New York Harbor and the Vicious Circle of the Winter of 1917–1918

Gerard Fitzgerald

Summary

Beginning in December 1917, and continuing through late February 1918, New York Harbor, a key hub of logistical support for the Allied war effort on the Western Front during World War I, was paralyzed by a seemingly unending series of ice storms and blizzards. The unique design of the harbor, and the problematic interface between rail traffic and the loading of goods on board merchant vessels through barges and lighters combined into a meteorological and environmental disaster until the storm front finally ceased. Military-environmental analysis of this event provides a new understanding of the war effort in the United States.

The severity of the extraordinary winter of 1917–1918 in the United States remains an important but relatively unexplored chapter of the First World War. Beginning in December 1917, and continuing through January and February of 1918, a powerful series of unrelenting and formidable ice storms and blizzards wreaked havoc across the nation, reaching from as far west as Omaha, Nebraska, and as far southwest as Memphis, Tennessee, to the port cities of the Atlantic Seaboard, and as far south as Norfolk, Virginia. This unprecedented winter onslaught caused civilian food and coal shortages in some northeastern states, coupled with the simultaneous inability to send critical logistical support to the Allied war effort on the Western Front. In particular, the storms paralyzed New York Harbor, the logistical center for support for the war in Europe in the eastern US. A useful historiographic framework for understanding the winter storms that incapacitated New York Harbor is Lisa Brady's analysis of acoustical shadows, which conceptualize meteorological phenomena as both historical actors possessing agency and also as an extension of Clausewitz's concept of nature as friction to understand the relationship between war and the environment.

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Fig. 1. Oceanic traffic leaving New York Harbor was fed by 12 railroads that either loaded freight cars on carfloats or offloaded material onto lighters or barges, a time- and labor-intensive process. More than nine thousand vessels traveled to the harbor each year making it one of the busiest, and without question, one of the most inefficient transportation hubs in the world. The combination of unprecedented weather and extreme wartime rail volume led to congestion and eventual gridlock.

Map of Greater New York Harbor by Harry Chase Brearley, 1914.
Courtesy of Linda Hall Library.

The blizzards and subzero conditions stretching from the Midwest to the Eastern Seaboard struck when the American transportation system was already in disarray and on the verge of complete collapse because of freight car shortages, a national coal shortage, and the mismanagement of east-west rail-freight traffic. In short, the national rail systems simply could not handle the unprecedented flow of food, munitions, and supplies into East Coast ports. On 1 November 1916, railroads experienced a shortage of 115,000 empty freight cars of various types. Only three months later, in February 1917, 145,000 freight cars accumulated at eastern points producing increased congestion that became self-reinforcing and ultimately led to paralysis across the entire national transportation system. Some rolling stock stayed put because of various "competing" railroads' reluctance to ship empty—and therefore revenue free—freight cars back to their point of origin while other cars simply became trapped in gridlocked yards and on industrial sidings. Once the storms arrived freight cars became frozen in place,

