# GRAIN TRANSPORTATION REPORT

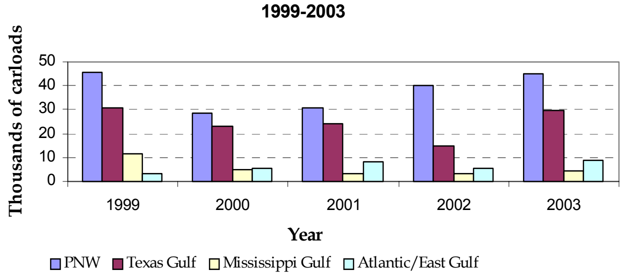
Transportation & Marketing, Agricultural Marketing Service
United States Department of Agriculture

FEBRUARY 5, 2004

| TM GRAIN TRANSPORT COST INDICATORS* | Truck | Rail | Barge | Ocean Gulf | Ocean Pacific |
|---|---|---|---|---|---|
| 02/04/04 | 106 | 233 | 119 | 320 | 321 |
| Compared with Last Week | ↓ | ↑ | ↑ | ↑ | ↑ |

*Indicator: Base year 2000=100; Weekly updates include Truck=diesel; Rail=nearby secondary rail market; Barge=spot Illinois River Basis; Ocean vessel based on routes to Japan

Figure 1--Fourth Quarter Rail Carloads Delivered to Ports, 1999-2003

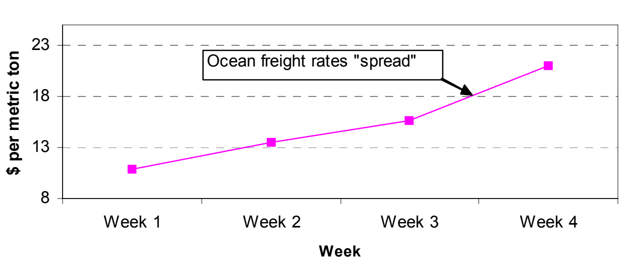



Source: *Grain Transportation Report*, AMS, USDA

**Fourth Quarter Rail Grain Deliveries to U.S. Ports Up.** For the fourth quarter of 2003, rail carloads of grain delivered to The Pacific Northwest (PNW) were up 5,000 carloads (figure 1) or 13 percent from last year and 15,849 carloads (55 percent) from the third quarter of 2003, despite recent problems experienced by the railroads. Rail carloads of grain delivered to the Mississippi Gulf were up 859 carloads or 26 percent from last year and up 139 percent from the third quarter. Rail carload grain deliveries to Atlantic and East Gulf ports were up 3,115 carloads or 57 percent from this period last year and 6,655 carloads (348 percent) from the third quarter. While rail carload grain deliveries to the Texas Gulf were up 14,468 carloads or 96 percent from the fourth quarter of 2002, they were down only 726 carloads (2 percent) from the third quarter of 2003.

**Exports Up in the Fourth Quarter, Despite Record High Ocean Freight Rates.** Grain inspected for exports was up in PNW and Gulf ports, despite all-time high rates recorded for two major grain routes, Gulf to Japan and PNW to Japan. A total of 6.37 million metric tons of grain were inspected for exports in the PNW during the fourth quarter of 2003, compared with 4.31 million metric tons in the previous quarter, a 48-percent increase. Grain inspected for export at Gulf ports increased by 45 percent to 21.81 million metric tons, compared with the third quarter of 2003. During the same period, ocean freight rates were recorded at $39.65 for PNW to Japan and $47.15 for Gulf to Japan routes. These rates represent 81and 42 percent increases for PNW and Gulf to Japan routes, respectively, compared with the third quarter of 2002.

Figure 2--January Ocean Freight Rates "Spread" Between Gulf and PNW Increasing




Source: The Baltic Exchange

**"Spread" Between Gulf and PNW to Japan Routes Increasing.** The difference between ocean freight rates from the Gulf to Japan and the PNW to Japan, referred to as the "spread," is increasing. The average weekly "spread" increased from $10.83 to $20.94 per metric ton during the first to the last week of January (figure 2). Traditionally, the lower the "spread," the more attractive shipments of U.S. grain from the Gulf would be relative to those from the PNW. Both the PNW and the Gulf have seen increases in total grain inspected for export since the first week of January, but the PNW may experience a rapid growth in exports if the current trend in the "spread' continues. Surajudeen.Olowolayemo@usda.gov


Report is prepared by Deen Olowolayemo, Johnny Hill, Karla Martin and Delmy Salin, Agricultural Economists, Transportation & Marketing, Agricultural Marketing Service, USDA (202) 690-1304. Support provided by Upper Great Plains Transportation Institute, North Dakota State University. This report can be found on the Internet at www.ams.usda.gov/tmd/grain.htm. E-mail comments and questions to Surajudeen.Olowolayemo@usda.gov .

