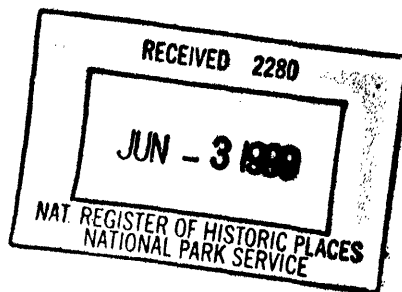


United States Department of the Interior
National Park Service

National Register of Historic Places
Multiple Property Documentation Form



cover

This form is used for documenting multiple property groups relating to one or several historic contexts. See instructions in How to Complete the Multiple Property Documentation Form (National Register Bulletin 16B). Complete each item by entering the requested information. For additional space, use continuation sheets (Form 10-900-a). Use a typewriter, word processor, or computer to complete all items.

☒ New Submission ☐ Amended Submission

A. Name of Multiple Property Listing

Barns of Linn County, Oregon, 1846-1946

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

- I. Self Sufficiency: Pioneer Agriculture in Linn County, Oregon, 1845-1870.
- II. Cash Crop: Wheat Production and Expanded Agricultural Markets in Linn County, Oregon, 1871-1899.
- III. Transition: Agricultural Diversification in Linn County, Oregon, 1900-1919.
- IV. Standardization and Specialization: Linn County Agriculture 1920-1945.
- V. Religious and Ethnic Immigration in Linn County, 1845-1945.

C. Form Prepared by

name/title Mary K. Gallagher with research assistance provided by May Dasch, Joni Nelson, Patricia Dunn and Beth Fox.

organization Linn County Planning Department

date 15 February 1998

street & number Linn County Courthouse, P.O. Box 100

telephone (541) 967-3816

city or town Albany, OR

state OR

zip code 97321

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. (X) See continuation sheet for additional comments.)

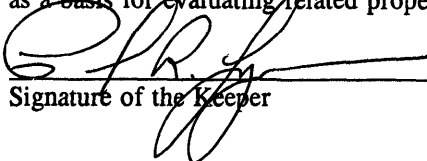


July 20, 1998

Signature and title of certifying official DSHPO Date

Oregon State Historic Preservation Office
State or Federal agency and bureau

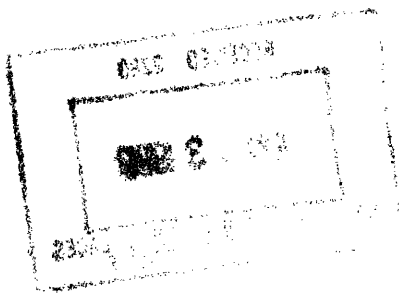
I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.



Signature of the Keeper

Date

6/23/99



United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 1

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

E. Statement of Historic Contexts

I. Self Sufficiency: Pioneer Agriculture in Linn County, 1845-1870

By 1850, approximately five years after the first pioneers claimed land within the present-day boundaries of Linn County, there were 138 farms in Linn County.¹ After the construction of a shelter, most early settlers turned their attention to clearing and planting. At first, these cultivated fields were small, just large enough to raise some "wheat and a little garden and oats."² With the limited availability of labor at the time of the gold rush, many settlers found it easier to raise livestock which was then in demand at the gold fields. The gold rush brought the early settlers of the region into a primitive market economy based on livestock. Between 1850 and 1852, there was an 86 percent increase in the number of cattle per capita in the Calapooia region of Linn County.³ There were also settlers who had large numbers of hogs, the products of which were also shipped to the mining regions to the south. Settlement on the valley floor was originally limited because it was believed that the open valley floor was too boggy and wet to ever be cultivated. Instead, the valley floor served as a vast pasture land for livestock. Because of mild conditions, livestock could forage in the valley year round. Thomas Kendall reported in an 1852 letter that, "Our beef and pork are the product of natures wild, unheeded by forced rearing of the sty or the stall."⁴ He further stated that "Cattle and horses, due to the mild climate, are more satisfied and can forage all year "never call at your barn for a meal."⁵ Barn-housed cows, however, were kept for milk and cream production; over thirty-seven thousand lbs. of butter and cheese were produced in a single year based on the statistics provided by the 1850 U.S. Census.⁶

In the late 1840's and very early 1850's, markets for any surplus crops were limited. Commodities could either be sold locally or carried in wagons to the Willamette River where they could be drifted down river in flatboats or canoes. Road construction, beginning in the early 1850's, and the commencement of steamboat traffic on the Willamette River at that time, allowed farm products to be marketed more broadly.

¹ Olsen, Charles Olaf, History of Linn County, Oregon, Work Projects Administration Writer's Program, Reprinted by L.M. Wheeler, 1982, p. 64.

² Haskin, Leslie, L., et. al., "Interview with Dorissa Jane Zoosman Miller," in Pioneer Stories of Linn County, Oregon, Vol. III, (Albany, Oregon, Linn Benton Genealogical Services), 1985, p. 90.

³ Boag, Peter, G., Environment and Experience: Settlement Culture in Nineteenth Century Oregon, (Berkeley: University of California Press), 1992, p. 109.

⁴ Olsen, Michael Leon, "Thomas S. Kendall's Letter on Oregon Agriculture, 1852," Agricultural History. Vol. 9, 1935, p. 189.

⁵ *Ibid*, pp. 191-192.

⁶ Olsen, 1982, p. 64.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 2

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

In 1851, the first steamboat made it up the valley as far as Corvallis; by 1856 Eugene City had been reached. Albany, Corvallis, Orleans, Burlington, Peoria, and Harrisburg were local wheat shipping points.

The growth in agriculture in Linn County in the decade from 1850 to 1860 has been described as remarkable.⁷ In 1850, Linn County harvested 50,000 bushels of wheat; in 1860, this number had risen to 145,273.⁸ This increase can be attributed to population growth and an increase in markets. The 1850 population of 994 had risen to 6,772 in 1860, and the number of improved acres increased from 6,041 to 200,980 during this period.⁹ "Altogether the ten years from 1850 to 1860 constituted an era of optimism and expansion in a new country where road-building was increasing, steamboat service growing and transportation as a whole improving."¹⁰ The subsequent decade, from 1860-1870, did not continue this pace of development. While improved acreage actually decreased slightly during this period, "there was an astounding development of grain production. Nearly half a million bushels of wheat were threshed against the 145,273 bushels of 1860."¹¹ This increase probably reflects the adoption of mechanized threshing.

The amount of land planted to wheat by an individual farmer had been limited by the lack of mechanized equipment for harvesting. Wheat was harvested by hand with a cradle scythe and the harvest needed to be completed within a 10 day period, or even sooner if rain threatened, because the grain would begin to shatter out of the heads.¹² Mechanized harvesting equipment included the header and the threshing machine. The header sliced the heads from the plants and forced them into a large bin. The grain heads were then hauled to the threshing location. The header eliminated the need for hand cutting, binding and shocking. In 1868, wheat was shipped directly from Portland to Europe for the first time.¹³ By the late 1860's, wheat, oats, and to a lesser extent, barley, were the major crops in Linn County. Oats and barley were used primarily as livestock feed.

In the mid-1860s, the Willamette Valley and Cascade Mountain Military Wagon Road, which provided a

⁷ *Ibid.*, p. 65.

⁸ Halbakken, David, A History of Wheat Growing in Oregon During the Nineteenth Century, M.A. Thesis, University of Oregon, Eugene, Oregon, 1948, p. 48.

⁹ Olsen, 1982, pp. 64-65.

¹⁰ Olsen, 1982, p. 65.

¹¹ *Ibid.*

¹² Hurt, R. Douglas, American Farm Tools, (Manhattan, Kansas: Sunflower University Press), 1982.

¹³ Boag, Peter Guy, The Calapooian Matrix: Landscape and Experience on a Western Frontier. Doctoral Dissertation, University of Oregon, Eugene, Oregon, 1988, p. 249.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 3

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

route east across the Cascade Mountains, was completed to Central Oregon allowing livestock producers to graze their livestock in the wide open ranges. With the shift of the cattle industry to the east side of the Cascades, the basis of Willamette Valley agriculture became wheat farming. The number of horses, however, increased tenfold in the period from 1850 to 1860.¹⁴ This increase probably is a reflection of the expanded population and the escalation of horse-powered farm equipment used in grain production. With the increased horse population, there was also greater acreage devoted to oat production, with oat production doubling in the decade from 1860 to 1870.

Also during this period, "modern" advances in agricultural practices were disseminated by several publications, such as The Oregon Farmer, which circulated from 1858 to 1863. The Morrill Act of 1862 gave rise to the agricultural education movement with the establishment of land grant colleges. The forerunner to Oregon State University, Corvallis College, was designated "the agricultural college of the State of Oregon" by the Legislative Assembly in 1868 so it could accept a grant of land under provisions of the Morrill Act of 1862.¹⁵

Many of the barns constructed in Linn County during this early period had a multiple purpose function. Functional needs included: a threshing floor; areas for storing unthreshed sheaves of grain, hay, and straw; grain bins for threshed grain; and often an area to shelter a limited number of livestock. Early barn construction reflected the incipient level of agricultural development of the region. Until mechanized threshing was adopted, wheat was still harvested by cutting the standing grain with a cradle and bundling it into sheaves. Although mechanical threshers were in limited use in areas of the United States at the time that the Willamette Valley was being settled, threshing machines were generally not an item in the pioneers' inventory of goods brought west by covered wagon.

Horses eventually replaced oxen as the primary "beasts of burden", but both needed to be sheltered. The milk cow(s) and calves were probably also housed in the barn. Separate stock barns were probably erected on farms where livestock, such as horses, were the focus of the operation. Otherwise, apparently in the early years of settlement, cattle and sheep required little in the way of shelter.

Andrew Kirk, son of Riley Kirk, noted that his father's first home on the Calapooia was "made merely by building a rail pen beneath a wide-spreading white fir tree...Such a shelter was common in those days. Besides using fir trees for houses, it was still more common to use them for barns."¹⁶ With the first

¹⁴ Olsen, 1982, pp. 64-65.

¹⁵ Oregon Agricultural Experiment Station, 100 Years of Progress: The Oregon Agricultural Experiment Station Oregon State University 1888-1988, (Corvallis, Oregon: Oregon Agricultural Experiment Station), College of Agricultural Sciences, Oregon State University, 1990, p. 1.

¹⁶ Haskin, Leslie L., "Interview with Andrew Kirk," W.P.A. Oral History Project, Linn County, Oregon, n.d.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 4

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

acreage cleared and planted came the need for a structure to store crops. Log barns and/or granaries were sometimes built as a temporary solution until a timber frame barn could be erected. Leander Kirk noted that his father "had an old log granary near his house."¹⁷

The timber frame barn was built several years after a claim was taken as a more permanent solution to the needs of threshing, storing grain and hay, and sheltering animals. "Almost all of the material for an early barn could come right off the farm....There were few farms that did not have stands of timber, even of first growth fir."¹⁸ Several descriptions of early barn construction in Linn County have been recorded. John McCoy's construction of a frame barn on his claim is described by J. Fred McCoy:

The frame timbers of this barn were hewn out of native forest trees with a broad-axe, the weatherboarding and roof was of clapboards.¹⁹ It had a roomy floor in the center in which the grain was tramped out, both cattle and horses being used for that purpose -for some years, and until threshing machines were brought into the country.²⁰

John L. Wigle, whose family settled east of Harrisburg, recalled that:

In 1853 and 1854 we built us a good commodious and comfortable hewn log house as fine a house as there was in the neighborhood and in 1858 we built us a log barn which still stands. For a foundation we went to the near by mountains and brought the heavy...rocks some of them were too heavy to load on the wagon and we dragged them. Frank Pierce has and will always have a good foundation under his barn and a good stone for his stable door to open against, I brought that rock from out of our grain field. Elisha Whitley came to see us when we were getting our barn timbers. He and I done the scoring and father the hewing....This work by Whitley was given on his contract with father for bringing him to Oregon and I do not think there was another one of the hands of the company who ever paid anything.²¹

Timber frame, post and beam construction dominated barn building in Oregon in the 19th century. Timber

¹⁷ Haskin, Leslie, L., "Interview with Leander Kirk," W.P.A. Oral History Project, Linn County, Oregon, 1939.

¹⁸ Dole, p. 92.

¹⁹ Clapboards may refer to shakes. Zachariah Bryant, a local barn builder noted that "Where I came from in Indiana the shakes was called clapboards." From: Bryant, Zachariah T., "An Unpublished Autobiography of a Carpenter/Builder and Civil War Soldier," Written and Transcribed in 1935, p. 40.

²⁰ McCoy, J. Fred, "A Biography of John McCoy with a Brief History of Linn County, Oregon," (Albany, Oregon: Richard R. Milligan), March 1983, p. 11.

²¹ Haskin, Leslie, L., "John L. Wigle Interview," W.P.A. Oral History Project, Linn County, Oregon, n.d.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 5

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

frame barns incorporated mortise and tenon joints to connect posts and beams. Timbers 60 feet in length were observed in Linn County Barns of this period. Although splicing timbers in early barns was not often required, pegged scarf joints of various types were used to splice timbers extending in the same direction and requiring great lengths such as sills, plates, and purlin plates.

Locally, the substructures of timber frame barns often consisted of perimeter frames of sill timbers connected by a number of transverse timbers, and, depending upon the size and design of the barn, by longitudinal girder(s). Floor joists were often peeled logs flattened on the upper surface and notched or mortised into the sill and the other base timbers. In several extent Linn County barns the logs were not peeled. Base timbers rested on footings of either large boulders from a nearby creek or sections of cedar or oak trees, sometimes two or three feet in diameter.²²

The simplest timber frame bents have an "H" configuration. A modification of this design adds an integral lean-to on one or both sides. Narrow barns, 24' or less in width, often have rafter pairs which are unsupported at mid-span. Wider timber frame barns often incorporate purlin plates, longitudinal timbers which provide the rafters with additional support between the plate and the ridge. Purlin posts are uprights which extend from the top of the tie beams to the purlin plates. These posts are either upright, in the Queen post mode, or are canted.

The roof structure often consisted of common rafters, either sawn or pole, which met at the peak and joined without an intervening ridgepiece. Locally, rafters observed in early barns were often 3" in width. Rafters, which sometimes tapered toward the lower end, were inserted into rafter seats and pegged or nailed to the plate. Sheathing material for the roofs of early barns often consisted of wide, rough-sawn boards with the outer edges retaining their bark resulting in a waney-edge. Laid longitudinally over the rafters, these boards were arranged in rows, usually several inches apart, and served as sheathing to which wood shingles or shakes were nailed.

The barn's frame was enclosed with an application of vertical boards. The siding was sash or rough sawn and of irregular widths sometimes up to 24 inches.²³ Several early barns observed in Linn County had grooved plates and sills to receive the siding thereby limiting nail use. Gable ends, because of the additional height, sometimes required separate boards for wall and gable. "A space of approximately one inch between boards allowed air circulation to promote the drying of grain or hay. Where the barn housed animals, especially horses, open spaces in stable areas were sometimes covered by wood battens to reduce

²² Dole, Philip, "Farmhouses and Barns of the Willamette Valley," in Space, Style, and Structure: Building in Northwest America, Ed. Thomas Vaughan and Virginia Guest Ferriday, (Portland, Oregon: Oregon Historical Society), 1974, p. 92.

²³ Dole, p. 89.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 6

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

drafts.²⁴ In early Linn County barns, shakes may sometimes have been used for the exterior cladding.²⁵

The earliest timber frame barns incorporated hewn timbers for the larger structural members such as sills, posts, tie beams, plates, and purlin plates. Locally, timbers used in early barns were generally of fir, irregular in size with little standardization from barn to barn except that timber dimensions ranged between 8" to 15" for posts and beams. Special members, such as a swing beam, could have larger dimensions. Smaller members, like the braces, were often sawn. "Smaller logs of lesser length and diameter were unsuited for hewing. Some builders chose to leave these lighter-weight pieces in their natural rounded state. However, their portable size also allowed for wagon transport to a nearby sawmill, where they could be processed by water-powered vertical saws into uniformly dimensioned support beams."²⁶ While hewn timbers were incorporated in many pioneer barns, sawn timbers were sometimes used after the establishment of local sawmills in the 1850s. Generally, the sawn timbers had dimensions ranging between 8" and 10". Even if sawn timbers were used, often the longer timbers, such as those used for the sills and tie beams, were hewn so it is not unusual to see both sawn and hewn timbers used contemporaneously. Sawn planks in early barns are sometimes stub-shot where the end of the sawn plank has been split from the log.

Locally, glazed windows were generally not used in early barns. Instead, "Hundreds of narrow gaps between boards provide dim interior light, as well as ventilation..."²⁷ Early barns were usually unpainted. Roller doors were in use in the eastern United States as early as 1855.²⁸ Doors observed on extant barns of this period in Linn County, however, were hinged with the wagon doors double-leaf. A standard post was often located in the center between the leaves. Mortises in the sill and the door girt held the post in place. Hardware such as pintles, strap hinges, hasps and latches was hand forged. Wood dowel harness holders were often drilled into posts and side girts in the horse stable and often can identify areas used for this purpose when other evidence such as stalls have been removed.

Flooring consisted of wood planks. The widths of these planks were often irregular predating the availability of standardized lumber. Tightly laid plank surfaces on the threshing floor prevented the passage of any threshed grain between the boards. Most barn builders laid single-layer floors with two-inch-thick

²⁴ Calkins and Perkins, pp. 50-51.

²⁵ Haskin, Leslie, L., "Interview with John Wigle," W.P.A. Oral History Project, n.d.

²⁶ Calkins, Charles and Martin Perkins, "The Three-Bay Threshing Barn," Barns of the Midwest, Ed. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, p. 47.

²⁷ Dole, p. 89.

²⁸ *Improvement in Barns*, The England Farmer, (Boston: Joel Nourse, Quincy Hall), Vol. 7, 1855, p. 540.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 7

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

planks that could withstand the constant pounding. Other farmers constructed special threshing surfaces of two board layers running perpendicular to one another or with their joints overlapped.²⁹ Another joinery technique used a tongue-and-groove connection between boards. "Builders often cut grooves into both sides of every board and then inserted a narrow tongue. This produced a threshing floor of well-fitted joints which, when individually spiked into the joists, created a permanently tight floor system."³⁰

Nail use was limited in early barns. When nails were used, they were commonly machine cut (square). Handwrought nails and spikes were also observed in early Linn County barns but often in non-structural situations.

In the 1860s, hewn timbers and sawn timbers continued to be used for barn construction but the increasing availability of standardized lumber provided siding and flooring of regular dimensions. This lumber was available in more locations of the county as the number of sawmills increased.

II. Cash Crop: Wheat Production and Expanded Agricultural Markets in Linn County, Oregon, 1871-1899

By 1870, harvesting grain with a cradle had become a technique of a by-gone era as wheat became a specialty crop in Linn County and vast acreages replaced the pioneer's 20-acre field. The greatest increase in wheat production in Western Oregon occurred in the 1870s.³¹ Linn County's wheat production increased 250% in the period from 1868 to 1875.³² In 1876, it was reported that Linn County exported more grain than any other region of the same size west of the Rocky Mountains.³³ The substantial increase in wheat production was a consequence of the construction of the first railroad in Linn County, the expansion of the wheat trade to foreign markets, and the agricultural transformation wrought by a series of mechanical innovations. "From the 1860s farming operations were affected by a series of inventions arriving in fairly rapid succession and made available by the new railroads."³⁴ Among these devices were

²⁹ Rikoon, J. Sanford, Threshing in the Midwest, 1820-1940, (Bloomington, Indiana: Indiana University Press), 1988, p. 10.

³⁰ Calkins and Perkins, p. 56.

³¹ Halbakken, David, A History of Wheat Growing in Oregon During the Nineteenth Century, (Eugene, Oregon: M.A. Thesis, University of Oregon), 1948, pp. 117-118.