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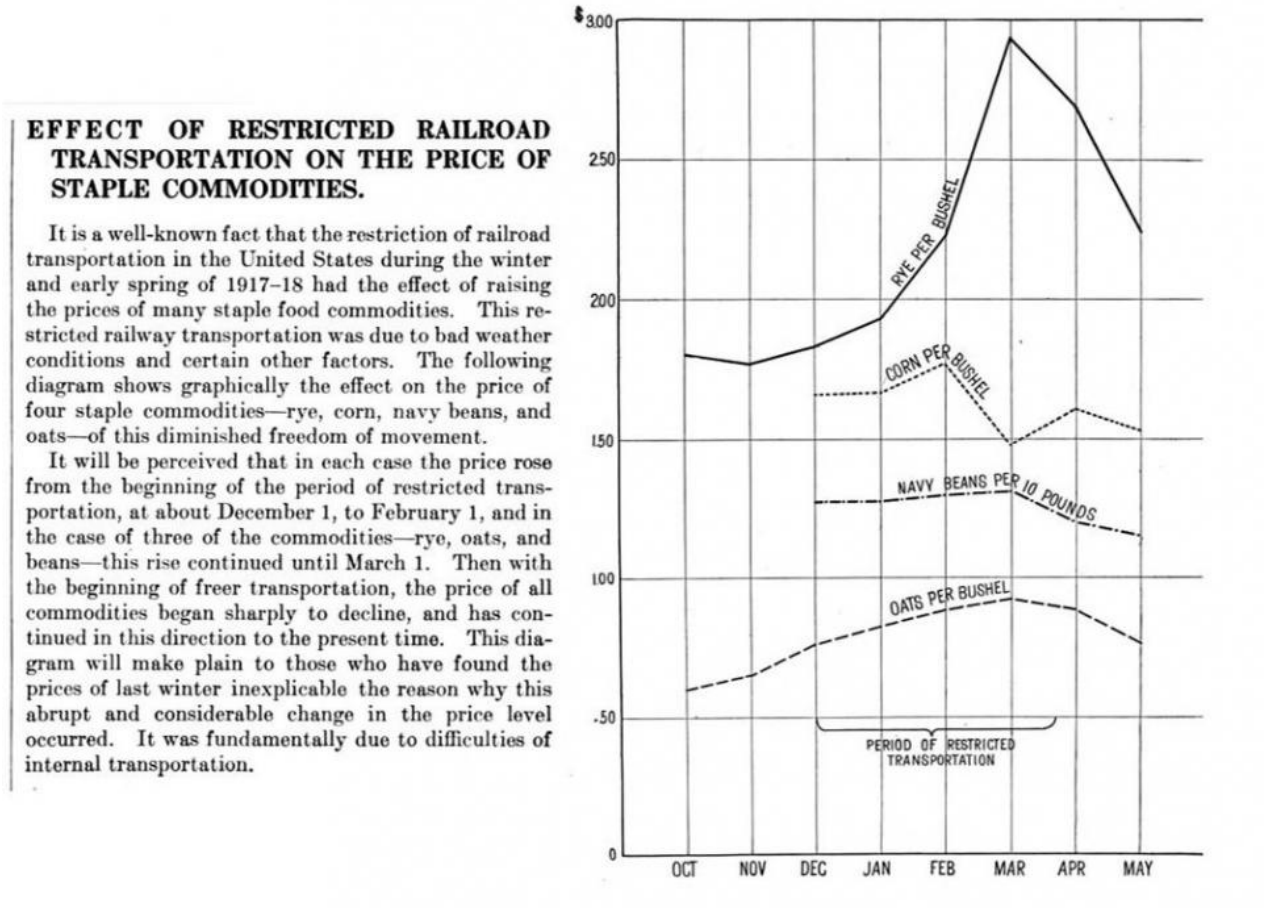
which trapped others behind them, eventually bringing the system to a standstill.



EFFECT OF RESTRICTED RAILROAD TRANSPORTATION ON THE PRICE OF STAPLE COMMODITIES.

It is a well-known fact that the restriction of railroad transportation in the United States during the winter and early spring of 1917–18 had the effect of raising the prices of many staple food commodities. This restricted railway transportation was due to bad weather conditions and certain other factors. The following diagram shows graphically the effect on the price of four staple commodities—rye, corn, navy beans, and oats—of this diminished freedom of movement.

It will be perceived that in each case the price rose from the beginning of the period of restricted transportation, at about December 1, to February 1, and in the case of three of the commodities—rye, oats, and beans—this rise continued until March 1. Then with the beginning of freer transportation, the price of all commodities began sharply to decline, and has continued in this direction to the present time. This diagram will make plain to those who have found the prices of last winter inexplicable the reason why this abrupt and considerable change in the price level occurred. It was fundamentally due to difficulties of internal transportation.

Fig. 2. On 10 August 1917, President Wilson issued an executive order controlling the distribution of food and fuel across the United States. The order, approved by Congress, allowed him to set a price floor for food and fuel to ensure that farmers received adequate revenues despite increased rail rates. With the combined crises of railroad congestion and paralyzing winter storms, as the chart and analysis show, commodity prices spiked during the winter freeze and only dropped once the spring thaw set in and railroad traffic resumed some semblance of normal operations.

United States Food Administration, 1918.
Originally published in *Effect of Restricted Railroad Transportation on the Price of Staple Commodities*, no. 2 (Washington, DC, 6 July 1918): n.p.

The railroads and docks of Manhattan were especially susceptible to ice as New York Harbor was primarily a lighterage port and relied on a system of car floats, barges, and lighters—small ships that transferred small amounts of cargo from land to water or from ship to ship—to move freight or coal to ships across the harbor or moored in the various rivers and inlets surroundings the metropolitan area. The absence of large dockside cranes, standard to harbors across the rest of the world, made Manhattan unique, as did the absence of any tunnels or bridges allowing freight trains to directly enter Manhattan from New Jersey and points south, an infrastructure problem that continues to exasperate policy experts today. (See Figure 1) An editorial entitled "The Real Tug of War" in the 26 October 1917 edition of *Railway Age Gazette* predicted the possible collapse of operations on the Eastern Seaboard due to the combination bad weather and infrastructure deficiencies, a viewpoint similar to

testimony given by the president of the Pennsylvania Railroad before the Interstate Commerce Commission in March 1917.