**Contents**

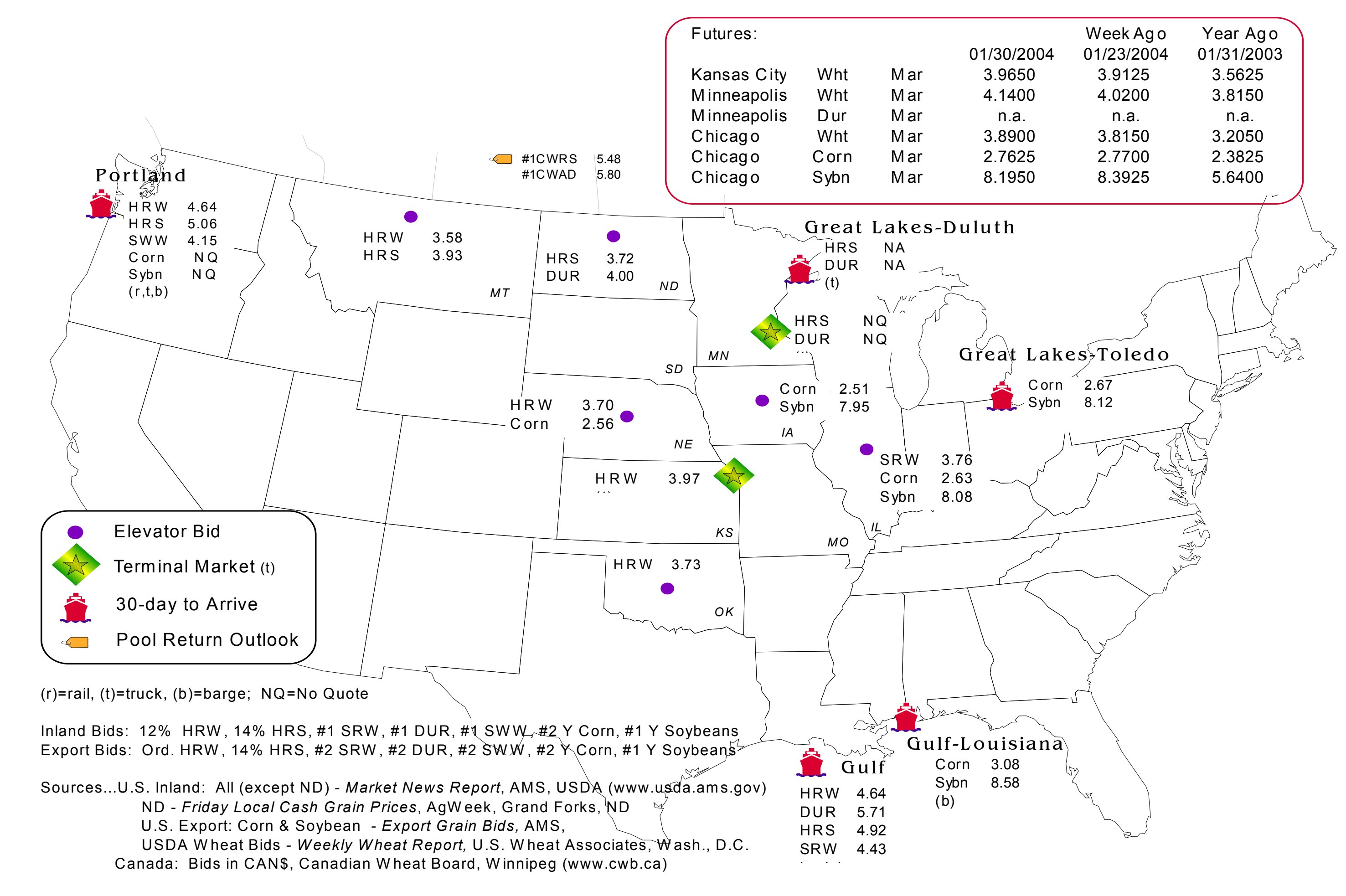

The Grain Transportation Report is a weekly news source for grain logistics. Detailed data and trend information on five major modes: barge, truck, rail, container, and vessel, provide timely insight into grain transport. The report is offered to policymakers and industry as a tool in day-to-day decision making and longer-term strategic planning for an effective and efficient U.S. grain logistics system.

**Table 1-- Market update: U.S. origins to export position price spreads (per bushel)**

| Commodity | Origin--Destination | This week | Last week |
|---|---|---|---|
| Corn | IL -- Gulf | -0.45 | -0.41 |
| Corn | NE -- Gulf | -0.52 | -0.44 |
| Soybean | IA -- Gulf | -0.63 | -0.61 |
| HRW | KS -- Gulf | -0.67 | -0.66 |
| HRS | ND -- Portland | -1.34 | -1.36 |

The **Grain Bid Summary** illustrates the market relationships for commodities. Positive and negative adjustments in differential between terminal and futures markets, and the relationship to inland market points, are indicators of changes in fundamental market supply and demand. The map may be used to monitor market and time differentials.

**Figure 1. Grain Bid Summary**



## RAIL TRANSPORTATION

**Table 2--Rail deliveries to port (carloads)**

| | Mississippi Gulf* | Texas Gulf | Pacific Northwest | Atlantic & East Gulf | Total |
|---|---|---|---|---|---|
| Week Ending: | | | | | |
| 01/21/04 | 334 | 2,679 | 3,670 | 452 | 7,135 |
| 01/28/04 | 289 | 2,564 | 4,289 | 290 | 7,432 |
| 2004 YTD | 889 | 11,487 | 14,217 | 1,347 | 27,940 |
| 2003 YTD | 2,691 | 5,344 | 13,172 | 3,540 | 24,747 |
| % 2003 YTD | 33% | 215% | 108% | 38% | 113% |
| Total 2003 | 15,026 | 90,749 | 150,311 | 20,746 | 276,832 |
| Total 2002 | 11,127 | 85,822 | 113,857 | 21,562 | 232,368 |

Source: Transportation & Marketing/AMS/USDA; (*) Incomplete Data

**Figure 2. Rail Deliveries to Port**

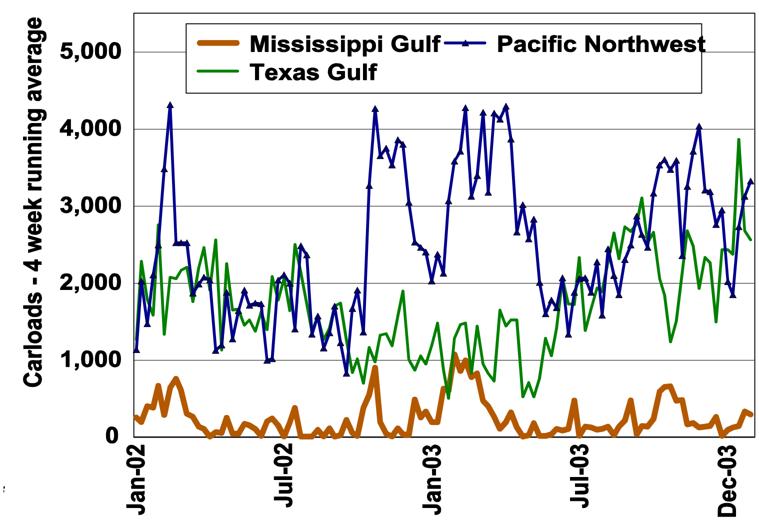
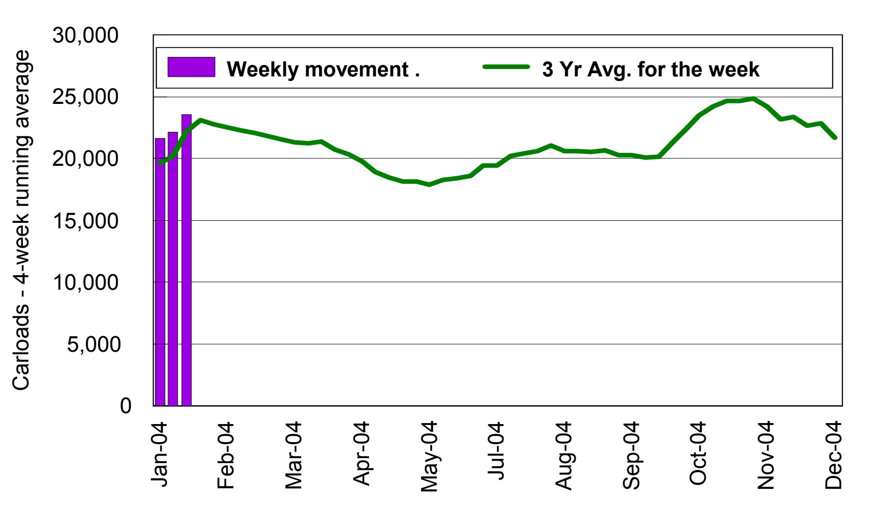



