



UNITED TRANSPORTATION ADVISORS, LLC

**Hearing: Keystone XL Pipeline:
Examination of Scientific
and Environmental Issues**

**Before the Subcommittee on Energy,
and Subcommittee on Environment
Committee on Science, Space and Technology
United States House of Representatives**

**Written Statement of Brigham A. McCown
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**Expected Delivery 10:00 A.M. EDT
May 7, 2013**

**STATEMENT OF BRIGHAM A. MCCOWN
FORMER ACTING ADMINISTRATOR / DEPUTY ADMINISTRATOR
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION
BEFORE THE
SUBCOMMITTEE ON ENERGY & SUBCOMMITTEE ON ENVIRONMENT
COMMITTEE ON SCIENCE, SPACE AND TECHNOLOGY
UNITED STATES HOUSE OF REPRESENTATIVES**

May 7, 2013

I. Introduction

Good morning. Thank you for the invitation to testify today at this joint hearing of the Subcommittees on Energy and Environment of the Science, Space and Technology Committee regarding the *Keystone XL Pipeline: Examination of Scientific and Environmental Issues*.

This is an important hearing, and an opportunity for us to explore and discuss pipeline safety, especially as it applies to the proposed Keystone pipeline expansion project. I commend the Committee for dedicating time and resources to this important issue. Today we stand at a crossroads in our national energy policy. The question before us is whether the proposed expansion project is in our national interest and the outcome of that decision will impact America's energy future, our competitiveness, and energy security for decades to come.

My transportation safety perspective is based upon real life experiences in both the public and private sectors. My testimony today will focus on my belief that building the remaining portion of the Keystone pipeline system is, for many reasons, clearly within the national interest of the United States – and based on the available information and plans for construction, the completed Keystone system would be the safest pipeline ever built in this country, if not in the entire world.

II. OVERVIEW

Today, I am pleased to offer several observations concerning the approval process for the Keystone XL expansion project. At the outset, I note that the Keystone Pipeline System is a series of pipelines designed to transport Canadian and U.S. crude oil to American refineries in the Midwest and to the Gulf Coast. When completed, this entire system would represent a state-of-the-art pipeline system capable of delivering over 1.1 million barrels of oil per day to U.S. refineries. A staggering figure when one considers that in February of this year, the United States imported 579,000 barrels per day from Venezuela and 1.0 million barrels of oil per day from Saudi Arabia.¹ The pipeline system itself represents a tangible asset with an estimated value of approximately \$12 billion.²

While I will limit my prepared testimony to discussing matters pertaining to transportation safety, the following points are worthy of recognition.

- **The Keystone Pipeline System Has Already Been Largely Approved and Built.**
 - Three of the Four Phases of Keystone have already been approved.
 - Two of the Three Phases are already operational.
 - Phase Three will become operational by the end of 2013.

- **Pipelines Are The Safest Form of Transportation, Bar None.**
 - While all modes of transportation are relatively safe, pipelines are the preferred method for transporting large volumes of energy products.
 - The Department of State (DOS) studies have confirmed existing data that “spills associated with the proposed Project that enter the environment are expected to be rare and relatively small.” (4.16-6)

¹ Source: U.S. Energy Information Administration.

² Source: TransCanada.

- **Keystone is the Safest Pipeline Ever Proposed & Built.**
 - The Department of State correctly concludes “the incorporation of the 57 Special Conditions will result in the project having a degree of safety over any other typically constructed domestic oil pipeline system.” (4.13-64)

- **Despite Claims To The Contrary, Oil Sands Crude Is No Different Than Other Conventional Heavy Crude Oils.**
 - Multiple studies by Canadian, British and American entities have all concluded that Canadian dilbit mixtures have similar, and in some cases even a lower corrosivity score than crude oils from Mexico, Columbia, and California.³
 - Crude derived from oil sands has been transported by pipeline since 1968⁴.
 - Diluted bitumen has been transported for over 25 years.
 - U.S. Government safety data has not found a single instance of a pipeline release (spill) caused by internal corrosion from Dilbit⁵.

- **Canada’s Oil Sands Will Continue to be Developed.**
 - Despite the growth of U.S. oil production, the Canadian oil sands will play a critical role in supplying the U.S. energy demand.
 - Rail and vessel currently assist pipelines in bringing oil to markets and that trend will continue.

