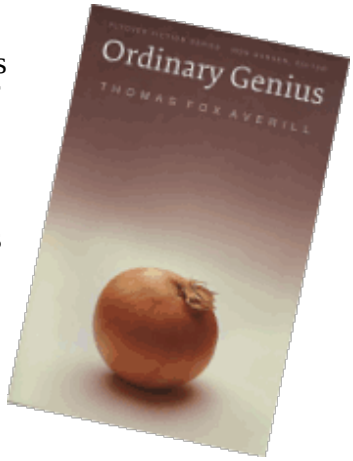
Speaking of Kansas
Washburn Center for Kansas Studies
ONLINE NEWSLETTER Apr, 2005

Fellows News:



Tom Averill, **English**, announces publication of his newest book, a collection of short stories, ***Ordinary Genius*** (University of Nebraska Press). Tom read from his work in the Kansas Room, Memorial Union, on April 5. For more information about the book see his website.

Marydorsey Wanless, **Art**, had three photographs of the prairie accepted for publication in the ***Plains Song Review***, Volume VII. It is a publication of the Center for Great Plains Studies at the University of Nebraska. The photographs and other art will be on display for two weeks at the Great Plains Art Gallery, 1155 Q Street, Lincoln, NE. A reception and reading will be at the Gallery on Thursday, April 21, 2005 at 7:00 pm. For more information contact cgps@unl.edu

Marcia Cebulska, who is William Inge Center's playwright-in-residence, announced plans for the Inge Center, through its director, Peter Ellenstein, to forge a possible partnership with Washburn University. Marcia would write a one-character play on the life of William Inge to premiere at the William Inge Theatre Festival in 2006.

Margaret Wood, **Sociology/Anthropology**, is involved in organizing the **64th Conference of the Plains Anthropological Society**, to be held in Topeka in 2006. Margaret is heading fundraising for this event.

Tom Averill, **English**, is planning a fall map colloquium, tentatively titled, "From Three Dimensions to Two: Mapping, Charting, Representing, Prediciting and Imagining the World." Tom reports having a wonderful response to the call for papers, with an evaluation soon to narrow the colloquium to a group of 14-16 scholars.

Marguerite Perret, **Art**, and the Washburn Art Department hosted an exhibit of quilts and photo-silk-screened images by fiber artist **Joleen Goff**. "Farm Stories: a Place of Belonging" featured imaged-depicting themes from Goff's grandparents' farm in Kansas and was part of a Fiber Arts Forum held in February 2005. Further information and photos of the forum are available online.

Tom Schmiedeler, **Geography**, introduced **Don Stull**, Professor of Anthropology at Kansas University, as the Kansas Day Speaker. Dr. Stull spoke on Friday, January 28, on "Meat-packing and Mexicans on the High Plains: from Minority to Majority in Garden City, Kansas." Dr. Stull's visit to Washburn was funded by the Center for Kansas Studies.

Prairie Cathedrals without Congregations

—by **Tom Schmiedeler**, Geography

In the early 1960s I made several trips with my family to Dodge City to visit my oldest brother, an aspiring history major at the now defunct St. Mary of the Plains College. As we traveled south from Mitchell County across the Smoky Hill Country to Great Bend, then up the broad Arkansas River Lowland, looming grain elevators announced the presence of yet another one of Alden Speare's "T-towns." Speare, as president of the Arkansas Valley Town and Land Company, an affiliate of the Santa Fe Railroad, platted these towns, including Spearville, every eight to ten miles or so as the railroad laid track up the valley in the early 1870s.

Grain elevators are unquestionably the most striking element in the townscapes of Kansas, but here, of course, the unbounded horizontal space aggressively accentuates their verticality. This spatial perspective encourages one to appreciate these monoliths not so much for their functional aspects, but rather for what they symbolize—the rhythmic ordering of places and space in the vastness of the plains landscape. The photographer Frank Gohlke has argued that as a culture we favor the "sense of sight above all others. We need to see our presence manifested in the landscape preferably over great distances. The workaday operations of the grain elevators could cease, and they would still serve a vital function on the prairie simply by being visible" (Gohlke, 22-23).