**Figure 3. Total U.S. Grain Car Loadings for Class I Railroads**




Railroads originate approximately 40% of U.S. grain shipments. Trends in these loadings are indicative of market conditions and expectations.

**Table 3--Class I rail carrier grain car bulletin (Grain carloads originated)**

| | East | | West | | | U.S. Total | Canada | |
|---|---|---|---|---|---|---|---|---|
| | CSXT | NS | BNSF | KCS | UP | | CN | CP |
| 01/24/04 | 3,533 | 3,741 | 8,819 | 757 | 6,954 | 23,804 | 4,768 | 3,783 |
| This Week Last Year | 3,131 | 3,355 | 8,398 | 305 | 6,056 | 21,245 | 3,514 | 3,370 |
| 2004 YTD | 10,312 | 11,377 | 29,002 | 2,256 | 21,267 | 74,214 | 14,732 | 11,694 |
| 2003 YTD | 9,310 | 10,311 | 25,157 | 1,221 | 20,533 | 66,532 | 10,314 | 10,411 |
| % 2003 YTD | 111% | 110% | 115% | 185% | 104% | 112% | 143% | 112% |
| 2003 Total* | 149,389 | 174,338 | 425,035 | 24,859 | 340,993 | 1,114,614 | 202,294 | 201,729 |

**U.S. rail covered hopper cars online index****

| | CSXT | NS | BNSF | KCS | UP | U.S. Total |
|---|---|---|---|---|---|---|
| Jan-04 | 95.0 | 102.7 | 93.8 | 92.4 | 95.4 | 96.0 |

*Data has been adjusted or revised to reflect 53-week year in 2003
Source: Association of American Railroads;**Base Year =2001, Index based on Number of Covered Hopper Cars Online (available for Service).

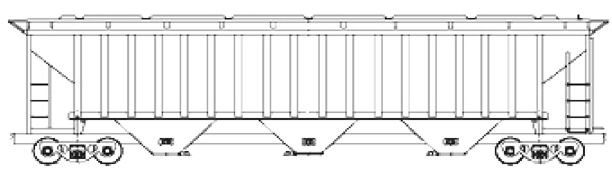


**Table 4--Tariff rail rates for unit train shipments***

| Date effective | Commodity | Origin | Destination | Rate per car | Rate per MT | Rate/per bushel** |
|---|---|---|---|---|---|---|
| 02/05/04 | Wheat | Kansas City, MO | Galveston, TX | $1,820 | $20.06 | $0.55 |
| 02/05/04 | Wheat | Minneapolis, MN | Portland, OR | $4,148 | $45.72 | $1.24 |
| 02/05/04 | Wheat | St. Louis, MO | Houston, TX | $1,945 | $21.44 | $0.58 |
| 02/05/04 | Wheat | Kansas City, MO | Laredo, TX | $2,280 | $25.13 | $0.68 |
| 02/05/04 | Wheat | Chicago, IL | Albany, NY | $1,834 | $20.22 | $0.55 |
| 02/05/04 | Corn | Minneapolis, MN | Portland, OR | $3,240 | $35.71 | $0.91 |
| 02/05/04 | Corn | Chicago, IL | Baton Rouge, LA | $2,736 | $30.16 | $0.77 |
| 02/05/04 | Corn | Council Bluffs, IA | Baton Rouge, LA | $2,170 | $23.92 | $0.61 |
| 02/05/04 | Corn | Evansville, IN | Raleigh, NC | $1,841 | $20.29 | $0.52 |
| 02/05/04 | Corn | Des Moines, IA | Laredo, TX | $2,864 | $31.57 | $0.80 |
| 02/05/04 | Soybean | Minneapolis, MN | Portland, OR | $3,110 | $34.28 | $0.93 |
| 02/05/04 | Soybeans | Chicago, IL | Baton Rouge, LA | $2,736 | $30.16 | $0.82 |
| 02/05/04 | Soybeans | Council Bluffs, IA | Baton Rouge, LA | $2,799 | $30.85 | $0.84 |
| 02/05/04 | Soybeans | Des Moines, IA | Laredo, TX | $2,864 | $31.57 | $0.86 |
| 02/05/04 | Soybeans | Evansville, IN | Raleigh, NC | $1,841 | $20.29 | $0.55 |

Sources: www.bnsf.com, www.cpr.ca, www.csx.com, www.uprr.com
*A unit train refers to shipments of at least 52 cars.
**Approximate load per car = 100 tons: Corn 56 lbs/bu, Wheat & Soybeans 60 lbs/bu*

**Table 5--Secondary rail car market,**
Average premium/discount to tariff, $/car - last week

| | Delivery Period | | | |
|---|---|---|---|---|
| | Mar-04 | Apr-04 | May-04 | Jun-04 |
| BNSF-GF | $125 | $55 | $21 | $17 |
| UP-Pool | $150 | $35 | $15 | $30 |