³ See Alberta Innovates Technology Futures, “Comparison of the Corrosivity of Dilbit and Conventional Crude” September 2011; Battelle Memorial Institute, “Diluted Bitumen-Derived Crude Oil: Relative Pipeline Impacts” July 20, 2012; CEPA & Penspen Integrity, “Dilbit Corrosivity” February 21, 2013.

⁴ Id.

⁵ Id. See also, Lidiak P, “Diluted Bitumen; What it is, pipeline transportation and impact on pipelines” Presentation to TRB Panel, July, 2012.

- **Environmental Concerns Concerning Phase Four Have Already Been Thoroughly Vetted and Addressed**
 - Threats to Ogallala Aquifer are misplaced. Pipelines have safely transported crude and refined products over the aquifer since at least 1953.
 - Multiple environmental studies by U.S. Government and University of Nebraska experts have all concluded the pipeline will not threaten the ecological stability of the region.
 - Executive Order 13337 was intended to expedite, not hinder cross-border permits.

III. The Keystone Pipeline System

In order to fully appreciate the magnitude of this debate, as well as the fact that we are all discussing a significant infrastructure project that has largely already been approved and built, please allow me to describe the various components making up the Keystone Pipeline System.

Phase One

Known simply as Keystone, the original pipeline was proposed in 2005, approved by the National Energy Board of Canada in 2007, and was granted a Presidential Permit on March 17, 2008. Keystone began commercial operation in June of 2010. This 1,853 mile initial 30" pipeline carries 435,000 barrels per day of Canadian crude from Hardisty, Alberta. The line travels east in Canada until its southerly turn takes Keystone through the eastern third of North and South Dakota and Nebraska where it passes just west of Lincoln, Nebraska. The line then continues to Steele City, Nebraska where it turns east, passing through Missouri just North of St. Louis before ending at Patoka, Illinois.

Phase Two

The "Keystone Cushing Extension" linked Steele City, Nebraska to Cushing, Oklahoma. That 298 mile 36" portion was completed in late 2010 and made

operational in February of 2011. With this addition, the commercial design of Keystone was increased to 591,000 barrels per day.

Phase Three

Commonly referred to as the “southern portion of Keystone XL” and officially known as the “Gulf Coast Expansion Project,” this 435 mile 36” pipeline will link Texas refineries with storage facilities in Cushing, Oklahoma. This portion is currently under construction, and is expected to become operational by the end of 2013.

Phase Four

The entire current debate centers on the final Keystone proposal. This last piece of the Keystone Pipeline System requires a Presidential Permit due to the border crossing between the United States and Canada. This phase requires 327 miles of new construction in Canada and 852 miles of new construction in the United States. The proposed 36” line would extend through Montana and South Dakota where it would provide access to U.S. Bakken crude before ending in Steele City, Nebraska.⁶

IV. Pipeline Safety

Pipelines are very much like our nation’s highways, or perhaps more accurately described by a Congressional Committee as being the “arteries of the Nation’s energy infrastructure, as well as the safest and least costly ways to transport energy products. . . [and] provide the resources needed for national defense, to heat and cool our homes, generate power for business, and fuel an unparalleled transportation system.”⁷

Transportation Secretary Norman Mineta (D-CA), who I had the pleasure of serving, went even further when he described pipelines as “the unsung heroes of our

⁶ Phase Four also includes a 46.7 mile pipeline between refineries in the Houston, Texas area.

⁷ H.R. Rep. No. 109-717, at 5 (2006); See also, PHMSA at <http://1.usa.gov/13XAlJ3>

economy.”⁸ Pipelines have been the preferred mode of transportation for energy products since the early 1900s.

In a sense, pipelines make our current way of life possible as they transport 70% of all hydrocarbon sources of energy used in our country. It is not a stretch therefore to suggest that pipelines really are the very lifeblood of the American economy, and without them, the quality of life we are accustomed to, simply would not exist.

Totaling a little over 2.6 million miles, the U.S. has more pipelines than any other country in the world. The Pipeline and Hazardous Materials Safety Administration (PHMSA) is the federal agency responsible for overseeing the safe and secure movement of approximately two-thirds of all energy products consumed in this country each and every day. The men and women of PHMSA are dedicated, hard-working professionals who oversee a robust regulatory and enforcement agency along with PHMSA’s state partners. They are up to the challenge of regulating a very complex transportation system.

