THE ROLE OF ANDRAGOGY AND SELF-DIRECTED LEARNING IN THE DRAFT HORSE INDUSTRY

A Dissertation

by

JAMES WILLIAM HYNES

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2005

Major Subject: Agricultural Education

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Approved as to style and content by:

James R. Lindner (Chair of Committee)	Kim E. Dooley (Member)
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ABSTRACT

The Role of Andragogy and Self-Directed

Learning in the Draft Horse Industry. (May 2005)

James William Hynes, B.A., University of Illinois;

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Chair of Advisory Committee: Dr. James R. Lindner

The purpose of this study was to determine and understand the variables affecting the revival of the draft horse industry in the United States. A qualitative study was conducted using 31 purposively (Lincoln and Guba, 1985) selected draft horse industry participants who were drawn from three case studies, conducted in East Texas, Russia (Siberia), and Northern Indiana. Structured and semi-structured interviews were utilized. Major findings emerged with this research showed that the culture of practicality, inventiveness, and risk taking has allowed communities of individuals to achieve financial success where others have been forced to abandon their businesses and seek other sources of livelihood.

Some of the findings stood alone with no seeming connection to the other findings. Other findings appeared to be intertwined with one another. All of the emerging findings contributed to the renewal and engagement of individuals in the draft horse industry revival. The findings are deliberately not listed in any particular order. The scope of the study did not include a method to determine which

finding or series of findings preceded the others. The major findings to emerge from this study are as follows.

Most of the participants in the revival were or are middle aged men and women. This finding melds well with another finding that determined the draft horse business was the second, third, or fourth career of the participants in this study. Many of the participants operate their businesses in rural non-farm locations. Owners and publishers of trade magazines played a pivotal role in this industry revival.

Geography and international connections played a role. The Amish communities across the U.S. played a pivotal role in keeping relic technologies alive and maintaining seed stock for the revival of the draft breeds. Specific markets for horses and equipment have been carved out by many of the participants. Self-directed learning and andragogy were exhibited by almost all of the participants. The role of university and extension personnel in this revival was essentially non-existent.

DEDICATION

Thank you Gerry, Kellie, and Maureen for all of the support and inspiration you gave me in this endeavor. Gerry, there were way too many boring nights and weekends while I worked in my new profession. We will make up for it. Kellie and Maureen, the successes you both have enjoyed as students made me want to visit the arena again. I am so glad I did.

This study is also dedicated to John J. Hynes II. You were my first and best teacher/facilitator of learning. I marvel now at how well you, as the most andragogical self-directed learner I have known, taught without even knowing these disciplines existed. You never stopped learning and always shared your knowledge.

ACKNOWLEDGEMENTS

I first want to acknowledge and thank my committee which consisted of James R. Lindner - Chair, Kim J. Dooley, Tim H. Murphy, and Robert R. Bednarz. I was fortunate to have such insightful people who unselfishly shared their time and knowledge with me. Dr. Lindner introduced me to concepts of andragogy and self-directed learning. The introduction to these subjects allowed me to finally make sense of what I had seen and felt as both a student and as a teacher. Dr. Lindner and Dr. Dooley made many excellent suggestions for improving the quality of this dissertation. Any shortcomings are mine. Dr. Bednarz pointed me in the correct direction for exploring the geographical aspects of this study. Dr. Murphy provided me with regular technological assistance.

Yvonna Lincoln first instructed me and then on many occasions offered advice on how to effectively conduct qualitative research. Jeff Moss needs to be thanked as well. He started me in graduate studies and introduced me to Texas A&M University.

None of this would have happened without the many years spent in the company of Jay Kern, Ray Scherrer, and Dick Shilliday. Jay, the night long conversations during the hunts in the Mississippi Bottoms were always a source of knowledge of the world and entertainment. They are sorely missed. Ray, your insights and understanding of horses and the men who use them have been building blocks for my work. Finally, this dissertation has Dick Shilliday's hands all over it. Dick was a veterinarian whose first calling as a teacher of the art of animal husbandry wrote many lessons in my life's continuing education.

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CHAPTER I

INTRODUCTION

Agricultural education has a strong history of affiliation with draft animal power, ancillary industries for production agriculture, and international agriculture (Simalenga & Jongisa, 2000; Craske, Davis, & Moss, 1999). Agricultural education can be defined as a discipline arising from the intersection of the knowledge bases of the hard sciences such as animal science, crop science, and soil science with the social sciences of education, sociology, and psychology (McLean, 1997). The resulting blend of information is often influenced by history and the geographic location/distribution of the elements being studied (Doubleday, Mackenzie, Fiona, & Dalby, 2004). In order to determine and understand the variables affecting the revival of the draft horse ancillary businesses, the history and the geography of the draft horse industry in the U.S. will be examined.

This information may be offered on the platform of human resource development, acquired formally or informally, taught either pedagogically or andragogically, or learned in a self-directed fashion. Ellinger (2004) suggests andragogy and self-directed learning remain significant components in the learning schema of adults. Adelaine and Foster (1990) found extension clients believed they had an attenuated influence on extension educational programs. Brown (2002, p.228) observed "the importance of self-knowledge as an outcome of learning."

This dissertation follows the style of the *Journal of Agricultural Education.*

Harpaz defined learning as “listening” and postulated it took place best in a “Community of Thinking.” Harpaz (2005 p. 136).

Courtenay, Merriam, and Baumgartner (2003) viewed integrative learning as the road map for joining marginalized groups of learners. “Intense internal curiosity and motivation” drives marginalized learners (Courtenay, Merriam, and Baumgartner, 2003, p.111). The participants of their study learned in an andragogical fashion.

The revival of the draft horse industry in the 20th century provides an example of how an industry can reinvent itself. Rindos (1980) reported that a positive selection for instability has characterized agriculture from its beginning. The components of the draft horse resurgence, such as knowledge, business expertise, and risk taking, are applicable to many other businesses. It was suspected that the knowledge and skills of the support business people in the draft horse industry were acquired through self-directed learning and/or informal training, rather than through formal, more traditional educational methods. A formalization of the informal approaches to training in the draft horse industry is in order. Alternatively, the importance of other variables, such as geography and history, as integral parts and platforms of the learning process, may be shown as determining factors in the reacquisition of knowledge and skills.

Lorimer (2003) found a connecting thread existed between learning geography, knowledge making, and the changing of the history of a discipline. Tooke (2000) argued for regionally based learning infrastructures which would match geographically differentiated employer skills. Downs, Liben, and Daggs (1988) called for the

integration of the ideas from geography into education. Appleton (2002) spoke of the relevance of a geographical perspective in solving social issues.

The knowledge gleaned from this study may enable educators to apply the methods used by the subjects in other venues of agricultural education. The knowledge derived from this study may benefit rural communities by showing a pathway towards employment for residents, expanded tax bases, and the stabilization of population levels. The exporting of the reacquired knowledge base back to the countries whose citizens originally settled and brought the draft animal technology and skills to the United States would suggest the first completion of an agricultural cycle that started 500 years ago. This study seeks to determine how the knowledge and skills of the people involved in the ancillary draft horse businesses were acquired.

Statement of the Problem

Traditional paradigms in financial agricultural education need to be reviewed (Gustafson, 2002). Page (1996) suggests that a gulf separates agriculture and industry driven by capitalistic theory development favoring industry over agriculture. Page further postulates the importance of locality and regional development. Educators need to encourage entrepreneurship when traditional methods are no longer successful. Part of the process of encouragement of entrepreneurial thinking is to broadcast information which already exists in the rural community. There is evidence of entrepreneurial efforts in the U.S. draft horse industry (Telleen, 1979).

Conroy (2000) suggests the primary goal for the education community should be supplying a well-trained work force. Rural communities dealing with shriveling tax bases, deteriorating infrastructures, and the migration of that portion of the population with the most potential all make this an issue of great relevance. Conroy's results indicate there are few students with an interest in traditional agriculture occupations. More than half of the students in the study evidenced interest in occupations that broadly fell under the umbrella of agricultural or natural resource industries. One method to reverse the loss of rural infrastructure and people would be to demonstrate to rural communities ways to secure alternative methods of livelihood via sustainable self-reliant enterprises.

Armstrong and Levesque (2002) propose that entrepreneurs set a target quality level for their product to maximize their returns. A central attribute of a learning society is the skills it possesses. Balatti and Falk (2002) consider skills and knowledge to be central attributes of a learning society. Chronicling the reacquisition of the skills and methods of the relic technologies of the 19th century by people who have successfully used them in the 21st century will provide a successful entrepreneurial blueprint for those who seek low cost alternative methods for starting their own business.

Blundel (2002) exhorts researchers to deeply understand the methods used to maintain heterogeneity and value, thereby distinguishing commonly found factors from those that come from deep history. The historical use of draft animals was on the mind of these subjects when they first started to acquire and use them. Jack and Anderson (2002) suggests that embedding, or the depth of one's ties to their environment, plays a

key role in his success. Entrepreneurs must fulfill a need in society to be successful. They accomplish this by maintaining business and personal networks, ties, and relationships.

According to Jack and Anderson (2002), a theoretical construct of structuration (recurring patterns of thought) states that the future is anchored in the past. This theory applies as well to education, though in the contextual areas of extension and organization and community the current paradigms do not take into account the change management possibilities of looking to technology of the past for solutions to current problems. The theory of Jack and Anderson (2002) affirms Rindos' (1980) observation that a positive selection for instability has characterized agriculture from the beginning.

Purpose of the Study

The purpose of this study was to delineate contextual applications in agricultural education used for acquiring the knowledge and skills necessary for the operation of contemporary businesses supporting the use of draft animal power. The researcher also sought to demonstrate that the reacquisition of these knowledge and skills is in part historically, culturally, and geographically driven. The methods used by the study participants in their reacquisition of the knowledge and skills necessary for success should be used as a role model for how other rural industries can start and flourish.

Recent developments indicate the knowledge and skills associated with draft animal power are starting to be used in Western Europe by individuals wishing to establish and maintain sustainable agriculture operations. For the past 8 years (D. K.

Stoltzfus, personal communication, June, 2004) attendance at the annual Horse Progress Days (HPD) by nationals from Western Europe has steadily increased. They have come to the HPD to observe and learn sustainable farming techniques as well as to purchase equipment.

Research Question

The following research question served as a guide in conducting this qualitative study: "What variables influenced the revival of the ancillary businesses in the draft horse industry?" Many of the subjects of this study, the business owners, learned their business after a generation or more passed between today's use of the technology and when it was previously used. This work may help to identify the components of the successful revival of a heretofore-defunct industry.

Lessons learned may benefit those seeking to start new rural enterprises, because they will be able to use ideas presented as a blueprint or map for success in their situations. Lessons learned may benefit educators in rural communities, because they may be able to use the ideas presented as a means to help people in rural communities acquire the knowledge and skills important for revitalization of their economies. The salient facts and features of the peak period of draft horse use in America as well as the nadir from which the industry was reborn in the mid 1960's will be examined and used as baselines for this study.

Methodology

This was a qualitative study of 27 respondents drawn from Russia (Siberia), Germany, England, East Texas, Oregon, Montana, Iowa, Indiana, Ohio, Michigan, and Pennsylvania. Structured and semi-structured interviews were utilized. This qualitative study followed procedures set forth by Lincoln and Guba (1985), Erlandson, Harris, Skipper, and Allen (1993), and Merriam (1998) and applied trustworthiness quality criteria. The field notes were organized and transcribed using the procedures outlined by Lincoln and Guba (1985). Member checks were used to confirm the veracity of the information provided by the participants. This was accomplished by reading back to the participants the information they provided at the end of the interviews as well as calling them on the telephone or communicating with them via email after the interviews were analyzed. Trustworthiness was assured by credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985).

Delimitations

The study was delimited to a sample of owners of ancillary businesses who were supported by the draft horse market. Those owners were interviewed in Russia (Siberia), East Texas, and Indiana. The annual Horse Progress Days in 2004, which was held near Middlebury, Indiana, showcased over 100 owners and operators of ancillary businesses, located from coast to coast, to the draft horse industry. Since 1995, this has been the largest exhibition of horse drawn equipment in the United States.

Limitations

The limitations of the study come from its sources of information. The researcher's own experience with the industry introduces unknown levels of bias. Several of the business owners were old order Amish. The researcher in his many years of experience working with that particular sect has found them to be quite circumspect about their affairs. Studying participants at the Horse Progress Days may have been a source of bias against those who did not participate in the show.

Definition of Terms

Draft Horse- an equine used primarily for work in harness

Ancillary Industries- businesses that support and are dependent on other existing enterprises

Old Order Amish- a religious body descendant from the Anabaptist followers of Jacob Amman.

Sustainable Agriculture- human activity that can be maintained over the long term without adversely affecting the environmental conditions necessary to support these same activities in the future.

In Chapter II, the literature review will address three key concepts. Self-directed learning and the theory of andragogy, the ties between the draft horse industry and sustainable agriculture, and a historical narrative of the draft horse industry. All of these concepts melded together and became integral in this study.

CHAPTER II

LITERATURE REVIEW

Introduction

The purpose of this study was to delineate contextual applications in agricultural education used for acquiring the knowledge and skills necessary for the operation of contemporary businesses supporting the use of draft animal power. This study demonstrates that selected agricultural educational contexts and their applications in economic pursuits work in nontraditional ways. These applications should be used as potential sources of solutions in the economic revival of contemporary rural societies. The first part of the literature review discusses self-directed learning and the theory of andragogy and their applicability to this study. The second part of the literature review addresses ties between the draft horse industry revival and sustainable agriculture. The third part of the literature review consists of a historical narrative describing the draft horse industry's decline and revival during the twentieth century in the U.S.