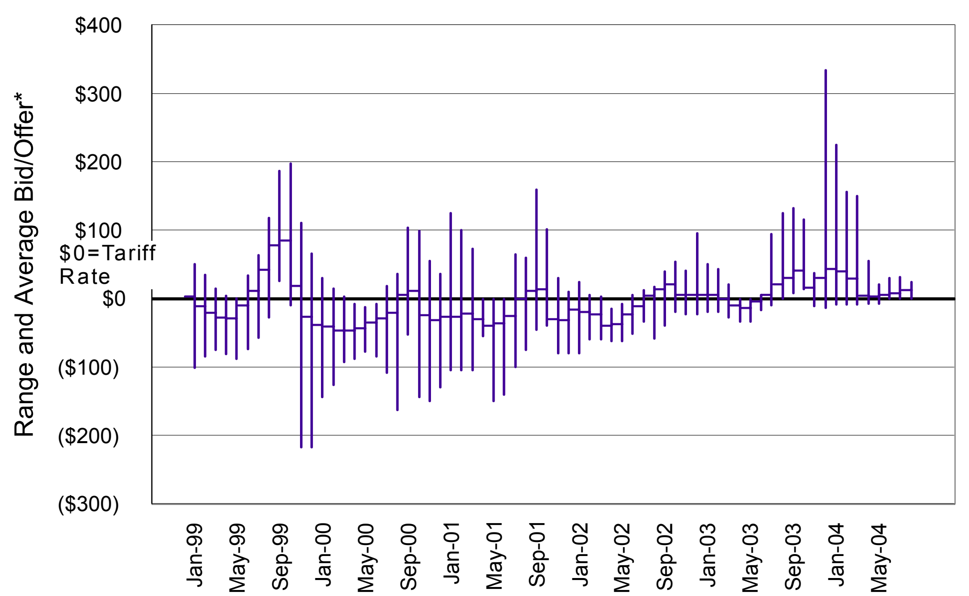
Rail service may be ordered directly from the railroad via **Auction** for guaranteed service or tariff for non-guaranteed service, or through the secondary market. The **Secondary Rail Market** information reflects trade values for service that was originally purchased from the railroad carrier as some form of guaranteed freight. The auction and secondary rail values are indicators of rail service quality and demand/supply.

**Table 6--Railroad car 'Auction' results**
Average premium/discount to tariff, $/car - last auction

| Delivery for: | Mar-04 | Apr-04 | May-04 |
|---|---|---|---|
| COT/N. Grain | no offer | no offer | $17 |
| COT/S. Grain | no offer | no offer | $3 |
| GCAS/Region 1 | no offer | $10 | $5 |
| GCAS/Region 2 | $97 | $25 | $10 |

Source: Transportation & Marketing/AMS/USDA.
COT=Certificate of Transportation; GCAS=Grain Car Allocation System

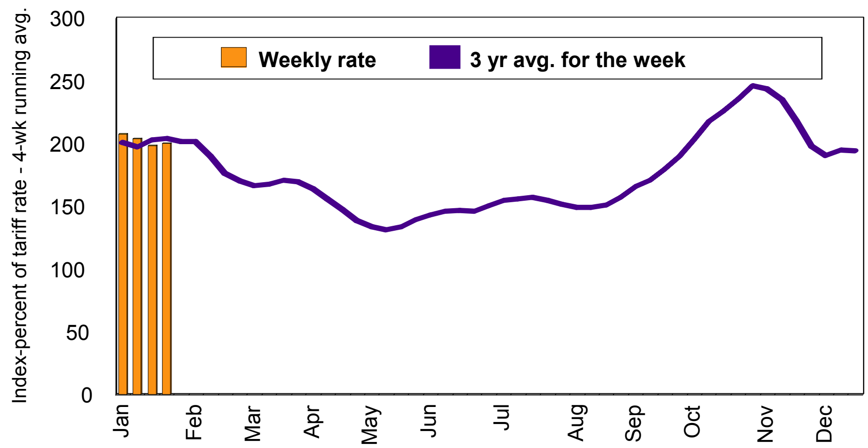
**Figure 4. Secondary Rail Car Market**




Source: Transportation & Marketing/AMS/USDA
*up to 6 months of trading

## BARGE TRANSPORTATION

**Figure 5. Illinois River Barge Rate Index - Rate Quotes**




The **Illinois River Barge Rate Index** averaged 183% of the Benchmark Tariff Rate between 1999 and 2001, based on weekly market quotes. The **Index**, along with **Rate Quotes** and **Futures Market** bids are indicators of grain transport supply and demand.

Calculating **Barge Rate** Per Ton: Index × 1976 Tariff Benchmark Rate per Ton

Select applicable index from market quotes included in tables on this page. The 1976 benchmark rates per ton are provided in map below.

**Table 7-- Barge rate quotes: Southbound barge freight**
Index=percent of tariff, based on 1976 tariff benchmark rate

| Location | 1/28/04 | 1/21/04 | Feb '04 | Apr '04 |
|---|---|---|---|---|
| Twin Cities | nq | nq | nq | 203 |
| Mid-Mississippi | nq | nq | nq | 177 |
| Illinois River | 208 | 194 | 201 | 167 |
| St. Louis | 150 | 157 | 147 | 138 |
| Lower Ohio | 159 | 171 | 153 | 141 |
| Cairo-Memphis | 137 | 144 | 141 | 130 |

Source: Transportation & Marketing/AMS/USDA, nq= no quote

**Table 8--Barge futures market**
Southbound barge freight nominal/cash basis values
Index=percent of tariff, based on 1976 tariff benchmark rate

| Week ended | River/region | Contract period | Rate futures | Rate cash |
|---|---|---|---|---|
| 02/04/04 | St. Louis | Mar. | n/a | 155 |
| | | May | n/a | 150 |
| | | July | n/a | 155 |
| | | Sep. | n/a | 188 |
| | | Oct. | n/a | 225 |
| | Illinois River | Mar. | n/a | 181 |
| | | May | n/a | 160 |
| | | July | n/a | 168 |
| | | Sep. | n/a | 205 |
| | | Oct. | n/a | 245 |