Gohlke's observations are evocative of the romanticized view of these structures that, according to the geographer George Carney, began with the writings of modern architectural theorists nearly a century ago. The Swiss-French architect Le Corbusier, who called grain elevators "cathedrals of the prairies," is most often cited. Additionally, Robert Riley has noted that generations of painters, novelists and photographers have found in grain elevators "not architectural maxims, but symbols of life on the Great Plains" (Riley, 50). More recently, however, as a counter to this romanticized view or what the architectural historian Robert Banham dismissively called "silo dreams," the literature has shifted to descriptions of their pragmatic aspects, particularly those related to the evolution in elevator construction, and how grain elevators function both internally and within the agricultural economy. My purpose here is to summarize these writings but also to describe in detail their internal operations, a research area that has received the least attention.

(Next: see "Despite the popular view...")

Despite the popular view of grain elevators as agricultural icons, their form is far more powerfully driven by utilitarian aspects of which the public is largely unaware because few people have ventured inside them. Grain elevators became components of a collection system through which a region's crops could be funneled to distant markets. As upright, concrete structures they were born of the necessity for eliminating the more labor-intensive movement of grain stored in bags in flat, open-storage units. Concrete elevators were a significant improvement over earlier upright wood and later ironclad elevators because they were less prone

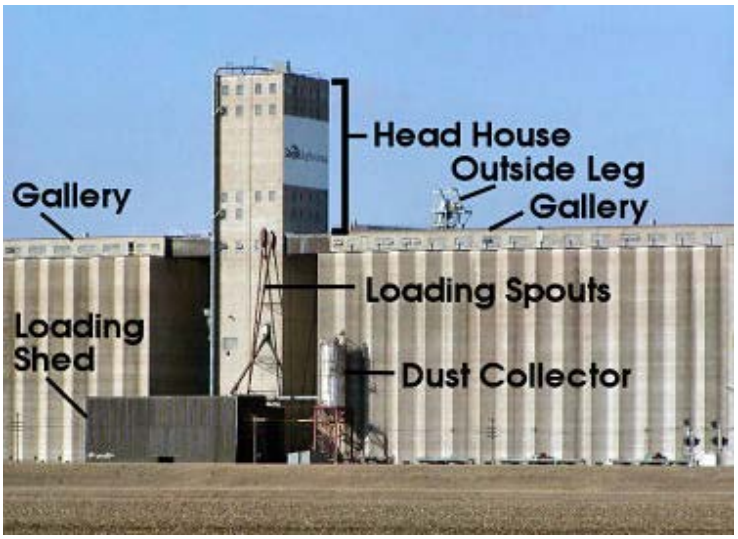
"...generations of painters, novelists and photographers have found in grain elevators 'not architectural maxims, but symbols of life on the Great Plains.'"

As the grain conveyor belt begins its descent at the top of the headhouse, the buckets empty their contents into the "garner," a hoppered holding tank that sits directly above another hoppered tank attached to the framework of a Fairbanks scale. As the garner fills, the next operation involves opening its bottom slide to allow grain to flow into the scale hopper. A decade or so ago, this was done manually by a scale operator on the "scale floor"

to insect infestation and to fire, which increased insurance rates. Concrete became the most popular building material for elevators by the early 1900s with the development of an innovative, concentric, double-ring, construction form, which created a tank in “one solid and continuous piece of concrete without joints or patches” (Carney, 8-10). Physics, too, played a role in the evolution of concrete elevators. According to Riley, “internal friction produces an arching effect within the mass of grain, which in turn is partly transferred by friction to a downward vertical compression in the bin walls.” The result was that “the floor can stand unsupported over an emptying trough” and “walls can be thin. This was particularly important in encouraging the early use of concrete, strong in compression but weak in tension. Thus, the striking verticality of grain elevators is a direct function of the static properties of the grain itself” (Riley, 51).