Self-Directed Learning and the Theory of Andragogy

Self-directed learning has its foundation in the teachings of Aristotle, who believed that all men, by nature, are lifelong learners. Cooper (1932) quotes Aristotle:

> Learning, … and wonder, as a rule, are pleasant; for wonder implies the desire to learn, so that the wonderful is something desired, and desire is always for the pleasant; while learning implies a settlement into our normal state. All men desire to know; complete knowledge is the settled state to which we tend; and by definition pleasure is a settling into our normal nature (p. 65).

Knowles (1972) developed a theory of adult learning that is consistent with Aristotle's observations. Knowles, Holton, and Swanson (1998) define andragogy as a "set of core adult learning principles that apply to all adult learning situations" (p. 2). Knowles ascribed psychological adulthood to individuals who assume the responsibility for managing their own lives. The participants of this study have manifested the management of their own lives.

Knowles (1972) specified several ways in which adults learn. All of the participants of this study were adults. Each learned their specific draft horse industry related skills in an andragogical fashion consistent with the writings of Knowles (1972). They were self-directed and called on their experiences of life as a resource in learning situations. They were driven by their situational needs to try to make their business work and assumed responsibility for their own increasing competence in their chosen endeavors.

Tough (1967) sought understanding of adult learners during self-teaching projects, suggesting that adult learners "listen to themselves." Grow's (1991, 1994) model of learning, referred to as SSDL or Staged Self-Directed Learning included the following point: a learner's ability to learn is predicated on situation, skills, and subject matter. The participants in this study all learned their trades and acquired their skills in non-traditional ways. Their subject matter is not formally taught in any institution of higher learning or in vocational/technical schools.

Tennant (1992) disagrees with Grow. Tennant implies support of a strongly directive learning style. Tennant suggests that Grow's model is not capable of "handling

a range of observations" and "needs to be internally consistent" (pp.164-166). This study demonstrates the opposite. Staged Self-Directed learning in the draft horse business and its attendant supporting industries provided the explanation for the structure and framework within which the participants were freed to teach themselves.

Kohler's (1947) explanations of Gestalt psychology help to explain how self-directed learning works. He believed learning was tied to association since association is derived from organization. The draft horse industry, particularly the breed associations, the state associations, and the supporting trade periodicals have tightly woven connections throughout and among its members and subscribers

Knowles, Holton, & Swanson (1998) as well as Donaldson and Graham (1999) looked at and defined learning theory. Their definitions are not contradictory. Instead, they complement each other. The Whole-Part-Whole Learning Model purports that there is a natural whole-part-whole rhythm to learning (Knowles, Holton, & Swanson, 1998). There are many disciplines (e.g., math) and activities (e.g., harness manufacturing) where the stages of learning can be diagrammed to fit this model. Evidence for use of this model was revealed during interviews with the respondents.

Donaldson and Graham (1999) suggested that adults use skills, techniques, and settings that are different from those of younger students to accomplish the desired results. Adults' mental schemas make learning more personally meaningful to them. They draw on existing knowledge and experience to utilize and apply new ideas. The participants of this study used their real life experiences that enabled them to connect theory, acquired through persistent effort to re-educate themselves, to those experiences

and derive meaning from them. One of the participants of this study spent several years learning how to provide horse drawn carriage services to the paying public. At one point he spent one week at the Arlington National Cemetery to learn the proper protocol for using horse/mule drawn hearses in military funerals.

Sustainable Agriculture

The second part of the literature review addresses the philosophy of sustainable agriculture, its roots, and its implications for stabilizing the economies of rural communities. Rogers (1983) suggested that before adoption takes place awareness, information seeking, evaluation, and trial must occur. Sustainable agriculture is important because it is a vital business component practiced by forward-thinking entrepreneurs (Geraci, 2004). Restaurant owners (Rainsfeld, 2004) across the country are seeking organically grown produce and meat from entrepreneurs practicing sustainable agriculture. Peterson (2004) found chefs across the country to be driving forces behind the development of the sustainable agricultural practices of farmers in areas of rising land prices and urbanization. Sustainable agriculture has become an international trend (Shi, 2004). Shi noted sustainable agriculture promotes "self-sufficiency….. rural employment and income generation to alleviate poverty"(Shi, 2004 p.114). "The philosophical core of this emerging practice is economic development and environmental protection could be coordinated" (Shi, 2004 p.114). Martinot, Chaurey, Lew, Moreira, and Wamkonya (2002) found a connection between rural entrepreneurship and sustainable development. Martinot, Chaurey, Lew, Moreira, and

Wamkonya (2002) noted the melding of rural entrepreneurship and sustainable development led to applications in agriculture, small industries – including companies to provide energy for households, and social services in rural environments. Kruger (2004) suggests sustainable agriculture provides climate-friendly farming and energy recovery.

Geraci (2004) noted agricultural success illuminates entrepreneurial energy. Leger-Jarniou (2001) called for entrepreneurial teaching programs at universities to focus on changing students' mindsets and attitudes toward entrepreneurial activities and develop an orientation to engaging in the process. Petrin and Gannon (1997) suggested entrepreneurship is the vehicle whereby individuals may improve the quality of their lives, families, and communities. Lohmoller (1990) believed that entrepreneurship in rural areas was the cornerstone for economic development and growth. Culture was found to play a role in providing the necessary environment for entrepreneurial success (Mueller and Thomas, 2001).

Firebaugh (1990) noted sustainable agriculture enables a stronger socio-economic footing to exist in rural communities and farms. Alonge and Martin (1995) found farmers were willing to look at new ideas and methods in their operations. Williams and Dollisso (1998) suggested that sustainable agriculture is a "global philosophy" (p.51) that directs the development of agricultural systems, which in turn, "address economic, social, and environmental issues in a multidisciplinary manner" (p.51). Williams (2000) postulated sustainable agriculture is more a philosophy concerned with the economic, social, and environmental benefits than a knowledge base of suggested farming practices. Gamon, Harrold, and Creswell (1994) called for new

educational platforms and techniques to address the needs for disseminating information on sustainable agriculture. Alonge and Martin (1995) determined that needs assessment and analysis must continually take place in order for sustainable agricultural practices to be completely comprehended and adopted.

Historical Narrative

A review of the draft horse industry's history and geographic location is essential to understand the contexts, needs, and in some cases the sources of the knowledge and skills acquired or reacquired allowing the industry and its ancillary businesses to re-appear in the U.S.

With the continuing economic, social, and political difficulties encountered by participants in all the phases of agriculture, it is incumbent on researchers seeking solutions to review the past in order to see forward (Jack & Anderson, 2002). The peak usage of horsepower and the beginning use of the internal combustion engine powered vehicles occurred around 1900. Our brief look at an overview of the state of selected aspects of twentieth century agriculture will be used as a historical review to help determine which variables contributed to the revival of certain agribusinesses in the twenty-first century whose technologies are drawn from a period of time over a hundred years old. The return to the Diaspora of agriculture is bound together by the cultural, educational, economic, geographic, and social needs of its participants.

The Early Twentieth Century

The primary source of farm and ranch power in the U.S. was draft animals in 1900 (U. S. Census Reports, 1900a). There were only 3,904 automobiles produced in 1900 (U.S. Census Reports, 1900a). Oxen (mature steers), mules (offspring of a male donkey [jack] bred to a female horse [mare]), and draft horses comprised the vast majority of animals. The use of draft animals was also common in cities where heavy weight teams, frequently Shire horses, provided the primary power to move freight loads to their destinations. Lightweight teams and single horses drew such diverse vehicles as ambulances, fire wagons, and milk wagons.

In 1900 the 12th Census of the United States was undertaken. The writers of the text accompanying the census statistics were optimistic about the prospects of the country. The agricultural industry showcased its purebred breeds of livestock at the first International Livestock Show in Chicago, Illinois (Telleen, 1975a). The market for horses was strong and the mule market was great. Great Britain had purchased in excess of 20,000 horses by the end of the first quarter of the year and was still in the market (Telleen, 1975a).

The strong market for horses in 1900 was demonstrated by a report from the *Breeder's Gazette* in which it was reported that for the week ending August 25, 135 carloads of horses were shipped out of East St. Louis, Illinois, to various parts of the country (Telleen, 1975c). In 1900, the heavy industry in the city of St. Louis, Missouri, was located along the Mississippi River. Since the city was built primarily on bluffs, most of the heavy industry was located on the flat second terrace bottomland to the east

in Illinois. Here, East St. Louis, along with extensive railroad switching yards, provided the industrial backbone for the 4th largest city in the United States (United States Census Reports, 1900a). The weekly horse sales at the East St. Louis Stockyards continued in some fashion (becoming monthly sales of primarily riding horses) until the early 1960's (personal observation by the researcher).

In 1900, the railroads carried most of the long haul freight in the United States. There were 193,000 miles of track (Auraria Library, 2003). Paved roads totaled 144 miles (United States Census Reports, 1900a). Horsepower was primarily animal-derived. The ten states with the largest number of farms were (in descending order) Texas - 352,190, Missouri - 284,886, Ohio - 276,719, Illinois - 264,151, Kentucky - 234,667, Iowa - 228,622, New York - 226,720, Georgia - 224,691, North Carolina - 224,637, and Tennessee - 224,623 (U.S. Census Reports, 1900a) (Appendix D-1) (Table 1). A farm was defined as "all the land under one management, used for raising crops and pasturing livestock, with the wood lots, swamps, meadows etc., connected therewith, whether consisting of one tract or of several separate tracts"(U.S. Census Reports, 1900a p. xiv).

Table 1

The Ten States with the Largest Number of Farms (United States Census Reports, 1900a)

State	Number of Farms
Texas	352,190
Missouri	284,886
Ohio	276,719
Illinois	264,151
Kentucky	234,667
Iowa	228,622
New York	226,720
Georgia	224,691
North Carolina	224,637
Tennessee	224,623

Farms were classified by area, principal source of income, reported value of products not fed to livestock in 1899, by tenure of the operator, and by the race or color of the farmer. There was a breakout of farm classification predicated on whether or not a farm grew crops and livestock, was a dairy farm, or was solely a livestock farm. The value of these enterprises was examined with the value of gold and the destruction of the Civil War given as explanations for many seemingly incongruent results of the census. Livestock farms were farms that derived their principal income from animal products. The census listed the top five states for livestock farms as Missouri - 151,451, Iowa - 133,625, Illinois - 113,674, Ohio - 113,520, and Indiana - 107,887 farms (Appendix D-2) (Table 2). Texas had 42,624 livestock farms and 228,606 cotton farms. It was duly noted that in Texas the cotton farms had negligible economic impact when compared to the livestock farms (United States Census Reports, 1900a).

Table 2

The Top Five States for Livestock (United States Census Reports, 1900a)

State	Number of Livestock Farms
Missouri	151,451
Iowa	133,625
Illinois	113,674
Ohio	113,520
Indiana	107,887

The United States Census (1900a) reported a total of 18,280,007 horses with 86.2% of the horses on farms, while 13.8% were in barns and enclosures- that is to say- in stables in the various communities across the land. It was noted that the breeders of draft horses had not followed studbook lines but had instead bred for qualities desired. This means that performance was the first criterion of the horse breeders of the day. This was not the situation when the draft horse business was revived 60 years later.

The United States Census 1900 classified farms by the race of the operator as well as the race of the owner of the land. The power source for the farm was also classified with the type of draft animal (horse or mule) considered noteworthy. Geographic location was used as an explanation or reason for one animal type chosen over another. Roughly 84% of farms operated by white farmers used horses, whereas 47% of the “colored” farmers used horses. The white farmers used an average of 4+ horses per farm, while colored farmers used an average of 2 horses per farm. These numbers were larger in the western states because the large farms on the Indian reservations were included in the “colored” category. Since some of the Indian

reservations did not report on their farming endeavors, the census report acknowledges a distortion to the numbers both in terms of farm size and number of horses. The 12th Census was the first census in the U.S. that did not include oxen as a source of draft power.

It is relevant to view the mind-set around which the philosophy and beliefs of the times revolved by looking at the discussion of mules in the 12th Census. Alabama, Georgia, and South Carolina were reported to have more mules than horses, while Mississippi, Louisiana, and North Carolina were noted for having an equal number of both mules and horses (United States Census Reports, 1900a). The text goes on to say:

> There are many reasons for the extensive use of mules in the Southern states. The hot, moist climate is quickly fatal to horses when hard worked, while mules bear it with impunity and endure hardship, overwork, and ill usage without great loss, an element of considerable importance in a country where work animals are handled largely by ignorant and careless laborers. (United States Census Reports, 1900a p. cxclx).

From 1885 to 1900 there were two competitors to draft and carriage horses in the cities and towns of America--bicycles and electric streetcars (United States Census Reports, 1900a). It was suggested in the United States Census of 1900 that people who had never owned a horse did own bicycles. Those who did not own a bicycle were thought to be potential automobile owners. It was not even suggested that the automobile would become a competitor of the horse.

The electric streetcars were another matter. Prior to the electrification of heavily populated communities, horses pulled the streetcars in those communities. The census scribes felt the dislocation of horses from streetcar work would be short lived and indeed that turned out to be a correct assumption. Once the panic of 1893 was overcome, horse

values and numbers started to rise again. The economic power of the horse market was strong enough to warrant a section in the 1900 census titled *The Permanent Demand for Horses* (United States Census Reports, 1900a, p. cxci).

Several case histories were presented to demonstrate this permanent demand. The census looked at two changes in long distance freight hauling methods. The Erie Canal initially displaced teamsters who hauled freight in the early nineteenth century in that part of the country. Once the freight was offloaded from the barges, horses were needed to move it to its final destination. The use of horses along the Erie Canal actually grew because of the freight traffic produced by the canal.