Source: St. Louis Merchants Exchange

**Figure 6. Benchmark Tariff Rates**

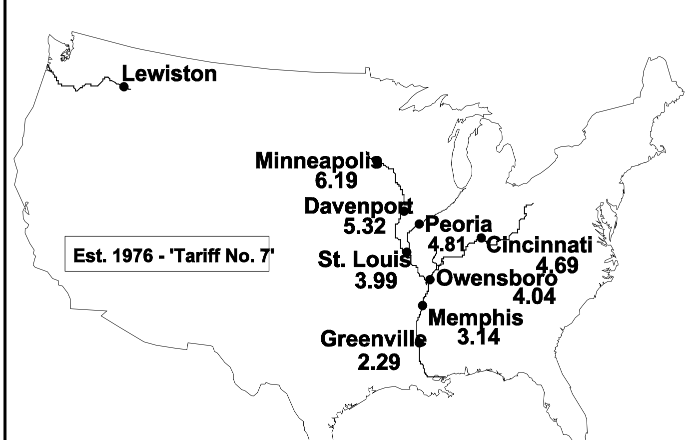


**Figure 7. Barge Movements on the Mississippi River** (Lock 27)

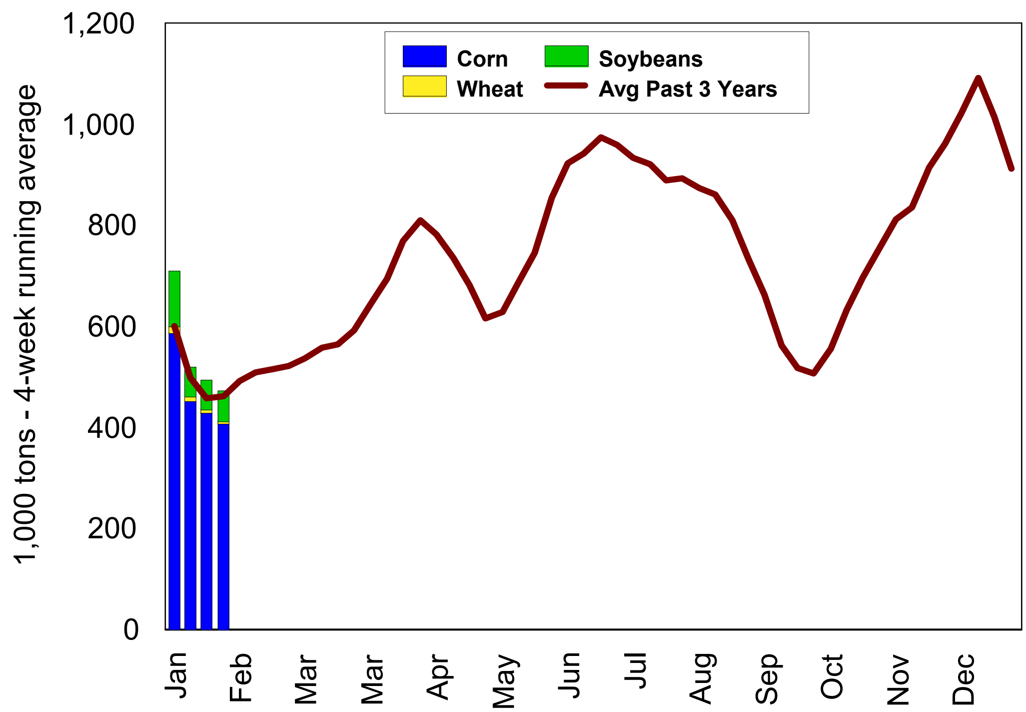


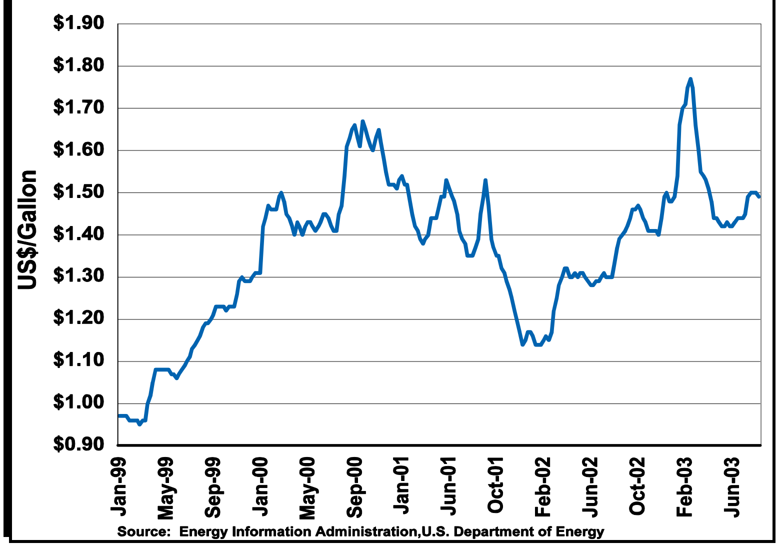

**Table 9--Barge grain movements (1,000 tons)**

| Week ending 01/24/04 | Corn | Wht | Sybn | Total |
|---|---|---|---|---|
| **Mississippi River** | | | | |
| Rock Island, IL (L15) | 0 | 0 | 0 | 0 |
| Winfield, MO (L25) | 0 | 0 | 0 | 0 |
| Alton, IL (L26) | 431 | 0 | 61 | 502 |
| Granite City, IL (L27) | 426 | 0 | 73 | 500 |
| **Illinois River (L8)** | 280 | 0 | 34 | 314 |
| **Ohio River (L52)** | 128 | 11 | 82 | 244 |
| **Arkansas River (L1)** | 0 | 9 | 10 | 19 |
| 2004 YTD | 2,089 | 125 | 623 | 2,901 |
| 2003 YTD | 1,998 | 128 | 1,109 | 3,358 |
| % 2003 YTD | 105% | 98% | 56% | 86% |
| 2003 Total | 29,898 | 2,787 | 9,146 | 42,526 |

Source: U.S. Army Corp of Engineers
YTD and Calendar year total includes Miss/27, Ohio/52 and Ark/1.

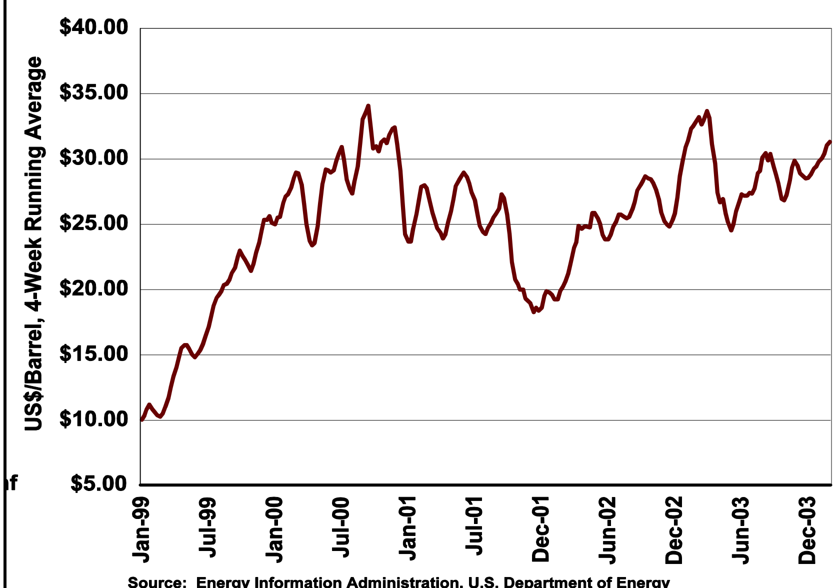
## TRUCK TRANSPORTATION

**Figure 8. Weekly U.S. Retail Road Diesel Price**




The weekly **Diesel Price** provides a proxy for trends in U.S truck rates. Diesel fuel is a significant expense for truck grain movements, accounting for 37% of the estimated variable cost. **Crude Oil Price** is an indicator in future diesel price trends.