Grain elevators are primarily storage facilities, but the advantages of the modern terminal elevator are realized in the movement of grain. Movement is that of a rectangular circuit. Let's plug into the circuit at the tracks where workers are unloading a series of “hoppers,” a type of rail car with funnel-shaped compartments used to haul bulk material. Hoppers, which originated with the Southern Railway in the early 1960s and rapidly replaced box cars that were far more labor intensive to load and especially to unload, can hold up to four thousand bushels of grain (Hudson, 99-100). When the compartments of the hopper car are aligned over the “pit,” workers open the hopper bottom or "slide" and the grain falls by gravity through the grate covering the pit to a horizontal conveyor belt. The grain quickly moves inside to the “leg,” a vertical belt two to three feet wide with metal “buckets” bolted to the belt, all of which is housed in a rectangular, box-like enclosure of heavy gauge sheet metal. A 100 to 150 horsepower motor drives the belt at a high speed so that grain flowing off the end of the horizontal belt can be picked up by the buckets and transported upward about two hundred feet to the top of the “head-house,” the rectilinear structure rising above the circular bins.

To observe the next stage of the operation one must travel to the top of the headhouse by way of yet another conveyor belt to which are attached step-like platforms and handholds located about immediately below the garner floor. In most terminal elevators today, however, slides are remotely controlled either by an operator in an office somewhere on the ground or by highly automated computerized systems. As the scale fills and approaches an 80,000 to 90,000 pound draft weight, one of two necessary to fill most hopper cars, the automated systems precisely balance the scale at the desired weight. A draft ticket is electronically punched and the scale slide is then opened to its maximum. As the grain flows from the scale hopper the garner hopper continues to fill with the next draft.



Thus, the garner, in its holding tank capacity, allows grain to flow continuously, sometimes for hours on end when elevators are loading so-called “unit trains.”

Obviously, timing at this stage of the overall operation is very crucial. When operations are running smoothly, as they usually are, the operator will have emptied the scale hopper of the weighed draft before the garner fills. But if for some reason there is a delay in releasing grain from the scale hopper (there are many possible causes), then the garner quickly fills to capacity and the grain arriving at the top has no place to go. Of course, it then backs up into the heavy sheet metal enclosure thereby “putting down” the leg. The leg must then be “dug out” by hand, first through a side panel on the ground floor, and then at the “boot,” the very bottom of the leg in the “tunnels.” Anyone who has shoveled grain can understand why workers hate spillage. Of course, management finds it especially loathsome because the entire operation comes to a halt, usually for several hours.

To observe what happens to the grain once it leaves the scale we will need to drop down to the lowest of the three headhouse floors. Grain first passes through a distributor, an octopus-like device whose multiple legs can direct grain to headhouse bins, “gallery” bins or to a loading downspout protruding diagonally downward from the distributor through the elevator wall to the loading shed above the tracks. Grain designated for bins is taken by

face high above the platforms. A tug on a rope starts the belt motor at the top of the headhouse; one then firmly grabs a handhold as it goes by while simultaneously stepping onto a platform. Workers who spend their entire day high above ground routinely make multiple trips to and among the three headhouse floors using this crudest form of all elevators. To this day there are relatively few enclosed or "cage" elevators so in most elevators there are no alternatives.

horizontal, conveyor belts housed in the "galleries," the house-like structure extending along the length of the top of the bins; a "tripper," which can be set at any pair of bin holes the full length of the belt, drops the grain into the bins.

(Next: see "Loading operations...")