The second example used by the census to prove their case for the Permanent Demand for Horses was the development of the railroad in the United States. Essentially the census people offered the same sort of proof here as they did with the Erie Canal. It was suggested that with all the freight hauled by the railroad, horses were needed to move the offloaded merchandise to either the appropriate warehouses or to the merchandise's final destination. The number of horses continued to grow.

Draft horses and the businesses that supported them were not evenly distributed among all of the states. The census did not distinguish between draft horses and riding horses on farms in the Census of 1900. The top ten states in terms of number of horses on farms in 1900 were in descending order: Iowa, Illinois, Texas, Kansas, Missouri, Ohio, Nebraska, Indiana, Minnesota, and New York. Pennsylvania and Michigan had slightly lower numbers than New York (Appendix D-3).

The applicability of the draft horse business in 1900 to the draft horse business in 2005 is best viewed through three related factors. All three of these factors are examined. The first factor is the distribution of the horses on farms in 1900. A historical review of the draft horse industry's 1900 location will be compared to the distribution of draft horses in 2003. Second, a study of where harness manufacturing (Table 3) took place in 1900 will be compared to the location from then with where harness makers are located now. Third, an examination of horse equipment manufacturing will compare the location of manufacturers in 1900 with the location of equipment manufacturers in 2003. These three indicators can be used as constants of draft horse business activity both in 1900 and 2003.

Harness manufacturing was conducted across the breadth of the United States. The census reported the top ten harness manufacturing states in 1900 as New York - 579, Pennsylvania - 301, Illinois - 261, Massachusetts - 225, Ohio - 215, Missouri - 143, New Jersey -116, California - 102, Maryland - 85 and Wisconsin -70 (Appendix D-4).

Table 3

The Top Ten Harness Manufacturing States (United States Census Reports, 1900b)

States	Number of Harness Manufacturers
New York	579
Pennsylvania	301
Illinois	261
Massachusetts	225
Ohio	215
Missouri	143
New Jersey	116
California	102
Maryland	85
Wisconsin	70

In 1900 horse drawn agricultural machinery was manufactured throughout the United States (United States Census Reports, 1900c). Illinois accounted for almost 40% of the capital invested in manufacturing equipment. Illinois was followed in descending order by Ohio, New York, Wisconsin, Indiana, Michigan, Pennsylvania, Minnesota, Iowa, California, and Kentucky (Appendix D-5). Missouri and Massachusetts filled out the top twelve agricultural equipment manufacturing states.

The 1920's and 1930's

The horse population was highest on the farms, ranches, and small towns in rural America, where businesses and industries in turn both supported and depended on draft horses. In 1920, the U.S. had 25 million horses and mules, the large majority of which were draft animals (Deuel, 2001). In 1920, the U.S. population was 106,021,537 (U.S. Population by State, 1900) with a rural/farm population of 31,974,000 (Rural Community, 2004). Mechanization of U.S. agriculture started in the 1920's. The Great Depression coupled with the drought of the 1930's hastened a population migration to the cities. During this period the U.S. government committed itself to a promise for inexpensive food as a social order preservation tool.

The Clydesdale breed fell on particularly hard times in the depression years of the 1930's. In May 1934, a fire at the Chicago stockyards destroyed the Clydesdale breed association headquarters. The Clydesdale association had $1.70 in their bank account when the fire broke out, a testimony to the decline of the breed's fortunes. The

advent of World War II hastened the conversion of power for farms from horse to tractor.

World War II

With the onset of world conflict, an acute labor shortage in rural America combined with economic and political pressure to drive many farmers to seek a more "efficient" way to farm (Telleen, 1979). This had a far-reaching destabilizing effect on rural America. Average farm size increased at the conclusion of World War II, and a new social order took hold in the United States (University of California, Davis, 2003). Soldiers returning from the front took jobs in the cities. Mechanization was in full swing in rural America. Rural communities began to lose their population and tax base. This in turn led to a decline of services available to the remaining people. With fewer people and lower tax collections, services began to diminish. Quality of education, health services, social services, and communication services all suffered.

Post-War Years

The businesses that supported the U.S. draft horse industry almost vanished. By 1950, the U.S. horse population was 2 million (Deuel, 2001) and the U.S. population was 151,325,798 with a rural/farm population of 23,048,000 (Beal, 2000). In 1960, the horse population in the U.S. stood at 3 million (Deuel, 2001). While the light horse breeds were experiencing a renaissance, the draft breeds were in danger of becoming a footnote in history. Just 85 head of Percheron horses were registered in 1954 (Percheron

Horse Association of America, 2001). In 1963, the Clydesdale Association registered eighteen horses (English, Emmons, Groves, & Behn, 2002).

The Early 1960's

The draft horse industry began its rebirth in the mid 1960's. The rebirth started slowly and not in a coordinated fashion. There have always been individuals in the United States who live and work outside of mainstream America. Certainly agriculture, with its history of independent thought, has always had room for individualism. People who chose to maintain or to begin using draft horses as their power source on farms and ranches did so out of conviction that their way made sense environmentally, economically, socially, and personally. When farmers and ranchers choose to use draft horses as a power source, it requires a willingness to accept a harder workload on the part of the farmer or rancher.

The interstate highway system played a major role in the renewed use of draft horses. Two of the first major sales in the 1960's were located along Interstate 70 in Columbus, Ohio and Indianapolis, Indiana (Telleen, 1969). It is particularly ironic that the internal combustion engine and the speed and roads it traveled on made it possible for people to easily find and transport horses. Prior to the present interstate highway system, most horses transported across the country were moved by rail. With the rise of the highway system the demise of the passenger movement on the nation's rail lines began. Freight moved by trucks has enjoyed a steady growth since the advent of the interstate systems. The ability of people to travel to rural enclaves and to see, purchase, and transport horses all contributed to the industry's growth. The source of horses and

equipment came from a variety of farmers and loggers. In the early 1960's most draft horses were non- registered or "grade" horses. The equipment available for horse drawn activities was comprised of leftovers from the 1930's and 1940's. The paucity of equipment and the scarcity of harness makers, while originally a problem, disappeared with the increase of the draft horse numbers and users.

During the 1960's it became acceptable to try new ideas of farming and land stewardship which were actual methods used in the time before combustion engines powered farm implements. The social changes taking place also may have engendered a yearning for simpler ways to do things. Abby (1968) likened growth for the sake of growth to the ideology of the cancer cell.

Against the societal backdrop of the 60's, draft horsepower resurfaced. For 40 years, this researcher has observed that draft horsepower requires farm-produced fuel, which when burned, has by-products that are nutritious for the soil. The self-replicating nature of this power source is not duplicated by machinery. It is a power that is fully flexible to do whatever work is required. Animal power units hold their value for extended periods of time (personnel observation.)

The Draft Horse Journal. In May 1964, Maurice Telleen, the former dairy superintendent of the Iowa State Fair, published his first issue of *The Draft Horse Journal.* It was 26 pages in length and dedicated to serving the interests of all draft horse breeds. The impact of this journal on the revival of the draft horse industry is undeniable. Today, it is the oldest journal serving the interest of all draft horse breeds and enthusiasts in the U.S. For many years it was the only journal serving and representing the draft

horse industry and therefore one of the few meaningful providers of history, knowledge, and skills for the rebirth of the draft horse industry. It first fostered and then chronicled the re-birth of the industry.

There were thirty-eight advertisers in the first issue of *The Draft Horse Journal*. None were from the Amish farmers, tradesmen, or craftsmen. This is noted in this study because often the Amish, a religious sect originally from Switzerland, disdain many modern facilities and are credited with the revival of the draft horse. They do all of their farm work and road travel via horses. While they certainly kept certain bloodlines going among the various draft breeds during the 1940's, 1950's, and 1960's, they were not the prime movers in re-educating the American public in the use of heavy horses. Telleen assumed that role. His journal, *The Draft Horse Journal,* was for many years the only journal devoted exclusively to promoting the use of draft horses once again in America. His quarterly journal regularly featured articles of a "how to" nature that by content and format promoted andragogy and self-directed learning.

In reviewing the first issue of *The Draft Horse Journal,* many of the advertisements were for pulling contests - a pair of horses is required to pull a set amount of weight from a standing position. The required distance for such an affair is usually set at 27 ½ feet. There were no advertisements for equipment or harness.

The second and third issues of that first year (*The Draft Horse Journal*, 1964, Volume 1, Numbers 2 and 3) were 28 pages long with 31 advertisers and 30 pages long with 33 advertisers, respectively. There was one ad in each of the second and third issues for equipment and feed additives. An ad by the publisher requesting advertisers and

subscribers appeared in the third issue. The horse pullers dominated the calendars in all three of the initial issues with over 100 contests listed in the August magazine. The breed associations were barely making a sound in the year 1964.

Breed Activity. In 1953, the Suffolk Horse Association had been legally dissolved and the Secretary had continued to serve in his capacity gratis. By 1960, the number of active Suffolk breeders was three. In 1964 the Shire Horse Association and the Suffolk Horse Association, in the interest of economy, were sharing the same office and secretary. In 1964 there were 18 active breeders of Suffolk horses. The two most active breeds, Belgians and Percheron, were a little better off, but not by much. The Belgians had registered 530 horses in 1963 and the Percheron had registered 116 horses (Telleen, 1989). The states that had the largest contingent of registered horses were Indiana, Iowa, Ohio, Pennsylvania, and Wisconsin. The states with the biggest public sales were Iowa and Ohio. Pennsylvania, Ohio, Iowa, and Indiana had the largest overall number of heavy horses. (Appendix D-6)

Entrepreneurship. From a perusal of the periodicals of the mid sixties through the seventies, there were few individuals and even fewer companies other than the Amish whose economic existence depended on the draft horse. The early stories of mercantile success with draft horses were centered on small business owners who found a way to make a little money using their livestock. *The Draft Horse Journal* (1966) carried two such stories on entrepreneurs. One was about a man who owned a hayride service in Michigan in a suburb outside of Detroit. The other story was about a man who

owned a Christmas tree farm and hired teamsters to haul customers to his trees where they would cut them down and haul them back on the wagons.

Draft Horse Shows and Auctions. The easiest way to view quantities of heavy horses in one place was either at the few state fairs that still had a heavy horse class or at one of the new annual or bi-annual auctions that were starting to appear. Telleen (1989) related that the start-up auctions in the Eastern United States brought horses and people together in the densely populated portions of the country. The Eastern States Sale in Ohio started in 1963. Ohio at that time had the fifth largest population in the United States and was within a day's drive of the largest population centers in the country (United States Census, 1995).

The shows in the mid '60's were mostly at state fairs. Not all state fairs had draft horse shows and not all draft horse shows at fairs had classes for all breeds of draft horses. Show classes and breeds accepted for those classes should provide an indicator of breed interest and draft horse population of the state. While there were small draft horse shows in the west, the large shows for draft horses at the state fairs in the mid-west dominated the show scene. In the mid '60's the Wisconsin State Fair had the best Clydesdale show in terms of prize money and entries. The Percherons were shown at Wisconsin, Illinois, and Indiana and the Belgians at Ohio, Minnesota, Missouri and Indiana (Telleen, 1991). (Appendix D-7)

The Late 1960's

The Draft Horse Journal (1969) had grown in size to an average of 50 pages per issue by its fifth year of publishing. It was published four times a year. Each issue had

over 90 advertisements. Businesses that supported the draft horse industry were starting to advertise. There were 4 to 5 advertisers per issue. The emphasis on pulling contests was starting to diminish, at least as far as advertising was concerned. The May 1969 issue had only 22 contests listed. By contrast, the interest in draft horse shows was growing.

There were 21 draft horse shows and fairs with draft horse classes advertised in the spring issue of the 1969 *The Draft Horse Journal*. They clustered around the upper mid-west. Michigan led the way with four shows, followed by Iowa and Ohio with three each. One each was held in Wisconsin, Nebraska, Missouri, Indiana, Minnesota, New Hampshire, New York, West Virginia, North Carolina, and Utah (Appendix D-8). Start up businesses in show equipment and harness began to appear. In 1969, state and Canadian provinces draft horse associations as well as national breed associations were advertising with regularity in *The Draft Horse Journal*, averaging five or six ads per issue.

The spring 1969 issue used three pages to give the sales reports (*The Draft Horse Journal,* 1969*).* One hundred twenty-seven head sold at the Columbus, Ohio sale. One hundred twelve head sold at Indianapolis, Indiana. Cedar Rapids, Lindsay Ontario, and Waverly Iowa accounted for 86, 107, and 347 head respectively. Another 35 head were sold at a farm auction in Indiana. Sale prices averaged around $450 per head (Appendix D-9).

The two major breed associations were active at the end of the 1960's. The Belgian Horse Association reported a record 684 new registrations and 1,081 transfers

for the 1969 fiscal year. A transfer occurs when the ownership of a horse changes hands and the registration papers are transferred to the new owner reflecting the change. Registrations were received from 27 states representing 339 breeders. The top five states for registrations were Indiana -149, Iowa-116, Ohio-87, Minnesota-46, and Illinois-43. Transfers came from 27 states. The top five states transferring Belgian horses were Indiana-229, Iowa-188, Ohio-134, Michigan-98, and Minnesota-73, (Telleen, 1994-1995). (Appendix D-10, Table 4).

The Percheron breed recorded 175 new registrations and 252 head transferred in fiscal year 1969. Registrations were received from 20 states. The top five were Ohio-50, Wisconsin-16, Pennsylvania-15, Michigan-14, and Minnesota-13. The top five states for transfers were Ohio-58, Minnesota-21, Illinois-20, Wisconsin-15, and 13 each in Iowa, Michigan, and Pennsylvania (Telleen, Winter 1994-1995). (Appendix D-10). Percheron Horse Association membership was 227. The two major breeds, Belgians and Percherons, were starting to increase in size.