**Figure 9. Weekly Brent Crude Price, Friday Close**




**Light Sweet Crude** is exchanged on the New York Mercantile Exchange. North Sea oil has a "benchmark" role in crude oil pricing. Brent crude, a blend of North Sea oils, is traded on the International Petroleum Exchange in London.

**Table 10--Crude oil prices (US$ per Barrel)-02/03/04**

| Type | This week | Last week | Change |
|---|---|---|---|
| Light Sweet Crude (NYMEX) | 32.61 | 33.01 | ↓ |
| Brent Crude | 30.05 | 30.67 | ↓ |

Source: U.S. Department of Energy, www.eia.doe.gov; *U.S. Refiner Crude Acquisition Cost, Composite Domestic & Import

## GRAIN EXPORTS

**Table 11--U.S. export balances (1,000 Metric Tons)**

| Unshipped export balance | Wheat | | | | | | Corn | Soybean | Total |
|---|---|---|---|---|---|---|---|---|---|
| | *HRW* | *SRW* | *HRS* | *SWW* | *DUR* | All Wheat | | | |
| 01/22/04 | 2,908 | 1,872 | 1,390 | 1,205 | 170 | 7,545 | 9,001 | 7,880 | 24,426 |
| This Week Year Ago | 1,066 | 502 | 1,235 | 587 | 107 | 3,496 | 5,219 | 7,524 | 16,239 |
| Cumulative Exports-Crop Year | | | | | | | | | |
| 2003/04 YTD | 8,107 | 2,446 | 4,374 | 2,891 | 737 | 18,556 | 19,427 | 16,513 | 54,496 |
| 2002/03 YTD | 4,937 | 2,031 | 4,503 | 2,346 | 557 | 14,373 | 16,241 | 15,097 | 45,711 |
| % 2002/03 YTD | 164% | 120% | 97% | 123% | 132% | 129% | 120% | 109% | 119% |
| 2001/02 Total | 8,761 | 5,485 | 5,582 | 3,175 | 1,133 | 24,135 | 48,003 | 29,926 | 102,064 |
| 2000/01 Total | 9,314 | 4,445 | 5,775 | 5,156 | 1,130 | 25,819 | 47,734 | 27,567 | 101,120 |

Source: Foreign Agricultural Service/USDA; YTD: Year-to-Date; Crop Year: Wheat=6/01-5/31, Corn & Soybeans=9/01-8/31

**Figure 10. U.S. Grain, Unshipped Export Balance**
Includes Wheat, Corn, and Soybean Sales

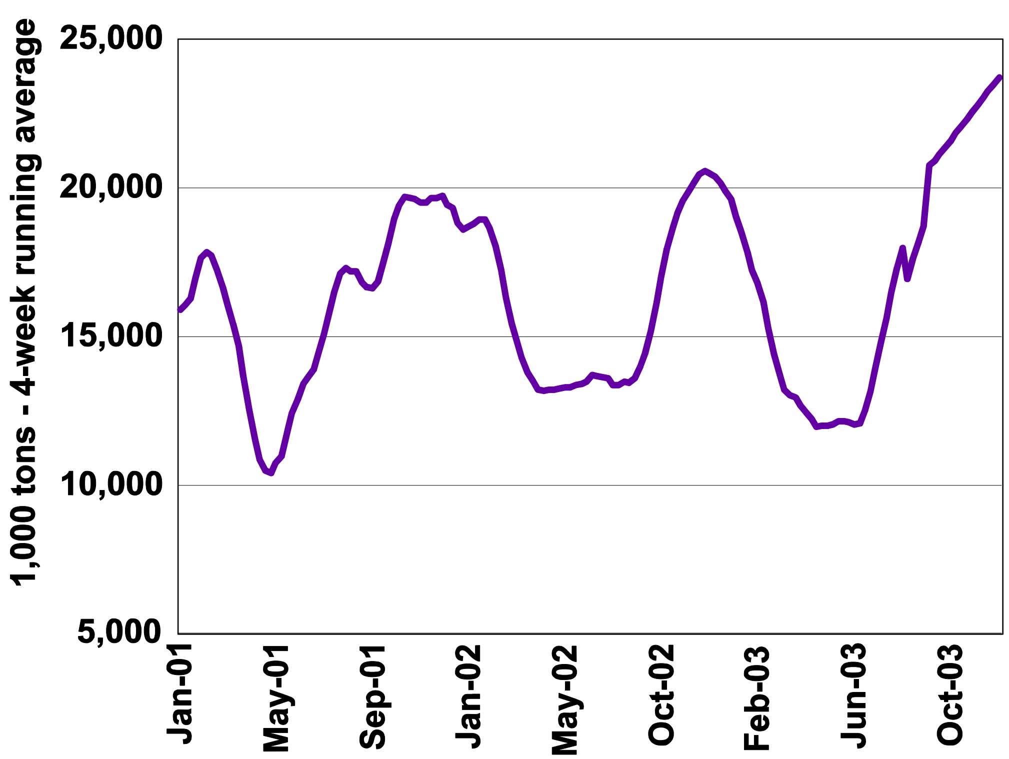
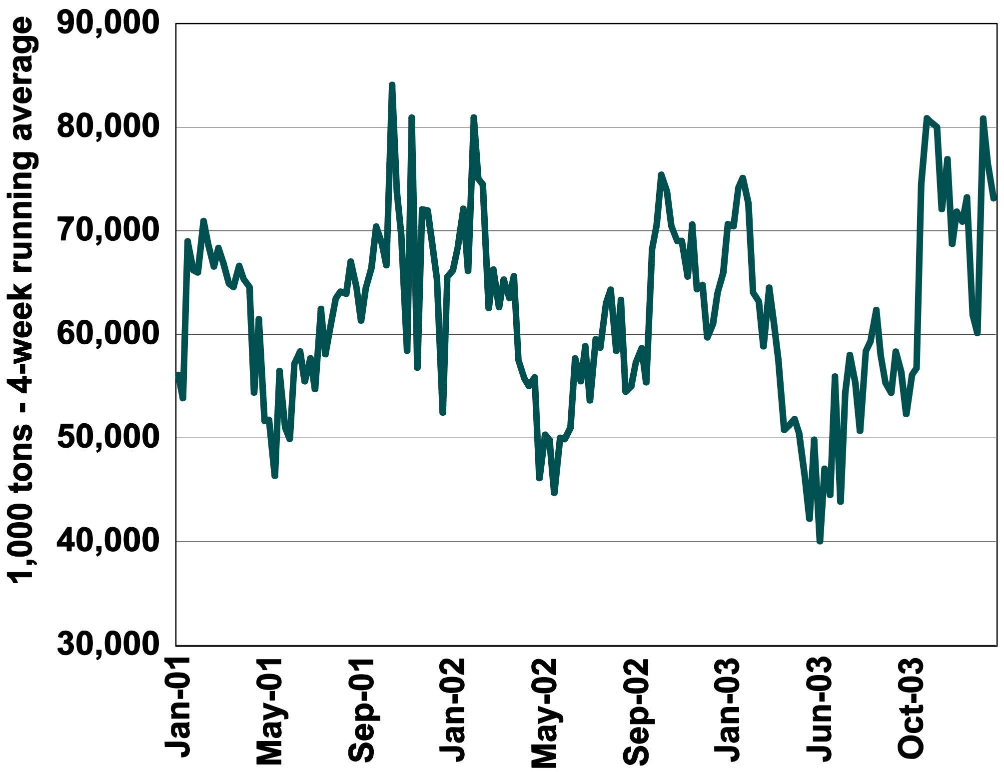