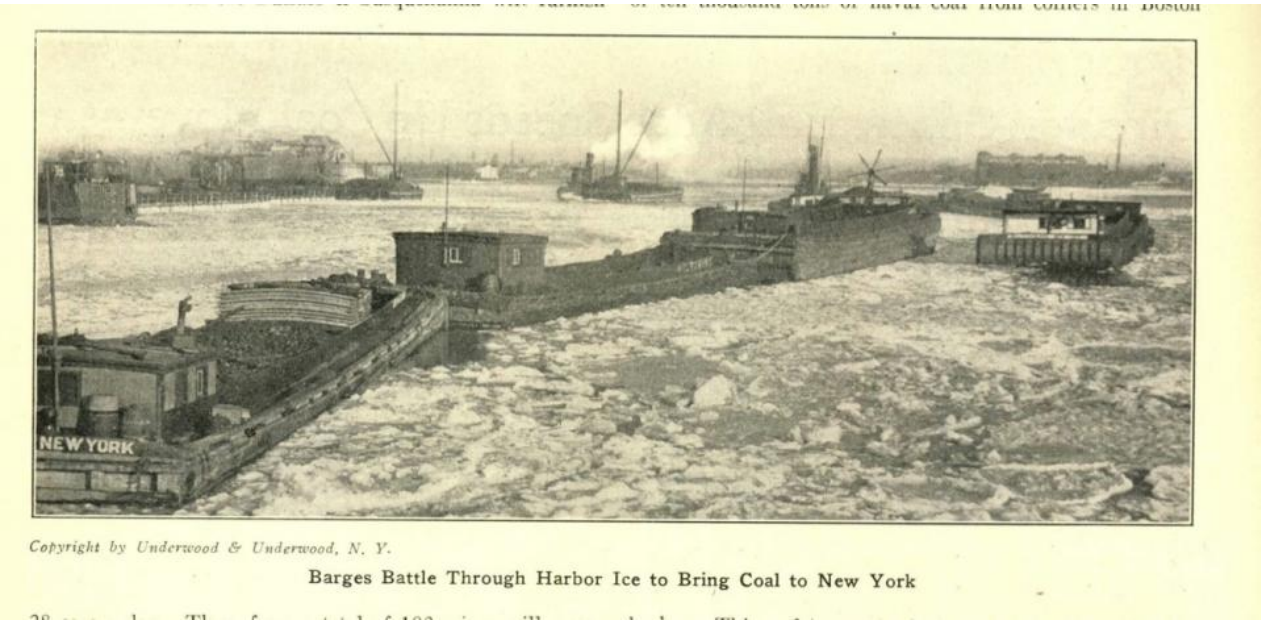
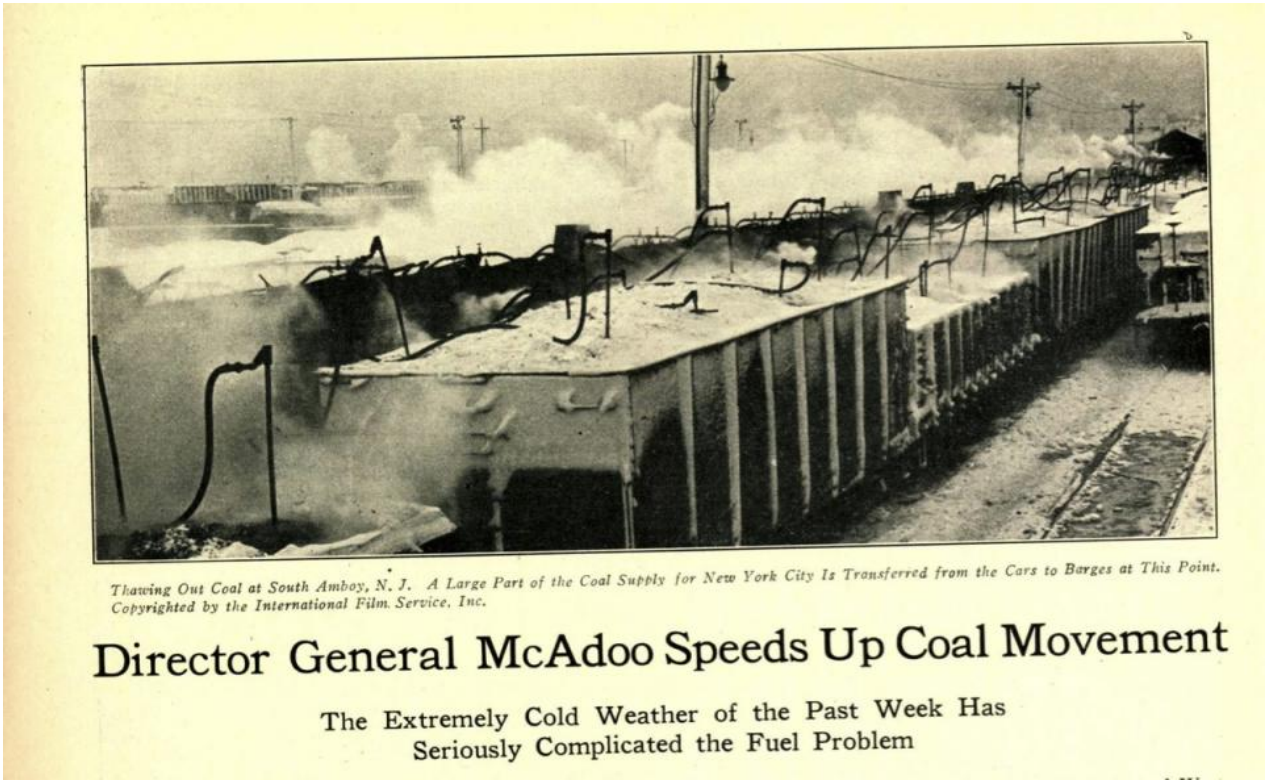