No Safer Alternative

As stated above, pipelines are clearly the safest and most cost-effective means to transport the extraordinary volumes of natural gas and hazardous liquid products that fuel our economy. Not only are they safe and cost-effective, pipelines are efficient. They often provide the most direct routes, and they do so without adding to congestion on our highways or rail lines.

To better illustrate this fact, take a major East Coast airport and remove the pipeline supplying that facility. To deliver the comparative volume of jet fuel would take a constant line of tanker trucks, about 750 per day, loading up and moving out every two minutes, 24 hours a day, seven days a week. The railroad-equivalent of this single pipeline would be a train of seventy-five 2,000-barrel tank rail cars every

⁸ Secretary Norman Y. Mineta speech during the 3rd Annual Pipeline Legal Issues and Policy Roundtable, Annapolis, Maryland, July 2005.

day.”⁹ The alternative mode becomes even more daunting when one considers that pipelines are the only mode of transportation that does not require repositioning of tanker cars or trucks. In order to keep the logistical lines open therefore would require double to triple the necessary assets mentioned above in order to create a round-trip logistical system. The most recent SEIS referenced several no-action alternatives. One of these options was transporting the oil by rail, or rail and tanker. Prior to discussing each mode as an alternative, it is first worth mentioning that all forms of transportation: pipeline, rail and commercial motor vehicles are safe, and each has a specific role in a robust logistics system.

That said, however, substantially increasing the freight requirements by any other mode in lieu of pipeline transport would have a significant negative impact on the transportation system. For these reasons, none of the other modes can effectively and efficiently carry out the duties performed by pipelines.

With respect to rail, even assuming for arguments sake that rail could in fact handle the tonnage requirements between the specific points serviced by Keystone¹⁰, rail falls short in comparison. Similarly, cargo vessel traffic on navigable waterways is also an untenable alternative, although it should be noted that some Canadian product is currently finding its way to market via barge. Finally, transport by motor carrier is also untenable.

Pipelines are the safest mode of transport based on ton-miles of freight, on a per-mile basis or by total crude shipped.

Based on total accidents per billion ton-miles shipped, an accident is 530% more likely to occur when shipped by rail, 1330% more likely when shipped by vessel, and 49,590% more likely when shipped by truck.

⁹ <http://1.usa.gov/107yA7Y>

¹⁰ The State Department draft assumes rail is capable of handling the capacity issue based on 2011 studies. The freight capacity analysis of rail is however much more complex. It is doubtful rail could adequately service the requirements from point to point.

Second, although rail has seen a recent resurgence, it is not an economically viable option. In the EIS, the State Department included an estimate of rail prices compared to the cost of pipeline export. Pipeline cost is approx. \$7/bbl. while actual rail cost is \$31/bbl. Third, rail causes much more harm to the environment than pipelines. It was estimated in the EIS, rail would cause 8% more greenhouse gas per year than the XL pipeline. Addendums "(A)" and "(B)" to my testimony contain additional statistical data for comparison purposes.

V. Keystone Pipeline Safety

Keystone is implementing state-of-the-art safety requirements and guidelines in materials, coatings, construction practices and monitoring systems, especially for the crossings of roads, highways and railroads, all of which adds to the unparalleled safety of the Keystone system.

It should be noted that the "DOS, in consultation with PHMSA, has determined that incorporation of those [57 Special Permit] conditions would result in a project that would have a degree of safety over any other typically constructed domestic oil pipeline system." (4.13-64)

For spill and leak prevention efforts, Keystone is taking significant steps to maximize safety, and I concur with the DOS findings that "(s)pills associated with the proposed Project that enter the environment are expected to be rare and relatively small." (4.16-6)

Without belaboring the point, Keystone has incorporated significant safety protocols, which are not always found on other pipelines. These include mitigation and quality control improvements covering everything from pipe production, construction practices, operations, maintenance, damage prevention and emergency response.

Aside from numerous federal studies attesting to the safety of Keystone, a thorough review of the planned safety provisions built into the pipeline's construction, operation, and monitoring, provides assurances Keystone will, and is, operating safely and it is my personal opinion that the Keystone XL pipeline's design provides an excellent example of world-class safety protocol.