**Table 12--Select U.S. port regions - grain inspections for export (1,000 metric tons)**

| Date | Pacific Region | | | Mississippi Gulf | | | Texas Gulf | | | Port Region Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Wheat* | *Corn* | *Soybn* | *Wheat* | *Corn* | *Soybn* | *Wheat* | *Corn* | *Soybn* | *Pacific* | *Mississippi* | *Texas* |
| 01/29/04 | 199 | 195 | 58 | 108 | 783 | 676 | 218 | 0 | 0 | 452 | 1,567 | 218 |
| 2004 YTD | 1,187 | 634 | 635 | 576 | 3,673 | 2,678 | 1,226 | 42 | 0 | 2,457 | 6,927 | 1,268 |
| 2003 YTD | 667 | 439 | 514 | 661 | 2,776 | 3,746 | 355 | 8 | 7 | 1,620 | 7,183 | 370 |
| % 2003 YTD | 178% | 145% | 0% | 87% | 132% | 71% | 345% | 524% | 0% | 152% | 96% | 343% |
| 2003 Total | 8,764 | 5,450 | 5,114 | 5,855 | 30,352 | 18,972 | 7,032 | 746 | 348 | 19,328 | 55,179 | 8,125 |

Source: Federal Grain Inspection Service YTD-Year-to-Date

**Figure 11. U.S. Grain Inspected for Export**
Includes Wheat, Corn, and Soybeans



The U.S. Exports Approximately One-Quarter of the Grain it Produces. On average, it includes nearly 45% of U.S. grown wheat, 35% of U.S. grown soybeans, and 20% of the U.S. grown corn.

Over 60% of these U.S. export grain shipments departed through Louisiana Gulf region in 2002.