Fig. 3. The railroads and terminal companies supporting New York Harbor employed more than 1,800 vessels including barges and lighters that became trapped in the ice once the harbor and river froze. Unable to move, these vessels were unable to supply fuel to anchored ships, furthering gridlock in the harbor and eventually leading to a complete shutdown.

Originally published in *Railway Age* 64, no. 2 (11 January 1918): 125.

Once the Hudson River became choked with ice, it became impossible for lighters and barges to coal ships that lay at anchor, and the merchant fleet soon became as immobile as the surrounding rail yards. In time, the movement of railroad rolling stock by car-floats, barges, and the transfer of coal to barges between New Jersey, Staten Island/Port of Richmond, Brooklyn, and New York City completely stopped (see Figure 3). As the storms continued, paralysis on both land and sea made the loading of cargo for the Western Front all but impossible. In addition, coal from southern mines was also unable to reach New England cities. Dr. Harry A. Garfield, the leader of the US Fuel Administration, explained the situation as follows: "At tidewater the flood of freight has stopped. The ships were unable to complete the journey from our factories to the war-depots behind the firing line ... The wheels were chocked and stopped, zero weather and snow bound trains; terminals congested; harbors with shipping frozen in; rivers and canals impassable ..." (*Railway Age*, 199.)



Thawing Out Coal at South Amboy, N. J. A Large Part of the Coal Supply for New York City Is Transferred from the Cars to Barges at This Point.
Copyrighted by the International Film Service, Inc.

Director General McAdoo Speeds Up Coal Movement

The Extremely Cold Weather of the Past Week Has Seriously Complicated the Fuel Problem

Fig. 4. Steam lines inserted into coal hoppers were used to thaw loads so they could be off-loaded to barges to supply anchored vessels with fuel to leave the frozen harbor.

Unknown photographer, n.d.
Originally published in *Railway Age* 64, No. 2 (11 January 1918): 125.