³² Boag, Peter Guy, The Calapooian Matrix: Landscape and Experience on a Western Frontier, Doctoral Dissertation, University of Oregon, Eugene, Oregon, 1988, p. 249.

³³ Haskin, Leslie L., Agriculture File, Historical Records Survey, Work Projects Administration.

³⁴ Dole, Philip, "Farmhouses and Barns of the Willamette Valley," in Space, Style, and Structure: Building in Northwest America, Ed. Thomas Vaughan and Virginia Guest Ferriday, (Portland, Oregon: Oregon Historical Society), 1974, p. 211.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 8

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

mechanical hayforks, portable horse-powered threshers, gang plows, seeding drills, headers, hayrakes, which stacked hay in windrows, and hayloaders, which transported hay from the windrow to the wagon.³⁵

The decade from 1870 to 1880 was one of marked development in Linn County.³⁶ There was a population increase of 4,000 and grain production doubled.³⁷ The number of farms in Linn County increased throughout this period: By 1880, there were 1,528 farms. This augmentation probably reflects the increase the amount of land cleared or drained for agricultural production, the division of donation land claims as the offspring of the pioneers reached maturity, and the diversification of agriculture toward the end of this period. While some farmers replaced or augmented smaller pioneer barns on existing farms, others remodeled the pioneer barn by raising the roof line. This could be accomplished by raising the plate. This alteration was observed on a number of Linn County pioneer barns. In the subsequent decade, the number of farms increased by 183, with the average farm 244 acres in size.³⁸ Although the number of farms grew by 706 in the decade from 1890-1900, the average farm size decreased to 203 acres. One author has noted that the last decade of the century was one during which the farmers of Linn County made slow progress.³⁹ This is partially attributed to the Panic of 1893.

In 1871, the Oregon and California Railroad completed a north-south line through Linn County. Along this line, which was extended to California by Southern Pacific in 1887, a number of towns, which functioned as grain shipping points and regional trading centers, developed. Included were the present day Linn County communities of Millersburg, Tangent, Shedd and Halsey. Grain elevators were constructed along the railroad tracks; some, like the Farmer's Union Warehouse in Shedd, were financed cooperatively by area farmers. In 1880, the Oregonian Railway Co. completed its line through Linn County to the east of the O. and C. line. Communities on this line included Shelburn, West Scio, and Brownsville. In 1880 the Albany-Lebanon Railroad built a line from the O. and C. line in Albany to Lebanon. A large grain warehouse was erected along the tracks in Lebanon.

By 1884, Linn County wheat production surpassed 1 million bushels.⁴⁰ Markets included England, British

³⁵ Hurt, R. Douglas. American Farm Tools. (Manhattan, Kansas: Sunflower University Press), 1982.

³⁶ Olsen, Charles Olaf, History of Linn County, Oregon, Work Projects Administration Writer's Program, Reprinted by L.M. Wheeler, 1982, p. 65.

³⁷ *Ibid.*

³⁸ *Ibid.*

³⁹ Olsen, p. 66.

⁴⁰ Halbakken, 64.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 9

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Columbia and China and, at the turn of the century, Japan and Europe. With the increasing value of wheat, the amount of land in agricultural production also increased. James Worth Morgan recalled when the whole neighborhood in the vicinity of what was later Halsey "was a wheat field".⁴¹ For farmers, markets became as close as the distance to the railroad station or steamboat landing. One source noted that the county had the best shipping facilities of any county in the state: "Linn County farmers have a boat landing or railroad shipping station from 1 to 5 miles from home."⁴² Locally, the number of gristmills also increased with a gristmill located in most Linn County communities.

In 1897, Linn County had the top yield of wheat in its history with 1,252,620 bushels produced. By this time, however, the results of monocropping were evident as yields declined, and there was a period of economic malaise between the years of 1890 and 1900. It was during this period that the seeds of diversified farming were sown. An 1895 promotional brochure stated that, "Owing to the large yields of wheat that has been raised to the exclusion of other crops, this has made it impossible to break up the large farms for reasonable prices. Low prices of wheat for some years has caused a change and now prunes, apples, pears, and small fruits are being produced more largely than ever before and a large acreage of hops has been planted."⁴³ The brochure further noted that Linn County was especially adapted to diversified farming with more acreage in cultivation than any other county in the Willamette Valley.⁴⁴

During the late 19th century, dairying also established an economic foothold. The 1895 Linn County promotional brochure stated that stock growing and dairying, "Are coming into prominence lately and with the Silo and Green Soiling a small Dairy will be a valuable adjunct of even the small valley farm; but it is in the rolling hills of the eastern central part that Stock raising and Dairying will reach perfection owing to the cheap, good land and abundance of pure flowing water."⁴⁵ In 1890, Dr. S.M. Babcock invented a method of determining the butterfat content of milk. This test resulted in dairy herd improvement on farms throughout the county since prior to the development of the Babcock test, little was known regarding the comparative value of dairy cows.⁴⁶ At about the same time, another important development for the dairy farmer was the hand or farm separator which allowed the farmer to separate the skim milk from the cream

⁴¹ Haskin, Leslie, L., "Interview with James Worth Morgan," W.P.A. Oral History Project, Linn County, Oregon, n.d.

⁴² Anon, "Pointers 1895. Linn County, Oregon. Facts Briefly Stated," 1895, p. 8.

⁴³ Anon, p. 2.

⁴⁴ *Ibid*, p.7.

⁴⁵ *Ibid*, p.6.

⁴⁶ Pirtle, T.R., History of the Dairy Industry, (Chicago: Mojonner Bros. Company), 1926, p. 79. (Reprinted 1973, Scholarly Resources, Inc.)

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 10

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

on the farm. In 1898, Southern Pacific Railroad began a 'dairy campaign' to promote the Willamette Valley as a dairying region. The success of this campaign, which enlisted the cooperation of Oregon Agricultural College, was manifest in the following decade.⁴⁷

During this period, agricultural improvement as an outcome of scientific investigation was advanced by the passage of the Hatch Act. As a result, on February 25, 1889, Governor Sylvester Penney signed legislation establishing an Agricultural Experiment Station at Oregon Agricultural College under provisions of the Hatch Act. "By 1890, Station publications were covering a wide range of subjects, most of them centered on helping farmers solve problems of raising hogs, controlling weeds, irrigating pastureland, improving soils, selecting the right varieties, and constructing useful buildings."⁴⁸ In order to disseminate this information, Farmers' Institutes held in Oregon and around the United States were held. In 1893, nine Farmers' Institutes were held in Oregon.⁴⁹ Agricultural education was also promoted by the Grange movement founded in 1867 as the National Grange of Patrons of Husbandry.⁵⁰ In Linn County the first granges were organized in the early 1870s with a single grange generally serving an area equivalent to a township.

Barn design was affected by a number of factors in the period after 1870 including: a demand for increased storage space, a corollary of increased agricultural production driven by expanding markets and technological advances in machinery for planting and harvesting; the development of hay hoisting devices which permitted higher barns; increased numbers of stall-housed horses, especially draft horses, and dairy cows; and the dissemination of information on barn design which, in addition to technological and practical considerations, accentuated style and appearance. One technological advance which impacted the spatial organization of the barn was the widespread adoption of threshing machines which eliminated the need for the threshing floor in the barn and, at the same time, increased the need for grain storage.

Perhaps the most profound change in Linn County barns during this period was barn form. The low profile

⁴⁷ Malboeuf, C.A., "The Railroad's Part in the Dairy Industry," Report of the 1909 Dairy Convention, on file Oregon State University Archives, pp. 39-40.

⁴⁸ Oregon Agricultural Experiment Station, 100 Years of Progress: The Oregon Agricultural Experiment Station Oregon State University 1888-1988, (Corvallis, Oregon: Oregon Agricultural Experiment Station), College of Agricultural Sciences, Oregon State University, 1990, p. 12.

⁴⁹ *Ibid*, p. 20.

⁵⁰ Butterfield, Kenyon L., Chapters in Rural Progress, (Chicago, Illinois: The University of Chicago Press), 1913, p. 139.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 11

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

barn vanished from new construction, replaced by a barn with a high ridge and high eaves.⁵¹ The transfiguration was largely wrought by the mechanical hayfork. Horse-powered "pitchforks" were available in the early 1860s with the first patent was issued for a harpoon hayfork in 1864.⁵² No matter the type, the fork was usually attached by rope to a pulley mounted on a cross piece in the center of the loft.⁵³

In 1867, William Loudon obtained a patent for his hay carrier which added a steel track and carrier for the hayfork. "The superiority of the hay carrier with its wooden track fixed to the roof rafters led to the quick replacement of the old horse hay-fork..."⁵⁴ The Loudon equipment magazine of 1916 noted that William Loudon was popularly known as "The Man Who Made High Barns Possible."⁵⁵

The hay carrier required that there be no obstructing cross beams in the way to interfere with the fork's operation. So with the increase in the height of the barn, there was also a change in bent configurations. "The mechanical fork was suspended from a track secured under the ridge and, to allow unimpaired movement of the fork loaded with hay, it was necessary to get rid of the cross girts or at least to lower them; raising the ridge - and the height of the barn - helped to achieve the desired clearance."⁵⁶ Ways in which obstructing tie beams were eliminated included canting the purlin plate posts or removing the tie beam from upright purlin posts. While the bent configurations of these barns resemble the bents of barns from the mid-century, the plates are higher and these barns all have a second level. Most barns of this period, however, eliminated the secondary purlin plate posts altogether by using a post to purlin plate configuration.

The increase in the eave height reflected the altered interior arrangement of the barn which bore little resemblance to the pioneer barns of only a decade or two before. The hayfork and the need for additional hay storage led to the proliferation of the two level barn. "A radical change occurred in the interior, for it became two separate floors: a low ceilinged ground floor for stock...; the haymow on the upper floor

⁵¹ Dole, Philip, "Farmhouses and Barns of the Willamette Valley," in Space, Style, and Structure: Building in Northwest America, Ed. Thomas Vaughan and Virginia Guest Ferriday. (Portland, Oregon: Oregon Historical Society,) 1974, p. 211.

⁵² Shannon, Fred A., The Farmer's Last Frontier: Agriculture 1860-1897, (New York: Farrar & Rinehart, Inc.), Volume V, The Economic History of the United States, 1945, p. 133.

⁵³ Soike, Lowell J., "Affordable Barns for the Midwest: Beginnings," Barns of the Midwest, Ed. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, p. 87.

⁵⁴ *Ibid.*

⁵⁵ Loudon Machinery Company, Loudon Barn Equipment, (Fairfield, Iowa: Loudon Machinery Company), 1916, p.15.

⁵⁶ Dole, p. 220.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 12

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

reached by ladder or stair, now the dramatic, high-volumed barn space."⁵⁷ At the same time, the threshing floor was no longer needed as portable horse-powered threshers, which bagged grain in the field, were in general use in the 1870s. Some periodicals of the era listed an area for the horse-power as one of the spatial requirements in the construction of a barn.⁵⁸ Grain bins, with an increased capacity, were often located on the first level with the stock.

During this period, a number of journals published advice on barn design and construction. "William Radford's architectural company and the Orange Judd Company began publishing more complete plans and specifications for farm houses, barns, out-buildings, and other farm structures well before the turn of the twentieth century"⁵⁹ A catalogue of rural books published and for sale by the Orange Judd Company was located in the collections of a Linn County resident indicating that these publications were available in Linn County. The literature of this period reveals a growing concern for the appearance of the barn. One author attributes this to the influence of A.J. Downing noting that:

His widely-read book, The Architecture of Country Houses (1850), and those of several other followers initiated a concern among farmers and rural builders for aesthetic considerations in new and remodeled barns. As farmers responded to the growing trend toward specialization and the appeal of scientific techniques during the blossoming Victorian era, their barns were often rebuilt to the predominant contemporary fashion. Simple gable ends became mazes of vergeboard topped by finials; great doors were transformed into cathedral arches. Healthful ventilation, the desideratum of modern farming, was accomplished by capping air shafts with vents or cupolas...⁶⁰

Matched siding, sometimes only on the main facade, glazed windows, and boxed eaves became more common on barns. Frieze boards and corner boards were sometimes employed. In Linn County, a number of barns dating to this period have the gable siding cantilevered slightly over the wall siding. Halsted, in his 1881 Orange Judd publication, Barns, Sheds and Outbuildings, illustrates many barns with ventilation cupolas, windows, gable ornaments and cross gables noting that, "With the increase of wealth, and we may add of good sense and enlarged ideas, among the farmers of the country, there is a gradual but very decided improvement in farm architecture."⁶¹ Wooden ventilation "Cupolas, often in rhythmic multiples, might have been justified in practical terms but no one doubted their ability to turn the eye as well,

⁵⁷ *Ibid.*

⁵⁸ Thomas, J.J., Rural Affairs, Vol. IX, (Albany, New York: Luther Tucker & Son), 1881, p. 63. (Reprint of Rural Affairs for 1879-1880-1881.)

⁵⁹ Harper, Glenn A. and Steve Gordon, "The Modern Midwestern Barn, 1900-Present," Barns of the Midwest, Ed. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, p. 230.

⁶⁰ Rawson, Richard, Old Barn Plans, (New York: Bonanza Books), 1982, p. 14..

⁶¹ Halsted, Byron D, Barns, Shed and Outbuildings (Reprint of 1881 edition originally published by O. Judd Co.), (Brattleboro, Vermont: The Stephen Greene Press), 1977, p. 13.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 13

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

particularly when they were dressed with gingerbread brackets and a splendid weather vane"⁶² Only several barns from this period in Linn County retain their wooden ventilation cupolas although it is clear from discussions with local farmers that many barns were once crowned with these elements.

Barns of this period generally have higher eaves, a higher ridge, and a steeper roof pitch than barns of the pioneer period. Often the roof line is unbroken, with the pervasive form being the single rectangular volume for two level barns. In addition to the design and functional differences which distinguish the pioneer barn from the barn of the latter 19th century, the barns are also distinguished by a number of differences in construction materials. Timber frame construction with mortise and tenon joinery, however, continued to be used for barns in Linn County in the latter part of the 19th century. All barns recorded from this period during the 1996 survey have a timber frame. The use of hewn or sawn timbers is not necessarily an indicator of age. While the vast majority barns recorded in the 1996 dating to this period had a sawn timber frame, with the 8" x 8" circular sawn timber in common use during this period for major framing members, there are examples of hewn timber frame barns dating to the latter part of the 19th century. For instance, all of the late 19th century barns recorded in the Jordan Valley of Linn County had hewn timber frames. No pole barns from the 19th century were located during the 1996 survey. This may reflect the poor survival rate of pole barns which often had the poles in contact with the ground.

For most barns, the fieldstone foundation was still typical although brick piers were observed for one barn dating to this period. Sawn sills were also commonly employed on barns with sawn frames. Dimensions recorded included 12" x 8", 10" x 10", 8" x 10" and 8" x 8". Circular sawn joists were recorded for the majority of barns dating to this period. Joist size varied, however, with joists as large as 4" x 7" and as small as 2" x 8". The use of puncheon logs was recorded for several barns while hewn joists were recorded for one barn. These barns also had hewn timber frames.

The dimensions of the vertical board siding became more standardized and was often the product of circular saws. Shiplap siding, sometimes applied vertically, was also utilized. Of the 27 barns recorded from this period, 11 have shiplap siding; on six barns this siding is applied vertically, and on five barns it is applied horizontally. Cornerboards and frieze boards were not uncommon. While functional in purpose, ventilation cupolas also were employed for appearance's sake.

The dimensions of flooring, sheathing, and rafters were also affected by the availability of circular sawn lumber. The 2" x 6" common rafter appears to have been frequently used with the 2" x 4" rafter located on several barns which date near the end of the century. The use of waney-edged sheathing boards for the roof was not exclusive to the pioneer era barn but the use of skip sheathing for this purpose became common in the latter 19th century.

Nail use was limited in the framing, with pinned mortise and tenon joints still employed. Machine cut square nails were in general use, although wire drawn (round) nails were probably available beginning in the 1890s locally although many builders preferred using cut nails well into the twentieth century.

⁶² Endersby, Elric, Alexander Greenwood and David Larkin, Barn: The Art of a Working Building, (Boston: Houghton Mifflin Company), 1992, p. 112.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 14

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Steel-track roller doors began replacing hinged doors locally. The majority of barns recorded from this period had at least one roller door, or evidence of a roller door, which appeared to be original. To protect the doors from the weather, a horizontal cap a foot or more in width was recommended.⁶³

While glazed windows were recommended and illustrated in many of the periodicals of the day, window use in Linn County barns during the earlier part of this period appears not to have been common. In lieu of glazed windows, hinged shutters or louvers were sometimes used. In the J.A. Smith horse barn, ventilation and light is provided by sliding sashes with vertical wooden slats; light and ventilation depend upon offset or aligned slats. By the 1890s, windows were used in some barns to illuminate the livestock aisles. Diamond shaped openings in the gables were also observed on a number of barns built around the turn-of-the-century.

Based on the 1996 survey of Linn County barns, barns in this period generally incorporated a wagon drive from which the hay wagon could be unloaded to lofts on either side of the drive. For interior unloading, "... the hay wagon was driven into the barn and unloaded by mechanical fork there. This required the old type of high open central wagon drive, but otherwise it, too, was floored over for a second story devoted entirely to hay storage."⁶⁴

III. Transition: Agricultural Diversification, 1900-1919

In 1905, Portland led the nation in the exportation of wheat.⁶⁵ Although much of this wheat came from eastern Oregon and Washington State, Linn County was second in production in Oregon in 1900.⁶⁶ By then, however, yields had decreased because of soil depletion from years of raising wheat. "The initial development of agriculture was drawing to a close by the turn of the century."⁶⁷ The isolation of rural communities was moderated and the exchange of information was facilitated during this period by the rural free mail delivery system, the telephone, the Good Roads Movement, and the Oregon Electric, an interurban electric railroad constructed in 1912 which enabled the farmer to ship farm products to cities on a daily basis.

Local agriculture began to diversify after the decline of the wheat market, and the period between 1900 and

⁶³ Thomas, J.J., Rural Affairs, Vol. VI, (Albany, New York: Luther Tucker & Son), 1889, p. 76. (Reprint of Rural Affairs for 1870)

⁶⁴ Dole, p. 220.

⁶⁵ Halbakken, David, A History of Wheat Growing in Oregon During the Nineteenth Century, (Eugene, Oregon), M.A. Thesis, University of Oregon, 1948, p. 72.

⁶⁶ *Ibid.*, p. 146.

⁶⁷ Carey, Charles, History of Oregon, (Portland, Oregon: The Pioneer Historical Publishing Company), 1922, pp.277-78.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 15

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

1910 saw an upswing.⁶⁸ The number of farms in Linn County grew from 2,417 at the beginning of this period to 3,041 at the end of this period.⁶⁹ Smaller farms could accommodate fruit and vegetable production, poultry production, and dairying which became important economic pursuits in Linn County. Field crops also were diversified. The M. C. Jenks Family who lived near Tangent during this period reflected this diversification. A daughter recalled that the family "...produced diversified crops: wheat, oats, barley, hay, apples, cherries, hogs, cream, milk, and eggs."⁷⁰

Dairying became much more important in Linn County and the state, reportedly due in part to the successful "dairy campaign" begun in 1898.⁷¹ This campaign was continued during the early years of the century by Southern Pacific Railroad. The company reduced rates on the shipment of high-bred stock into the region; worked closely with Oregon Agricultural College, bringing farmers to Corvallis to attend Farmers' Institutes; established reasonable rates for the transport of milk cans; and operated demonstration trains through the state from which Dr. Withycombe of Oregon Agricultural College lectured to farmers.