**Figure 12. Gulf Port Grain Vessel Loading**
**Past 7 Days**

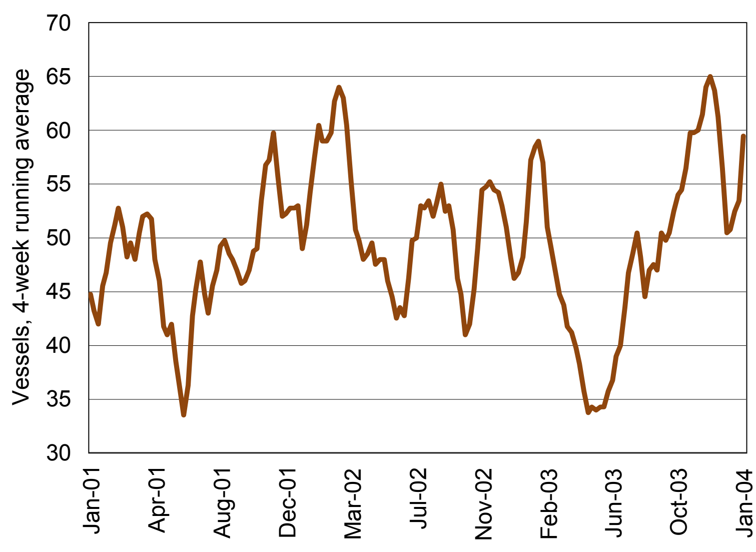



**Table 13--Weekly port region grain ocean vessel activity (number of vessels)**

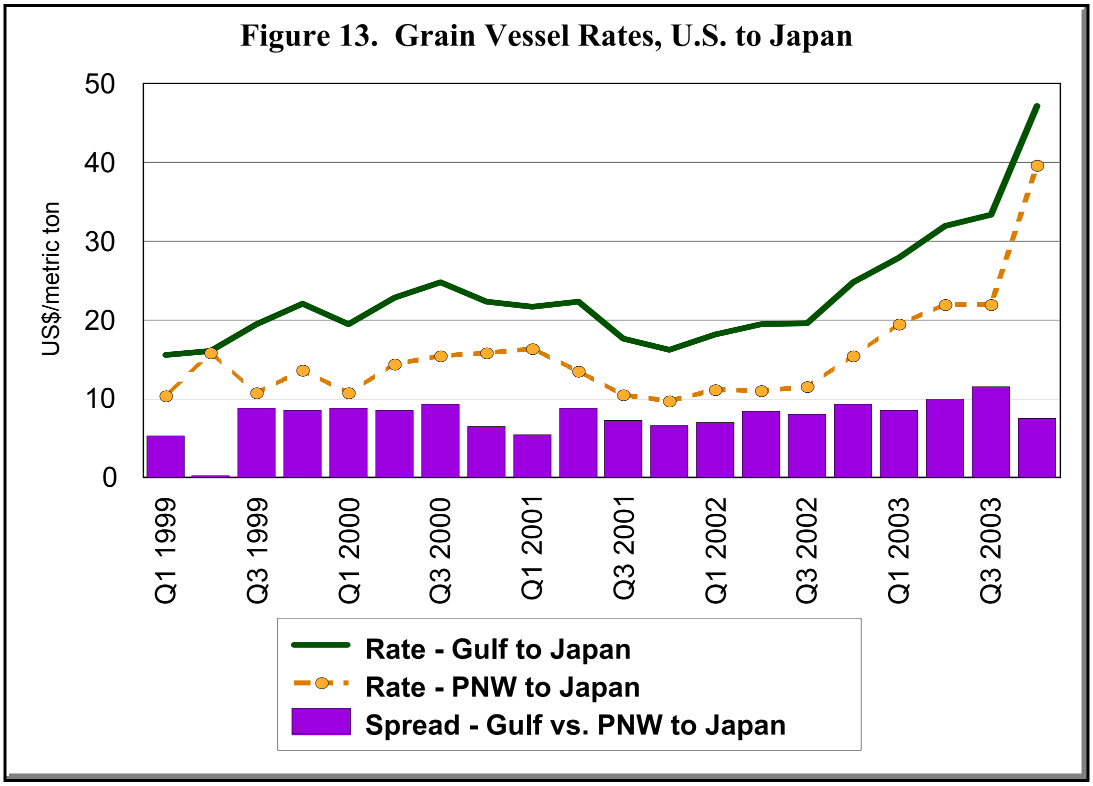
| **Date** | **Gulf** | | | **Pacific Northwest** | **Vancouver B.C.** |
|---|---|---|---|---|---|
| | In Port | Loaded 7-Days | Due Next 10-Days | In Port | In Port |
| 01/22/04 | 29 | 61 | 78 | 9 | 3 |
| 01/29/04 | 28 | 60 | 69 | 12 | 6 |
| 2003 Range | (11..47) | (30..76) | (39..93) | (3..13) | (1..15) |
| 2003 Avg | 31 | 49 | 62 | 9 | 6 |

Source: Transportation & Marketing/AMS/ USDA

**Table 14--Quarterly ocean freight rates (average rates & percentage changes, U.S. dollars/metric ton)**

| | **2003 4th Qtr** | **2002 4th Qtr** | **Change %** | | **2003 4th Qtr** | **2002 4th Qtr** | **Change %** |
|---|---|---|---|---|---|---|---|
| **Gulf to** | | | | **Pacific NW to** | | | |
| Japan | $41.83 | $24.75 | 69% | Japan | - | $15.39 | - |
| Taiwan | $44.00 | - | - | | | | |
| N. Europe | - | $18.07 | - | **Argentina/Brazil to** | | | |
| N. Africa | $35.00 | $18.33 | 91% | Med. Sea | $38.50 | $22.00 | 75% |
| Med. Sea | $31.75 | - | - | N. Europe | - | $22.63 | - |

Source: Maritime Research, Inc.




Source: The Baltic Exchange

**Table 15--Ocean freight rates for selected shipments**
Week Ending 01/31/04

| Export region | Import region | Grain | Month | Volume loaded (Tons) | Freight rate ($/ton) |
|---|---|---|---|---|---|
| U.S. Gulf | Peru | Grain | Mar 9/18 | 9,710 | $55.59* |
| U.S. Gulf | China | Hvy Grain | Jan 25/39 | 55,000 | $53.25 |
| U.S. Gulf | China | Hvy Grain | Feb 5/14 | 55,000 | $60.00 |
| U.S. Gulf | S. Africa | Sorghum | Jan 26/Feb 5 | 20,000 | $49.50 |
| U.S. Gulf | S. Africa op Mozambique | Sorghum | Jan 26/Feb 5 | 10,000 | $80.00 op $86.00* |

Source: Maritime Research Inc.
Rates shown are for metric ton (2,204.62 lbs.=one metric ton), F.O.B., except where otherwise indicated; op=option
*Most food aid from the United States is required to be shipped on U.S. flag vessels. The vessels are of limited availability resulting in higher rates. In addition, destinations receiving food aid generally lack adequate port unloading facilities, requiring the vessel to remain in port for a longer duration than normal.

## CONTAINER

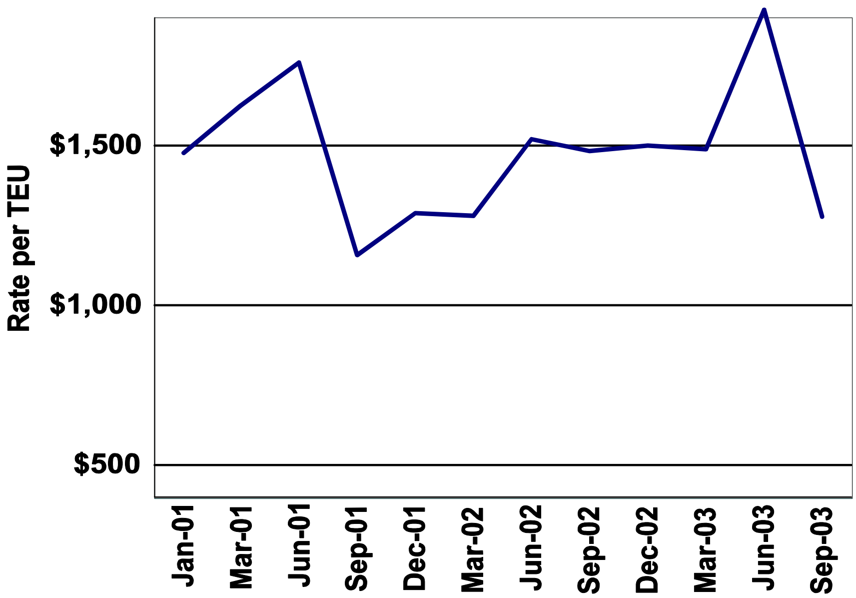
**Container Ocean Freight Rates**

Average rate per twenty-equivalent-unit (TEU), weighed by shipping line market share

Source: Transportation & Marketing/AMS/USDA, Quarterly Updates

**Figure 14. Container Rates - Soybeans**

**Seattle, WA Origin to Tokyo, Japan**




Approximately 420,000 MT of grain and oilseed exports were marketed via container in 2001. This volume increased 26% compared to 1997.

**Figure 15. Container Rates - Feed Grain**

**Seattle, WA Origin to Selected Destinations**