Table 4.

Top Five States for Belgian and Percheron Horse Registrations and Transfers in 1969 (*Telleen,* Winter 1994-1995).

Belgians				**Percherons**			
Registrations		**Transfers**		**Registrations**		**Transfers**	
State	**No.**	**State**	**No.**	**State**	**No.**	**State**	**No.**
Indiana	149	Indiana	229	Ohio	50	Ohio	58
Iowa	116	Iowa	188	Wisconsin	16	Minnesota	21
Ohio	87	Ohio	134	Pennsylvania	15	Illinois	20
Minnesota	46	Michigan	98	Michigan	14	Wisconsin	15
Illinois	43	Minnesota	73	Minnesota	13	Iowa, Michigan, Pennsylvania	13

The 1970's

The Early 1970's. The 1970's started with a couple of interesting twists for a livestock business. One was a sign of total immersion in education in the draft horse business. The second was probably the single most important event in the history of the Clydesdale breed in the United States.

In the February 1970 issue of *The Draft Horse Journal* (1970) the first *Draft Horse Journal* tour of Europe was advertised. Some 45 people signed on for a two-week tour of draft horse farms, shows, and studs in England and Scotland. That 45 people would agree to spend the money and time for such an event is an indication of strong confidence and interest in the budding draft horse industry.

In the February 1970 issue of *The Draft Horse Journal,* Anheuser-Busch, Inc. took out a two-page ad to make an extraordinary offer of free stud service for Clydesdale mares. The ad showed the new stallion barn at Grant's Farm in St. Louis, Missouri, with 9 photographs of the stallions they were offering for free service to the public along with the accompanying text:

> In a recent letter to members of the Clydesdale Breeders Association, August A Busch, Jr., President and Chairman of the Board of Anheuser-Busch, Inc. offered for the first time the Company's famous Clydesdale stallions for free stud service to other Clydesdale breeders in the U.S. and Canada. Mr. Busch explained this offer is being made by the Company because of its interest and desire to help perpetuate the breed. Anheuser-Busch established its own breeding operation several years ago to assure the continuity of the Company's famous Budweiser 8-Horse Hitch with Clydesdales that meet its rigid standards for proper color, size, weight and confirmation (Telleen, 1970).

People interested in this program were advised to write to the draft horse manager at Grant's Farm. This program stayed in existence for many years.

This ad addressed several problems. The first one was Anheuser-Busch's difficulty in raising 8 male horses that were suitable to be used together. When this ad ran, Anheuser-Busch had two teams of 8-horse hitches and was looking to establish a third hitch. Even though they had a herd of over 150 brood mares they could not raise the necessary colts nor could they buy them in the open market. Back in the peak of draft horses (1900-1925), professional stallioners would take their stallions to farming communities to service the mares for a fee. Sometimes the stallion owners would return in 18 months or so and offer to buy the best of the colts. Anheuser-Busch just did a variation of that theme.

A major problem in 1970 for the Clydesdale breed was the lack of genetic diversity. The breed numbers had fallen so low in the 50's and early 60's that inbreeding could only be avoided by importing new blood. That is exactly what Anheuser Busch did. Busch bought the top winners from the major Clydesdale shows in Scotland and England and imported them. By making them available to the breeders in North America for free he simultaneously upgraded the genetics of the Clydesdales while insuring his own supply of hitch horses. It was a great symbiotic relationship.

The role of education fell first to Telleen, editor and publisher of the *Draft Horse Journal*. Lynn Miller, as the founder, editor, and publisher of the Small Farmers Journal in 1976, joined Telleen as one of two primary sources of print information for the owners and operators of businesses revolving around the use of draft horses and mules. These owner/editors publications successfully provided a platform for their collective

knowledge of methods and uses for heavy horses to those seeking such information who had nowhere else to find it.

Modern Uses of Draft Horses. The circulation of *The Draft Horse Journal* had grown from literally a handful to around 8,000 by 1970 (Telleen, 1995). The general interest articles usually focused on how to use draft horses. Articles were published describing how to fit a collar before harnessing a horse. There were stories on using horses as "chore teams." A "chore team" is a team used for farm or ranch chores such as winter-feeding range cattle, hauling firewood on sleighs through heavy snow, or mowing ditches with horse drawn mowers (Telleen, 1975a). In the early '70's it was very important to have a reliable source of information since many draft horse owners did not have an experienced horseman to offer sage advice. This became a role created by and filled by *The Draft Horse Journal* In many instances, *The Draft Horse Journal* was the only source of information.

The proliferation of articles on how to use draft horses for pleasure and profit has continued into the present time. Subjects such as the gathering of maple syrup in the early spring in the northeast, selective logging in the pacific-northwest, and the decline of the "family farm" were regularly featured. The loss of the family farm has not been a subject championed by draft horse people. The draft horse people have shown a way that preserves family farming.

Using draft horses or providing a service for the industry is not an easy way to earn a living. The August 1971 issue had a story of making hay in the Sand Hills of Nebraska (Telleen, 1971). The haying was done on the 102 sections of the U-Cross

Ranch and the 50 section Star Ranch. The hay work was done with horses, and the teamsters put up around 7,000 tons of hay each summer. There is nothing idyllic about the life style. The manual labor alone can be quite daunting. The life style is one led for personal satisfaction as often as for personal gain.

In the ‘70’s, draft horse users were not suggesting to America as a whole or farmers in particular to return to pre-tractor days. Rather, they proposed the concept of mixed power on farms and for select service work in the cities. The mixed power concept is premised on the belief that some work on a farm or some services in urban environments are performed more efficiently with animals as the source of power rather than the combustion engine. Feeding cattle hay in the wintertime with a team rather than a tractor; setting up and taking down temporary electric fences, and hauling manure were/are often used as examples. It is much easier to get on and off a sled pulled by horses to put up or take down electric fence than to negotiate up and down in a cab on a tractor. Hauling manure with horses allows one to travel fields that might be too wet for tractors. There is less compaction of the fields using horse drawn manure spreaders even when they are dry.

The economies of scale were examined by users of draft animals to determine if it was beneficial for them to operate small farms and businesses with horses and mules. Costs of homegrown feed were compared to oil-dependent power that was subject to trade embargoes. With commodity prices falling, and absolute input costs rising, horses that reproduced their own replacements, ate home-produced fuel, and produced the

fertilizer for that food had an appeal--if one knew how to use them, had equipment for them, and could find suitable animals to purchase.

The Draft Horse Journal started to address these problems in earnest. No extension agent could help. The know-how had been lost. Articles on how to hitch horses, or how to determine the age of a horse continued to be pushed hard in (Telleen, 1975b). At the end of the first quarter of the decade of the 70's, momentum was building from the business side of the draft horse industry.

The Draft Horse Journal was approaching 60 pages in length with each publication. Advertisements were starting to regularly exceed 100 per issue in number. Cottage industries supporting the owners of heavy horses were beginning to advertise heavily in *The Draft Horse Journal*. In the August 1972 copy of *The Draft Horse Journal,* the stories dealt with horse farmers and where draft animals fit into their multi-power farming systems. The ads from businesses dealt with used horse drawn equipment, rebuilt wagons, reference books for draft horsemen, and harness manufacturers. Owners of auction companies, professional photographers, trophy manufacturers, horseshoe manufacturers, trailer manufacturers, and one equipment manufacturer all were making their presence known (*The Draft Horse Journal*,1972).

The Economics of the Draft Horse Business. An article in the November 1971 issue of *The Draft Horse Journal* demonstrated the diversity of the ongoing business growth in the draft horse industry. The Arnold Farms of Quebec shipped 4,100 head of horses to Europe from March to October 1971. The article pointed out that about 60% of the horses were of draft stock. The horses were transported across the Atlantic to Dieppe

with roughly 1,000 head per load. The story stated that only 180 head were sold for meat. Even then, there was a strong animosity in the U.S. toward killer buyers of horses.

The researcher had spoken with several killer buyers during this time period and he believes that there probably were a few more sold for meat than the article acknowledged. In any case, it cannot be overstated how having a floor provided by the killer market helps maintain the price of horses in the open market.

The four major sales in the early ‘70’s were the Eastern States Sale at Columbus, Ohio, the Indiana Sale at Indianapolis, Indiana, the Waverly Sale at Waverly, Iowa, and the Tri-State Sale at Cedar Rapids, Iowa. (Appendix D-11) These four sales continued to perform the service of offering breeding stock and geldings to draft enthusiasts in the U.S. and Canada. The Columbus and the Indianapolis sales were near the sites of the Interstate 70 highway system that was being developed from Zanesville, Ohio thru Topeka, Kansas - in other words, the heart of the mid-west. Cedar Rapids and Waverly served the upper mid-west as distribution points. The far west had difficulty in procuring registered stock and or equipment. In the south, most people who used draft animals had either grade horses or mules and, like the north, had to travel long distances to attend a major sale.

In the fall of 1972, Telleen, the publisher of *The Draft Horse Journal,* noted he had 9,400 subscribers and the Waverly draft horse sale sold 400 head of horses into 19 states, Canada, and Australia (*The Draft Horse Journal,* Autumn 1997). The spring 1973 horse sales started the rapid rise in draft horse prices that would last for 10 years. At Columbus, Ohio sale prices averaged $703, a 45% increase in price from their 1972

average of $485. The Waverly, Indianapolis, and the Tri-States Sale at Cedar Rapids, while not as remarkable, had strong increases in their average prices.

The Belgian and Percheron breed associations reported a strong increase in registrations, transfers, and new members for the 1972 fiscal year. The Belgian Association registered 855 head, transferred 1,378 horses, and added 107 new members. The Percheron Horse Association registered 250 head, transferred 327 head, and added 31 new members.

The Mid 1970's. The draft horse renaissance was at full speed by 1975. The *Draft Horse Journal* had grown from 26 pages to 100 pages with a paid circulation of 13,500 by the 1975 winter issue. That issue had an intriguing article announcing that Sperry Rand's New Holland Division was interested in adapting its new equipment to live horsepower. Location always helps. Their factory was in the heart of Amish country in southeastern Pennsylvania. The journal had subscribers in all the states and several foreign countries. Ohio, Michigan, Wisconsin, New York, Iowa, Indiana, Minnesota, Pennsylvania, and Illinois had more than 500 subscribers each in 1975 (Telleen, 2000) (Appendix D-12).

Another indication of the resurgence of the industry is non-farm related. In 1979, the United States was exporting mules off to war. This was during the Soviet invasion of Afghanistan. Instead of shipping them to South Africa via the ocean, the mules were first assembled at Fort Campbell, Kentucky. Once there, the army fitted each mule with a parachute and gave it one practice jump. Those who survived were loaded, wearing parachutes, onto cargo planes outfitted with stalls. They were flown nonstop to

Afghanistan where they were dropped via parachute to the freedom fighters battling the Soviet army. The mules, primarily used as pack animals carrying munitions and supplies, were considered an excellent source of protein when their useful life had ended (H. L. Mueller, personal communication, Spring 1985).

Evidence of Andragogy. The calendar year of 1973 saw the beginning of a concerted effort on the part of the publisher of *The Draft Horse Journal* to educate or inform the public about how to use draft horses. This not only included lessons on handling various horse issues but also addressed the major issues of finding equipment and tack needed to use the horses one owned. The February issue carried stories of a new manufacturer of horseshoes. In the summer of 1973, Bermingham started the first driving school for teamsters in Cabot, Vermont (Telleen, 1973a). He felt there was an economic need for draft horses and was concerned the expertise necessary to keep horses useful would be lost if not handed down via education. Bermingham had held a field day at his farm the previous year and perceived a need to hand down acquired skills before they were lost.

In the February 1973 issue sale reports, harness shop ads, several articles on "how to" deal with a variety of horse problems, and a general tone of euphoria filled the pages. Several newly formed state draft horse associations ran ads listing their members by name, address, telephone number, and breed of horse. A continuing service to the readers throughout these early years was education. One cannot repair harness by replacing old or worn parts without knowing the name of those parts, especially if one is ordering by mail from a harness maker who doesn't use a phone such as an Amishman.

To help solve the problem, *The Draft Horse Journal* published an article in the summer of 1973 with a detailed diagram of the names of harness parts and how to fit a collar to a horse (*The Draft Horse Journal*, 1973).

Subscriptions to *The Draft Horse Journal* had risen to 11,059 by September 1973. The *Draft Horse Journal* published an announcement in that issue notifying all harness makers that in the upcoming spring issue there would be a published directory of harness makers. Ever mindful of the economics of the business, the *Journal* pointed out that at $10 per listing, the cost to the harness maker would be 1/10 of a cent per reader. There was also an ad from the El-Zar Book Bar (Telleen, 1973b). This Cedar Rapids business was offering reprints of harness manufacturing texts, books on horse bits, articles on knots-hitches and their uses, and a variety of obscure publications from a bygone era, all dealing with draft horses and how to use them.

The spring 1974 issue of *The Draft Horse Journal* had 155 advertisements counted by this researcher. Telleen, the editor of the journal, had an impressive response from his harness maker promotion ad. He arranged the 31 harness makers into geographical areas (Table 5). Two were in Ontario, Canada. Four were located in the Eastern U.S. states - one each in Connecticut, New Hampshire, New York, and Massachusetts. Fourteen responded from the East Central states (east of the Mississippi). Three were located in Wisconsin, four were in Illinois, four were in Ohio, and one each was in Indiana, Kentucky, and Michigan. There were no responses from Pacific coast states or the South. The West Central states (west of the Mississippi) showed seven harness manufacturers. There was one located in Kansas, two in Iowa, three in

Minnesota and one in Nebraska. There were ads from hame and horseshoe manufacturers. A manufacturer of harness making machinery advertised his latest strap cutter.