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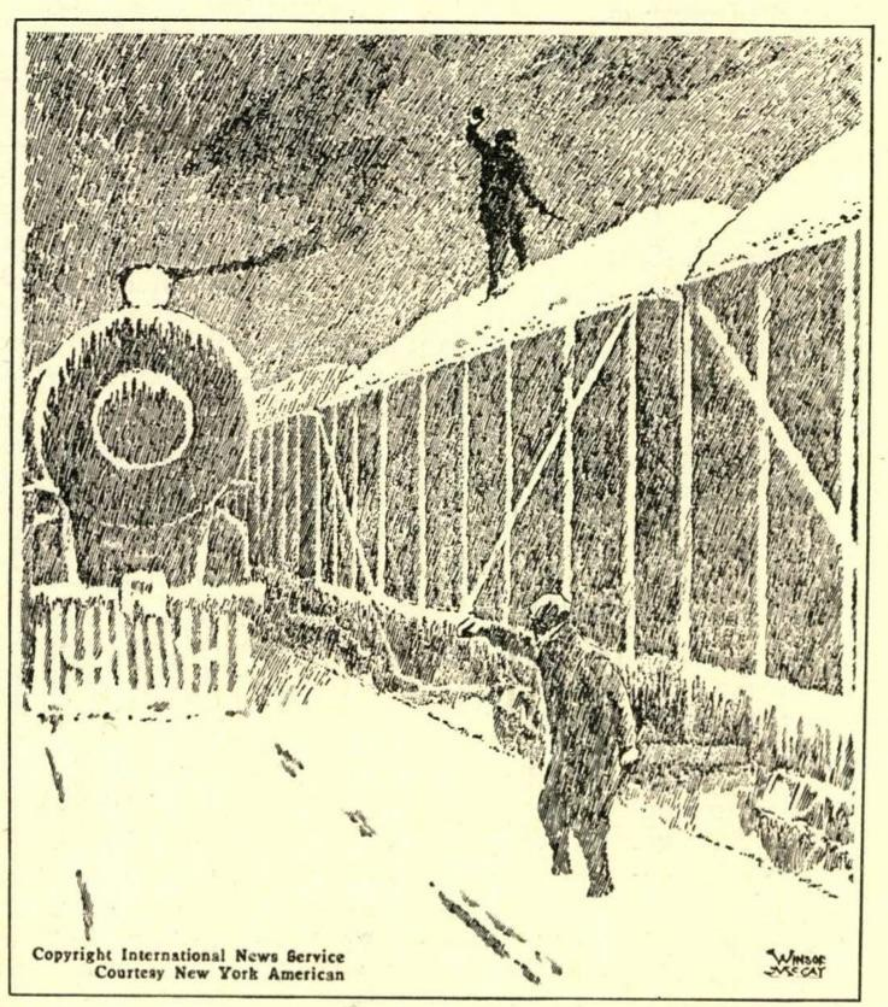

Fig. 5. "Heroes at Home" is the title of a circular distributed by president E. E. Loomis of the Lehigh Valley Railroad to express thanks to his employees who battled the winter storms. It included pictures reprinted from the New York American newspaper. Loomis noted: "Never have I seen more splendid devotion to duty than that manifested by Lehigh Valley Railroad men in the trying days we have experienced this winter. With the temperatures for weeks below zero, blizzards and icy blasts seemed only to spur you on to greater efforts. There have been few slackers."

Illustration by Winsor McCay, 1918.
Originally published in *Railway Age* 64, no. 8 (22 February 1918): 427.

In response to these conditions, President Woodrow Wilson nationalized American railroads and various riverine and coastal transportation systems on 26 December 1917 using the Army Appropriations Act of 1916. Wilson appointed William McAdoo, the first Director General of the Railroads, two days later, and McAdoo quickly found himself and the national transportation system unprepared for three months of historic winter storm systems. McAdoo noted: "The harbors on the Eastern Seaboard were crowded with ships that could not depart … on account of a lack of coal … the coal could not be brought to the ports because of the congestion on the railroads. Things were moving in a vicious circle." (457) The simultaneous collapse of both rail and river freight movement temporarily brought the harbor to a standstill.

In early spring, as the weather stabilized, strict military mobilization timetables were reestablished but not before

convincing transportation leaders that the lifeline to the Western Front was susceptible to breakdown due to infrastructure weaknesses. Events in New York Harbor illustrate the power of weather to stymie large technological systems and the usefulness of examining a military-logistics crisis through an environmental lens.

Arcadia Collection:
Terms of Disaster

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Gerard J. Fitzgerald, PhD, is a visiting scholar in the Department of History and Art History at George Mason University. This essay comes from his larger book project, *The Nature of War: An Environmental History of Industrialization in the United States During World War I, 1898–1920*. He largely researched this article at the Linda Hall Library in Kansas City, Missouri, where he was a fellow in 2018. He recently published "The Chemist's War: Edgewood Arsenal, the First World War, and the Birth of a Militarized Environment," in *Environmental Histories of the First World War*, edited by Richard P. Tucker et al. (New York: Cambridge University Press, 2018.)

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