021	\$28,237,887
<i>Payments to Injured Employees</i>	Determine whether the Postal Service is properly paying its injured employees.	20-156-R20	September 30, 2020	\$15,733,353
<i>Package Delivery in Rural and Dense Urban Areas</i>	Explore the unique issues related to package delivery in remote rural and dense urban areas and identify opportunities to remedy the challenges.	RISC-WP-20-008	September 16, 2020	\$0
<i>Workers' Compensation Program Cost Containment Activities</i>	Determine the current status of Postal Service cost containment activities related to workers' compensation costs and liabilities.	19-031-R20	August 6, 2020	\$0

<sup>39</sup> For carrier injury status, as well as carrier injury cases by injury cause code related to handling packages, we used data from OWCP. The 12 cause of injury codes used include: 24 – Handling Packaged Material, Weight Stated; 25 – Handling Packaged Material, Weight not Stated; 31 – Handling Mail Containers; 34 – Handling Hand Trucks/Dollies; 59 – Falling Cargo; 63 – Falling Objects; 64 – Fall on Floor/Work Surface/Aisle; 65 – Fall on Stairway or Steps; 66 – Fall on Walkways/Curbs/Porches; 82 – Fall; 91 – Slip – Not Falling; and 92 – Slip/Twist/Trip. We devised this list of cause of injury codes in consultation with OIG subject matter experts. The codes then were filtered by three OWCP injury type codes to further ensure applicability: 600 – Exertion; 610 – Lifted, strained by; and 620 – Stressed by. To view the full list of OWCP cause of injury codes, go to: <https://dfecapps.dol.gov/AgcyData/>.

# Appendix B: Management's Comments



September 13, 2022

Carrie Fox, Director, Operations Central, Research and Insight Solution Center (RISC)

SUBJECT: Management Response: Changes in Mail Mix: Implications for Carriers' Physical Health (Project Number 2022RISC003).

Thank you for providing the Postal Service with an opportunity to review and comment on the finding and recommendation contained in the draft audit report, Changes in Mail Mix: Implications for Carriers' Physical Health.

Management agrees with the recommendation that clarification should be disseminated to address how to appropriately lift and deliver parcels as a result of the changes in mail mix.

**Recommendation [1]:**

We recommend the **Vice President, Human Resources**, develop and implement standard operating procedures outlining how a carrier should deliver a heavy package (weighing 35 pounds or more).

**Management Response/Action Plan:**

Management **agrees** with this recommendation.

**Target Implementation Date:** 10/01/2022

**Responsible Official:**

Sr. Director, Occupational Safety & Health  
Director, Delivery Strategy & Policy

A handwritten signature in black ink, appearing to read "Simon Storey", written over a horizontal line.

Simon Storey  
Vice President, Human Resources

cc: *Manager, Corporate Audit Response Management*



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