Table 5.

Harness Manufacturers Advertising in The Draft Horse Journal, *Spring 1974.*

Location of Harness Manufacturers	**Number of Harness Manufacturers**
Ontario, Canada	2
Connecticut	1
New Hampshire	1
New York	1
Massachusetts	1
Wisconsin	3
Illinois	4
Ohio	4
Indiana	1
Kentucky	1
Michigan	1
Kansas	1
Iowa	2
Minnesota	3
Nebraska	1

The spring 1974 issue of *The Draft Horse Journal* had numerous articles on how to use draft horses, including an article on how to construct a fore cart. The fore cart is one of the most necessary pieces of equipment on a farm that uses draft horses for power. It is almost a must for a mixed power farm, for it enables a farmer to use tractor equipment behind a team of horses. In his column titled “25 Years Ago,” reviewing July, August, and September 1975, Telleen (2000) concluded his reminiscences with the following paragraph. It summarizes the justification for my research into the andragogy and self-directed learning that has taken place in the draft horse business and the role

model potential it offers for present day rural entrepreneurship undertakings. Here is what Telleen had to say about 1975:

> Teamster schools were just beginning to get underway. So basically, there was no formal draft horse instruction. If you didn't have a dad, an uncle or a granddad with draft horse savvy you were probably on your own. So we ran more helpful hint types of things. I will attach two of them to this column. One is on trimming colt's feet and the other is a list of teamster tips from Dale Collins up in Michigan. (p. 133)

By 1975 the resurgence of draft horse breeds and the businesses, which supported them, were well becoming re-established or entering a new era. A telling fact is found in the 1975-winter issue of *The Draft Horse Journal.* It had 81 pages with advertisements out of a possible 100 pages, including the covers, as compared to 38 advertisements, which ran in its first issue in 1964 on 20 pages out of a total of 30 pages including the covers.

The decade of the 1970's saw many changes that impacted agriculture including rampant inflation, with prime lending rates moving from 7% in the summer of 1975 to 21.5% in the winter of 1980 (Bank of America, 2004). The federal agricultural programs put traditionally independent minded farmers under the thumb of government.

For example, under the Agricultural Act of 1970 the producers were first required to set aside acres of productive ground to receive price supports for their planted acreage. Under this same act, producers were required to plant their eligible allotment acres of a crop to receive payments! The Agriculture and Consumer Protection Act of 1973 was even more bipolar. It emphasized expanded production on farmed acres to replace price supports while maintaining set aside acres. Crop loan rates were increased dramatically – reflecting inflation. In 1977, the Food and Agricultural Act

raised the price supports paid to farmers and the stated target prices. None of these higher prices for the program were tied to production costs (Richardson, Anderson, and Smith, 1999).

As the 1970's moved forward, the United States wearied of the war in Viet Nam, moved forward with the civil rights movement, accepted a greater role of women in society, and adopted the concept of mother earth and the need to care for the environment (Gillis, 2004). Against this socio-economic backdrop, many first time buyers of draft horses and equipment were men and women who sought a simpler more economical way, or who felt nostalgic twinges to recreate their youth (personal conversations with researcher). This all came together in the 1980's and 1990's.

The 1980's

During the 1980's, after years of inflation, Americans started to spend lavishly on themselves. Individual debt rose to new heights. A national brand of conservatism arose. Quality of public education became a national issue. New attempts at banning books such as *Huckleberry Finn*, *The Grapes of Wrath,* and *Catcher in the Rye* took place in New York State. Sexism became anathema. *Roget's Thesaurus* replaced the word man whenever an androgynous word could substitute. Traveling over the ever-increasing lanes of the interstate highway system grew (Whitley, 2004). The draft horse industry and its participants flourished in part by offering farmers and businessmen alike alternative choices to debt and an opportunity to create sustainable cottage industries in an increasingly complex society.

Sensing a need to educate/re-educate its readership, *The Draft Horse Journal,* in 1980, drew attention to the need for new ideas for equipment and even uses for draft horses by sponsoring The Cumberland Contest (Telleen, 1980a). The best idea received by the journal was published and the author received a token monetary award. Once the professional manufacturers returned in full force to the draft horse business, the program was discontinued. A brief review of *The Draft Horse Journals* of the 1980's will demonstrate the range of learning and the subsequent development of this industry.

One of the first Cumberland Contest winners was Vincent Crowley of Slayton, Minnesota (Telleen, 1980b). He attached an eight-horse Briggs and Stratton engine to a forecart with a V belt drive to an auto transmission for variable speed reduction. This enabled him to run an auger wagon feeding 90 head of dairy cows. The article noted he used a gallon of gasoline every 7 days. The second most important part of the story was the prediction by the editor (Telleen) that this "forecast some other possibilities with some adoptions. A power take off trailer mower and sprayer unit are two possibilities that come quickly to mind" (Telleen, 1980b, p.129).

Today there are hundreds of equipment options manufactured commercially by and for users of draft-powered implements (Appendixes D-20, D-21, and D-22) that run off of forecarts with mounted engines and hydraulics. In the winter 1980 issue of the *Draft Horse Journal*, a Cumberland Contest winner was Phillip Wolfe of Cornwall Bridge, Connecticut. He designed and built out of wood a homemade logging scoot.

A futuristic view of the possibilities for ancillary draft horse businesses was seen in the Winter 1980-81 issue of *The Draft Horse Journal.* The Cart Horse Company Ltd.

from England sent *The Draft Horse Journal* brochures listing a new line of horse drawn equipment that could be imported into the United States. Telleen suggested that this was an idea whose time had come. It had actually begun in 1978 with Pioneer manufacturing in Dalton, Ohio. He just wasn't aware of it yet – Pioneer was concentrating on it's own Amish community. Telleen continued with the Cumberland contest until the cottage industries manufacturing equipment grew to the point where it was no longer needed.

The Draft Horse Journal (Winter) 1981-1982 publication carried an article brimming with hope for the draft horse industry. Texas A&M University at College Station had added a team of draft horses to work as teaching aids. Students learned how to harness, drive and feed livestock. Telleen was hopeful this would be the start of institutions of higher learning return to using draft animals for instructional purposes. The professor, Dr. Gary Potter noted, "We use the mares to pull our feed wagon at feeding time here at the horse station. They're a lot cheaper to maintain than a tractor, they don't rut the pastures during wet weather, and you never have to worry about a dead battery" (Telleen, Winter, 1981-1982, p.45).

In 1983 Telleen continued with his innovative way of providing knowledge based learning to his readers. He started a column called Horsemen's Round Table where he had knowledgeable and skilled horsemen discussing "how to" solve a particular problem (Telleen, 1983a). For his first lesson Telleen had them share how they would deliver a load of six horses, five hundred miles, in March. The horses were mature geldings, mares, and one nursing foal. The discussion covered feeding, watering,

shots, space and bedding requirements in the trailer, and the feeding and watering regimen. This was a popular column for his readers for many years.

In the summer of 1983, Telleen traveled from southern Minnesota to Lancaster County, Pennsylvania to determine the level and depth of draft horse equipment manufacturing (Telleen, 1983b). He found a string of new cottage businesses. Prior to his trip, he had sent out a survey on the cover of his journal. He had "over 250 responses from Maine to Alaska (Telleen, 1983c)." Several have grown and are flourishing in 2004. In 1983, a farmer could have bought two teams of horses and the necessary harness and equipment for a 160-acre farm for $20,000(Telleen, 1983c) That was less than a new 160 hp John Deere tractor would have cost. There were definite economic advantages for using horses if one was willing to do the work required.

The livestock used to power this revival grew during the decade of the 1980's. Far and away the two most popular breeds then (and now) were the Belgians and Percherons. The average combination of registrations and transfers (of new Belgian foals) mostly fillies and a few stud colts 1981 through 1985 amounted to 9976 head per year (Belgian Draft Horse Corporation of America., 2002). During this same time period, the Percherons had an average combination of 1863 registrations and transfers per year (Christian, 2004). Most of the stud foals (half of the horses born each year) for any breed were not registered – they became geldings. This makes the numbers of horses available for use significantly larger than the above figures suggest. From 1986 thru 1989 the Belgians averaged 9849 registrations and transfers per year. During this same

time period the Percheron numbers were 2863 registrations and transfers per year (Christian, 2004).

The 1990's to the Present

The decade of the 1990's brought even faster changes to the American scene than previous decades. The Internet and the personal computer enabled those who wished to, to interact with one another. Designer clothes, cassette disks, and starkly vivid movies (*Silence of the Lambs*) help frame the cultural disposition of the times. There was an increased interest in health and nutrition as well as ongoing battles with obesity (Whitley, Bradley, Sutton, & Goodwin 2004). With continuing mergers and acquisitions in the corporate world, self-employment became an increasingly attractive alternative. According to the U.S. census there were 2.17 million people who worked at home in 1980. By 1990, 3.40 million worked at home, an increase of over 56% (U.S. Census Bureau, 2000).

Education in the 1990's embraced diversity, distance education, and school to work (Whitley, Bradley, Sutton, & Goodwin 2004). Variations of school to work have been mainstays in the businesses that support the draft horse industry for many decades. Draft horse schools teach aspiring teamsters how to drive teams, multi-horse hitches, and use equipment. Apprenticeships in equipment manufacturing shops, harness manufacturers, and carriage/buggy builders provide a few ready examples of learning a trade while one is gainfully employed.

The draft horse population continued its' growth through the nineties into the new millennium. In 1990, the two largest breeds posted a combined number of 12,624

registrations and transfers. Note geldings (a bit less than half the horse population) are not often included in these numbers for they are not normally registered. In 2000 those numbers rose to 16,660 for the Percherons and Belgians (Christian, 2004). When one considers the average horse lives close to 20 years, we are looking at a total draft horse population that is now well in excess of 150,000 animals, a long way from the mid 1960's.

Draft horse industries continued their growth as well. In the 1960's, draft horse equipment was readily found throughout the territory where they had been used. Many barns had a favorite piece or two stored in them for nostalgic reasons. Harness was readily available and inexpensive (personal experience of the researcher – he purchased a complete set of harness in the late 1960's for $15.00). For the most part, people interested in using draft animals in the early 1980's had a hard time finding equipment and parts for use with their livestock. Cottage industries sprang up in earnest to support their endeavors. During the 1990's many cottage industries supporting the draft horse businesses matured into companies with several employees. By the year 2000, a map (Appendix D-13) of the states with the largest number of registered draft horses, whose owners supported the draft horse ancillary industries, closely resembled the map of draft horses from 1900 (Appendix D-3).

Miller in his book *Work Horse Handbook,* 2004, noted the continuing growth of the ancillary draft horse businesses. For resource purposes, he listed major businesses supporting the draft horse industry. The following categories and the number of businesses listed in each are: blacksmith (3), books and videos – publishers and

producers of books and videos on draft horse use and care (7), collars (4), equipment (56), hames – the wood or metal tubes that hold the harness on the work collars (2), harness (41), wheel wright – manufacturers of wagon wheels (3), and workshops – these are businesses that conduct training schools to educate people in the use and care of draft horses (9).

Of the 125 businesses listed 27 posted e-mail addresses, this is significant because according to the author of this book, 40% of the subscribers to his magazine – the *Small Farmer's Journal* are Amish (oral communication 6-30-04). These businesses with e-mail addresses are serving a non-Amish (English) clientele. The researcher believes this is an indication of the depth and breadth of the interest in using draft horses. The states where these ancillary businesses are located are found in (Appendix D-14). These businesses are by no means the only ones in the country in their category. Rather, they are some of the largest, most successful, and visible enterprises. A break out of the states with the locations of major equipment manufacturing companies in 2003 would be equally interesting (Appendix D-15).

Many of the ancillary businesses serving the draft horse industries are now into their third or fourth decade of existence. They have been developed to serve a niche market in rural communities and their growth continues to move outward from the collar states around the Great Lakes. While the participants of this study live and work in different parts of the country, the world, and aspects of the industry – they continue to show many common threads connecting each to the other.

In Chapter III, the methodology used for this research will be discussed. This is a qualitative study of 27 purposively selected respondents. They were selected from a wide geographical setting and included people representing many of the ancillary businesses in the draft horse industry.

CHAPTER III

METHODOLOGY

The purpose of this study was to delineate contextual applications in agricultural education used for acquiring the knowledge and skills necessary for the operation of contemporary businesses supporting the use of draft animal power. The study demonstrates that selected agricultural educational contexts and their applications in economic pursuits work in nontraditional ways. These applications should be used as potential sources of solutions in the economic revival of contemporary rural societies.

This is a qualitative study of 27 conveniently selected respondents drawn from draft animal users in Russia (Siberia), Germany, England, East Texas, Oregon, Montana, Iowa, Indiana, Ohio, Michigan, and Pennsylvania. Structured and semi-structured interviews were utilized. This qualitative study followed acceptable procedures and applied trustworthiness quality criteria set forth by Lincoln & Guba (1985), Erlandson, Harris, Skipper, & Allen (1993), and Merriam (1998). The field notes were organized and transcribed using the procedures outlined by Lincoln and Guba (1985). Both formal and informal member checks were used. Trustworthiness was assured by credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). An audit trail was maintained (Strauss & Corbin, 1998). Internal validity was addressed using Merriam's (1998) six strategies for enhancing validity.

Qualitative research methods used to fully understand the constructs or themes responsible for the revival and growth of the draft horse industry in the United States.

Qualitative research may be undertaken using interviews, censuses, and surveys. In qualitative research, the researcher and the respondents alike contribute to the study through their interaction with one another during the interview process. The truth and applicability of the study is dependent upon the accuracy of both the subjects and the researcher in reporting the answers and the questions.