Loading operations begin in the "tunnels," which, like the galleries, run the length of the bins but beneath them. It is here that one is most likely to encounter the standard grain elevator rat. Though about the size of a beaver, these critters are relatively harmless and assuredly happy in their gluttonous world, and upon confrontation will simply waddle away. To begin loading, the operator in control of a computerized system will program slides to open on a number of bins, thereby allowing grain to flow in the right "mix" onto another horizontal belt, which completes the circuit by conveying grain back to the central leg for eventual loading. The mix is important relevant to the grading system used by the industry in conjunction with the state grain inspection service, which collects samples by probes from loaded hoppers or by automatic samplers during loading. These samples, as representative of a car load, are tested by the Kansas State Grain Inspection for moisture and protein content, weight per bushel, "foreign material" (i.e. dockage consisting of chaff, bits of stalk, other grains) and other criteria. After testing, samples are graded from one (highest) to five (lowest) or as "sample grade," a category below five. Each grade has an acceptable range for each of the criteria. For example, if a buyer orders a quantity of number two corn, ideally the seller will try to stay within the ranges of criteria for number two, but just barely. To do so, the elevator operator may order the "mix" from several different bins whose contents are representative of a variety of grades or of variable quality within grades. The optimization of profits occurs by selling the poorest quality number two grade corn possible.

Of course, in the process there is always the risk of loading a car with number three grade corn. Here is a possible scenario. Let's say that an operator loads only from three bins and two of them run empty during loading. The lighter debris-bits of stalks and

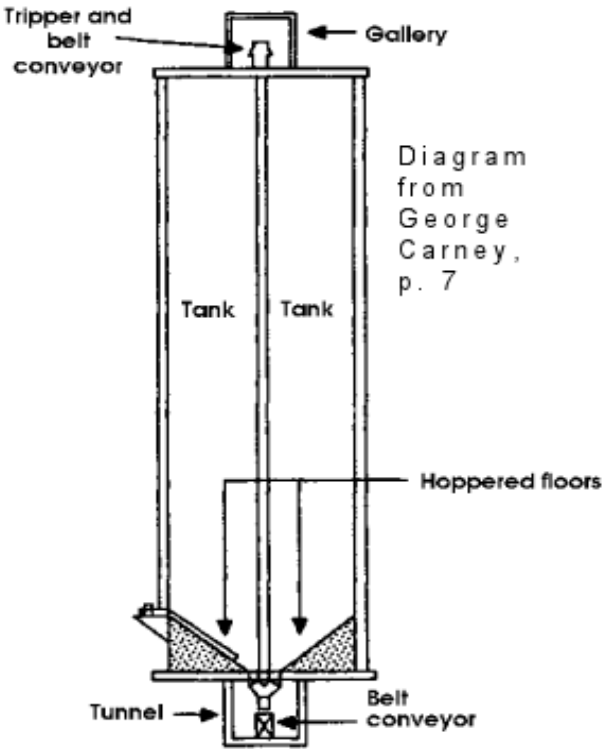


Diagram from George Carney, p. 7

them. With increasing competition among railroad, barge and truck transportation, a new type of grain elevator—the subterminal—has emerged as a hybrid between country and terminal elevators. Their geography, at "access points convenient for assembling shipments via both rail and highways" is often in "open country away from towns" (Hudson, 100-101).

The abandonment of some rail lines and the emergence of subterminal elevators suggest that the days of the remaining country elevators are numbered. On the other hand, trucks still serve country elevators abandoned by railroads. Then, too, some railroad branch lines or "short lines" have been sold to local shippers. "Short lines can handle grain (the only reason for the line's existence) more cheaply than larger railroad companies, which have costly agreements with organized labor" (Hudson, 101). The

cobs-that tends to migrate to the top of the grain as bin content is lowered may enter the grain stream excessively, thereby causing the grade of the grain loaded in a car to slip to number three. That, too, does not make elevator managers happy because the car needs to be pulled back (not necessarily easy to do) to the pit and unloaded, the mix adjusted, and then the car reloaded. Of course, a mistake like this, along with equipment breakdowns, add to labor costs but also increase the likelihood of demurrage-charges assessed by the railroad to a firm for having rail cars too long.

This basic system of grain movement has evolved to the point where large terminal elevators are capable of loading 120-car unit trains within a day. The special rates given by railroads for unit trains have provided the large terminal elevators with significant competitive advantages over the older country elevators whose capacities are far too small for them to be eligible for the cheaper rates. Through time, many of the country elevators have become redundant and railroads have abandoned the branch lines that served

result has been a new lease on life for many country elevators served by these lines. Even some of the old, metal-sheathed, cribbed elevators have survived because of their use for equipment storage and their limited salvage value.