The formerly simple system of milk production for family use and sale within the community began to shift to a complicated industry in which milk was shipped long distances, the milk from many herds mixed together and divided among customers.⁷² "This change in the marketing system occasioned by the change from a rural to an urban economy brought into existence many new problems, the most important of which was milk sanitation."⁷³ In 1905, Oregon began differentiating milk produced for fluid consumption from milk produced for butter and cheese. This led to the distinction between a Grade A dairy and a Grade B dairy. Sanitary requirements for the production and handling of milk for the fluid trade were much more rigid, and persons maintaining cows for the purpose of fluid consumption in cities of 10,000 or more had to apply annually for a certificate of inspection. This certificate could be revoked if proper sanitary conditions were not maintained in the stables, buildings, or grounds where the cows were kept.⁷⁴

Dairying led to a greater diversity of products than any other branch of farming due to the requirement for forage feed. Clover and vetch, which enrich the soil, were grown, and crop rotation created good pasture

⁶⁸ Olsen, Charles Olaf, History of Linn County, Oregon, Work Projects Administration Writer's Program, Reprinted by L.M. Wheeler, 1982, p. 66.

⁶⁹ U.S. Agricultural Census, Linn County, Oregon, 1900, 1910, 1920.

⁷⁰ "On the Farm," Albany Democrat Herald, Albany, Oregon, Friday, March 26, 1993, p. 34.

⁷¹ Malboeuf, C.A., "The Railroad's Part in the Dairy Industry," Report of the 1909 Dairy Convention, on file at Oregon State University Archives.

⁷² Sitton, G.R., "Evolution of Public Regulation of the Market Milk Industry in Oregon," (Corvallis, Oregon: Oregon State College, Agricultural Experiment Station), Circular of Information No. 252, December 3, 1941, p. 4.

⁷³ *Ibid.*, p. i.

⁷⁴ *Ibid.*

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 16

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

for sheep and cattle. Creameries were established in many Linn County communities and in nearby Corvallis and Stayton. In 1907, the Linn Condensed Milk Co. was incorporated, and, in 1910, the Scio Condensed Milk Co. was incorporated.⁷⁵ During the peak days of the company, Scio was referred to as the "Dairy City of the Willamette Valley".⁷⁶ During this period farmers could also sell their milk to several cheese factories in Linn County; two of them were located near Scio.

In 1908, The first cow testing association in Linn County was organized at Peoria. The association was formed to test cows to generate scientific data on milk and cream production at various times of the year. By December 1908, there were five associations in Oregon with three in Linn County centered in Peoria, Shedd, and Crabtree.⁷⁷ This is of note since a book entitled the History of the Dairy Industry, published in 1926, states that the first cow-testing association in the United States was organized only three years earlier, in 1905, in Michigan and that the first testing began in 1906. In 1940, there were only forty such associations in the United States.⁷⁸ Apparently, Linn County was progressive in this area.

The 1910s were extremely prosperous as war-torn Europe demanded American agricultural products. From 1914 to 1919, overall crop prices more than doubled. As a consequence of this boom, a contemporary publication noted that:

Development in farm buildings in the years since 1910 has been rapid and continuous. Farming communities have become prosperous, and since the fundamental improvements of clearing, drainage and tillage have been largely accomplished, more money is available for buildings. Land values have risen, and the owner is now justified in putting more improvements on the farm.⁷⁹

In 1916, the Federal Farm Loan Act was passed. The Farm Loan banks created by this act were authorized to lend sums at a low interest to cooperative farm-loan associations on the security of farm lands and buildings.

World War I also led to a worldwide shortage of horses. As early as 1915, *Scientific American* predicted that an "enormous drain on America's horse supply...will hasten the adoption of tractors hitherto accepted

⁷⁵ Articles of Incorporation, Linn County, Oregon, Vol. 2.

⁷⁶ Bates, Carol, Scio in the Forks of the Santiam, (Gates, Oregon: Susan Gauderman, Gates Graphics), 1989, p. 209. Bates, p. 209.

⁷⁷ Report of the 1908 Dairy Convention, pp. 49-50.

⁷⁸ Pirtle, T.R., History of the Dairy Industry, (Chicago: Mojonner Bros. Company), 1926, p. 69. (Reprinted 1973, Scholarly Resources, Inc.)

⁷⁹ Foster, W.A., and Deane G. Carter, Farm Buildings, (New York: John Wiley and Sons), 1922. p. 2.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 17

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

with some hesitation."⁸⁰ In the period prior to World War I, tractor makers experimented with basic design concepts.⁸¹ Ford began mass-producing the Fordson tractor during the war, and mass-production combined with a price war between Ford and Harvester, "lowered the price of tractors to the point where a tractor cost 'less than the price of a good team of horses'".⁸² Fordsons were of questionable value, however, because of their inability to be used on row crops, and because they were too large and too expensive for smaller farms.⁸³

While the gasoline-powered tractor was still a few years in the future for most farmers, threshing and similar jobs created a market for a large number of steam engines in agriculture between 1885 and about 1920, with steam power at its peak in 1910.⁸⁴ A photograph of a Barrett Bros. threshing crew, taken in 1902, illustrates a steam-powered tractor driving the belt for a threshing machine.⁸⁵ Small portable combustion engines made their debut in the early 20th century.⁸⁶ In 1914, Blatchford Bros. of Shelburn advertised the Sterling thresher combined with an I.H.C. gasoline engine. The advertisement pointed out: "When threshing is over, you can dismount the thresher and mount a saw in its place. Or, you can belt the 4 or 6-horse power engine to a pump, corn sheller, grinder, etc."⁸⁷

During this period, agricultural education was promoted by several pieces of legislation. By 1902, 2,700 Farmers Institutes around the nation had attracted 800,000 farmers and their wives. These institutes eventually led to the establishment of the Cooperative Extension Service. The Oregon Extension Service was established in 1911, and, in 1914, the Smith-Lever Act gave major congressional support to extension work throughout the United States.⁸⁸ This act provided for the expansion of agricultural extension work

⁸⁰ Williams, Robert, C., Fordson, Farmall, and Poppin' Johnny: A History of the Farm Tractor and Its Impact on America, (Urbana and Chicago: University of Illinois Press), 1987, p. 43.

⁸¹ *Ibid.*, p. 86.

⁸² *Ibid.*, p. 55.

⁸³ *Ibid.*

⁸⁴ *Ibid.*, p. 10.

⁸⁵ "Barrett Bros", Albany Democrat Herald, Friday, March 26, 1993, p. 36.

⁸⁶ Williams, pp. 35-36.

⁸⁷ The Stayton Mail, April 30, 1914.

⁸⁸ Oregon Agricultural Experiment Station, 100 Years of Progress: The Oregon Agricultural Experiment Station Oregon State University 1888-1988, (Corvallis, Oregon: Oregon Agricultural Experiment Station), College of Agricultural Sciences, Oregon State University, 1990, p. 24.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 18

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

under the direction of the state agricultural colleges.⁸⁹ The Smith-Hughes Act, passed in 1917, encouraged the teaching of agriculture in high schools.⁹⁰ In addition to providing crop and livestock information, "The extension service departments of most agricultural colleges and college departments of rural economics or farm management, agricultural engineering or farm mechanics, and horticulture or landscape architecture also offered advice on the arrangement of farm building groups."⁹¹

It was now more common for farmers to have had training at a state agricultural college; at this time, Oregon Agricultural College in nearby Corvallis was the largest agricultural college in the United States in proportion to state population.⁹² The daughter of M.C. Jenks recalled that:

After attending Oregon Agricultural College, now Oregon State University, Jenks liked to try progressive farming methods such as spraying, fertilizing and experimenting with new crops. He bought the first land plaster machine in the Tangent area....land plaster contained sulfur and was used as a stimulus for legumes like the clover crop Jenks grew to return nitrogen to the soil. By loaning the land plaster machine to his neighbors, Jenks contributed to the soil enrichment program throughout the area.⁹³

Between the turn of the century and the end of World War I, barn building in Linn County was also in a transitional phase. During this period, barn construction and design began to shift from vernacular designs to standardized designs that were disseminated nationwide. While some farmers adopted modern, lighter framing techniques, others continued to build conventional timber frame barns. There also appears to have been a good deal of experimentation in the interpretation of new barn building concepts. It has been suggested that, "If a single theme characterizes twentieth-century barn construction, and agriculture in general, it was experimentation."⁹⁴

Factors contributing to change in Linn County barn design during this period included: lighter framing systems and the adoption of the gambrel roof; the rise of dairying as a primary economic pursuit; the incorporation of the hay hood in barn design; greater exposure to new ideas disseminated by the extension service, agricultural experiment stations, farm periodicals, and pattern books; and the proliferation of mail-order farm equipment companies.

⁸⁹ Harper, Glenn A. and Steve Gordon, "The Modern Midwestern Barn, 1900-Present," Barns of the Midwest, Ed. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, p. 229.

⁹⁰ *Ibid.*

⁹¹ *Ibid.*

⁹² Klock, p. 39.

⁹³ "On the Farm", Albany Democrat Herald, Albany, Oregon, Friday, March 26, 1993, p. 34.

⁹⁴ Harper, Glenn A., and Steve Gordon, "The Modern Midwestern Barn, 1900-Present," Barns of the Midwest, Eds. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press, 1995), p. 213.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 19

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

It has been observed that, "With few exceptions engineers and researchers at agricultural experiment stations had ignored the study of barns and their improvement during the nineteenth century. Farm structures began attracting some interest, however, during the opening decade of the new century, stimulated in part by the studies of Franklin H. King of the Wisconsin Agricultural College and Experiment Station."⁹⁵ During this period the Regional Plan Service was developed through the cooperation of a number of federal and state agencies. The plan service of each region was conducted cooperatively by the United States Department of Agriculture, the state extension services, and, in some states, by the Agricultural Engineering Departments of state colleges. Two stated purposes were the standardization of farm building construction in a given geographical area, and the dissemination of plans and information on farm building construction.⁹⁶ One writer noted: "Thus a farmer who wants a plan for a particular farm building can consult the catalogue in his county agent's office, and through the county agent, order the standard plan from the state extension service."⁹⁷

In addition to plans provided by educational organizations, there was a proliferation of agricultural journals, pattern books, mail-order catalogs, and other product dealer and manufacturer promotions.⁹⁸ In 1914, the James Manufacturing Co. advertised its barn planning service. A free barn building book was also offered.⁹⁹ Barns were a major part of the sales operations of two Iowa firms -- the Loudon Machinery Company and Gordon-Van Tine company.¹⁰⁰ "Louden began its self-proclaimed 'first free planning service' in 1907."¹⁰¹ Barns also appeared in Sears, Montgomery Wards, and Aladdin catalogues.¹⁰²

There was also a selection of plan books which included: Barn Plans and Outbuildings by E. Powell (1903); Sanders Publishing Company's Farm Buildings (1907); Modern Farm Buildings by Alfred Hopkins, Orange Judd Company's Barn Plans and Outbuildings, (1907), a slightly updated version of their 1881 plan book; William Radford's Practical Barn Plans, (1909); Farm Structures by K.J.T. Ekblaw (1914); Herbert A. Shearer's, Farm Buildings with Plans and Descriptions (1917); and Armstrong H. Robert's, The Farmer His Own Builder (1918).

⁹⁵ Soike, Lowell J., "Within Reach of All: Midwest Barns Perfected," Barns of the Midwest, Eds. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, pp. 157-158.

⁹⁶ Gray, Harold E., Farm Service Buildings, (New York: McGraw-Hill Book Company), 1955. p. 29.

⁹⁷ *Ibid.*, p. 30.

⁹⁸ Harper and Gordon, p. 215.

⁹⁹ The County Gentleman, Jan. 10, 1914.

¹⁰⁰ Soike, p. 158.

¹⁰¹ *Ibid.*

¹⁰² *Ibid.*

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 20

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Perhaps the most noticeable change in barn design during this period was the shift from the gable roof forms of the 19th century to the gambrel roof. The gambrel roof's ascent to popularity was a response to the need for more hay storage, a corollary of increased dairy activity and horse-operated mechanical equipment, and the acceptance of light barn framing. Light framing allowed for braced and trussed roofs that provided overhead storage of hay and feed without interference from supporting members. Data from the 1996 survey indicate that in Linn County the gambrel roof form made its appearance in the first decade of the 20th century and became common in the 1910s. Overall, however, the gable roof still appears to have to been predominate, especially during the first decade of the century.

The variety and combination of barn framing techniques is one of the characteristics of the period 1900-1919. The timber frame, the plank frame, the pole frame, the balloon frame, and the platform frame were all used during this period. Barn building conventions of the 19th century persisted into the early 20th century; timber frame barns predominated at this time. Bent designs varied, with many barns incorporating the same designs used in barns dating to the 19th century. While Wing's joist-frame was promoted nationally in the 1890s, this frame configuration was recorded during the 1996 survey only in barns built in the first decade of the 20th century; however, timbers, rather than the usual plank dimension lumber, were employed.

While the majority of timber frame barns recorded for this period had gable roofs, timber framing was also used for early gambrel-roofed barns. The gambrel roof in a timber frame barn was generally supported by tall timber purlin posts extending from the loft floor to the purlin plate. Early examples in Linn County are not always conventional, however; a number of designs for achieving the gambrel form were employed. Timber framing was also combined with braced rafter and trussed roof designs. By the second decade of the century, the gambrel form was commonly achieved either by the Shawver truss which was a plank truss design, or by a braced rafter system which incorporated light trussing on each pair of rafters.

With the increased need for hay storage, it appears that unloading hay from a wagon on the exterior of the barn became the preferred method in Linn County sometime around the turn of the century. With exterior unloading, the mow floor could be uninterrupted providing additional mow space. A hay hood or hay bonnet is often incorporated on barns where the hay is unloaded from the exterior. Francaviglia (1972) identified five hay hood forms.¹⁰³ In form, they range from no hood, to a simple cantilevered pointed hood, to a boxed-in enclosure. The gable extended form and the peaked form are most common in the period prior to 1920. Boxed forms are also used during this period but were recorded in lesser numbers during the 1996 survey. The survey also verified the north and east elevations as the favored locations for hay hoods. Francaviglia noted that "Loft openings of a disproportionate number of barns in the Willamette Valley face north or east. Farmers have implied deliberate positioning because most rains in this area are accompanied by strong southwesterly winds" ¹⁰⁴

¹⁰³ Francaviglia, Richard V., "Western American Barns: Architectural Form and Climatic Considerations," *Yearbook of the Association of Pacific Coast Geographers*, Ed. John F. Gaines, (Corvallis, Oregon: Oregon State University Press), Vol. 34, 1972, pp.153-160.

¹⁰⁴ *Ibid.*, p. 157.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section E Page 21

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

The prominence of dairying at this time increased the dairy herds in the county with more space allocated in barns for this function. The milk room and milkhous also became common during this period.

During the 1996 survey, barns with transverse arrangements and barns with longitudinal arrangements from this period were found in almost equal numbers. Transverse arrangements from three to six bays were recorded. Three-bay designs usually incorporated a central wagon drive, with cows on one side and horses on the other side. A four-bay plan common at this time had a wagon drive in an interior bay flanked by grain bins. Outer bays were for horse stalls and cow stanchions. Although a similar five-bay plan was recorded, the use of the extra bay was not determined. In the six-bay plan, the extra drive was used for wagon and equipment storage.

A three-aisle barn with a central wagon drive flanked by livestock stanchions, stalls, pens, and grain bins in varying arrangements was a common longitudinal plan. Bank barns having this arrangement also were recorded from this period with the cow stanchions located in the basement level. As would be expected, bank barns in Linn County are generally found only in the hilly portions of the county or in areas where terraces of the Willamette River provide the needed bank.

A four-aisle longitudinal plan, similar to that described for 19th century barns, persisted during this period. Automobile storage was sometimes incorporated into the design. In some barns, a feed aisle replaced the wagon drive, no longer essential when hay was loaded from the exterior of the barn.

Several three-level, non-bank barns were recorded during the 1996 survey. The only access to these barns is on the main level; the second level is gained only by stair or ramp in the interior of the barn.

The only observed barns with overhangs in the county were built in the area south of Stayton during this period. The earliest appears to have been the Michael Ryan Barn built in 1910. Michael Ryan hailed from Pennsylvania and his barn can be classified as a Pennsylvania Barn based on its forebay overhang and plan. The Ryan Barn is the only example of a Pennsylvania Barn in Linn County. A very short distance from the Ryan Barn is the Aegerter Barn. This barn, built in 1915, has a four-sided overhang, a design that may be related to Aegerter's Swiss heritage. The Aegerters hailed from Canton Bern where buildings with four-sided overhangs are common. Also nearby is a barn with two-sided overhangs built by the Sandner Family, a Linn County pioneer family. The overhangs were incorporated into the design of the barn to protect the stable doors from the elements.

Materials and workmanship during the early years of the 20th century mirror the transitional character of barn construction and design at that time. Concrete, plank dimension lumber, wire-drawn nails, and nailed connections were embraced by some builders, while others clung to the traditional materials and workmanship of the 19th century.

In Linn County, the first use of concrete in barn construction appears to date to the first decade of this century. The earliest use may have been for concrete piers that could substitute for fieldstones. During the 1996 survey, a number of barns were recorded dating to the first decade of the 20th century that incorporated concrete piers. The earliest recorded barn with a concrete perimeter foundation and a slab-on-

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 22

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

grade floor dates to 1910. During this period, however, many farmers who adopted the concrete perimeter foundation continued the tradition of a wood floor.

Although some of the literature of the period advocated the plank frame for barn construction, only two plank frame barns were recorded during the 1996 survey.¹⁰⁵ Since timber scarcity was a reason for adopting the plank frame, the apparent scant employment of the plank frame in Linn County may have been related to the locally abundant timber resource. The large number of timber frame barns from this period attests to the availability of timber. Plan books dating to the first decade of the 20th century, such as Radford's Practical Barn Plans (1909), Farm Buildings, published by the Sander's Publishing Co. in 1907, and Barn Plans and Outbuildings published by the Orange Judd Company also in 1907, include numerous plans for timber frame barns. Based on the findings of the 1996 survey, the earliest examples of barns with stud wall framing date to ca. 1910. Barns of this period having the lighter balloon or platform framing also have plank truss roof systems.

While timbers for framing barns continued to be used in the early 20th century, the size of the timbers diminished. The 8" x 8" timber was still used in some barns, but, more commonly barns were constructed with 6" x 8" or 6" x 6" timbers. As the size of the timbers diminished, so too did the use of mortise and tenon joinery. Even when mortise and tenon joinery was used for posts and beams, toenailing was often used for brace and wall girt joints. (Toenailing is the practice of driving nails at an angle into the side of one piece, close to the end, so that they extend into a second member at right angles.) In many cases, mortise and tenon joinery gave way to simpler let-in, lapped, notched or halved joints with nails and spikes replacing wooden pins. In some cases, even when the mortise and tenon joint was retained, the wood pin was replaced by a spike. Pole barns also were being built in the early 20th century, some with mortise and tenon joinery.

Although timbers were generally sawn, several hewn timber frame barns were recorded. The bent configurations of these barns were similar in design to Wing's joist-frame, but with timbers rather than plank dimension lumber. Timbers were connected with mortise and tenon joinery, but the 2" x 7" braces were spiked into place. The hewn posts were 8" x 8".

In the first decade of the 20th century, both wire drawn (round) and machine cut (square) nails were used. Although several Linn County barns dating to the mid-1890s appear to have originally incorporated wire drawn nails, the widespread use of these nails in Linn County barns dates to the first decade of the 20th century. By the 1910s, the wire drawn nail was the standard.¹⁰⁶

Barn siding varied during this period. Generally, timber frame barns had vertical board siding, while barns

¹⁰⁵ There may be other examples. Interiors of approximately 147 barns were recorded and only two plank frame barns were identified in this sample.

¹⁰⁶ During the 1996 survey Only one barn that possibly postdates 1910 was recorded with machine cut nails. The 1912 date of this barn has not been substantiated. At least two barns dating to the first decade of the 20th century had a combination of wire drawn and machine cut nails.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 23

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

with stud wall construction had horizontal siding. Of the timber frame barns recorded during the 1996 survey, approximately two-thirds with vertical siding incorporated battens. Both plain and shaped battens were used during this period. All of the barns surveyed with stud wall construction had horizontal siding, with horizontal drop siding favored. V-match siding was observed on several barns. Two timber frame barns from this period also had horizontal drop siding.