For the data collection, the researcher conducted a series of interviews. In Case Study I, the researcher interviewed respondents whose occupations ranged from farming to manufacturing. Horse Progress Days (HPD) has become the premier event in the U.S. for draft horse equipment manufacturers to display their wares and innovations (several years of personal communication with vendors, manufacturers, and draft horse owners). HPD is an annual event. It is now in its 11th year with the location of the show changing each year. In 2004, the show was held in Middlebury, Indiana. It is always held on a farm in one of the large Amish communities in the U.S.

The respondents in HPD live throughout the United States and informal interviews took place with citizens from several countries abroad. The respondents sell everything from vitamins to heavy horse equipment. A very short list of some of the draft horse equipment displayed and offered for sale at the 2004 show will be instructive. Bale spears, logging carts, arches and winches, forecarts – standard and mechanized with engines up to 75 hp., hay balers – large round and square, hay mowers and an assortment of tedders and rakes, plows, discs, harrows, wagons, tongues, and eveners were displayed and demonstrated on a 20 acre field.

Most of the researcher's work with the heavy horse industry has been in Illinois and Missouri. The researcher was familiar with many of the manufacturers and vendors participating in HPD, whose products he had seen and used. He had, however, never met any of them in person. All of his communications and purchases had been conducted via U.S. postal mail. With that in mind, the researcher telephoned I-1 who hosted the show on his farm and told him what he wished to accomplish. I-1 was genuinely delighted and invited the researcher to spend as much time as needed to conduct the interviews. He also invited the researcher into his home for a meeting with several international guests who were attending the show. When asked to introduce the researcher to his friends and acquaintances at the show during the initial telephone conversation, he readily agreed to do so. I-1 kept his word.

Interviews

The interviews themselves were conducted over a 5-day period wherever the participants could meet with the researcher, such as the show site, in homes, or at the bar in the motel where the researcher was staying. I-1 gave several names at his first meeting with the researcher at his farm. The researcher had arrived several days before the show to start the interview process. He sought out the people who were suggested to him for interviews. All but one person on his list was willing to visit with him and discuss their business. After each interview, he would ask the participant "Whom else should I be talking to?" and names would always flow. The participants were a loquacious group of people. They required little prompting.

The researcher would start his mornings by meeting with participants and asking when they would be free during the day of their choice for a 90-minute interview. He let them write his calendar. All of the interviews started with one of two questions – "How were their skills acquired?" or "Where did they learn their trade?" A list of frequently asked questions and variations thereof posed to all respondents may be found in Appendix C.

In East Texas, the researcher interviewed owners/operators of heavy horse related businesses in November and December 2003. This group of participants was chosen because of their relatively close proximity to where the researcher worked. The limiting factor was the participants needed to live no more than a 4 hours drive from the researcher's workplace.

In order to find the subjects of this study, the researcher sent e-mail to the Secretary of the Texas Draft Horse and Mule Association. The Secretary forwarded the researcher's inquiry to the whole association. Within 48 hours there were 24 responses. Many lived too far away for the purposes of this study. For those who weren't too far, appointments were made

E-mails were sent to the men and women who had sent responses the researcher. Most of the people responding thought the researcher was looking for horses to buy and they mentioned the breeds they owned while inquiring as to the researcher's interests. All but one of the respondents was willing to visit. The researcher did not talk to most of the people who had appointments until they were met at their homes and or barns. When the researcher approached and introduced himself, it was somewhat surprising that

almost all of them would ask again about the purpose of the interview. This question was asked after reading the explanation during the exchange of e-mails. Additionally, during these e-mail exchanges, the researcher always sent a paragraph to the subjects detailing his studies at TAMU along with a brief history of his involvement in the draft horse industry.

The format for collecting the information was a straight request followed by a pause for their response. The researcher would ask them how they got interested in draft horses, sit back, and wait for the story to flow. After the first interview, questions were kept to a simple few. Several people only needed a couple of questions during the interview. One individual started with the date he was born and moved forward. Three or four times prompts were used during our one and a half hour conversation. Most of the interviews lasted one to one and a half hours. A few took two hours.

The third group of respondents lived and worked in central Siberia. They were chosen when the opportunity to work as a horse consultant for ACDI/VOCA presented itself to the researcher. He was chosen for his expertise (Appendix B) in draft horses and he was charged with the task of formulating ways to improve the production of Kuznetskaya draft horses – a breed found locally in Siberia. The Russians were particularly interested in improving their management techniques in the production of horse meat and seeking markets to buy their breeding stock. He conducted interviews in central Siberia with business owners whose work revolved around heavy and light horses in June 2004. He also attended the Horse Progress Days 2004, near Middlebury, Indiana, in July 2004, where he conducted interviews with owners/operators of ancillary

businesses supported by the draft horse industry. This venue was chosen because it represents the single largest gathering of draft horse equipment manufacturers in the country.

In each of the case studies, the participants were assigned a code to assure confidentiality. The participants are coded with a capital I (interviewee) in front of a number – all done in sequential order. Documents and pictures are coded using a capital D (document) in front of a number – all are also done in sequential order.

Qualitative Methods

The researcher used qualitative methods, in particular, unstructured and semi-structured interviews, while making the necessary adjustments to the questions as the interviews proceeded. The researcher initially chose a series to questions he believed would be perceived by the respondents as benign yet providing an entrance into their learning styles and a window into sources of their business success. Adjustments to the questions in the interviews were predicated on the responses of the participants. The interviewer did not pass judgment on the answers to his questions, and the respondents were expected to answer with thought and veracity.

Participation by the respondents in this study was voluntary. The answers from the interviews were coded and kept confidential. Throughout the study the responses were written down and recorded during the interviews. When the opportunity presented itself, semi-structured interviews were conducted. The interviewer prepared and would refer to a set of questions throughout the interview (Appendix C). The participant's

responses were written down. With the semi-structured interviews, the interviewer was prepared to delve deeply into the respondent's answers to gain further information.

On several occasions the participants would be asked an opening question and they would start talking and would basically continue to talk without any prompting or questions for the rest of the interview. These interviews became unstructured interviews. The researcher would write their thoughts. Unstructured interviews do not have a set schedule of questions. The interviewer asks questions and, as the answers flow, adjusts his questions and focuses on the responses received to tweak out the most information he can from his respondent.

In order to determine where and from whom the data would be collected the inquiry's focus was provisionally defined (Lincoln & Guba, 1985). The focus of this study required using participants who were successful in their business enterprises. This purposive sampling of convenient samples allowed the researcher to develop and expand the emerging theories into case studies. Snowball sampling furthered the process by enabling the researcher to interview several reticent individuals attending the Horse Progress Days who, for personal or business reasons, were reluctant to talk to strangers (Babbie, 1992). Thus the researcher would ask people who were interviewed to whom else he should be talking.

Data Analysis

The constant comparative method of analysis (Glaser and Strauss (1967), Lincoln and Guba (1985) and Merriam, 1998) was chosen for this study. In constant comparative

method of analysis, units of information are compared with one another. The researcher sought to find similarities and differences amongst and between the units of information. There are four stages to the constant comparative method: (1) compare the various occurrences from each category; (2) meld the categories and their components; (3) determine the theory; (4) write the theory. This allowed the researcher throughout the study to review and analyze the responses to the questions asked of the participants. The researcher was able to refocus and reformat his questions as dictated by the flow of the interview, thereby enabling him to validate the responses he received and write his case studies.

Using the procedures outlined by Lincoln and Guba (1985), the field notes were organized and transcribed. Next, units were identified (Lincoln and Guba, 1985) and placed individually on index cards. Index cards with the same unit of information were gathered into the same file and identified by an assigned code. The themes of this study emerged from this analysis.

The use of purposive sampling allowed the researcher the opportunity for in-depth analysis of the subject matter. The respondents were in part selected to represent as much diversity in occupations in ancillary draft horse businesses as the researcher could find. This search for diversity and success of the individuals in the draft horse industry was furthered thru the use of snowball sampling.

Cross case analysis was used to analyze the case studies. Themes from the cases were identified and listed (Appendix A). Themes common to all three case studies were

listed as well. Themes that were common to 2 of the case studies were listed and themes found only in 1 case study were shown as well (Appendix A).

Trustworthiness

Lincoln and Guba (1985) propose that trustworthiness, or the basis for it, be established from the beginning of the research project. To that end, they suggest the implementation of four steps to ensure trustworthiness. The researcher ensured the approach for trustworthiness was properly followed as the information and reporting stages of his work were completed using the steps of credibility, transferability, dependability, triangulation, and confirmability. An audit trail has been maintained (Strauss & Corbin, 1998).

A reflexive journal was maintained for each of the three sets of participants. Lincoln suggested a journal has five parts (Lincoln, Y. Classroom notes received on 11-11-03). It will have a log of "evolving perceptions, day-to-day procedures, methodological decision points, day-to-day personal introspections, and developing insights and hypotheses (Lincoln, Y. Classroom notes received on 11-11-03). The journals contained the interviews with the participants as well as observations, thoughts, and insights of the researcher. During interviews, answers were written down by hand and read back to the respondents at the conclusion of the interview for their corrections and any information they wished to add or delete. While several of the participants asked the researcher to correct various points in his notes, more took the opportunity to add to

his body of information. They participants would either embellish existing units of information or add entirely new units.

Merriam (1998) suggested six strategies for enhancing internal validity. They are triangulation, member checks, long-term observation, peer examination, participatory or collaborative modes of research, and researcher's biases. All six strategies were utilized in this study.

Both formal and informal member checks were used (Lincoln & Guba, 1985). Member checks were accomplished by reading back to each participant interviewed their comments to the researcher. There were ongoing discussions with members of the researcher's committee regarding the findings and observations that were explored.

The researcher searched for "similarity" (Lincoln and Guba, 1985 p.124) in information derived from interviews, historical documents, and the visual representations provided by the maps and photographs depicting units of information. Triangulation was accomplished by extensive interviews, audit check, and a lifetime of personal observation by the researcher. Persistent observation at the research sites included extended conversations with the participants. Additionally, follow-up telephone conversations to verify particular units of information took place as needed.

The research conducted in Texas was completed with participants who were chosen from a list of respondents to an e-mail sent to all members of the Texas Draft Horse and Mule Association sent by the association's secretary. The e-mail requested all who were interested in talking with someone about draft horses to contact the researcher

by e-mail. The respondents to the e-mail, which became the participants in the study, all lived in East Texas.

The researcher spent 5 days on site during Horse Progress Days 2004, in Middlebury, Indiana, with the participants he interviewed. The participants came from Germany, England, Oregon, Montana, Iowa, Indiana, Ohio, Michigan, and Pennsylvania to attend this show. The interviews ran from early in the morning until late in the evening. Horse Progress Days is an annual event sponsored by the Draft Horse and Mule Association of America. It is the premier event in the U.S. for draft horse equipment manufacturers to display their wares and innovations (several years of personal communication with vendors, manufacturers, and draft horse owners). It is always held on a farm in one of the large Amish communities in the U.S.

The participants from Siberia, Russia either requested information through ACDI/VOCA and I interviewed them or the Russian agricultural ministry suggested I meet and conduct interviews with them. The participants would speak and the translator would translate to the researcher what had been said. The researcher would reply and the translator would translate his response back to them. The meetings would last for hours. The researcher was on site for 16 days. Frequently the same units of information were discussed several different times. All of the researchers' work was discussed with his peers and supervisors.

Peer examination was accomplished in part by delivering seminars to fellow graduate students and the professors of Texas A&M University. Participatory or collaborative modes of research were undertaken by ongoing discussions with the

participants about the research topic. During interviews, he would frequently ask, “Is there any question I have not asked that I should have asked?” Researcher’s biases were acknowledged. The samples and or selection of participants may not be inclusive enough and those not spoken to may have an entirely different perspective than those with whom the researcher spoke.

Credibility

Lincoln and Guba (1985) suggest that prolonged engagement, persistent observation, and triangulation combined will increase the probability of credible findings in the research project. Prolonged engagement was accomplished by the researcher spending his lifetime involved with the draft horse industry. Persistent observation both during the interviewing of the participants and lifelong involvement in the industry provided credibility. Peer debriefing with faculty and committee members was ongoing throughout the study.

Transferability

Lincoln and Guba (1985) propose transferability is accomplished through thick description. With thick description, enough minutias are provided to enable the reader to decide if transferability is possible (Geertz, 1973). It is suggested that the researcher include a wide range of information. The researcher addressed transferability reporting the interviews with the participants, providing historical background through research of government documents, maps demonstrating distribution of various applicable

phenomena, and annotated photographs. The researcher additionally relied on his decades of experience to further transferability.

Dependability

Demonstrating, overlap methods and triangulation are suggested as procedures to provide dependability for the study (Lincoln & Guba, 1985). The researcher demonstrated dependability by studying the research question in the United States and Russia and holding formal interviews with 27 participants from eight states and informal interviews with 5 nationals from England and Germany. The overlap methods and triangulation were used throughout the review of the information units gathered.

Confirmability

Lincoln and Guba (1985) propose a confirmability audit to establish confirmability. Confirmability involves ascertaining if a number of participants or individuals in a study agree on a particular point or issue. It is important to establish the research design in such a way that neither the questions asked nor the participants and the researchers affect the responses. The neutrality of the researcher was maintained throughout the study. Additionally, triangulation and the keeping of a reflexive journal are suggested as fitting into the task of confirmability. An audit trail was completed at the conclusion of this study. Triangulations of the units of information were used as well as the keeping of a reflexive journal for each of the three case studies. The reflexive journals showed the development of the thought processes of the researcher particularly

with his work in Russia and East Texas as he moved through his research seeking units of information.