What of the railroad T-towns, like those of Alden Speare that only existed as part of the Santa Fe's grain collection system? The businesses and institutions that constituted a small town were necessary in the beginning, but changing economies of scale and the increasing mobility of farmers (trucks of a thousand bushel capacity are common on today's farms) have rendered them obsolete. As John Hudson noted "The massive concrete silos of the modern subterminal elevator may have dealt the last blow to the viability of many small towns" (Hudson, 102). If so, our prairie cathedrals are about to lose the last of their congregations.

Prairie Cathedrals... Bibliography

Banham, Reyner. *The New Brutalism: Ethic or Aesthetic?*, (Reinhold: New York), 1966. Quoted in Carney, p.1.

Carney, George O. "Grain Elevators in the United States and Canada: Functional or Symbolic?," *Material Culture*, 27(1995): 1-24.

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Kansas Studies Courses—

Fall 2005 offerings include:

- **State and Local Government** PO 107A 10:00 - 11:00 MWF 30252

- **State and Local Government** PO 107B 8:00 - 9:15 T,R, 30253
- **Kansas Geography** GG304 1:00 - 2:15 M,W, 31156
- **Kansas History** HI322 1:00 - 2:15 T,R, 31564
- **Kansas Folklore** HN202E 1:00 - 3:40 R
- **Documentary Photography (Small Kansas Towns)** AR399 1:00 - 3:45 M,W 31531
- **Historical Geology (Kansas emphasis)** GL103EA
- **Freshman Composition (Kansas emphasis)** EN101C 8:00 - 8:50 MWF
- **Freshman Composition (Kansas emphasis)** EN101P 12:00 - 12:50 MWF

Kansas Studies minors at Washburn University, upon graduation, are expected to:

- **Acquire knowledge of the natural environment of Kansas and how humans have interacted with that environment**
- **Acquire knowledge and appreciation of the diversity of the cultures, arts and literature of Kansas**
- **Acquire knowledge of Kansas history, economics and political processes**

DOCUMENTARY PHOTOGRAPHY

AR 399 A (Cross-listed for Kansas Studies Minor)
Document Small Towns in Kansas
Monday/Wednesday 1:00 - 3:45 p.m., Fall 2005

This class will be working with the Kansas State Historical Society to make a photographic documentary of small towns in Northeast Kansas. The project will conclude with a traveling exhibition, and copies of the work will be donated to the Kansas Historical Society for its permanent collection.Students will be working in pairs, with each pair documenting one town for the semester.

Participants will receive instruction in historical research, history of documentary photography, interviewing techniques, structure of prairie towns, architecture, photography, etc.

There will be a field trip to the Spencer Museum to see the Pennell Documentary Photography collection, and Jim Richardson of National Geographic will spend a day with us discussing his documentation of Cuba, Kansas and critiquing student work.

Prerequisites: AR 220 Photography 1 or consent of instructor.
Students will need their own 35mm Single Reflex Lens camera that uses film.
For information, Marydorsey Wanless, 231-1010 ext. 1632 or marydorsey.wanless@washburn.edu.

Hicks Block, Topeka, auctioned

On March 20, 2005 the Hicks Block, 600 S.W. 6th, Topeka, was auctioned. Ruth Martin of Topeka won high bid of $110,000.

The seven row houses were built in 1888-89 for $50,000 by Elhanan Hicks. After a real estate Tyler (a row house within the Hicks Block) and her mother owned all of the houses. Eventually each was divided into four apartments. The building earned a place on the National Register of Historic Places in 1977. Dove died last year and the property was

depression, Hicks lost the property and each three-story (plus basement) row house was owned separately.

By the 1960s, Marjorie Dove, born at 525 S.W. owned briefly by John Clinkenbeard.

See complete photo essay:
Hicks block — myprairie.net




—Photos by **Carol Yoho**, *Art*