With a greater emphasis on sanitation during this period, new materials were promoted for the interiors of barns used for dairying activities.

The material for the interior surface of the cow barn is selected with a view toward the elimination of all wood. Even in a wooden structure the interior walls can be entirely covered with non-absorbent materials, which render it possible to make a wooden building just as sanitary as one of masonry. To get this result it is necessary that the walls to the height of...4 ft. above the floor...be plastered in Portland cement...forming a cement dado all around the building. This cement dado...is best put on galvanized iron lath. Above this point the walls and ceilings are plastered in the usual manner but finished with some hard substance, such as Keene's cement...All offsets in the plastering should be carefully avoided and 3-in. coves run at all interior angles...¹⁰⁷

Despite this advice, in Linn County many barns continued to have wooden surfaces, although the wood was often whitewashed. Whitewashing provided a surface where dirt could be seen and cleaned.

During this period, a number of items were developed for the barn which made a farmer's work easier, including the litter carrier patented by William Loudon in 1898, and the feed carrier. Farm equipment catalogues during this period advertised a number of products to promote sanitary conditions, including steel stanchions, cow stalls, and gravity water bowls. Steel stanchions with wood linings were also available, supposedly providing more comfort to the cow. While original stanchions have been removed or replaced in many barns, it appears that simple wood stanchions which could be built by the farmer with little expense were the most common in Linn County except in Grade A dairies where wood eventually did not meet sanitation requirements.

There was great concern for proper ventilation. One author noted that: "The simplest way...to get air out of the cow barn without opening the doors and windows is to erect a duct which will go from the floor straight up through the roof...There may and should be two outlet ducts when the number of cows require it..."¹⁰⁸ "Orange Judd (1911) promoted the very latest ventilation technology, the F.W. King system, which controlled the inflow and outflow of air through ventilating tubes regulated by dampers"¹⁰⁹ Metal ventilators were located on the roof ridge at the end of a ventilation shaft. While often supplanting wooden

¹⁰⁷ Hopkins, p. 30.

¹⁰⁸ Hopkins, p. 56.

¹⁰⁹ Harper, Glenn A. and Steve Gordon, "The Modern Midwestern Barn, 1900-Present", Barns of the Midwest, Eds. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, p. 230.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 24

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

ventilation cupolas, the wooden cupola was still being built during this period, sometimes simply for the sake of appearances. Also, some cupola roofs were gambrel in form.

With the new emphasis on the inclusion of glazed barn windows, also thought to promote livestock health, the hinged window ventilator was advertised in many early 20th century catalogues. These galvanized iron shields prevented air from blowing directly on the stock and prevented rain from blowing in. In Linn County, barns of this period have these shields, but they are almost always made of wood and appear to be hand-made rather than ordered from supply houses. In order to prevent drafts, most barn windows used these shields in conjunction with single hopper windows, often with four or six lights. Sometimes, dormers with windows were employed to provide light and ventilation, as well as to improve the appearance of a barn.¹¹⁰

Roller doors were recommended during this period. "Doors built up out of matched flooring are very strong, and if made double thickness with one thickness running at right angles to the other, will prevent warping..."¹¹¹

IV. Standardization and Specialization: 1920-1946

Mechanization, especially the widespread adoption of the tractor, more rigorous standards in dairy sanitation, and the introduction of ryegrass as a commercial crop were among the milestones affecting agriculture and barn design during this time period in Linn County.

Increased mechanization, especially after 1920, created new demands for implement storage facilities and altered traditional barn functions. Most farms changed from a dependence on draft animals to mechanical power, and farmers shifted from general-purpose farming to crop and animal specialization, which increased the demand for highly specialized equipment and facilities designed to meet these new production needs.¹¹²

Agriculture was also affected by two major upheavals during this period: the Great Depression and the Second World War.

By 1921, feverish wartime purchasing had ended; crop prices plummeted, with American farm income

¹¹⁰ Vogeler, Ingolf, "Dairying and Dairy Barns in the Northern Midwest," Barns of the Midwest, Eds. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, p. 105.

¹¹¹ Loudon Machinery Company, Louden Barn Plans, (Fairfield, Iowa: Loudon Machinery Company), 1914, p. 14.

¹¹² Harper, Glenn A. and Steve Gordon, "The Modern Midwestern Barn, 1900-Present," Barns of the Midwest, Eds. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, pp. 224-225.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 25

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

sliding to half the level of the previous year.¹¹³ In the period from 1920 to 1930, the number of farms in Linn County increased only slightly, from 3,041 to 3,074. In the 1930s the country plunged into the Great Depression. Overextended farmers were faced with foreclosure. The policies of the New Deal had a profound affect on agriculture. The New Deals's Agricultural Adjustment Acts (1933-1938) paid farmers to curtail production in order to reduce surpluses and thus raise prices. The Farm Credit Administration (FCA), established in 1933, provided short and long term credit to farmers that could be used, among other purposes, to acquire the necessary machinery. During the Depression, "...financial institutions and insurance companies found themselves in possession of even more land after many farmers...were forced to default on their mortgages...Equitable Life Assurance Society seized thousands of acres ...farming while it awaited an upturn in real estate prices."¹¹⁴ At the same time, there was a substantial increase in the number of farms in Linn County during the early 1930s: The number of farms grew from 3,074 to 3,849 in the five-year period, 1930-1935. This increase in farms reflects a regional surge in population due, in part, to the exodus of framers from the dust bowl. The early 1940s once again saw great demand for agricultural products as the Second World War raged.

Just as experimentation was a hallmark of early 20th century agriculture and barn construction, the desideratum of this period was to be modern. "The agricultural press, land grant colleges, and farming societies all urged the farmer to be 'modern'".¹¹⁵ Being modern meant adopting labor-saving equipment. And for many, being modern meant owning a tractor. "In one generation between 1920 and 1950, most farms in the United States changed from dependence on draft animals to dependence on mechanical power."¹¹⁶

"Gasoline tractors were not common until the early 1920s, and were at first used largely for plowing and other heavy tillage operations."¹¹⁷ In 1924, the row-crop tractor was introduced. "The introduction of a successful general-purpose tractor marked the end of an era."¹¹⁸ By the thirties, farm specialization and farm tractor numbers were both growing. The tractor discouraged diversification because "The more diversified a farm was, the more specialized equipment it required..."¹¹⁹

Before farmers brought tractors, they had to use about one-quarter of their land to feed their horses

¹¹³ Williams, Robert C., Fordson, Farmall, and Poppin' Johnny: A History of the Farm Tractor and Its Impact on America, (Urbana and Chicago: University of Illinois Press), 1987, p. 71.

¹¹⁴ *Ibid.*, p. 163.

¹¹⁵ Williams, p. 71.

¹¹⁶ *Ibid.*, p. 3

¹¹⁷ Cavert, William L., "The Technological Revolution in Agriculture, 1910-1955," Agricultural History, 30(1), 1956, p. 18.

¹¹⁸ Williams, p. 79.

¹¹⁹ *Ibid.*, p. 138.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 26

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

or mules...Fully one-half of the increase in farm produce for human consumption between the world wars came from acres that had formerly fed horses. In 1941 estimates of "released" land came to thirty-five million acres that had shifted into market production between 1918 and 1945...In addition, there was a marked decrease in the demand for oats and hay.¹²⁰

In Linn County, oat production dropped markedly in the 1920s, from 49,735 acres in 1920 to 34,546 acres in 1930.¹²¹

Mechanization also increased farm size.¹²² "The pressure to constantly expand forced large farmers to swallow up their smaller neighbors. Ever-larger tractors demanded ever-larger farms if they were to be operated efficiently."¹²³ Mechanized farming also increased the amount of capital required to begin farming.¹²⁴

While the first practical and affordable gasoline tractors were available in the 1920s, many Linn County farmers reported that they used horses for farming until the 1940s. Merle Jesse Splawn, who grew up on a farm in the Calapooia River Valley, recalled: "We got our tractor in the early forties. Up until that time we had horses. Horses really were best for muddy conditions on a farm. They could get in the fields when it would be too muddy for a tractor. We kept one of our horses through to about 1950."¹²⁵

Dairying became a more specialized activity, with dairying ranking as the state's biggest income-producer (16% of the state's gross agricultural income in 1935).¹²⁶ Milk production ranked first in the products of the county in 1944.¹²⁷ While a small herd of dairy cows was a component of the diversified farm in the early 20th century, during this period the specialized dairy emerged. In 1928, one observer noted:

¹²⁰ *Ibid.*, 149-150.

¹²¹ Hill, D.D. Oats Production in Western Oregon. (Corvallis, Oregon: (Oregon State Agricultural College, Agricultural Experiment Station), Station Bulletin 285, June 1931, p. 5.

¹²² Williams, p. 149.

¹²³ *Ibid.*, p. 163.

¹²⁴ *Ibid.*, p. 161.

¹²⁵ Judge, Barbara C., Historic Farm Structures as Material Culture: an Oregon Study, (Corvallis, Oregon: Oregon State University), Master's Thesis, 1993, p. 66.

¹²⁶ Scudder, H.D., and E.B. Hurd, "Graphic Summary of Agriculture and Land Use in Oregon," (Corvallis, Oregon: Agricultural Experiment Station), Station Circular #114, December 1935, p. 26.

¹²⁷ Federal Cooperative Extension Service, Oregon's Farm Products for Market 1936-1940, (Corvallis, Oregon: Oregon State College Extension Service), Extension Bulletin 641, Sept. 1944.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 27

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

With the increased competitive conditions it is becoming more doubtful if the small-issue dairy farm can be successful, or a paying proposition. This is more of an age of specialization, and in order to take advantage of the latest inventions in labor-saving machinery, the herd unit must be of sufficient size to get the highest possible returns from its use...It begins to appear that the dairy unit should either be of a size sufficient to supply the home need, or else considerably larger; for instance, from 20 cows up. Probably the six- and seven-cow units are uneconomical and even the ten- and twelve-cow units are becoming questionable.¹²⁸

One of the labor-saving machines was the milking machine, which, prior to the availability of electrical power, could be operated with a small, portable combustion engine. In 1928, it was noted that, "With increased cost of labor and the difficulty of getting the proper kind of milkers, the milking machine is coming into greater general use."¹²⁹

"By 1923, Linn County had more dairy cows than any other county in the state."¹³⁰ The Jersey breed was the most important in Linn County during this period and the breed was known for its cream production. In 1928, ninety percent of all the dairy cattle in Linn County were of that breed, with 227 breeders of registered Jersey cattle in the county.¹³¹ "Linn County Jerseys are shipped to every state in the union, and to give some idea of the magnitude of this industry this county last year ranked third in the United States in the number of transfers of ownership of registered Jerseys, also fifth county in the United States in registration for 1927."¹³²

During the past fifteen years Linn County herds have claimed continuously one or more of the eight world records for production. This county can also claim the distinction of having for four successive years the highest producing herd in America. Linn County produced the first medal of merit bull in the world; also the world record fourteen year old cow, four year old cow and senior yearling.¹³³

The Medal of Merit Jersey, one of only two in the United States at that time, was Holger, owned by the Riverwood Dairy operated by Hector Macpherson. Other breeds found on county dairy farms included

¹²⁸ Jamison, N.C., "Dairy Cattle Feeding With Some Pointers on Management," (Corvallis, Oregon: Oregon Agricultural College Extension Service), Extension Bulletin 402, March 1928, p.13.

¹²⁹ Jamison, N.C., "Dairy Cattle Feeding With Some Pointers on Management," (Corvallis, Oregon: Oregon Agricultural College Extension Service), Extension Bulletin 402, March 1928, p. 13.

¹³⁰ Mullen, Floyd C., The Land of Linn, (Lebanon, Oregon: Dalton's Printing), 1971, p. 197.

¹³¹ Anon, Opportunity Awaits You in Linn County Oregon, The Garden Spot of the Willamette Valley, 1928, n.p.

¹³² *Ibid.*, n.p.

¹³³ *Ibid.*, n.p.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 28

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Holsteins, Guernseys, and Brown Swiss.¹³⁴ The Dairy Herd Improvement Association was formed in Linn County in 1929.

Outlets for cream were numerous. Hauling was facilitated by motorized vehicles, some operating on an all weather road network. Dairies were often located near cities. "At one time there were 19 dairies around Albany, all of them delivering door to door."¹³⁵ Prairie Rose Dairy near Shedd, operated by the Davis Family, had its own bottling plant and milk delivery trucks.

In the 1920s, grass seed was grown commercially for the first time in Linn County. Howard Jenks, who lived near Tangent, became the first commercial shipper of domestic ryegrass.¹³⁶ This firm opened the eastern market for ryegrass. The Brownsville Times on July 1, 1926, reported that, "...ryegrass has become quite an extensive production in this section of the Willamette Valley and brings growers many thousands of dollars."¹³⁷

In 1935, it was stated that, "Grass seed growing is in its infancy in Oregon. Linn County, uses the largest acreage chiefly of domestic ryegrass."¹³⁸ Locally, the region with the most intensive ryegrass production was the floor of the Willamette Valley, south of Albany. Between 1936 and 1940, production doubled.¹³⁹ By the 1940s, large acreages, that had been devoted to wheat production in the 19th century, now were planted in grass seed. As a result, the Willamette Valley became recognized as the primary source of ryegrass seed in the United States. Ryegrass production brought about the conversion of many barns into seed cleaners, with added elevating equipment and large bins. Combines were required to thresh ryegrass. Self-propelled combines were not introduced until the 1940s. Prior to that time, the combine had to be pulled by a team of horses or a tractor.¹⁴⁰

¹³⁴ *Ibid.*, n.p.

¹³⁵ "Nygren dairy", Albany Democrat Herald, Albany, Oregon, Friday, March 26, 1993, p. 46.

¹³⁶ Mullen, p. 158.

¹³⁷ The Brownsville Times, Brownsville, Oregon, July 1, 1926.

¹³⁸ Scudder and Hurd, p. 26.

¹³⁹ Breithaupt, L. R., and M.D. Thomas, and C.J. Borum, "Production and Income Statistics for Certain Specialty Farm Products Oregon 1936", (Corvallis, Oregon: Oregon Agricultural College Extension Service), Extension Circular No. 318, Sept. 1936.

Thomas M.D., and Breithaupt, L. R. and N. I. Nielsen, "Production and Income Statistics for Specialty Farm Products Oregon 1938", (Corvallis, Oregon: Oregon Agricultural College Extension Service), Extension Circular No. 334, July 1939.

Thomas M.D., and Breithaupt, L. R. and N. I. Nielsen, "Production and Income Statistics for Specialty Farm Products Oregon 1940", (Corvallis, Oregon: Oregon Agricultural College Extension Service), Extension Circular No. 375, August 1941.

¹⁴⁰ "Barrett Bros.", Albany Democrat Herald, Albany, Oregon, Friday, March 26, 1993, p. 38.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 29

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

While ryegrass began to dominate on the valley floor, farmers were still producing the hay crops required by the county's large number of dairy herds. In 1928, one source noted that, "The principal hay crops grown are red and alsike clover, cheat and vetch."¹⁴¹ Although hay baling equipment had been available since the 19th century (in the mid-1880s, steam powered balers replaced the horse-powered hay press of the 1850s), hay was frequently put in a barn in loose form in the early 20th century as feed for a farmer's livestock. Hay baling became more common during this period and may be related to the increasing sale of hay; hay bales, as opposed to loose hay, could be easily transported. Farmers who were not specializing in dairying and who had converted to tractor power no longer needed a large mow of loose hay.

Flax was also grown in Linn County during this period. "In 1924, Oregon contained 5000 of the 6500 acres of flax produced in the U.S. and there is no better flax land than some in Linn County."¹⁴² The demand for flax accelerated during World War II when a farmers cooperative flax processing plant was built in Harrisburg in 1941. The plant burned down the following year. In 1939, Linn County also led the state in turkey production.¹⁴³ Often pigs were kept by dairy farmers because for was recommended that one pig be kept for every dairy cow on farms that sold cream. (Pigs were fed the extra skim milk.) In 1944, the top agricultural products of Linn County were milk production, turkeys, and common ryegrass seed. These were followed by: cattle and calves; chicken eggs; hogs; sheep; lambs and wool; wheat; oats; farm forest products; and hairy vetch.¹⁴⁴

The first known rural electric line in the country was reportedly constructed in 1906 at Hood River, Oregon.¹⁴⁵ Mountain States power reportedly provided electricity in the Jefferson-Scio Road area as early as 1925-26. Hector Macpherson, who lives near Tangent, recalled that an electric line reached their farm in 1928.¹⁴⁶ It was not until the mid-1930s, however, that electrical power first reached many farmers in Linn County. "Following the advent of the Rural Electrification Administration in 1935, there was a rapid increase in the availability of electricity, and in 1940 the census reported that 45.6 per cent of all farms had an electric distribution line within one-fourth mile of the dwelling."¹⁴⁷ Merle Jesse Splawn, living in the Calapooia River Valley, recalled that, "We got electricity in 1945. The barn had electricity before we had

¹⁴¹ Anon, 1928, n.p.

¹⁴² Rural Enterprise, Halsey, Oregon, July 22, 1925, p. 4.

¹⁴³ Thomas, M.D., and L.R. Breithaupt, and N. I. Nielsen, "Production and Income Statistics for Specialty Farm Products Oregon 1938", (Corvallis, Oregon: Oregon Agricultural College Extension Service), Extension Circular No. 334, July 1939.

¹⁴⁴ Federal Cooperative Extension Service, Oregon's Farm Products for Market 1936-1940, (Corvallis, Oregon: Oregon State College Extension Service), Extension Bulletin 641, Sept. 1944.

¹⁴⁵ Cavert, p. 20.

¹⁴⁶ Macpherson, Hector, Personal Communication, July 1997.

¹⁴⁷ *Ibid*, p. 20.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 30

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

it in the house."¹⁴⁸ With electrical power:

The farmer soon discovered that it was feasible to have small, medium, and large motors scattered about the farmsteads as might be needed. Thus, we have electric pumps, milking machines, ventilating systems, hay and grain dryers, barn cleaners, silage unloaders, feed grinders, tool grinders, and milk coolers, and lights when and where we want them. We also have heat lamps to warm the new born pigs and lambs and thermostatically controlled hovers for chicks and turkey poults.¹⁴⁹

The trend toward specialization saw dairy farmers building dairy barns, or, in the later part of this period, a separate hay barn, loafing shed and milking parlor combination. Grass seed farmers needed seed cleaners and warehouses. The tractor and its accessories required machine sheds. Out of the transitional years of the early 20th century emerged similitude, characterized by light frame construction and the gambrel roof form. Farmers began to rely less on traditional barns built by carpenters and more on engineer-prepared plans. This standardization was engendered by the increasing dissemination of barn plans by a number of agents.

One of these agents was the state extension service.¹⁵⁰ Oregon State College had a Farm Plan Building Service. Available plans were listed in an Extension Circular. The plans appear to have been prepared by the Oregon State College Department of Agricultural Engineering, in cooperation with the U.S. Department of Agriculture. A list of plans available in September 1941 included general purpose barns, dairy barns, horse barns, beef barns, and bull barns. Plans were also available for wood and steel stanchion details, roof details for the Iowa truss and the Shawver truss, and "Gothic" rafter details for the bent and sawed type.¹⁵¹ Unfortunately, many of the plans listed are not in the current collections of the Oregon State University (formerly Oregon State College) archives.

A number of barn equipment companies offered plan services during this period, including the Loudon Company which had a representative in Portland, Oregon. The Star Line catalogue of 1921, published by the Hunt, Helm, Ferris & Co. of Harvard, Illinois, advertised The Star Barn Plan Service.¹⁵² The company also had a main office located in Portland, Oregon. Like the Loudon Company, the catalogue advertised steel stalls, steel stanchions with wood linings, tubular steel stanchions, adjustable wood stanchions, steel manger partitions, water bowls, steel bull pens, window guards, and "steel cupolas".