In Chapter IV, the case studies are presented. The beginning of the chapter starts with Table 6 - a conceptual frame of the themes that emerged from the case studies. At the conclusion of each case study the themes that emerged from each study are listed.

CHAPTER IV

FINDINGS

The purpose of this study was to delineate contextual applications in agricultural education used for acquiring the knowledge and skills necessary for the operation of contemporary businesses supporting the use of draft animal power. This study demonstrates that selected agricultural educational contexts and their applications in economic pursuits work in nontraditional ways. These applications should be used as potential sources of solutions in the economic revival of contemporary rural societies. The presentations of findings in Chapter IV are done by using case studies. Each case study has its own appendix that helps to clarify the points made in the text. At the conclusion of each case study, a list of emergent themes is presented. A cross case analysis is presented at the conclusion of Chapter IV.

The respondents are designated by a capital I and a number, for example I-1. Individuals who were not interviewed but are discussed and whose identities need to be kept confidential are designated by two capital letters, for example YX. Businesses are designated by capital three capital letters, for example QQQ.

Case Study I – Horse Progress Days, 2004

Horse Progress Days (HPD) has become the premier event in the U.S. for draft horse equipment manufacturers to display their wares and innovations (several years of personal communication with vendors, manufacturers, and draft horse owners). HPD is an annual event. It is now in its 11th year with the location of the show changing each

year. In 2004, the show was held in Middlebury, Indiana. It is always held on a farm in one of the large Amish communities in the U.S.

The respondents in HPD live throughout the United States and several countries abroad. These vendors sell everything from vitamins to heavy horse equipment. A very short list of some of the draft horse equipment displayed and offered for sale at the 2004 show will be instructive. Bale spears, logging carts, arches and winches, forecarts – standard and mechanized with engines up to 75 hp., hay balers – large round and square, hay mowers and an assortment of tedders and rakes, plows, discs, harrows, wagons, tongues, and eveners were displayed and demonstrated on a 20 acre field.

Most of the researcher's work with the heavy horse industry has been in Illinois and Missouri. The researcher was familiar with many of the manufacturers and vendors participating in HPD, whose products he had seen and used. He had, however, never met any of them in person. All of the communications and purchases had been conducted via U.S. postal mail. With that in mind, the researcher telephoned I-1 who hosted the show on his farm and told him what he wished to accomplish.

He was genuinely delighted and invited the researcher to spend as much time as needed to conduct the interviews. He also invited the researcher into his home for a meeting with several international guests who were attending the show. When asked to introduce the researcher to his friends and acquaintances at the show during the initial telephone conversation, he readily agreed to do so. I-1 kept his word. The conceptual framework developed from the results of the case studies is presented in Figure 1.

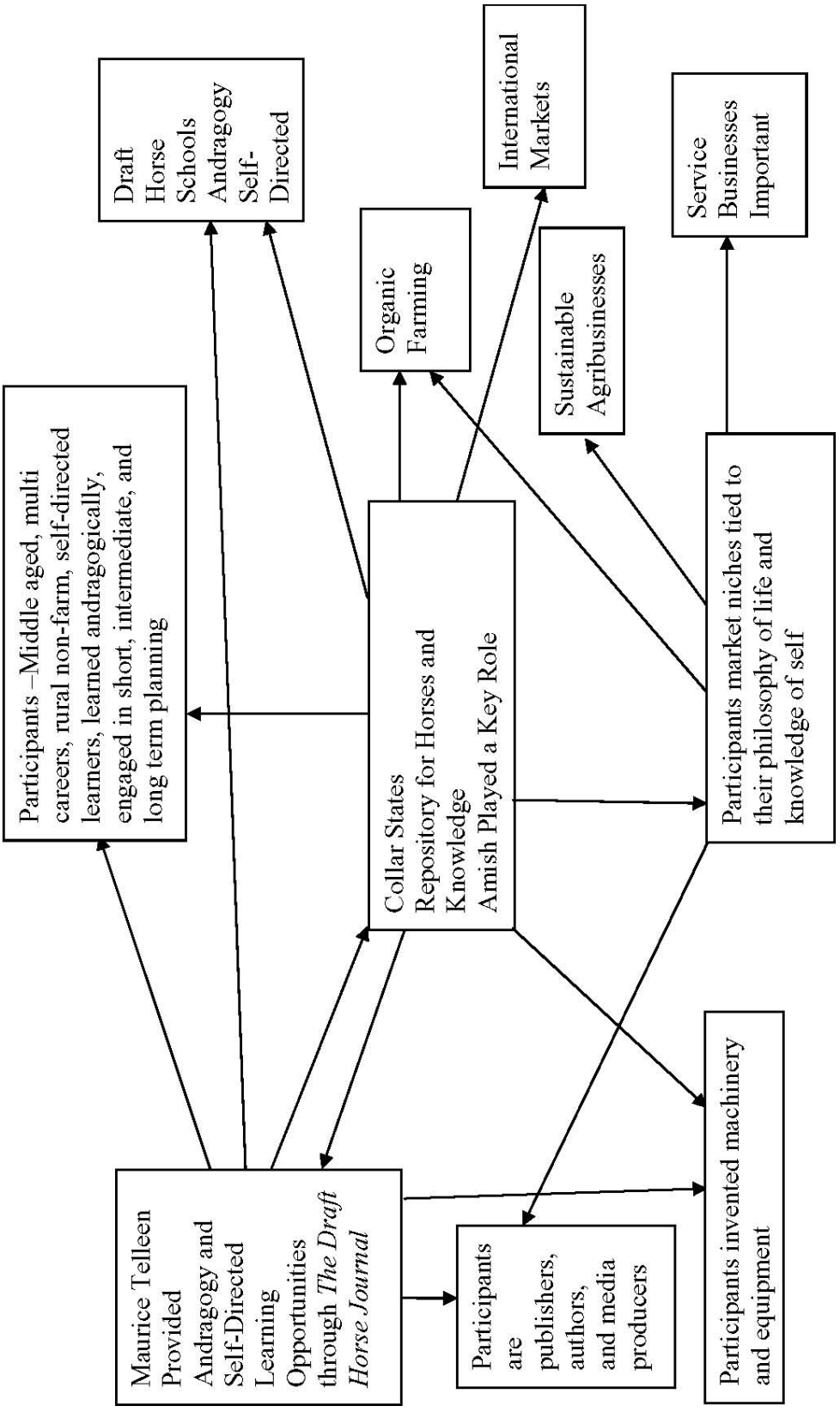

Figure 1. Conceptual Framework

Results Case Study I

Respondent I-1

I-1 was interviewed on June 29, 2004. I-1 is 60 years old. He is a tall, lean, and athletically (basketball in his youth) built man with the powerful sinewy vein laced hands and forearms of a man long used to hard work. His easy manner and bright eyes bespeak of one comfortable and knowledgeable in his world. The interview was conducted in his home/ meeting room surrounded by tables and chairs. It is a beautiful homestead. Up until 3 years ago, I-1 milked 60 Holsteins. Today he farms, raising corn, oats, hay, beef cattle, and high-grade registered Belgian horses. He is most interested in raising fine horses and improving horse drawn equipment. All of his farming is done with draft horses. He quit school in the ninth grade.

I-1 bought his first team of registered Belgians in 1964 (Appendices D-16 and D-17). Many of his thirty some horses carry those bloodlines today. When asked why he likes horses so much, he told this little story. As a young boy his father had a mare that foaled one spring. After the mare had foaled, his father took it and the colt to the orchard to graze. I-1 would go to the orchard and watch the mare and colt for hours. When asked how he came to learn so much about registered stock, he said he went to sales and trained himself. He also sought the advice from successful breeders on which bloodlines to cross. He neither sought nor received advice from extension or university people. He could not afford the horses he liked; he had to raise them himself- thus he worked towards a goal.

His main market is a horse farmer though he will occasionally sell to show circuit people. He relies heavily on word of mouth and repeat-customers. Most of I-1's customers are acquired by word of mouth. His long-term plans include a dispersal sale providing a nest egg for retirement. His short and intermediate goals are enjoying what he has.

I-1 enjoys his equipment as much as his horses (Appendix D-18). He plans new pieces of equipment by daydreaming about the problem or situation. He thinks how he wants it in its final form. He visualizes it just in his mind. He said he never draws a plan out. The closest he comes to doing that is scratching something in the dirt. He doesn't like to write or read, though he enjoys history.

He is justifiably pleased with his invention of a 3-team hitch using the McKesson Hitch (Appendix D-19). His chains and sprockets worked very well. The design was verified on a computer by a high school Ag teacher as doable and then confirmed by the White Horse machine company in Pennsylvania. White Horse is a major manufacturer of horse drawn equipment.

I-1 first started altering hay equipment to enable its use with horses. He used to run a square baler with an engine and would custom bale 33,000 to 34,000 bales per year. When others started to do that, he stopped that custom work and started to custom mow with a haybine. He would annually mow 500-600 acres per year. When that got competitive, he turned to custom large round bales- including wrapping them for silage. Last year he did 3,800 bales. He now rents out his wrapper for custom work. He designed his own forecart with a 100 hp John Deere diesel and 4 outlets for hydraulics.

He keeps up-to-date by attending Purdue Hay days and attending farm shows. From these events, he gets ideas to adapt to horses. He feels the biggest contributions to the increase in draft horse use and numbers is new equipment and people retiring to small acreage and wanting to farm with horses.

Respondent I-2

I-2 (32 years old) was interviewed in his mother's kitchen on June 30, 2004. He has the good humor and ready smile of a natural salesman. I-2's occupation is the manufacture and selling of wood shavings. He uses a box in a machine where the logs go over planner knives moving alternate ways. Paper-thin shavings curl up and break off. The heads in the box are 10 inches in diameter. Twelve knives 40 inches long, which may be removed and sharpened professionally, are used to shave the wood, thus creating the shavings.

Newly manufactured shavings are wet and need to dry out. Shavings are put through a drum dryer 8 by 24 feet in a triple pass – three times. A fan sucks shavings and the heat out by pulling the shavings through a cooling tower 30 feet high after which they fall down on shaker screens, which shake out fines and dust, sending the shavings back to a storage bin. The dust goes to another bin with a gasified burner. I-2 uses the dust for heating and drying. The process produces 2 million Btu's (British thermal unit or the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit at its maximum density). The drying unit is lined with 9-inch firebrick. He used a blueprint from a friend in Michigan for the tower, constructing it on his own. The shavings go to a stationary baler and are baled into bales, whose

dimensions are 13 inches x 20 inches x 25 inches. They are stapled shut, stacked on pallets, and then covered with shrink-wrap.

When asked how he developed this business he told me that eight years ago he was buying shavings as byproducts from the many recreational vehicle plants in the area. He put them into bags he bought from St. Louis and sold the shavings to local draft and buggy horse people. Four years ago he could not get enough shavings because the economic downturn diminished the recreational vehicle business manufacturing. He saw chippers in Arkansas. He heard about one in Alexander, Minnesota, went up there, and bought it. He had a choice – he could get bigger by making his own shavings or do it part time while working for someone else. He chose to remain self-employed.

I-2 buys his logs, #2, or #3, from any place he can but mostly from Michigan. Number 2 logs have some defects while number 3 logs have the most defects and may also be curved. The diameter may be anywhere from 4 to 40 inches. He cuts them with a chainsaw into 4-foot lengths.

He has acquired most of his customers by word of mouth. He ships to Michigan, Illinois, Ohio, and Indiana. He started selling using a sign on the road in front of his house. Today he uses a combination of a good sales pitch and maintaining personal relationships with customers. Future plans include merging with another wood shavings manufacturer. I-2 will sell him shares in his business. He hopes to expand to the racetracks in Chicago and eventually double his business from today's sales of 50,000 to 60,000 bales to 100,000 to 120,000 bales per year.

I-2 keeps current in his business by contacting people by telephone and talking to others in the business. He has a good friend in Wisconsin he networks with who uses the Internet on I-2's behalf. I-2 has never used the University or the extension people as a resource. He does not know how to explain the resurgence of the draft horse industry.

Respondent I-3

I-3 was interviewed June 30, 2004 in his display tent. A middle-aged man (49 years old), he has the low key deliberate no nonsense manner of one accustomed to command. His thoughtfulness and ready answers indicated one who has spent a large amount of time reflecting and thinking on his work and life.

His business is animal drawn equipment. He manufactures equipment for horses, mules, and oxen (used by members of Hare Krishna). He is the owner of AAA, an agricultural equipment company. He has an 8th grade education and acquired his skills on the job. He believes in training the young "for us, with us, and amongst us" – all education done on the job vocationally. He strongly believes the young should be taught while they are young and paid well to do so. I-3 believes in learning by doing. He does not want his people or anybody to miss out on some of their most productive years – ages 15 to 18. By the time an employee is 20, they are doing a man's job for a man's wage. He describes his business as a family business where people start early and work their way up. He believes skills are acquired through use. At AAA they know what they want the equipment to do.

A core group designs the machinery (Appendix D - 20). Changes and adaptations are made based on customer feedback. Twenty-six years ago, when they started,

customers were acquired by word of mouth. Today all sales are made through the company's dealer network. They sell the products with company support. The only time people visit with the workers from the plant is at the shop or at the annual Horse Progress Days event. Even then, they must buy through one of the dealers in attendance at the show.

I-3 learned to market through observation. He reads a lot. He enjoys reading. History and current events are favorite subjects. He stays abreast of his business by feedback from customers and his dealer network. He is a subscriber to all the publications in the draft horse industry.

Future plans are twofold in nature. He wishes to be able to continue to provide work for himself and family. He is also seriously concerned with providing needed product for draft horse industry particularly in the plain (Amish) communities.