VI. Keystone Studies

Since TransCanada filed for a Presidential Permit with the U.S. Department of State in 2008 to construct the Keystone Pipeline expansion project, the federal government has undertaken a thorough and rigorous risk assessment for this project as guided by Executive Order 13337. That Executive Order, issued by President George W. Bush was intended "to expedite reviews of permits as necessary to accelerate the completion of energy production and transmission projects. . . connecting the United States with a foreign country...."¹¹

The State Department issued its first Environmental Impact Statement (EIS) in August 2011 in accordance with National Environment Policy Act of 1972 (NEPA). Following revisions to a portion of the initial approved route in Nebraska, a Supplemental Environmental Impact Statement (SEIS) was issued on March 1st, 2013.

From both a safety and NEPA point of view, it is not possible to suggest that this has not been the most scrutinized, and carefully reviewed pipeline project in our nation's history.

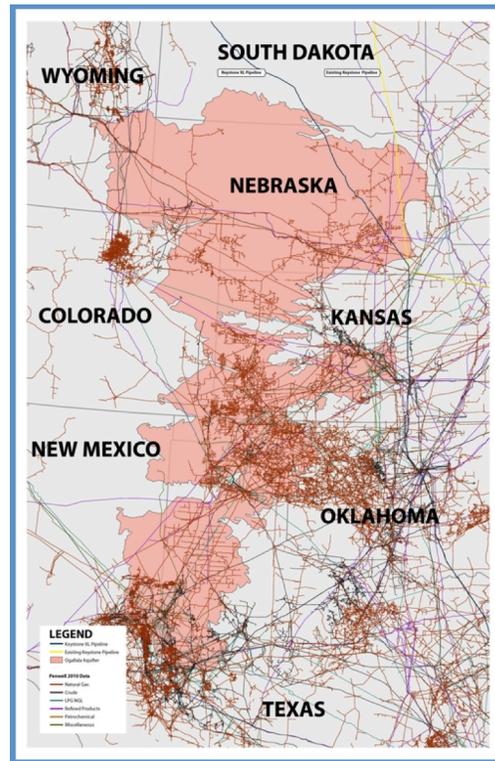
Concerns for the Ogallala Aquifer

In Section 3.3 of the EIS, the DOS finds that Keystone is unlikely to adversely impact any groundwater or surface water resources.

¹¹ Executive Order 13337, 69 Fed. Reg. 25299 (issued April 30, 2004).

In Section 4.3.5, DOS concludes that construction of the connected projects will have minimal impact provided normal construction and operational practices are followed. DOS finds that - “(t)housands of miles of pipeline carrying crude and refined products traverse throughout the region where the Ogallala Aquifer is present. Pipelines installed within the last 10 to 15 years are all generally constructed and operated under similar regulatory and engineering procedures and design as would be required of the Keystone XL pipeline.”

(3.3-5)



The main safety concern that has been voiced by some, is the potential of Keystone XL to endanger the Ogallala Aquifer, which provides regional public water supply and irrigation water. What is puzzling about this apprehension, though, is that many other oil and natural gas pipelines currently traverse the Ogallala Aquifer. In fact, as the map here below demonstrates, there are thousands of miles of pipeline already crossing the aquifer, and have done so safely for nearly half a century.

Decades of experience and review demonstrate that the risk to the environment and public health from our nation’s million miles of pipelines is minimal. That said PHMSA regulations specifically address environmentally sensitive areas and require heightened standards. Please keep in mind that our country’s pipelines live in harmony with the environment. The Trans-Alaska system has been safely transporting oil above environmentally sensitive areas for decades. Pipelines in the

marshes of Louisiana and across sensitive areas of Florida are examples of pipeline co-existing in the environment in which we live.

PHMSA environmental regulations also take into account areas containing critically imperiled, endangered or threatened species as well as ecological areas utilized during assemblage or migratory periods. These factors and more are considered during the design and operational phase of a pipeline and moreover, continue to be considered during the pipeline's entire lifecycle.

VII. Conclusion

Pipelines are our local, interstate and international energy highways, delivering almost two-thirds of all energy products used in the U.S. each year. Keystone will only make our national energy highway that much stronger. Furthermore, this project would be privately, not publicly, funded, providing direct stimulation to our economy without spending federal funds, and without adding to our deficit.