¹⁴⁸ Judge, p. 78.

¹⁴⁹ Cavert, p. 20.

¹⁵⁰ *Ibid*, p. 30. "Gothic," used here, is the 20th C. plan book term referring to arched rafter configurations that gained more loft space than double-pitched roofs afforded.

¹⁵¹ Oregon State College Department of Agricultural Engineering, "Oregon State College Farm Building Plan Service." (Corvallis, Oregon: Oregon State College Extension Service), Extension Circular No. 376, September 1941.

¹⁵² Hunt, Helm, Ferris & Co., The Star Line, (Harvard, Illinois: Hunt, Helm, Ferris, & Co.), 1921 edition.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 31

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Other companies which sold barn accoutrements as well as barn plans were the Hudson Manufacturing Co. of Minneapolis, Minnesota, and the James Manufacturing Co. of Fort Atkinson, Wisconsin.

During this period, concrete perimeter foundations and slab-on-grade floors became the standard in barn construction. It was recommended that, "The barn foundation should be continuous, rather than in the form of piers."¹⁵³ Of the forty-two barns recorded from this period during the 1996 survey, all but two feeder barns had concrete foundations, albeit several had concrete piers instead of perimeter foundations.

Balloon frame construction, with either a braced rafter roof or, less commonly, a Shawver truss, was the norm. As in the previous period, girders supported by posts helped carry the vertical load of the loft. Metal posts were recorded in several barns dating to this period, with one barn having posts from the Loudon Company. The beams were almost always built-up by this time.

Timber frame barns were still being built during this period, but they represented a minority of the barn construction that was taking place. The gambrel roof form was also standard although gable roofs were generally found on the timber frame barns from this period. During the 1996 survey, all barns with a balloon frame had a gambrel roof although the corollary was not always true since there were several barns with timber frames that had light-framed gambrel-roofs. At least one family during the Great Depression utilized materials on hand to build a log barn.

Masonry construction is first seen in barns constructed during this period, but appears to have been rare in this area probably because wood was copious. During the 1996 survey, only two barns with masonry wall construction were recorded in the county: one was built of hollow tile; the other was constructed of pumice block. Both barns dated to the 1940s. The literature notes that steel frameworks were being used to some extent in barns at this time. The *Agricultural Engineering Journal* of May 1926, contains a report of a steel frame barn that was found to be very satisfactory.¹⁵⁴ In 1936, the James Manufacturing Company was furnishing steel frames.¹⁵⁵ Galvanized sheet metal was also used as sheathing as early as the 1930s.¹⁵⁶ Only one metal building was recorded during the 1996 survey -- the Prairie Rose Dairy milking parlor manufactured by the James Manufacturing Co. just prior the onset of World War II.

With the predominance of the balloon frame, horizontal siding was more common than vertical siding during this period. In Linn County, drop siding appears to be used most commonly, although a narrow bevel lap siding and v-match were also used. Barns that had vertical siding were timber or plank frame barns (posts composed of plank dimension lumber). Most vertical-sided barns from this period incorporated battens. The hopper windows observed on many of the early 20th century barns continued to be used

¹⁵³ Foster, W.A. and Deane G. Carter, *Farm Buildings*, (New York: John Wiley and Sons), 1922, p. 67.

¹⁵⁴ Wooley, J.C., *Farm Buildings*, (Columbia, Missouri: The University Co-Operative Store), 1936, p. 59.

¹⁵⁵ *Ibid.*

¹⁵⁶ *Ibid.*

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 32

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

during this period.

Two other roof systems emerged during this period: the Clyde Truss, developed in the early 1920s for a gambrel roof, and the round-arched Gothic roof. The arched roof was employed as early as the 1910s, but was perfected in the 1920s and 1930s. By the early 1920s, the arched-roof barn was a staple of plan books and equipment company catalogues. The earliest construction date recorded during the 1996 survey for a Linn County barn with an arched roof was 1924; earlier examples, however, were reported.¹⁵⁷ Barns with arched roof forms have even more loft space; therefore they are very suitable for livestock or dairy farming. Farmers could store more hay in round-roofed and pointed, gothic-roofed barns than in gambrel-roofed ones.¹⁵⁸ It has been noted that, "...the gothic roof passed through more than two decades of experimentation as new ways of building and using curved rafters in barns evolved...."¹⁵⁹ Sawed construction, which was initially used to create the curved rafters, may have first been used in the Northwest where there was an abundant timber supply.¹⁶⁰ The outside edge was sawed from one-inch boards, measuring eight-to-twelve-inches wide and three-to-four-feet long, in order to create the needed curvature. Then, "...three or four plies were laminated together side by side with nails, with the splices staggered to get the curve needed."¹⁶¹ In September 1941, the Oregon State College Farm Building Plan Service issued its revised Extension Circular No. 376 listing the farm building plans then available. One of the plans for a barn measuring 36 x 56 feet was categorized as an "Oregon arch roof -- sawed type."¹⁶² Another plan designed by the Agricultural Engineering Department refers to the "Oregon Gothic roof", also a sawn design.

A second type of curved rafter construction involved the use of bent or sprung rafters, developed following a 1916 experiment in Davis, California. "The perceived savings in material and labor required to produce the same contour, by bending instead of sawing, brought the rafters quickly into favor."¹⁶³ All arched-roof barns recorded in Linn County during the 1996 survey had bent rafters laminated with nails.

The Loudon Machinery Company introduced an improvement in the Gothic roof design by substituting, at

¹⁵⁷ Macpherson, Hector, Personal Communication, July 1997.

¹⁵⁸ Vogeler, Ingolf, "Dairying and Dairy Barns in the Northern Midwest," *Barns of the Midwest*, Eds. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, p. 105.

¹⁵⁹ Soike, Lowell J., "Within Reach of All: Midwest Barns Perfected," *Barns of the Midwest*, Eds. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, p. 161.

¹⁶⁰ Ibid.

¹⁶¹ Ibid, p. 161.

¹⁶² Oregon State College Department of Agricultural Engineering, "Oregon State College Farm Building Plan Service," (Corvallis, Oregon: Oregon State College Extension Service), Extension Circular No. 376, September 1941, p. 11.

¹⁶³ Ibid.

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section E Page 33

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

every eight feet, a patented, curved, reinforcing truss that ran continuously from plate to plate. This early 1920s truss, which Loudon claimed was economical to build and simple to raise, lent "enormous strength" to every third or fourth rafter.¹⁶⁴ Loudon also introduced the concept of rafters extending all the way from the foundation sill on one side to the foundation sill on the other. "This avoided the weak point where the bent rafters joined the upper wall plate, which often had been mounted to the plate by merely toenailing, sometimes with the help of braces running from the rafter to the mow floor joist."¹⁶⁵

The Gothic roof entered its final phase of innovation during the 1930s, when modern glues first were used to produce a stronger bent rafter. Glue laminated timber was used in the Pacific Northwest as early as 1938. During World War II, Timber Structures, Inc. of Oregon began to manufacture glued laminated timber.¹⁶⁶ No barns recorded during the 1996 survey incorporated rafters laminated with glue.

In the early 1920s, A.W. Clyde, an extension engineer for Iowa State College, developed the Clyde Truss, also known as the Iowa Truss. Used for a gambrel roof, it was less expensive than the Shawver truss, which required more expensive extra-length material. The design, which used gas pipe for shear pins at the ends of each truss, "...tied the ridge, the purlin, and the plate into a single uncomplicated truss to carry the intervening rafters....Clyde's Iowa truss constituted the final innovation in the plank-frame tradition."¹⁶⁷

Older barns continued to be remodeled. "An essentially modern barn could be created by rebuilding or remodeling an older structure. Remodeling involved constructing a self-supporting roof over the lower portion of the earlier timber-frame bents."¹⁶⁸ Materials could also be recycled from older barns and other buildings for new barn construction. Several barns dating to this period incorporated posts from earlier barns.

With the advent of grass seed production on a large scale, some farmers converted their barns into seed-cleaning facilities. Commercial seed cleaners had bins 2-3 stories high to hold seed that was to be cleaned.

Hayforks now could be pulled by horse, automobile, or by electricity. In 1929, a good power hoist could be procured for \$80.00 to \$100.00.¹⁶⁹ A power hoist was observed on one Linn County barn but may have been overlooked on other barns.

¹⁶⁴ Soike, p. 162.

¹⁶⁵ Ibid.

¹⁶⁶ Rhude, p. 20.

¹⁶⁷ Soike, p. 160.

¹⁶⁸ Harper, Glenn A. and Steve Gordon, "The Modern Midwestern Barn, 1900-Present," Barns of the Midwest, Ed. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, p. 218.

¹⁶⁹ Price, F.E., A.W. Oliver, and E.L. Potter, "Electric Hay Hoists," (Corvallis, Oregon: Oregon State College), Agricultural Experiment Station), Station Bulletin 255, Sept. 1929.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 34

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Several agricultural developments affected the design of the general purpose barn during this period. In some cases, horse stalls disappeared or were reduced in number, especially toward the end of this period. Notwithstanding the shift from the horse to the tractor, some general purpose barns built in this period had horse stalls, for many Linn County farmers farmed by horse until the end of World War II. The author of a book published in Portland, Oregon in 1947, remarked that, "Tractor equipment is fast replacing horse-drawn tools. In addition to tractors, we now have combines, corn pickers, forage harvesters, one-man balers, four-row planters, grain and fertilizer drills, power sprayers and dusters, potato diggers and other mechanized equipment....Thus, machine sheds are needed for modern farming..."¹⁷⁰ A number of barns from this period had areas for tractor storage, even though tractors were generally not stored in the barn because of the fire hazard. Machine sheds were also added to some barns.

The wagon drive was eliminated in some barns, and was replaced by a narrower feed aisle. A shift from loose to baled or chopped hay at this time reduced the need for haymows. Many farmers adopted the "loose-housing" or "loafing" system for housing cattle.¹⁷¹ Sometimes, loafing areas began to be included within the envelope of the barn or in lean-tos. The cows were only brought into the barn to milk.

VI. Religious and Ethnic Immigration, 1845-1945

Many settlers migrated in groups formed of extended families and neighbors of like endemic and religious convictions. For instance, in the early period of settlement, the Oakville and Union Point areas were identified as Presbyterian neighborhoods; the Providence area was associated with Baptist settlement. The social character of neighborhood settlements could therefore have an impact on building, with regional variation within the county. Barns may provide a better opportunity for observing cultural convention and affinity than other building types. The groups mentioned below, while not inclusive, are groups which have left their imprint on the character of the county.

The German Baptist Brethren

Members of the German Baptist Brethren faith, sometimes referred to as Dunkers or Dunkards, settled in Linn County at an early date. Among the families belonging to this group were the Hardman, Backus, Peebler, Baltimore and Ritter families. This group settled on rich agricultural lands between the current cities of Lebanon and Albany. The Wigle family were also originally Brethren but settled further to the south, east of Harrisburg, Oregon. In 1854, Daniel Leedy settled with this Linn County group and became the first Brethren minister on the Pacific Coast. The Brethren in the Oregon Territory established the first

¹⁷⁰ Doane Agricultural Service. The Farm Book: A Guide to Better Farming with Better Buildings. West Coast Woods, Portland, Oregon, 1947, p. 22.

¹⁷¹ Harper, Glenn A. and Steve Gordon, "The Modern Midwestern Barn, 1900-Present," Barns of the Midwest, Ed. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, p. 225.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 35

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

congregation on the west coast in this location in 1855 or 1856 with Leedy as minister.¹⁷² This congregation was first known as the South Santiam congregation.¹⁷³ The name was eventually changed to Willamette Valley congregation. The congregation expanded from the original 23 members to 100 members by 1881, the year that the area was divided into two congregations: Salem north of the Santiam River, and Lebanon, south of the Santiam. M. M. Bashor and David Brower were the congregation's elders assisted by Leedy, A.H. Baltimore and Philip Workman. By 1907, the Lebanon congregation had only 16 members and in 1912 had the beginning membership of 23. The congregation, albeit small, continued to meet, eventually forming the Sunrise Community Church in Albany. In 1962, the oldest Oregon congregation of this denomination was disbanded by the district.

Only one barn of this group was identified in previous surveys. The Gideon Backus Barn, probably built in the 1850s, is a side-opening barn typical of pioneer barns in Linn County. Apparently, this barn does not reflect the Brethren tradition in barn building. According to The Brethren Encyclopedia, because "...of the predominance of agriculture as a source of Brethren livelihood in the 18th and 19th centuries...farm buildings were of primary importance. It is noted that the Brethren followed the Pennsylvania-German pattern in architectural style and placement of barns....Barns...were the two level or "bank-barn" style."¹⁷⁴ Barns were also the location of large gatherings such as love feasts and Annual Meetings throughout the 19th century.¹⁷⁵

Mennonite Settlement in Linn County

In 1976, Hope Lind Kauffman, author of *Apart and Together: Mennonites in Oregon and Neighboring States 1876-1976*, noted that "The ratio of members in Oregon's Mennonite and related groups to the total of Oregon's population is almost twice that of all United States Mennonite groups to the total U.S. population."¹⁷⁶ The first Mennonites to settle in Oregon were Christian C. and Magdalena Wenger, and John and Elizabeth Lichty who accompanied the Wengers. They settled in the Hubbard area of Marion County in 1876.¹⁷⁷ In ca. 1880 the first Amish Mennonites moved to Oregon, and in 1887 the Joseph Maurer Family, Amish Mennonites, purchased a farm located four miles north of Lebanon, Oregon in Linn County. The family consisted of Joseph Maurer, born in the Alsace province of France, his wife Barbara Gerig Maurer, Joseph's twice-widowed mother, Barbara Conrad, and several small children. The Maurer Family came to

¹⁷² The Brethren Encyclopedia, 3 Vols. (Philadelphia: Brethren Encyclopedia, 1984), p. 14.

¹⁷³ *Ibid.*

¹⁷⁴ *Ibid.*, p. 89.

¹⁷⁵ The Brethren Encyclopedia, p. 90.

¹⁷⁶ Lind, Hope Kauffman, Apart and Together: Mennonites in Oregon and Neighboring States 1876-1976, (Scottsdale, Pennsylvania: Herald Press, 1990), p. 19.

¹⁷⁷ Lind, p. 27.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 36

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Family came to Oregon from Davis County, Iowa.¹⁷⁸ For seven years they were the only Amish Mennonites living in Linn County.¹⁷⁹ In the fall of 1894, three other Amish Mennonite families headed by Jacob and Mary Eicher Roth; Daniel and Katherina (Roth) Erb; and Christian and Magdalina (Swartzendruber) Kennel, moved to Linn County from Thurman, Colorado.¹⁸⁰ In 1895, Jacob Roth was ordained as a minister and meetings were held in his home.¹⁸¹ Eventually, they began meeting in the former German Baptist Brethren Church building in the area.¹⁸² In 1911 they purchased an acre of land and constructed a meeting house. Christian Kennel, who was also a barn builder, was the main carpenter. The congregation was called Fairview.

"Soon after Fairview organized, other families with names including Widmer, Christner, Schlegel, Heyerly, Neuschwander, Eicher, Gerig, Sutter, Ropp, Yutzi, Nofzinger, and Schrock moved to the area. Several joined the Albany Mennonite Church when it organized in 1899 and some joined Harrisburg. But most stayed to swell the ranks at Fairview. Later, others moved to Linn County, especially because of the prolonged drought in Nebraska and Colorado in the mid-1930s. Fairview became the second largest congregation in its conference, with a membership high of 426 in 1965..."¹⁸³

Fairview and Hubbard's Zion churches were both Amish Mennonite but their corporate personalities soon developed differently.¹⁸⁴ Fairview had more members who had immigrated directly from Europe or come from families of more recent immigrants who had first settled in Ontario, Canada, earlier in the 1800s. More of Zion's members came from immigrant families of the 1700s".¹⁸⁵

The Albany Mennonite Church [Old Mennonite] was established in 1899 and the Harrisburg Conservative Amish Mennonite Church established 1911. Minister Daniel Kropf and his wife Anna Hostetler and their family moved to Harrisburg and soon eight other families from Hubbard's Zion congregation followed. Charter members of the Harrisburg church include: Hostetler, Kropf, Miller, Neuschwander, Smucker,

¹⁷⁸ Gerig, Irvin, "History of the Fairview Mennonite Church," *OMHGS Newsletter*, Vol. 2, Number 1, February, 1989, p.1.

¹⁷⁹ Lind, p. 51.

¹⁸⁰ Gerig, p. 1.

¹⁸¹ *Ibid.*

¹⁸² *Ibid.*

¹⁸³ *Ibid.*, p. 53.

¹⁸⁴ Lind, p. 54.

¹⁸⁵ *Ibid.*, p. 54.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 37

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Stutzman, and Widmer families.¹⁸⁶

In the 1930s, another influx of Mennonites came to the Albany area from the drought ravished regions of the United States. Included were the Beckler, Birkey, Jantzi, Stutzman and Schweitzer families.¹⁸⁷

The impact of this settlement on the architectural character of the portions of Linn County settled by these various Mennonite groups has never been studied. In other areas, Pennsylvania barns are often a indication of Mennonite settlement. Examples of Pennsylvania barns, two level bank barns which include the diagnostic forebay, have not been located in association with Mennonite settlement in Linn County although one has been identified in the Hubbard vicinity of Marion County. The flat topography of the region settled by the Mennonites would certainly have been a limiting factor for this barn choice. Furthermore, Hope Lind notes that

"In contrast to some Mennonites in the West and the Midwest who had settled in territories even before they achieved statehood, Oregon's earliest Mennonites arrived after two or three generations of farmers had taken their pick of land and Oregon had been a state almost twenty years. Some Oregon Mennonites did clear timber and break new sod, but many purchased or rented land which others had already tamed."¹⁸⁸

This land often included established farm building groups.

There were several Mennonite carpenters who were known to build barns in Linn County. C.R. Kennel was responsible for the construction of a number of barns in the Lebanon-Albany area. Prior to coming to Linn County, he had built barns in Ontario, Canada. Only two barns, built for his children, have been identified as examples of his work. Both barns have details which were not observed in other Linn County barns. A barn built for his son John Kennel in 1925 is notable for its use of louvers in the walls. The Krabill barn has atypical framing.

Another Mennonite barn builder was J.S. Yoder who reportedly built barns in the Harrisburg area and as far north as Albany. The only recorded example of a barn known to have been erected by him is his own barn just east of Harrisburg. This gambrel-roofed, balloon frame barn is similar in exterior appearance to other barns built in Linn County at the time; nonetheless, his son, Glenn Yoder, who still owns the property, described the barn by referring to the feed aisle as the "fudergang" and a pent roof on the east elevation as the "foreshoot" noting that these were the terms used by his father whose family hailed from Pennsylvania.

The Smucker Family, a Mennonite family originally from Orville, Ohio, came to the Harrisburg area after living near Hubbard. A new barn was built in 1946 after a trip back to Ohio and Pennsylvania. Wilton

¹⁸⁶ Lind, p. 56.

¹⁸⁷ Gerig, p. 2.

¹⁸⁸ *Ibid*, p.39.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 38

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Smucker, the current owner, recalled that the trip provided his father with the idea of an "overshoot" and block walls. With walls built of pumice block, the Smucker barn is one of only two masonry barns in the county.

Catholic Settlement in the Jordan Valley

In the mid-1880s, a group of about fifty German Catholic families from Minnesota arrived in Linn County.¹⁸⁹ The events precipitating this colonization can be traced to the Baden region of Germany in the 1830s. There, Father Joseph Maria Albrecht joined the priesthood as a member of the Society of the Precious Blood after separating from his wife so that she and his daughter could join a convent. Eventually, Father Albrecht came to Ohio with other members of his order. In Ohio, Albrecht angered members of his parish and the church hierarchy with some of his views. Eventually he was suspended from his duties. Angered by this treatment, Father Albrecht decided to leave the area and, with a group of loyal parishioners, he moved to Rush Lake, Minnesota. A 700 acre community was established complete with church, convent, school and farms. Father Albrecht was eventually excommunicated from the Catholic Church.

