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## **100+ Car Marketing: An Alternative for Shipping Hard Red Spring Wheat**

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In the fall of 1997, a public offering of 100+ car rates initiated broader interest in this recent innovation in rail grain pricing, particularly among upper-Midwest shippers of hard red spring (HRS) wheat, who rely on unit-train (50 cars or more) shipping for a significant percentage of their product.

While 100+ car rates may offer cost benefits for participants in the HRS wheat market, implications vary due to production and logistical characteristics specific to the market area. Elevators and farmers' co-ops will have to carefully consider a number of factors as they evaluate the potential for an investment in 100+ car shipping.

### **Grain Production and Grain Rail Transport in the North-Central Region**

HRS wheat is concentrated in the north-central region of the U.S., with North Dakota, Montana, Minnesota and South Dakota accounting for more than 95% of the country's HRS wheat production. In this region, located long distances from barge facilities and major markets, rail has inherent advantages in moving grain to most markets.

Increasingly, producers and shippers have used larger trains to gain economic advantages in shipping grain for export. Following the initiation of multiple-car rail rates for wheat in 1980, rail rate spreads provided further incentive for unit-train (50+ car) facilities. Today, there are more than 100 unit-train facilities in North Dakota, accounting for 67% of HRS wheat origination during the 1994-95 and 1996-97 marketing years.

For purposes of evaluating the potential for 100+ car marketing of HRS wheat, this study looked at aspects of grain production and grain rail transport. Wheat is the dominant commodity in grain origination regions comprising western North Dakota and northeastern Montana; eastern North Dakota, northwestern Minnesota and northeastern South Dakota; western South Dakota; and western and central Kansas. The northernmost regions (N.D., Mont., Minn. and eastern S.D.) grow predominantly HRS wheat and durum; western South Dakota produces a mixture of HRS, durum and hard red winter (HRW) wheats, while Kansas is the dominant supplier of HRW wheat. In looking at the potential for 100-car marketing, particularly in those regions where HRS wheat is the dominant crop, key factors include the following:

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- **Production density:** An elevator's potential to increase the amount of grain handled by expanding the size of the drawing area is directly related to the density of production in that area. Relatively low densities for HRS wheat production in the northernmost regions mean a potentially smaller increase in handle with an expansion in draw area.
  - **Dependence on rail marketing:** Wheat producers generally are more dependent on rail for origination and marketing, with from six to nine of every 10 bushels of wheat produced originating via rail. In fact, in eastern North Dakota, nine of 10 bushels are dependent on rail shipment, magnifying the value of rail shipping options for shippers of HRS wheat.
  - **Rail-rate spreads:** Spreads between unit and single-car rates allow options in packaging products and provide incentive for investments in efficiencies. The wheat rate spread between the shipment sizes ranged from \$3.08 to \$4.74 per car-mile over the six-year period between 1990 and 1995; the rate spread for wheat has trended upward since a low in 1992.
  - **Desire of customers to use unit-train shipments:** Shippers in the wheat market have been less inclined to make use of unit-train rates than corn and soybean shippers, with unit-train shipments peaking at 34% of the annual rail wheat shipments between 1990 and 1995. In North Dakota, about one-fourth of all elevators can employ unit-trains as an alternative in packaging and distributing products to a global customer base. HRS wheat accounted for 54% of North Dakota's elevator shipments among five primary bulk commodities, and on average, 29% of HRS wheat was shipped via unit train.

Because use of unit trains in marketing HRS wheat seems to follow the trend in sales of wheat by North Dakota producer, a closer look at how HRS wheat moves from supplier to customer offers further insight into the potential for 100+ car marketing.

### **Rail from Supplier to Customer in the Hard Red Spring Wheat Market**

Three factors differentiate the wheat marketing environment from other grains:

- **Demand of customers for consistency and quality:** This is particularly true of higher-protein products such as HRS wheat, often marketed profitably as a specialty product, tailored to suit specific customer demands and end-uses. Increased privatization of import buyers means quality and consistency requirements are likely to become even more pronounced.
- **Dependence on demand and exposure to global competition:** With the U.S. supplying only 29% of the world's export wheat, product differentiation and timely delivery are paramount in maintaining and expanding market share.
- **Market structures impacting the ability to market HRS wheat:** Only three domestic wheat mills currently have track space and storage to facilitate rail deliveries of 75 cars or more; it is unlikely that these mills would demand large shipments of higher protein wheats, such as HRS wheats, on a regular basis.

Previously concentrated in the Gulf, exports of HRS wheat are now concentrated in the Pacific and Great Lakes export regions as well. During the 1994 to 1996 marketing years, the Gulf and Pacific export regions accounted for 24% and 56%, respectively, of

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HRS wheat exports among U.S. ports, with the Great Lakes export region also accounting for 24%. North Dakota elevator shipments targeted for export through both the Great Lakes and Pacific Northwest regions have increasingly been made via unit train, with unit trains accounting for 72% of the Pacific Northwest shipments in 1996-97. This trend may indicate market acceptance of even larger (100+ car) trains.

### **Cost Analysis for Grain Elevators Looking at 100+ Car Investments**

Cost analysis of the savings realized by railroads through larger-train configurations indicates that converting the single-car market to a 100-car market gives greater savings than those realized by converting the 52-car market to a 100-car market. For North Dakota's diverse elevator population, along with varied marketing patterns, savings would depend on the characteristics of existing traffic.

To analyze individual investment strategies, North Dakota's elevators may customize three resources:

- **Financial estimates for greenfield (new) elevator construction:** Investment costs to upgrade existing facilities to load 100-car trains range from \$500,000 to \$3.5 million. To construct a greenfield elevator site — including 1.2 million bushels of storage, as well as a rail loadout system allowing a rate of 50,000 bushels an hour — the average cost estimate is \$4.6 million, with an additional \$1 million in track cost. This cost estimate serves as an upper threshold of investment when considering the economics of refurbishing an existing elevator.
- **Producer delivery decisions related to grain drawing:** In a 1994 survey, producers were asked the number of miles they would travel to deliver to an elevator offering a higher board price than a closer elevator. Based on their responses, the average producer will travel 10 additional miles to deliver to a 100-car elevator offering a board

price \$0.045 higher than a closer 52-car elevator.

- **Benefit/cost estimates for alternative 100-car investment scenarios:** Several benefit/cost scenarios allow individual elevators to more quickly complete a basic initial analysis of the potential return on investment from a 100-car facility. These scenarios seem to indicate that elevators handling smaller amounts (6-8 million bushels) of HRS wheat destined for export will receive a negative net benefit in the first year of 100-car service. It appears that elevators with a current export HRS wheat handle of over 10 million bushels annually could profitably make a \$2 million investment to upgrade to a 100-car facility, without needing to increase handling of HRS wheat export volumes.

Each elevator has a draw area and market unique to its competitive situation; these individual factors must be considered in any investment analysis.

### **Conclusion**

Development of 100+ car facilities has important implications for the infrastructure and market processes that support HRS wheat procurement. With the increased flexibility an added marketing alternative provides, 100+ car marketing may likely benefit market participants. However, the advent of larger trains will probably contribute to further rationalization of the state's grain procurement system, resulting in fewer elevators, additional rail line abandonment and longer producer deliveries. Despite the potential benefits of 100+ car marketing, the demand for smaller grain shipments may still prevail.

*A copy of the full report, "Marketing Hard Red Spring Wheat in 100-Car Trains" (MPC Report No. 98-93), is available from the Upper Great Plains Transportation Institute. Contact: John Bitzan (701) 231-8949.*

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