After reviewing this project and consulting with my former colleagues at PHMSA, I am confident that, if approved, this pipeline will offer a level of protection above what the law requires and I am satisfied this pipeline will improve the security, welfare and safety of our nation as a whole.

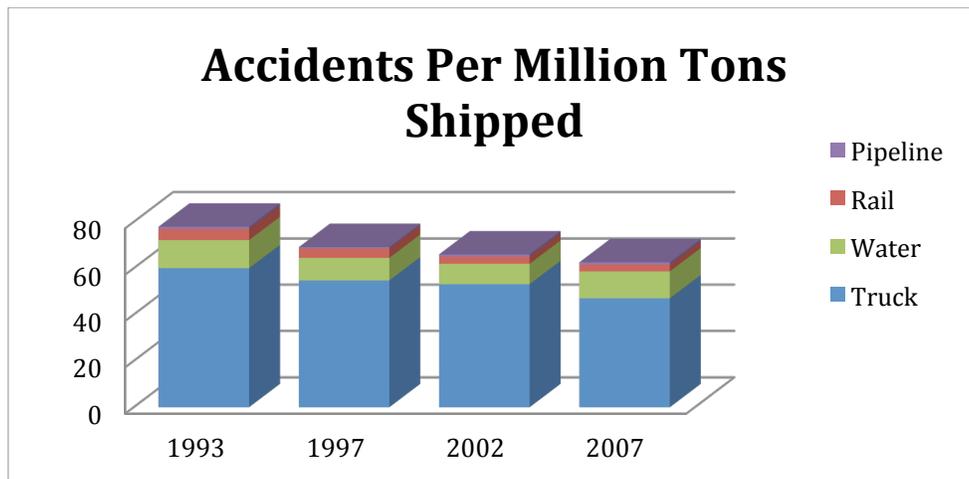
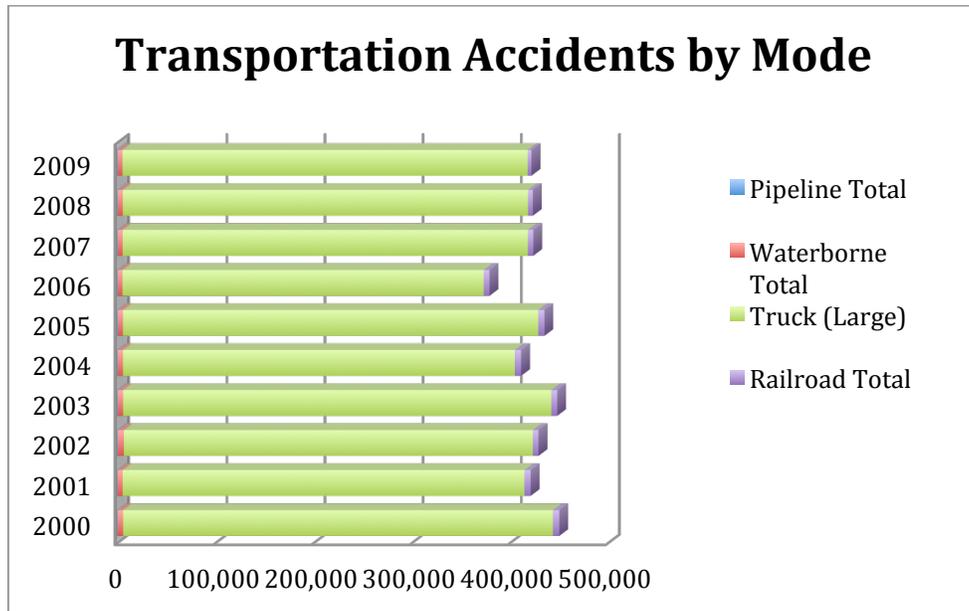
Addendum-A