Father Albrecht died in 1884. Prior to his death, he chose Anton Bender, Christof Silbernagel and Victor Eifert as trustees. It was decided to leave Minnesota for a new settlement in the west. These men knew of acquaintances from Ohio who had settled in Scio, Oregon. Shortly thereafter the colony -- which consisted of approximately 90 people, including 20 religious members such as nuns -- settled in the Jordan Valley, a tributary stream valley in the foothills east of Scio, Oregon. Land had been purchased by the trustees for the group to establish farms and erect a church. Eventually a priest, Father Joseph Buchholzer, was assigned to the group by the Archdiocese of Portland.

Our Lady of Lourdes Church continues to be the focal point of this community which is still home to many of the descendants of the original members. The architectural character of the Jordan Valley is distinctive in Linn County. Several barns of this group built upon their arrival in the 1880s were recorded during the 1996 survey. Compared to other barns being built in Linn County during this period, the materials used for these barns were less processed. Log joists and hewn timbers were used in all 1880s barns of this group recorded. In other areas of Linn County at this time, it appears as though sawn timber frames predominated. The interiors of the barns have been altered but all of the recorded barns have traditional transverse arrangements of four or five bays. The Foltz Barn has a double outshed, the only example observed in the county.

Czech Settlement

People of Czech nationality are from the ancient kingdoms of Bohemia, Moravia, and Silesia. Slovaks are primarily from the province of Slovakia. Czechoslovakia came into existence in October of 1918 and, by the treaties of St. Germain (1919) and Trianon (1920), consisted of Bohemia and Moravia, the Austrian province of Silesia, the Hungarian Province of Slovakia, and a district of northeastern Hungary called Ruthenia. The formation of Czechoslovakia occurred after the establishment of a rural Czech community in Linn County.

¹⁸⁹ The information on the history of this Catholic Group is summarized from Centennial History: 1885-1895, Our Lady of Lourdes, Jordan, Oregon. (Eds.) Barbara Bentz, Linda Duman, and Father Gregory Moys, North Santiam Newspapers, 1985.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 39

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

The first Czech settlers came to Linn County in the period between 1880 and 1890. It is likely that this settlement was facilitated by the completion of the Oregonian Railway through this area in 1880 with stations at West Scio and Crabtree, the main areas of Czech settlement in the county. Early families included the Cladek, Youngs, Svododa, Horsky, Stepanek, Suchanek, and Faltus Families.¹⁹⁰ By 1900, families and individuals with the surnames of Wesley, Stastny, Andrlik, Bartu, Roner, Ondrej, Schinost, Lamplot, Prokop, Oupor, Posvar, Shimanek, and Vasek among others had joined the growing colony.¹⁹¹ "Some came from the old country, and some were 'second jumpers' from Nebraska, Michigan, the Dakotas, Wisconsin, Illinois, and Iowa."¹⁹² It appears that the majority of Czechs settling in Linn County had lived elsewhere in this country before moving to Oregon, although their tenure in these other localities may not have been lengthy. The greatest influx occurred in the first decade of the 20th century; in 1910, there were 1,709 individuals in Oregon born in Bohemia or Moravia, up from the 231 figure in 1900.¹⁹³ The Czech population was centered in the north part of the county near Scio, Oregon.

Noble and Cleek describe a Czech Barn as "27-30 feet by 48-80 feet, with an elongated rectangular plan, wagon doors on the gable end, one or two smaller doors on the side, fieldstone walls, and a gable roof. Small windows are usually high on the side walls. Sometimes exterior walls are plastered and whitewashed."¹⁹⁴ "Sometimes, a barn was attached to the gable end of the house. In fact, the European farmstead often consisted of a courtyard created by series of connected single-pile units [and]....some evidence of loosely arranged courtyard plans of mostly free-standing structures can be found on a few Czech-American farms"¹⁹⁵

While an attempt was made in the 1996 survey to locate barns built by these Czech settlers, time prevented a thorough identification. Several barns were recorded from this group, however, although none of the barns were similar to the Czech barns described above by Noble and Cleek. Without further study, it can only be noted here that there were barns and/or farmsteads that had some characteristics that were not in keeping with the barn building traditions of Linn County at that time.

The 36' x 44' Roner Barn, built in ca. 1900, is the only extant barn in the county to be constructed of hewn logs. The barn's rafters are connected with a pinned tongue and fork joint at the ridge, also singular in the

¹⁹⁰ "Tolstoj Lodge Plays Active Part in Richardson Gap History," Lebanon Express, Friday, November 1, 1968.

¹⁹¹ *Ibid.*

¹⁹² "ZCBJ Halls: reminders of Czechoslovakian settlers," The Lebanon Express, Mar. 31, 1977.

¹⁹³ Capek, Thomas, The Cech (Bohemian) Community of New York. (New York: Czechoslovak Section of America's Making, Inc.), 1921, p.15.

¹⁹⁴ Noble, Allen G. and Richard K. Cleek, The Old Barn Book: A Field Guide to North American Barns and Other Farm Structures, (New Brunswick, New Jersey: Rutgers University Press), 1995, p. 112.

¹⁹⁵ Rau, John E. "Czechs in South Dakota," To Build in a New Land: Ethnic Landscapes in North America, (Baltimore: The John Hopkins University Press), 1992, p. 292.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section E Page 40

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

county. The Kruml Barn, probably built in the first decade of the 20th century, had an unusual framing detail with the tie-beams resting on the plates. In 19th and 20th century timber frame barns in the United States, it is rare to see the tie beam resting on the plate. Andrew L. Nash, in his article entitled, *The American Timber Frame*, notes that in 20 years of restoring barn frames in central New York, he had observed only one barn in which the tie beams rest on the plate. He points out that Henry Glasie's 1974 study, *Barn Building in Otsego County*, reinforces his observations, with Glasie reporting one frame of this type in the 2,000 barns examined.¹⁹⁶ In Linn County this framing anomaly was observed in only one other barn, the Zeller Barn, which was built for or by a German immigrant. The Kruml Barn's front transverse drive is also atypical.

Because many of the Czech settlers in this region lived elsewhere in the United States prior to their move to Oregon, it is possible that they had already assimilated the contemporaneous barn building practices of the areas in which they lived, primarily the Midwest, and were actually more up-to-date than native Oregonians. The Kotan Barn on Oupor Rd., built in 1911, is an early example of a barn incorporating balloon framing in Linn County.

There were also non-Czech owned barns constructed by Czech builders. Thomas Prospal was a Czech builder who was known to have constructed a number of barns in Linn County including the Norman Barn built in 1921. The ca. 1920 Leever Barn was reportedly built by a crew of Czech builders who built a number of barns in the Scio region.

In the south part of the county near Harrisburg there were also several families of Czech descent including the Balkovich family. Michael Balkovich was a barn builder.

¹⁹⁶ Nash, L. Andrew, *The American Timber Frame*, Timber Framing, No. 37, Sept. 1995, p. 11.

United States Department of the Interior
National Park ServiceNATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEETSection F Page 41**Barns of Linn County, Oregon, 1846-1946**

Name of Multiple Property Listing

Section F: Associated Property Types*Property Type Descriptions*

The following table provides a summary of distinctive characteristics of Linn County barns for the four chronological time periods defined in the historic context. The following attributes describe the **pattern of features** common to barns constructed in each time period and is not intended to take into account all of the variability which occurs. While a discussion of property type significance and registration requirements proceeds this, this table is intended to summarize the information provided in the overviews.

Characteristics	1850-1870	1870-1900	1900-1920	1920-1945
Frame Type	timber frame	timber frame	timber frame plank frame balloon frame platform frame	plank frame balloon frame platform frame
Joinery	mortise and tenon /wood pins	mortise and tenon/ wood pins	mortise and tenon/ wood pins or metal spikes lapped and let in joints/spiked nailed and spiked connections for frames incorporating dimensional lumber	nailed and spiked connections
Nail type	hand wrought machine cut (square)	generally machine cut	machine cut and/or wire drawn (round)until 1910 wire drawn after 1910	wire drawn
Timber or lumber dimensions	timbers for posts and beams 8" to 14"	timbers for posts and beams 8" x 8" most common	timbers for posts and beams of timber frame barns 6" to 8"	timbers 6" or less
Roof sheathing	waney-edged sheathing	waney-edged sheathing or skip sheathing	skip or deck sheathing	skip or deck sheathing

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 42

Barns of Linn County, Oregon, 1846-1946

Name of Multiple Property Listing

Siding	vertical boards, irregular dimensions often sash sawn but circular sawn lumber available by 1860s spaces between boards for ventilation	vertical boards, regular dimensions, circular sawn (8" dimension common) horizontal and vertical shiplap siding	vertical boards, regular dimensions horizontal siding	horizontal siding
Exterior finish elements	often none	sometimes cornerboards, frieze boards, drip caps, water tables, ornamental trim pieces, profiled moldings	cornerboards	cornerboards
Roof form and pitch	low gable	medium gable	medium gable gambrel	gambrel gothic
Windows	rare	limited use usually along stable walls	common - windows regularly fenestrated at least on one side of the barn	common - windows regularly fenestrated at least on one side of the barn
Flooring	plank floors, irregular dimensions	plank floors, regular dimensions	plank floors regular dimensions matched flooring concrete floors	matched flooring concrete floors
Hayfork	none	interior	interior or exterior	exterior
Hay hood	none	presumably some barns began to incorporate hay hoods in their design during this period although no examples were verified from this period	common predominate type: gable extended with solid or open brackets and pointed (ridge extended)	common predominate type: pointed (ridge extended)

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 43

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Grain, hay and straw storage	one level -- hay stored in hay mow on main level, straw and grain in the sheaves stored in scattered mows above drive, threshing floor, grain bins, and lean-tos	hay often stored on second floor located on either side of wagon drive (open to roof above at least a portion drive)	full second floor serves as hay mow	full second floor serves as hay mow
Form	low ridge and low eaves lean-tos for stock frequently flank one or more elevations	high ridge and high eaves lean-tos for stock	high ridge and high eaves lean-to for stock	high ridge and high eaves lean-tos sometimes incorporated for equipment storage or cow loafing single level barns for milking, loafing, equipment

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 44

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Functional requirements	<p>hay mow</p> <p>straw mow</p> <p>areas for storage of unthreshed sheaves</p> <p>threshing floor</p> <p>grain bins for limited quantities of grain</p> <p>stalls and pens for a limited number of livestock</p>	<p>increased hay storage and means to lift the hay (bent design needs to accommodate hayfork)</p> <p>increased grain storage and less need for threshing floor because of the availability of mechanized threshing</p> <p>space to house a greater number of horses and cows</p>	<p>space to house horses and an increasing number of cows</p> <p>increased hay storage to feed the growing numbers of livestock (full second floor not interrupted above the drive for the operation of an interior hayfork and roof forms which provided more space)</p> <p>silos inside of barns or adjacent to barns to provide silage for cows</p> <p>concrete floors for milking areas with concrete gutters</p> <p>feed and manure carriers</p> <p>white washed walls</p>	<p>space to house increasing number of cows as dairying becomes more important in the county</p> <p>milk rooms</p> <p>white washed or plastered walls in milking areas</p> <p>separate milking parlors and loafing sheds</p> <p>feed and manure carriers</p> <p>horse stalls decreasing as gasoline powered equipment is adopted (equipment storage needed)</p> <p>increased hay storage to feed the cows (full second floor not interrupted above the drive for the operation of an interior hayfork and roof forms which provided more space)</p> <p>silos inside of barns or adjacent to barns for silage</p> <p>concrete floors for milking areas with concrete gutters</p> <p>grass seed bins and cleaners installed in some barns</p>
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United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 45

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Ventilation	siding boards spaced to provide ventilation	wooden cupolas or louvers	wooden cupolas metal ventilators	metal ventilators
Plan type	transverse plans with 4 or 5 bays predominate.	transverse and longitudinal arrangements with longitudinal plans of 3 and 4 aisles perhaps most common	transverse and longitudinal arrangements both common feeder barns	transverse and longitudinal arrangements common with three aisle plans dominating dairy barn design feed-aisle plans (wagon drive eliminated) loafing areas within envelope of the barn or in lean-to feeder barns
Dimensions	Length rarely exceeds 60 feet. Width variable from 24'-30' for barns without lean-tos and from 44'-60' for barns with lean-tos on each side elevation	Length rarely exceeds 60'. Width is from 36'-42' for 3 aisle barns and 48'-54' for 4 aisle barns	Length generally exceeds 60' after 1910	Length generally exceeds 60'.
Hardware	hand-forged	hand-forged and manufactured	manufactured	manufactured
Doors	hinged	hinged or roller	roller doors predominate	roller doors predominate
Roof Framing	Common rafter	Common rafter	Common rafter Shawver Truss Braced rafter	Shawver Truss Braced rafter Iowa Truss laminated Gothic rafters

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 46

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Integrity

As a property type, barns have evolved to meet the changing requirements of agriculture. "Most barns have been constantly added to, altered, rebuilt, and remodeled throughout their history. They are the products of many individuals, generations, ideas, and social and economic changes. The sense of evolution communicated through vernacular environments is what makes them meaningful. Their significance is often local, highly personalized, and, in many cases, subconscious."¹

Property Type: BARNS OF THE MID-19TH CENTURY

Property Subtype Descriptions

Subtype: A Willamette Valley Side-opening Barn

As defined by Philip Dole, the Willamette Valley side-opening barn is a single-level, timber frame, post and girt building. The central enclosed volume, exclusive of lean-tos, is generally "...30 x 60 feet in plan and from floor to plate 15 to 18 feet."² Large double doors are centered on both long sides of the structure. In Linn County, barns of this type often had four, five and even six bays instead of the three bays typical of what is known as the English threshing barn.³ Of the 18 extant side-opening barns estimated to pre-date 1870, one has six bays; four have five bays; ten have four bays; and three have three bays. Three-bay barns recorded are between 34-36 feet in length; four-bay and five-bay barns are from 40-60 feet in length; and the six-bay barn is 75' in length. Widths range from 24' to 30' excluding integral lean-tos which each generally add approximately 12' per lean-to.

"The roof pitch is very low and since a number of lean-tos surround the center, the building has a rather flat and spreading look..."⁴ In the 1860s, this roof pitch became steeper. "Increase in roof pitch may have been in response to Oregon's rainfall, or to produce a stiffer structure, or perhaps because architectural style after 1860 favored steep roofs. Other than that, lean-to forms and unpainted vertical siding characterized the majority of new barns..."⁵

¹ Dandekar, Hemalata C. and Eric Allen MacDonald, "Preserving the Midwestern Barn", Barns of the Midwest, Eds. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, pp. 265.

² Dole, Philip, "Farmhouses and Barns of the Willamette Valley," in Space, Style, and Structure: Building in Northwest America, Ed. Thomas Vaughan and Virginia Guest Ferriday, (Portland, Oregon: Oregon Historical Society), 1974, p 89.

³ Calkins, Charles and Martin Perkins, "The Three-Bay Threshing Barn," Barns of the Midwest, Ed. Allen G. Noble and Hubert G.H. Wilhelm, (Athens, Ohio: Ohio University Press), 1995, pp. 40-61.

⁴ Dole, p. 89.

⁵ *Ibid.*, p. 120.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 47

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

A characteristic of many farmstead barns during the period prior to 1870 was the presence of a threshing floor. The antecedents of the threshing barn are ancient with roots in "...both continental Europe and the British Isles. As in New England, this barn is associated with the early agricultural development of the Willamette Valley when grain production was at or near subsistence level. "The organization of the barn was based on long established functional principles established before the development of agricultural machinery, which the Oregon farmer did not have at the time these barns were being built."⁶

The wagon drive was generally located in an interior bay, often the center bay in barns with three bays. The wagon drive also served as the threshing floor which generally encompassed an adjacent bay. In order to provide a space that was unencumbered by a center post, builders often removed the center post from the bent located between the two bays which, combined, served as the threshing floor. Dole notes that:

Each builder became particularly inventive in creating the open space desired for the threshing floor. Each solution proves to be unique. The problem was to combine the 15 x 30-foot wagonway or drive with an adjacent space to create an uninterrupted threshing floor about 30 feet square for turning horses. The barn's structure was made up of a plan module about 15 feet square marked by a hewn post at four corners. To omit the center post of the 30 x 30 threshing floor required an exceptional, long span truss, which also had to support the weight of stacked wheat in the loft.⁷

The doors at either end of the wagon drive/threshing floor allowed a team to enter and pass straight through the barn.⁸ Unthreshed wheat was stacked in the loft over the threshing floor.⁹ An over mow for additional storage was sometimes located above the wagon drive. The over mow was often made of scaffolding which could be increased or removed according to need. The two opposite wagon doors provided a through draft for winnowing prior to the acquisition of fanning mills.

In the side-opening barn, a haymow was generally located on one side of the threshing floor. The mow was often one or two bays in size and extended from floor to roof. Several authors describe the low retaining wall that was often located on the side of the threshing floor dividing the threshing floor from the haymow. Gray states that "The hay was stored in a mow to one side of this floor, and a tightly boarded

⁶ Dole, p. 90.

⁷ *Ibid.*, p. 91.

⁸ *Ibid.*, p.89.

⁹ *Ibid.*

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 48

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

breast girt kept the loose grain from scattering into the hay."¹⁰ Often a ladder was framed into the bent adjacent to the haymow.

The other bay flanking the threshing floor was used for storing the threshed grain in bins. A limited number of livestock could also be stabled in this bay.

...along the far end are two or three small grain bins with a total capacity of about 1,200 bushels and perhaps a small bull or calf pen....The small size of the grain bins suggests a small acreage developed suitable for wheat, or farms more generalized rather than specialized in crops, and also threshing smaller quantities at a time rather than threshing the whole crop.¹¹

Straw or unthreshed sheaves of grain could be stored above the livestock and the grain bins as well as over the non-drive portion of the threshing floor. Mows upon scaffolds were recommended to prevent moisture damage.¹² From there, sheaves could be thrown directly down onto the threshing floor. Cows could run loose in the barnyard and could seek shelter in an open shed or lean-to connected to the barn.¹³ "It was common practice to stack the roughage in the center of the barnyard and allow the stock to feed directly from the stack. An open shed attached to the barn furnished shelter for the animals during severe storms."¹⁴ In Oregon, many early barns incorporated lean-tos in their designs providing shelter for stock. These lean-tos, which were often earth floored, "...occur on one side, usually on two or three sides, and sometimes on four sides of the central volume."¹⁵ Sometimes lean-tos are integral, that is within the main volume of the barn. Sometimes the lower walls of the lean-tos were left open to provide shelter for livestock.

Of the twenty-three barns estimated to have been built prior to 1870 recorded during the 1996 survey, side-opening barns predominate with 18 examples.

¹⁰ Gray, Harold E., Farm Service Buildings, (New York: McGraw-Hill Book Company), 1955, p. 4.

¹¹ Dole, 89-90.

¹² Deane, Samuel, The New England Farmer, (Boston, Wells and Lilly), 1822.

¹³ Gray, p. 4.

¹⁴ Ibid.

¹⁵ Dole, p. 89.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 49

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Subtype: *The Willamette Valley End-opening Barn*

An end-opening barn was also built during the early settlement period in the Willamette Valley. In contrast to the side-opening barn, the end-opening barn has the main wagon entrance on the gable end. Quite often this was a stock feeding barn, located in a pasture some distance from the house.¹⁶ Characteristics of early examples include hewn construction with:

lean-tos of hewn frame construction, partly enclosed with vertical boards, earth floored and with feeding racks for loose stock. The lean-tos surround three sides of a taller hewn framed enclosed structure, which would have a wood floor and large doors on one side. As the lean-tos are an integral and original part of the construction, the very low pitched roof has an extensive spread and seems to "nearly touch" the ground"¹⁷

A end-opening barn was also being built in New England before the settlement of Oregon's Willamette Valley. Hubka (1984) refers to this end-opening barn as a New England barn, to distinguish it from the side-opening English barn. He notes that farmers throughout New England began building this type of barn in the early 1800s and by 1860 it had become the most popular form.¹⁸

The nineteenth-century New England barn is easily differentiated from the earlier English barn by the major door centered in the gable end. It was frequently built in a three-bays-wide, three-bays-deep grid and organized around a central vehicle floor that runs the length of the barn parallel to the roof line and the side wall. Since mechanical threshers generally replaced hand threshing between 1830 and 1860, it is inappropriate to label this central bay a threshing floor. Although many observers assume that the central drive floor and its barn door are located in the exact center of the barn, this is infrequently the case. Most New England barns were designed to accommodate a wide haymow bay and a narrow cow tie-up bay, and consequently, the barn door is usually offset from the exterior view.¹⁹

In Linn County, four end-opening barns estimated to pre-date 1870 were recorded during the 1996 survey. All were located on farmsteads and no examples of early field barns were located. The Linn County examples are generally four bays deep. Two of the barns incorporate swing beam bents providing a wide

¹⁶ Dole, p. 88.

¹⁷ Dole, pp. 87-88.

¹⁸ Hubka, Thomas C., Big House, Little House, Back House, Barn: The Connected Farm Buildings of New England, (Hanover: University Press of New England), 1984, p.52.

¹⁹ *Ibid*, p.55.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 50

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

center aisle suggesting that the barns may have been designed for threshing. Unfortunately, both barns have been altered to such an extent that it is difficult to reconstruct the original spatial organization. The other two examples have 12' drives and no indication of a threshing floor, perhaps indicating a date of construction at a time when the threshing machine was in common use. All of the barns have a hewn timber frame.

Subtype: *The Bank Barn*

Only one bank barn believed to predate 1870 was recorded during the 1996 survey. A bank barn is a two-level barn whose upper level is entered from a bank or hillside or by a ramp constructed against the barn. The lower level, or basement, is often used for livestock. The Cochran Barn is unusual because it has bank access from a side-end and a gable-end (corresponding to the east and the south elevations). This has resulted in a combined transverse and longitudinal configuration of the drive on the main level providing for through entry and egress, which would not have been possible with a single directional drive. The main level of the barn was originally used for threshing grain and storing hay, grain and straw while the lower level housed livestock. The barn has three large mows, probably reflecting the owner's emphasis on stock raising.

Property Type Significance: Barns dating to the mid-19th century in Linn County are a very significant property type. Traditions embodied in the conception of early Linn County barns demonstrate a cultural continuity from Europe, to the English colonies in America, and, at the dawn of the age of mechanized agricultural production, to Oregon's Willamette Valley. The diverse barn building traditions of a nation adapting to the frontier conditions at the end of the fabled Oregon Trail are embodied by these barns. Constructed during the only period in Linn County history when agriculture was a subsistence activity, these barns illustrate several major themes in Linn County history with areas of significance including settlement, agriculture, and architecture.

Barns associated with Euroamerican settlement of the region may be significant under **Criterion A** of the National Register. These barns may also meet Criterion A for their association with the early agricultural development of the region.

Criterion B of the National Register may be met by barns that are associated with the lives of persons significant in Linn County history particularly if the individual's contributions were significant within the context of agriculture.

Criterion C of the National Register may be met by barns which either exemplify the pattern of features common to barns of this period, or illustrate individuality or variation. While standard in concept, these early barns can be highly individual in construction detail. Barns may also be significant for illustrating transitional or evolutionary characteristics. For instance, the threshing floor may be eliminated in barns constructed during the latter part of this period because mechanical threshers were available at that time, or,

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 51

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

the framing may be designed to accommodate the hayfork which was developed in the early 1860s. Barns may be eligible under Criterion C for illustrating the adaptations typical to that property type. For instance, many pioneer barns were modified in the latter part of the 19th century by raising the height of the barn so that it could accommodate a hay fork and have a full second level for hay storage. A barn may also be eligible under Criterion C if it was built by a builder recognized for his consummate skill. "The work of an unidentified craftsman is eligible if it rises above the level of workmanship of the other properties encompassed by the historic context."²⁰

Property Type Quantity, Quality and Condition: The 1996 survey identified 27 barns estimated to date from this period. Four of the 27 were not recorded; three because they had been extensively altered, and one because permission was not granted. In the latter case, the barn had been largely gutted and was in very poor physical condition. Two of the 23 recorded barns, the Hugh Leeper Brown Barn and the Matthew C. Chambers Barn, are listed on the National Register of Historic Places. One of the 23 recorded barns, the Settle Barn (ca. 1850), was destroyed by fire shortly after it was recorded by the survey team. Seven of the recorded barns are in such poor physical condition that collapse may occur during the next severe storm. Several barns have been gutted so that little except perhaps their framing and form remains. Only a very small number of pioneer barns survive in reasonable condition; therefore, the subtypes of end-opening barns and bank barns are represented by only one or two examples. Because of their rarity and individuality, the integrity threshold is less for pioneer barns than for barns of latter periods.

Registration Requirements: Barns are National Register eligible under **Criterion A**, in the area of settlement, if they are associated with the first individuals to establish land claims in an area, and, in order to convey this association, the exterior design of the barn, the location, and rural setting are unimpaired. The most distinctive exterior design characteristic is the form of the barn with its low profile and, with the exception of the single bank barn, one story height. Since original cladding materials are not often found on early barns, replacement siding of vertical boards of an appropriate width, unless there is evidence of horizontal siding, is acceptable. Large non-historic openings cut into one or more exterior walls may make a barn ineligible under Criterion A depending upon the location of the openings and how they impact the character of the barn. Metal roofs, while not endorsed, have become almost a universal feature of the Linn County barn, primarily because of the expense of shingle or shake roofs. While metal is an acceptable material for the roof, metal cladding would not be desirable on a barn seeking nomination under Criterion A in the area of settlement since feeling and association would be greatly diminished by this material. Given the rarity of this property type, however, metal siding should probably be judged on an individual basis since its impact on a barn will vary with siding type, color and application.

Barns are eligible for the National Register under **Criterion A**, in the area of agriculture, if characteristics

²⁰ National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation*, U.S. Department of the Interior, National Park Service, p. 20.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 52

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

are present which link the barn to early agricultural practices in the Willamette Valley. In addition to the exterior integrity threshold required for barns eligible under Criterion A, in the area of settlement, some aspects of the original interior spatial organization should be retained which link the barn to early agricultural practices.

A barn may be illustrative of a person's important achievements especially if the area of significance for those achievements is agriculture. Barns are eligible for the National Register under **Criterion B** if they are associated with the lives of persons significant in Linn County history, and maintain the characteristics by which that association is conveyed. The most important aspects of integrity for barns eligible under Criterion B are exterior design, sufficiently unaltered so that it would be recognized by the associated individual, location, and setting.

Barns are eligible under **Criterion C** of the National Register if they exhibit the pattern of features common for barns built during this period. Design, materials and workmanship are more important than location and setting so moved barns, and barns located in an area where the rural setting has been compromised, may still be eligible. Since one of the most important design aspects of this period is the method of construction, a barn may be significant for distinctive timber framing regardless of the integrity of other features. In this case, integrity of materials and workmanship are paramount. Because individuality and variation are hallmarks of the pioneer barn, and because this resource type is rare, remaining examples should all be considered as potential National Register properties under Criterion C with issues of integrity judged on an case by case basis.

Property Type: BARNS OF THE LATE 19TH CENTURY

Property Subtype Descriptions

Subtype: Side-opening Barns

In contrast to the barns of the previous period, these barns have higher ridges and higher eaves. The threshing floor and the floor to ceiling hay mow has often been eliminated, replaced by additional grain bins and livestock stalls. As in the earlier period, side-opening barns are usually three, four or five bays in length. Plans often feature an interior drive flanked by grain bins on one side with livestock in the two outer bays. The hay mow has been replaced by a second level devoted to hay storage. Because hay was still unloaded from the interior of the barn, a portion of the area over the drive is not floored over so the hayfork could operate.

Subtype: End-opening Barns

In contrast to the previous period, end-opening plans appear to have predominated at this time. Like the side-opening barns of this period, they are generally taller with more space beneath the roof. In the end-

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 53

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

opening barn, grain bins and stock were aligned along a wagon drive in varying arrangements, often under a continuous roof line. Three and four aisle barns were the most common. In the four aisle barn, grain bins and the off-center drive were located in the inner aisles, while livestock was located along the walls. Also observed was a single level plan with a broken roof line. This plan has a two aisle arrangement beneath the main roof a wagon drive flanked by grain bins. On two, three, or even four sides of the main volume are lean-tos for stock. Mow space is located above the grain bins and above the stables.

Subtype: *Western Barns*

In form, the Western Barn was similar to the side- and end-opening barns described above. "The "Western" barn has a high ridge and high also eaves....In a number of barns the lean-to disappeared altogether, but the majority of them simply incorporated them under a continuous roof pitch."²¹ In contrast, however, a radical change occurred on the interior, for it became two separate floors: a low ceilinged ground floor for stock with horses in stalls and cows in stanchions; the haymow on the upper floor reached by ladder or stair, now the dramatic, high volumed space....almost the complete separation of the barn into two stories"²² With the first level floored over, hay was unloaded from the wagon on the outside the barn by a mechanical hayfork. Hay hoods sheltered both the track and the hay door.²³ Philip Dole notes that it is the hay hood which distinguishes the Western barn type.²⁴ Western barns appeared toward the end of this period.

Subtype: *Feeder Barn*

Feeder barns have a central space open from floor to ceiling for hay. Livestock aisles flank the center hay bay on both sides; there are no drives and a pedestrian entry is located in the center of a gable end and usually accesses a room with a grain bin or two. Stock doors access the stock aisles. These barns usually have a wide, spreading appearance with low side walls.

Property Type Significance: Barns dating to the late 19th century in Linn County were built at a time when the county was a major wheat-producing region of the United States. These barns reflect the change from subsistence level agriculture to commercial agriculture in the Willamette Valley. New technologies, most

²¹ Dole, Philip, "Buildings and Gardens: Farmhouses and Barns of the Willamette Valley," in Space, Style, and Structure: Building in Northwest America, Ed. Thomas Vaughan and Virginia Guest Ferriday, (Portland, Oregon: Oregon Historical Society), 1974, p. 219-220.

²² *Ibid.*

²³ *Ibid.*

²⁴ *Ibid.*

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 54

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

notably the threshing machine and mechanical hayfork, combined with the completion of the first rail line in the region to facilitate this transition. With the mechanical hayfork, barns could be higher, and with the threshing machine, the threshing floor was eliminated from the barn plan. Bent designs also changed to accommodate the hayfork with post to purlin plate configurations common. Materials for barns were generally more processed and even the timbers were often the product of the local sawmill.

Barns dating from the late 19th century illustrate several major themes in Linn County history; areas of significance include agriculture and architecture. **Criterion A** of the National Register may be met by barns which reflect agriculture during this period. **Criterion B** of the National Register may be met by barns that are associated with the lives of persons significant in Linn County history particularly if the individual's contributions were significant within the context of agriculture. **Criterion C** of the National Register may be met by barns which retain enough characteristics to be considered a representative of the property type. A barn may also be eligible under Criterion C if it was built by a builder recognized for his consummate skill.

Property Type Quantity, Quality and Condition: The 1996 survey recorded 27 barns estimated to date to this period. Not every barn from this period was recorded during the survey; nonetheless, this property type is rarer than anticipated. Several examples were in poor condition, but, overall, the condition of barns from this period is better than the condition of barns from the mid-19th century. Because of their rarity, the integrity threshold should be less than that for barns of the 20th century.

Registration Requirements: Linn County barns may be National Register eligible under **Criterion A**, in the area of agriculture, if characteristics are present which link the barn to agricultural practices of this period. Aspects of integrity which should be present to convey this association are design, especially exterior design, location, and setting. The most distinctive exterior characteristic is the form of the barn, often a singular rectangular volume with a moderately-pitched gable roof of sufficient height for a second level hay mow. Often these barns have been adapted at a later period by the addition of one or more lean-tos. Since original cladding materials are not often found on early barns, replacement siding of vertical boards of an appropriate width, unless there is evidence of horizontal siding, is acceptable. Large non-historic openings cut into one or more exterior walls may make a barn ineligible under Criterion A depending upon the location of the openings and how they impact the character of the barn. Metal roofs, while not endorsed, have become almost a universal feature of the Linn County barn, primarily because of the expense of shingle or shake roofs. While metal is an acceptable material for the roof, metal cladding would not be desirable on a barn seeking nomination under Criterion A in the area of agriculture since feeling and association would be greatly diminished by this material. Given the rarity of this property type, however, metal siding should probably be judged on an individual basis since its impact on a barn will vary with siding type, color and application. Ideally, some aspects of the original interior spatial organization should be retained linking the barn to agricultural practices of the period. The barn's location and rural setting should be intact in order to foster the qualities of feeling and association.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 55

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

A barn may be illustrative of a person's important achievements especially if the area of significance for those achievements is agriculture. Of special interest would be barns associated with individuals that made significant contributions in the area of grain production. Barns are eligible for the National Register under **Criterion B** if they are associated with the lives of persons significant in Linn County history, and maintain the characteristics by which that association is conveyed. The most important aspects of integrity for barns eligible under Criterion B are exterior design, sufficiently unaltered so that it would be recognized by the associated individual, location, and setting.

Criterion C of the National Register may be met by barns which either exemplify the pattern of features common to barns of this period, or illustrate individuality or variation. Because this property type appears to be rare, remaining examples are potential National Register properties under **Criterion C** if they clearly contain enough characteristics to be considered a representative of this property type. Design, materials and workmanship are more important than location and setting so moved barns, and barns located in an area where the rural setting has been compromised, may still be eligible. To be considered a good representative of the type, a barn should exhibit the pattern of features common for barns built during this period. Since one of the most important design aspects of this period is the method of construction, a barn may be significant for distinctive timber framing; in this case, integrity of materials and workmanship are paramount. Barns may also be eligible for illustrating the variation which occurs in the property type. Barns which illustrate evolutionary or transitional characteristics may be eligible under Criterion C. For instance, prototypical barns, such as the earliest barn to incorporate a hay hood or Wing's joist-frame, may also be eligible under Criterion C.

Property Type: BARNs OF THE EARLY 20TH CENTURY

Western barns and feeder barns, described for the previous period, continued to be built in the early 20th century.

Property Subtype Descriptions

Subtype: Gambrel-roofed Barn

The gambrel-roofed barn of this period shares some characteristics of the Western barn (described above).²⁵ The profile of these barns changed perceptibly, however, with the gambrel roof supplanting the gable roof forms. Gambrel-roofed barns typically incorporated hay hoods and uninterrupted mow floors. Light framing also accompanied the gambrel roof's adoption although during this transitional period timber framing was also used.

²⁵ *Ibid.*, p. 225.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 56

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Subtype: *Gambrel-roofed Bank Barn*

Gambrel-roofed bank barns were generally three level barns identical to their non-banked counterparts except for a basement level which usually housed cow stanchions.

Property Type Significance: Innovation and experimentation in both agriculture and barn construction are hallmarks of this period. Some barns reflect the transitional quality of the period illustrating evolutionary stages, or sometimes misguided experimentation, in the shift from the timber-framed barns of the 19th century to the light-framed, gambrel-roofed barns of the 20th century. Other barns illustrate conservative or progressive ends of the spectrum. In the early 20th century, diversified farming replaced wheat production; dairying played a prominent role. Barns built during this period generally have more room devoted to dairy cow stanchions and hay storage. The specialized dairy barn also emerges at this time.

Barns dating from the early 20th century illustrate several major themes in Linn County history; areas of significance include agriculture and architecture. **Criterion A** of the National Register may be met by barns which reflect agriculture during this period. **Criterion B** of the National Register may be met by barns that are associated with the lives of persons significant in Linn County history particularly if the individual's contributions were significant within the context of agriculture. **Criterion C** of the National Register may be met by barns which retain enough characteristics to be considered a representative of the property type. In this period, the property type is actually characterized by variation and individuality. A barn may also meet the requirements of Criterion C if it was built by a builder recognized for his consummate skill.

Property Type Quantity, Quality and Condition: It is difficult to determine the number of extant barns from the first two decades of the 20th century because only a sample, approximately 45, were recorded; many more were located during the reconnaissance survey but it was generally not possible, upon cursory exterior examination, to distinguish barns of this period from barns of the subsequent period unless a date of construction was provided. Clearly, barns of the 20th century are far more numerous than their 19th century counterparts. Although there are more examples, there is also more variation because of the transitional character of this period. For this reason, while the property type is more numerous, barns significant for illustrating a certain variation or evolutionary phase may be poorly represented. For these barns, the integrity thresholds may be less than for barns represented by numerous examples.

Registration Requirements: Linn County barns are National Register eligible under **Criterion A**, in the area of agriculture, if characteristics are present which link the barn to agricultural practices of this period. For instance, dairy barns which date to this period may be eligible under Criterion A because they reflect the importance of dairying at this time. Aspects of integrity which should be present to convey this association are design, especially exterior design, location, and setting. Since barns of this period are more numerous, original cladding materials should be present on at least several elevations. (It is rare to find a Linn County barn in which the siding has not been replaced on the south and west elevations). Modification of door

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 57

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

openings, window openings, and window sash should be limited. Metal roofs, while not endorsed, have become almost a universal feature of the Linn County barn, primarily because of the expense of shingle or shake roofs. Ideally, some aspects of the original interior spatial organization should be retained linking the barn to agricultural practices of the period. Silos and milkhouses inside of the barn, or in close proximity to the barn, are good indicators of dairy activity. The barn's location and rural setting should be intact in order to foster the associative qualities.

A barn may be illustrative of a person's important achievements especially if the area of significance for those achievements is agriculture. Of special interest would be barns associated with individuals who made significant contributions to the dairy industry. Barns are eligible for the National Register under **Criterion B** if they are associated with the lives of persons significant in Linn County history, and maintain the characteristics by which that association is conveyed. The most important aspects of integrity for barns eligible under Criterion B are exterior design, sufficiently unaltered so that it would be recognizable by the associated individual, location, and setting.

Barns of this period may meet the requirements of National Register **Criterion C** if they clearly contain enough characteristics to be considered a representative of this property type. Design, materials and workmanship are more important than location and setting so that moved barns, and barns located in an area where the rural setting has been compromised, may still be eligible. To be considered a good representative of the type, a barn should exhibit the pattern of features common for barns built during this period. The table above summarizes these characteristics. Barns of this period are characterized by variation, individuality, and evolution. For this reason, a wide range of design is actually "typical" of the property type. Since one of the most important design aspects of barns is the method of construction, a barn may be significant for framing regardless of other features. In this case, integrity of materials and workmanship are paramount. Barns which fall into the below categories may be eligible under Criterion C if they retain those characteristics by which their significance is understood.

- * Barns which continue the building traditions of the 19th century. For instance, a barn with a hewn timber frame or Gothic inspired exterior design.
- * Prototypical barns which are the earliest known examples illustrating 20th century trends in barn building such as: the earliest barns to use concrete for foundations and floors; barns with plank frames; the first barns to use lighter framing methods such as balloon or platform framing; the first barns with gambrel roofs; and early examples of the Shawver truss or braced rafter roof framing.
- * Barns illustrating variation and individuality such as barns with three levels, barns with overhangs, and bank barns.
- * Barns for which the plan can be traced to one of the following: the Regional Plan Service;

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 56

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Oregon State College; pattern books of the period; a barn planning service; catalogue such as Sears or Montgomery Wards; or a barn that is pre-cut and shipped by a company.

- * Round or octagonal barns.
- * Barns which illustrate methods of construction that are rare such as pole frame construction with mortise and tenon joinery or log construction.
- * Specialized barns, such as feeder barns or dairy barns, that illustrate spatial arrangements peculiar to that barn type.

Property Type: BARNS OF THE MID-20TH CENTURY

Feeder barns, and the Gambrel-roofed barns described for the previous period, continued to be built in the mid-20th century.