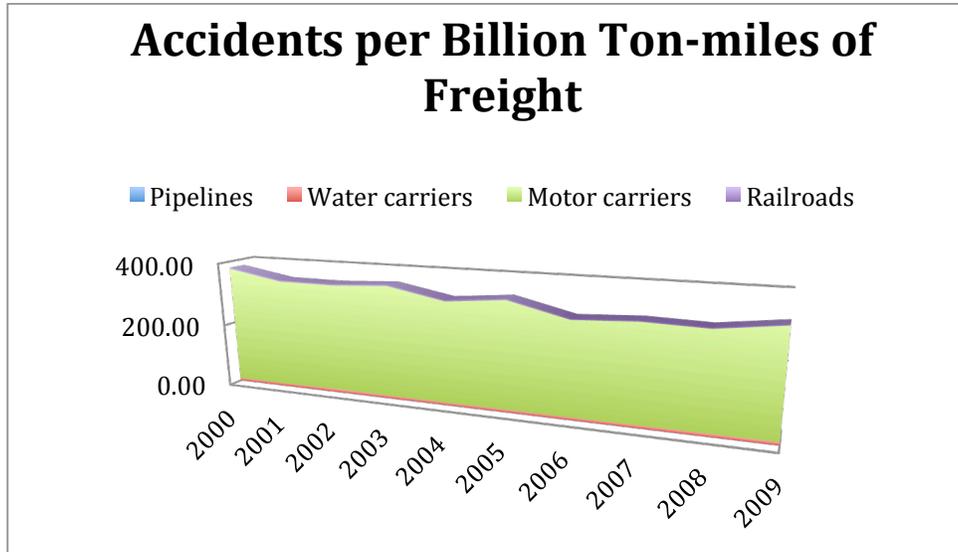
TONS SHIPPED	Accidents per tons shipped	
Truck	64x	6400%
Rail	4.4x	440%
Water	13x	1300%
Pipeline		
TON-MILES	Accidents per ton-mile	
Truck	496x	49600%
Rail	5.3x	530%
Water	13.3x	1330%
Pipeline		

TONS SHIPPED	Accidents per tons shipped	
Truck	64x	6400%
Rail	4.4x	440%
Water	13x	1300%
Pipeline	1x	n/a
TON-MILES	Accidents per ton-mile	
Truck	496x	49600%
Rail	5.3x	530%
Water	13.3x	1330%
Pipeline	1x	n/a

Crude Oil and Petroleum Products Transported in the United States by Mode (billions)







Addendum-B

Table 1-61M: Crude Oil and Petroleum Products Transported in the United States by Mode (billions)

Table 1-61 Ton-Miles of Petroleum	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Combined crude and petroleum products, total	873.3	869.8	864.6	883.3	902.5	906.0	855.4	835.4	(R) 857.9	810.0
Pipelines ^a	577.3	576.1	586.2	590.2	599.6	607.5	581.3	557.7	(R) 605.7	568.4
Water carriers ^b	244.4	244.0	227.6	240.1	246.9	240.5	213.1	216.0	194.0	186.8
Motor carriers ^c	31.3	30.8	30.6	33.2	34.4	34.8	35.2	35.2	35.1	33.9
Railroads	20.3	18.9	20.2	19.8	21.6	23.2	25.8	26.6	23.0	20.9

Table 1-50: U.S. Ton-Miles of Freight (BTS Special Tabulation) (Billions)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Pipeline	928	910	932	925	937	939	907	904	954	910
Domestic water transportation	646	622	612	606	621	591	562	553	520	477
Truck	1193	1213	1245	1265	1281	1291	1291	1404	1429	1321
Railroad	1546	1599	1606	1604	1684	1733	1856	1820	1730	1582

Table 2-3: Transportation Accidents by Mode

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Pipeline, total	380	341	644	673	(R) 673	721	(R) 642	615	(R) 663	626
Waterborne, total	5,403	4,958	6,008	5,163	4,962	4,977	4,598	4,694	4,756	4,458
Truck ^f , large	437,861	409,372	416,477	436,161	399,156	423,016	367,920	412,852	412,852	412,852
Railroad, total ^g	6,485	6,260	5,815	5,996	6,470	6,332	(R) 5,940	5,471	(R) 4,910	(R) 3,841
Accidents per Billion Ton-miles of Freight										
Pipelines ^a	0.41	0.37	0.69	0.73	0.72	0.77	0.71	0.68	0.70	0.69
Water carriers ^b	8.4	8.0	9.8	8.5	8.0	8.4	8.2	8.5	9.1	9.3
Motor carriers ^c	367	337	334	345	312	328	285	294	289	312
Railroads	4.2	3.9	3.6	3.7	3.8	3.7	3.2	3.0	2.8	2.4