Property Subtype Descriptions

Property Subtype: *Arched Roof Barns*

Arched-roof barns are distinguished by their convex roof profiles. In plan, the arched-roof barn was usually the same as the gambrel-roofed barn of the period. Because of the additional space provided by the convex roof form, the arched-roof barn was often a dairy barn.

Property Subtype: *Dairy Barns*

With the prominence of dairying in Linn County in this period, the specialized dairy barn emerged. Dairy barn designs generally accommodated two longitudinal rows of cows with complement of litter and feed aisles. The design might also include bull, maternity and calf pens; a feed room; office; milk room; wash room; cool room or can room. It was recommended that the dairy barn be placed with the long axis north and south in order to secure direct sunlight for as much of the day as possible.²⁶ Ceiling height was recommended at eight and one-half feet and the width of the barn either 34 or 36 feet with room for two rows of stock. Cows can face out with a single cleaning alley in the center or face in with a feeding alley in the center.²⁷ The length of the barn depends upon the size of the herd.²⁸ Concrete for barn foundations,

²⁶ Foster and Carter, p. 6.

²⁷ Foster and Carter, p. 8.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 59

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

floors, and gutters became common and were required for Grade A dairies. Often, mangers were formed of concrete. Dairy barns had rows of windows along the side ends in response to the recommendation that "Four square feet of glass, well placed, should be provided for each mature animal in the dairy barn."²⁹ Above, a large hay mow, beneath a gambrel or Gothic roof, accommodated loose hay which could be dropped through hay holes to the feed aisle below. A silo, or perhaps two silos, were located adjacent to the barn with a door from the inside of the barn to access the silage.

Milk, once stored in spring houses, now needed to be cooled in order to prevent bacterial growth and the milkhouse provided this function. It was advised that the milkhouse be constructed within 6 to 10 feet of the barn with the location such that prevailing winds during the dry season will carry barnyard dust away from it.³⁰ By the 1940s, however, it was reported that:

New thinking has gone into milk house requirements. At one time it was necessary to place the milk house at rather long distances from the milking room or dairy barn. Now the reverse is true. New milk houses should be attached to the milking room or barn, and in most cases city ordinances will permit construction under the same roof when a passageway with two doors is provided between the milking room and the milk cooling and utensil room. This is a big advancement and makes it possible to coordinate feeding, caring for the cows, milking them, and handling the milk, all into an efficient system.³¹

In the 1930s, there was a trend toward separate milking parlors. In 1936 one author remarked that there were two methods for handling dairy herds. The first method involved the use of a dairy barn with cows in stalls where they are fed, watered, milked and kept in overnight. The second method is the loafing barn type with another building where cows are milked. Some farmers added milking parlors during this period, sometimes attaching them to the barn.

Property Type Significance: Standardization in barn construction and specialization in agriculture are hallmarks of this period. Out of the design jumble of the early 20th century, the balloon frame, gambrel-roofed barn emerged as the standard in barn construction. The diversified farm often became a specialized

²⁸ Foster and Carter, p. 7.

²⁹ Foster and Carter, p. 15.

³⁰ Federal Cooperative Extension Service, "Producing Clean Milk," (Corvallis, Oregon: Oregon State College), Extension Service Bulletin 630, Jan. 1944, revised 1947.)

³¹ Doane Agricultural Service, The Farm Book: A Guide to Better Farming with Better Buildings, (Portland, Oregon, West Coast Woods, 1947, p. 19.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 60

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

farm during this period as increasing mechanization made it costly to purchase equipment for numerous activities. In Linn County, ryegrass production and dairying were in the forefront of specialized agriculture. Ryegrass production required a seed cleaner rather than a barn. Barns that were built during this period were often dairy barns. Others in dairying followed the advice of experts at the time which recommended separate milking parlor, hay barn, loafing barn combinations. With the adoption of the tractor, the automobile and other gasoline powered equipment, barn space required for horses and their accoutrements diminished.

Barns dating from the mid-20th century illustrate several major themes in Linn County history with areas of significance including agriculture and architecture. **Criterion A** of the National Register may be met by barns which reflect agriculture during this period. **Criterion B** of the National Register may be met by barns that are associated with the lives of persons significant in Linn County history, particularly if the individual's contributions were significant within the context of agriculture. **Criterion C** of the National Register may be met by barns which retain enough characteristics to be considered a representative of the property type.

Property Type Quantity, Quality and Condition: It is difficult to determine the number of extant barns from the mid-20th century because only a sample, approximately 45, were recorded; many more were located during the reconnaissance survey but it was not always possible, upon cursory exterior examination, to distinguish barns from this period from barns of the first two decades of the century unless a date of construction was provided. As evidenced by the reconnaissance survey, barns of the mid-20th century are far more numerous than their 19th century counterparts and barns of the mid-20th century appear to be more numerous than barns dating to the earlier part of the century.

Registration Requirements: Linn County barns are National Register eligible under **Criterion A**, in the area of agriculture, if characteristics are present which link the barn to agricultural practices of this period. For instance, dairy barns which date to this period may be eligible under Criterion A because they reflect the importance of dairying at this time. Aspects of integrity which should be present to convey this association are design, especially exterior design, location, and setting. Since barns of this period are more numerous, original cladding materials should be present on at least several elevations. (It is rare to find a Linn County barn in which the siding has not been replaced on the south and west elevations). Modifications to original door openings, window openings, and window sash should be limited. Metal roofs, while not endorsed, have become almost a universal feature of the Linn County barn, primarily because of the expense of shingle or shake roofs. Ideally, some aspects of the original interior spatial organization should be retained linking the barn to agricultural practices of the period. Silos and milkhouses inside of the barn, or in close proximity to the barn, are good indicators of dairy activity. The barn's location and rural setting should be intact in order to foster the associative qualities. Barns which have been converted to grass seed cleaners in the 1920s or 1930s may also be eligible under Criteria A. Integrity assessments would center on the adapted design, not the original barn design.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 61

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

A barn may be illustrative of a person's important achievements especially if the area of significance for those achievements is agriculture. Of special interest would be barns associated with individuals who made significant contributions to the dairy industry or grass seed industry. Barns are eligible for the National Register under **Criterion B** if they are associated with the lives of persons significant in Linn County history, and maintain the characteristics by which that association is conveyed. The most important aspects of integrity for barns eligible under Criterion B are exterior design, location, and setting, sufficiently unaltered so that the property would be recognizable by the associated individual.

Barns of this period may meet the requirements of National Register **Criterion C** if they clearly contain enough characteristics to be considered a representative of this property type. Design, materials and workmanship are more important than location and setting so that moved barns, and barns located in an area where the rural setting has been compromised, may still be eligible. To be considered a good representative of the type, a barn should exhibit the pattern of features common for barns built during this period. The table above summarizes these characteristics. Since barns of this period are more numerous and standardized, the integrity threshold should be high for barns illustrating the patterns common to barns of this period. Since one of the most important design aspects of barns is the method of construction, a barn may be significant for framing regardless of the integrity of other design aspects. In this case, integrity of materials and workmanship are paramount. Barns which fall into the below categories may be eligible under Criterion C if they retain those characteristics by which their significance is understood.

- * Late examples of timber frame barns.
- * Barns which illustrate methods of construction that are rare, such as log construction.
- * Barns illustrating variation and individuality in design or construction materials, such as barns with masonry construction or barns which were built using metal cladding.
- * Barns for which the plan can be traced to one of the following: the Regional Plan Service; Oregon State College; pattern books of the period; a barn planning service; catalogue such as Sears or Montgomery Wards; or a barn that is pre-cut and shipped by a company.
- * Barns with arched Gothic or rainbow roofs (These barns are rare with only about 15 extant examples.
- * Specialized barns, such as dairy barns, that illustrate spatial arrangements peculiar to that barn type.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 62

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Property Type: ETHNIC BARNS

Property Subtype Description

Ethnic barns are those in which the building traditions of other parts of the country and/or the world are evident, or barns for which the construction and/or design is associated with an ethnic group locally. With the exception of the Pennsylvania Barn described below, further survey work is required to define these property types and characteristics in Linn County.

Property subtype: *The Pennsylvania Barn*

The Pennsylvania Barn is a two level bank barn with a forebay that has antecedents in Switzerland.³² The template was carried to Pennsylvania in the 1700s by Germanic emigrants. Today, as a result of diffusion, Pennsylvania barns are found in various areas of the United States and are considered excellent markers by which to identify areas of Pennsylvania settlement especially by Amish, Mennonites and German Baptist Brethren.³³

Ensminger, author of the book, *The Pennsylvania Barn: Its Origin, Evolution, and Distribution in North America*, (1992), describes the characteristics of a Pennsylvania barn:

It is always banked to provide access to the upper level. This level is used to process and store feed grains, hay, and straw. It contains several sections or bays. Bays entered directly from the bank have large doors and function as threshing or machinery floors; those adjacent to the threshing floors serve as mows for storage of hay and straw. The upper-level space to the fore of the barn, extending over the stable wall below, is the forebay. Windows in the front wall of the forebay provide light for this area. An opening in this wall, formerly provided draft for hand threshing and winnowing. Through this opening straw can be tossed to the barnyard below...The forebay area may be continuous with the mows providing additional storage space. Usually, it is partitioned from the mows, and houses a granary with bins for various feed grains...The lower level of the Pennsylvania barn has always been used to house livestock, including cows, beef cattle, and horses....In many barns, pens for calves and even pigs, sheep, and chickens, can be found....Access between the stable and the barnyard is through the double split doors in the front wall, below the forebay. Gable end doors in Pennsylvania barns, when they occur, provide access

³² Ensminger, Robert F, *The Pennsylvania Barn: Its Origin, Evolution, and Distribution in North America*, Baltimore and London: The John Hopkins University Press, 1992.

³³ *Ibid.*, p. 164.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 63

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

to the feeding alley...³⁴

Ensminger notes that there can be significant variations in details of the design and construction of Pennsylvania barns because the barn evolved as agriculture changed.³⁵ The essential identifying feature, however, is the forebay.³⁶

Mennonites have proven to be an excellent index group for predicting the occurrence of Pennsylvania barns.³⁷ Additionally, Ensminger observes that "Members of the various Germanic Baptist Brethren churches, called Dunkards or Brethren, were also part of the population of Pennsylvania-German settlers who moved beyond the Pennsylvania hearth. One could expect that the Brethren Pioneers also participated in the diffusion of the Pennsylvania barn."³⁸

One Pennsylvania Barn has previously been identified in Oregon. This barn, built in 1889 is located near Hubbard, Oregon, the earliest site of Mennonite settlement in Oregon. Nearby is the community of Aurora, a utopian colony also with Germanic roots founded in 1856.

The 1996 barn survey in Linn County located one Pennsylvania Barn, the Michael Ryan Barn built in 1910. The builder and owner of this barn was not Mennonite but did hail from Pennsylvania. The barn has all the diagnostic features of a Pennsylvania barn but, because of its date of construction, is built using 20th century construction methods and has a gambrel roof. This is analogous to the barns of Central Wisconsin which Ensminger notes "...being late examples of the Pennsylvania barn, frequently have gambrel roofs....The basement stables follow a center-aisle plan with primary access provided by gable-end doors rather than under-forebay doors. This efficient arrangement permits a larger and more easily serviced dairy herd."³⁹

Property Type Significance: Barns associated with various ethnic groups that have settled in Linn County illustrate several themes in Linn County history; areas of significance include ethnic heritage, agriculture and architecture. **Criterion A** of the National Register may be met by barns that are associated with

³⁴ Ensminger, pp. 53-55.

³⁵ *Ibid.*, p. 52.

³⁶ *Ibid.*

³⁷ Ensminger, p. 161.

³⁸ *Ibid.*, p. 164.

³⁹ Ensminger, p. 90.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 64^a

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

various ethnic groups that have made a significant contribution to the broad patterns of Linn County history. **Criterion B** of the National Register may be met by barns that are associated with the lives of persons significant in Linn County history, particularly if the individual's contributions were in the areas of agriculture and ethnic heritage. **Criterion C** of the National Register may be met by barns which illustrate the building traditions of ethnic groups in other parts of the country and/or the world.

Property Type Quantity, Quality and Condition: The number of extant barns associated with various ethnic groups in Linn County is not known. Based on the 1996 survey, in which a number of ethnic barns were recorded, it is evident that there are barns in Linn County which reflect the building traditions of other parts of the nation and the world. Further survey work will undoubtedly identify more of these barns.

Registration Requirements: Linn County barns are National Register eligible under **Criterion A**, in the area of ethnic heritage, if the barns are associated with an ethnic group which has made an important contribution to the patterns of Linn County history, and the barn is sufficiently unaltered to convey that association. The most important aspect of integrity for barns nominated under Criterion A in this area is exterior design, location and setting. Original cladding materials should be present on at least two elevations. (It is rare to find a Linn County barn in which the siding has not been replaced on the south and west elevations). Barns should have a majority of original door openings, window openings, and window sash. Metal roofs, while not endorsed, have become almost a universal feature of the Linn County barn, primarily because of the expense of shingle or shake roofs. For a barn to also meet Criterion A in the area of agriculture, ideally some aspects of the original interior spatial organization should be retained linking the barn to agricultural practices of the ethnic group. The barn's location and rural setting should be intact in order to foster the associative qualities.

A barn may be illustrative of a person's important achievements especially if the area of significance for those achievements is agriculture. A barn may meet the requirements of National Register **Criterion B**, in the area of ethnic heritage, if it is associated with an individual that has made significant contributions and is a member of ethnic group in Linn County. The barn should be sufficiently unaltered to convey that association. The most important aspects of integrity for barns eligible under Criterion B are exterior design, location, and setting, sufficiently unaltered so that the property would be recognizable by the associated individual.

Barns may meet the requirements of National Register **Criterion C**, in the areas of architecture and ethnic heritage, if they illustrate enough characteristics linking the barn to the building traditions of ethnic groups in other parts of the country and/or the world. Design, materials and workmanship are more important than location and setting so that moved barns, and barns located in an area where the rural setting has been compromised, may still be eligible. Since the characteristics are variable, the barns should retain those characteristics by which their significance is understood. For instance, in the case of the Pennsylvania barn, the characteristic forebay must be present. Since one of the characteristics may be method of construction, a barn may be significant for framing; integrity of materials and workmanship are paramount.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 64^b

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Associated Property Types Other Than Barns

The focus of this multiple property submission is the barn. However, it is acknowledged that the historic barns of Linn County, as elsewhere, stand in relation to a farmstead consisting of accessory buildings, structures, and a farm residence, or headquarters, all of which function interdependently. For purposes of this multiple property submission, therefore, such related buildings may be included in a nominated area as features contributing to the significance of the primary feature. They may be determined eligible if they meet one or more of the National Register criteria for evaluation and each of the registration requirements cited below.

Subtype: ***Associated Outbuildings***

Property Type Significance

To be considered eligible for inclusion as a contributing feature in the nominated area, the accessory building

- 1) must be importantly associated with agricultural development in Linn County in the historic period 1846-1946 (Criterion A),
- 2) must be associated with the lives of persons significant in Linn County history for contributions to agriculture (Criterion B), or it must
- 3) embody the characteristics of a type of construction or design significant in Linn County architecture or engineering in the agricultural setting (Criterion C).

Registration Requirements

To be considered eligible for inclusion as a contributing feature in the nominated area, the accessory building

- 1) must have been developed and used in conjunction with the primary feature, the barn, during the historic period 1846-1946,
- 2) must be a clear-cut, generally intact example of its utilitarian type, and it
- 3) must clearly express its historic functional relationship to the barn in terms of its placement and visual character.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section F Page 64^C

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

Subtype: *Farm Houses*

Property Type Significance

To be considered eligible for inclusion as a contributing feature in the nominated area, the farm house

- 1) must be importantly associated with agricultural development in Linn County in the historic period 1846-1946 (Criterion A),
- 2) must be associated with the lives of persons significant in Linn County history for contributions to agriculture (Criterion B), or it must
- 3) embody the characteristics of a type of design or construction significant in Linn County architecture in the agricultural setting.

Registration Requirements

To be considered eligible for inclusion as a contributing feature in the nominated area, the farm house

- 1) must have been developed and used in conjunction with the primary feature, the barn, during the historic period 1846-1946,
- 2) must be a clear-cut, generally intact example of its residential stylistic type, and it
- 3) must clearly express its historic functional relationship to the barn in terms of its placement.

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section G, H Page 65

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

G. Geographical Data

All townships in Linn County, Oregon which lie to the west of the Willamette Meridian, and all those townships which lie one range east of the Willamette Meridian.

H. Summary of Identification and Evaluation Methods

This multiple property submission of barns of Linn County is based upon a 1995-1996 project which consisted of the completion of an historic context and an intensive level survey of barns in Linn County. The project was conducted by the Linn County Planning Department. The first phase of the project was the compilation of information on topics which could influence barn design and construction in the county such as agricultural developments and settlement and ethnic immigration. A review of literature on barn construction and design in Oregon and elsewhere was also undertaken as was an appraisal of previous survey data for this resource type in the county. Based on this research, a draft of a resource-based historic context was prepared. This draft context served as a predictive model and provided the framework for identifying potentially significant barns.

The survey phase began in March of 1996. The area covered by the survey includes all of the agricultural, non-forested lands of Linn County. Covering approximately 640 square miles, the survey incorporated several geographic regions including flat agricultural lands located on the valley floor formed by the Willamette and Santiam Rivers; agricultural lands located at the interface of the valley and the Cascade Mountain foothills; the tributary stream valleys formed by several drainages the most important which are Crabtree Creek, Thomas Creek, and the Calapooia River.

Two forms were developed to record survey information. One form provided reconnaissance level information only -- the type of information that could be gathered during a windshield survey. The second form was designed to record detailed information on individual barns including both interior and exterior details. While all barns estimated to be over 50 years old were to be recorded on one of the two forms, the decision as to whether or not to use the reconnaissance form or the more detailed survey form was guided by several factors including access to the property and the historic context. The historic context suggested properties which may be potentially significant and these were targeted for the longer form when encountered. Examples include pioneer barns, barns of the late 19th century, barns with Gothic roofs, barns which are suspected of being associated with an ethnic group, exceptionally intact barns from any period, barns which may be prototypical examples, barns which are prominent of the landscape, barns known to be associated with an important theme in Linn County history such as dairy barns, or barns known to have been associated with an important individual. In general, because of their greater numbers, properties erected from 1900 until the end of World War II were more selectively recorded.

All roads indicated on U.S.G.S. maps dating to the 1950s were travelled and all farm locations indicated on those maps were viewed. Metsker maps from the 1930s which illustrate ownership and sometimes

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section H,I Page 66

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

driveways to farms some distance off the road in the 1930s were also used. Aerial photographs were used on a limited basis. For this reason, barns located some distance from a road may have been missed. Visibility was generally unobstructed, however, on the valley floor. The intensive level survey located approximately 836 barns that were estimated to be at least 50 years old. Of the 836 barns, 147 of the barns were selected for recordation using the longer form.

Data provided by the survey allowed the draft historic context to be refined. For instance, only three chronological time periods were initially defined but information provided by the survey clearly indicated a division of one of the defined periods. Property type identification are purposefully general and are based on chronological period. Integrity requirements were based upon knowledge of existing properties representing each property type.

Based on the registration requirements, a list of 50 potentially National Register eligible barns was compiled; this list does not include every National Register eligible barn in the county. Using this list, letters were prepared asking property owners if they would be interested in having the county prepare a National Register nomination for their property as part of a multiple property submission which the county planned to prepare. The county had funding to complete six individual nominations. Only 25 of the 50 owners were initially contacted because of the limited funds allowing the county to prepare only six nominations. Eight positive responses were received. Subsequently, one owner decided to sell their property and the uncertainty led to dropping the property from consideration at this time. Nomination forms were completed for seven barns.

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United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET

Section I Page 67

Barns of Linn County, Oregon, 1846-1946
Name of Multiple Property Listing

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