The transportation and delivery of his products is via private carriers as well as Fed Ex. and UPS. He believes draft horse schools are helpful to his business by sparking interest in the use of horses and equipment. The schools provide a vital input of customers to the industry.

I-3 felt the biggest contributor to the resurgence of the draft horse industry was the history of the people who participated in it had grown up on farms. When they retired a certain number of them grew nostalgic for the simple life. They turned to the Amish for instruction. As proof, he suggests that Europeans have now expressed interest in heavy horses but without Amish communities to draw on, they can't learn how to use them or manufacture equipment for them without coming to the U.S. for instruction. I-3

expressed concern that the time needed for instruction was such that one had to spend more than a weekend or two to acquire the necessary skills. Several Europeans had spent time in his factory watching and learning, but the knowledge didn't come fast enough to make a substantive difference.

He also noted that his business is for Amish first and the English can adapt to his products. His work is not for hobbyists or pleasure. It must work in the field. His company has exported animal powered equipment to Columbia, South America under various AID programs. He has heard the equipment did not work there because their draft power comes from light donkeys and mules not 1750 - 2000 lb. draft horses that are required to pull his equipment.

Respondent I-4

I-4 is 57 years old. He has the gray hair and beard, mahogany brown skin, and the work thickened hands of the 19th century man of the west for an exterior – inside, he is a 21st century renaissance man with an intellectual's creativity and curiosity. His artistic bent and passion are heard in his opening remarks.

The interview took place in my truck parked along a fencerow under an elm tree June 29, 2004. His business is the BBB magazine, Ag research, and publishing. I-4 has no formal training in the publishing business. He started off life wanting to be a painter. He earned two graduate degrees in Fine Arts. But he always carried with him dreams populated by images of an old style farm of mixed livestock and crops. He had paid for his formal education by working throughout the school years on a farm. After graduating for the last time, he decided he didn't want to teach art after all.

I-4 leveraged himself to buy a small farm of 77 acres and a draft team. His plan was to raise organic vegetables. When he started farming, he had no money for tractors or modern equipment. Draft horses and their harness and equipment were a cheap, viable option. His original goal was to acquire a tractor and the accompanying equipment when he could afford it. As the vegetable business grew, he bought a second team and did everything with the horses. I-4 fell in love with those horses. He has never bought that tractor.

After 2 years of farming, producing 14 acres of organic vegetables, raising feeder pigs, and owning dairy cows he started to get public exposure via T.V. stories about him. A Pulitzer Prize award-winning photographer took pictures of his operation and sold the pictures to a national magazine. Someone sent videotape to the local evening news about his farm. He always could speak well and soon was invited to lecture on farming with horses. The Reader's Digest published a book, "Back to Basics," and one of the chapters dealt with I-4's methods of farming. All of this suggested to him that in the early 1970's, people were interested in learning more about horse agriculture.

In 1975 he formatted his magazine and started to publish it in 1976. He started off with 800 subscribers in his first year who were acquired by advertising in *Organic Gardening and Farming* and *Mother Earth News*. Today, subscribers in all states, all Canadian provinces, and 71 countries receive copies of the AA1. In 1980 I-4 wrote and published the a major handbook on the use and care of draft horses. It is now in its second edition. There are over 100,000 copies of the first edition in print.

Today I-4 lectures and conducts clinics all over the U.S. He has held horse-farming demonstrations from N.Y. to Oregon. He has lectured at many universities and colleges across the country including some of the most prestigious institutions of higher learning such as Cornell and Amherst. He considers his invitation to announce Farm Progress Shows as his most prestigious accomplishment. The researcher would suggest that having 40% of his 20,000 subscribers Amish would be his highest accolade directly attributable to his knowledge of horse drawn agricultural equipment, his animal husbandry skills, and the inclusive attitude with which he approaches everything.

He never directly set out to market his magazine in an organized fashion. He can't believe he has done what he has done. He attributes much of his success to remembering names with faces. He enjoys developing family/personal relationships with customers and subscribers.

His future plans call for expanding his market to include a new and different audience. He plans to run display ads in the *Smithsonian*, *New Yorker*, and *Yankee.* The periodicals he has chosen were recommended to him by his readers who he believes also subscribe to the aforementioned journals.

I-4's philosophy is "how we might live better than we are." While his sources of articles will come from everywhere and anywhere, he is disinclined to use the work of professional writers. He, himself, learned his craft and keeps current by attending shows, receiving mail, and reading the Internet. I-4 views himself as a storyteller rather than a writer. He said, "I never let the craft worry me." He relies on anecdotes and analysis for his decision-making.

I-4 will use extension bulletins, magazines, and books for sources of information. He considers his own library a reference source for use by such diverse organizations as the John Deere library and the United Nations Food Committee who have used his reference materials for historical information. His knowledge and resources are the "germ plasma" for the draft horse industry. Extending the "shelf-life of our knowledge by making information accessible" is an ongoing goal. He views his work as the "extension for the draft Horse Industry and beyond that a protector of relic technology." He considers Agricultural Extension offices from land grant institutions to be "structurally condescending."

I-4 believes the resurgence of the draft horse industry comes from the love of the business by its participants.

Respondent I-5

I-5, 40 years old, is a co-owner along with YX; of CCC a major manufacturer of draft horse equipment, was interviewed on June 30, 2004. I-5 is a wiry intense man given to a sharp insightful pattern of speech.

The interview took place with I-5 next to his Recreational Vehicle trailer where he was camped for the duration of the show. His business has five major divisions – farm equipment manufacturing, engine manufacturing, research and development, retail and wholesale sales and service, and repair work. The business (founded by 1P –father of I-5 and YX) started out by repairing farm machinery and welding for their neighbors. It evolved into a full time business. CCC made the first 2-way hydraulic reset plows (Appendixes D-21, D – 22, and D – 23). When the need arose for a new cylinder that

would put downward pressure on the plows, they made not only those cylinders but also others for different brands of equipment, thus becoming diversified. The business then started to manufacture all the components for the plow. The big breakout for the business occurred in 1983 when they developed the hydraulic manifold valve. They got the idea from RR. The manufacture of the hydraulic manifold valve now accounts for more than half of their business. The business repairs township and construction equipment as well.

They have no formal advertising program and feel they don't need one. They "started a business with a need" and thus advertisement was not needed. "Reputation and work speaks for itself."

Future plans call for continuing with their machinery work. All of their manufacturing takes place in a 200 by 70 foot building. Space is becoming a problem. The company now has 3 generations working there. Their materials are all purchased locally. I-5 keeps up to date by keeping an open mind. He farms out projects whenever it makes sense to do so.

Their use of university or extension services is limited to seeking information on human relations and how to handle company personnel problems. Their short-term goals are seeking to spin off one of their five areas of concentration. Each area has grown in a unique way.

In the latter portion of the conversation I-5 acknowledged he needed short (contradicting his first comment on the subject), intermediate, and long-term goals. The

company uses commercial carriers for their transportation needs. They have found that draft Horse schools have caused a rise in the demand for their products and services.

I-5 believes the biggest contributor to the resurgence of the draft horse industry is:

"People spend money freely on things they don't need. They love to be involved with horses after boring jobs. We are developed from the earth and the closer we work with it the better we fulfill the needs of the body. Hard work, fresh air, and self-satisfaction are the key ingredients. The body is like a plant and this will supply everything it needs."

Respondent I-6

I-6 is 52 years old. He was interviewed on June 30, 2004 in the motel where we stayed during the Horse Progress Show. I-6 is a fine gentleman who is involved in many aspects of the draft horse industry.

I-6 makes his living selling residential real estate and is seeking a way to earn his living with draft horses. He has three registered mares and stands a stallion for public service. He does dealer sales for AAA equipment, BBB equipment, and CCC implements as well as selling harness for DDD Harness. He also sells his wares using an Internet catalogue wherein he puts a markup on the product and arranges for its shipping. He does little business with the Amish – most of it with the English. I-6 ships his merchandise all over the country. His work in the draft horse industry includes buying an unbroken team, starting them in harness, and selling them at a later date.

He sells his teams by word of mouth. He is also a dealer for Best Bloom vitamin supplements. Working with a partner, I-6 sells stallion calendars in Pennsylvania, Ohio, and Indiana. His target markets for the calendars are farriers, feed stores, and veterinary clinics. Last year he sold 14,000 calendars. He acquired his marketing skills through his real estate work.

I-6's long term plans are to grow all his enterprises until one separates itself and comes to the front. He will then focus on that particular enterprise more than the others. He uses commercial carriers in his business dealings. He has not used his state university or its extension system as a source for information in his horse business. Draft horse schools have helped his business only indirectly.

I-6 stays current by going to events, maintaining his position as secretary of the EEE Draft Horse Sale, working as president of the FFF Draft Horse & Mule association. He reads the *Draft Horse Journal* and talks to breeders.

I-6 believes the largest contributors to the resurgence of the draft horse industry is the *Draft Horse Journal*, a national resurgence of interest in horses in general, and people such as Harold Clark who tracked young men interested in draft horses and enabled them to learn the business.

Respondent I-7

I-7 is 57 years old and president of GGG a 501c3 corporation whose purpose is to "preserve, study, and exchange low-capital technologies that increase the sustainability and productivity of rural peoples." The interview was conducted at his booth on July 1, 2004. His appearance is one of a scholar. He has the quite voice and

mannerisms more akin to a philosophy professor than the trail blazing innovator/change agent he is.

I-7's business is running a training center, with emphasis on training rural youth from third world countries, in use of draft power and such related skills as carpentry and blacksmithing. His institute looks for low capital options – they are not limited to the history of the communities they serve. For example, when the circumstances warrant it, they suggest using intensive grazing versus open range. A broad spectrum is always sought. They customize their solutions for each problem – they sought outside help during their work in Madagascar. I-7 constantly updates his mental catalogue of options to be field-tested. He considers his work to be a learning community rather than teaching.

I-7 uses a web site for entrance into his community. He maintains a mailing list of 10,000 names. He started his learning for his trade by growing up on a dairy farm in upstate Michigan. He worked in his cabinet shop in the wintertime. He signed up for the Peace Corps in 1969 for a 3-year tour of duty in Africa. When the threat of tsetse fly had been removed in his host country, I-7 helped with the introduction of oxen. Prior to the introduction of oxen, his host country had practiced only hand cultivation techniques. When he left after three years, there were 500 teams of oxen in use. He and the aboriginal communities he worked with learned together (Appendix D-24).

I-7 took the circuitous route to his career. After returning from the Peace Corps, he visited the H. K. Ford museum one day and saw a threshing demonstration. He

reckons that trip started his process of learning – he learned how to create a technical bridge.

I-7 learned from practitioners the techniques of blacksmithing, welding, and other basic journeyman type skills. Throughout his life, I-7 has changed, altered, and refined what he has learned. I-7 believes that while we are often driven by technology, it is very important to remember that people's mind is the end product. His philosophy of life includes inspiring or creating an attitude of experimentation. He wants the process of learning to be the learners so they are able to decide which approach is best for them.

I-7's future plans call for working with the 100 volunteers he has gathered from around the word, enabling them to network and facilitate with one another while seeking solutions for host country problems. For example, projects GGG has in Uganda tie in with work being done in Madagascar. "Take appropriate technology, appropriate it, and make it work better until it becomes yours" summarizes I-7's approach to learning and educating.

I-7 has 5 university faculty members on his board of directors. He will occasionally tap into University Extension. He always seeks to deliver his message in person with tools on site. He runs two draft horse schools each year.

I-7 believes the resurgence of the draft horse industry has a threefold source.

- There is an Amish role
- Curiosity comes into play. We have the leisure time to do what we want. We now, as a nation, have the money to do what we want. We have the time and money to do what is attractive to us and what gets us outdoors.

- His third reason is premised on the historical experience of the interested parties.

Respondent I-8

I-8 is 59 years old and was interviewed on July 1, 2004 in his booth at the Farm Progress Show. He is Secretary of FFF, a major breed association among the draft horse breeds. He is a dedicated competent manager of his breed association. The researcher has conducted draft horse registration and transfer business with him for most of I-8's tenure in his present position. This was the first in depth conversation the researcher has ever had with I-8.

I-8 believes the resurgence in the draft horse industry started 35-40 years ago when 60 – 70 year-old farmers started it out of nostalgia. Many of them had retired after working in plants and factories and went back to the farm. The *Draft Horse Journal* took on the responsibility to bring people together. Younger people have, in recent years, learned by attending clinics and schools.

The University Extension services have not helped. He feels the business will end up being a hobby. I-8 estimates there are 25 -30 thousand registered Percherons in the U.S. Historically draft horses have lived mostly in the states surrounding the Great Lakes from Minnesota to New York. I-8 believes if states have farmers who raise corn, there will be draft horses nearby.

Respondent I-9

I-9, age 59, was interviewed on July 1, 2004 in a luncheon booth at Horse Progress Days. He has the mannerisms of a successful practitioner of animal husbandry. The mustache and western outfit completes the picture. As a youth, I-9 had always been interested in the Old West and, after Iowa Veterinary School, moved to Montana to set up his practice. He practiced veterinary medicine for 20 years. While running his business, he developed a horse consulting business on the side and eventually transitioned out of his veterinary practice.

His work focused on offering his services as a consultant to individuals and farm owners. He helped people determine their goals with horses and how to reach them (e.g. financial or otherwise). He often helped select horses with those goals in mind. He started doing wagon and sleigh rides at a ranch where people boarded horses. This grew into a business that evolved into his horse consulting business. He learned by trial and error and started to acquaint himself with various IRS tax advantage programs in the 1980's that favored the ownership and breeding of horses. This additional knowledge helped him in his work with the absentee owners who became the focal point of his new horse business.

His next major move was to a ski resort where he worked full time for 10-11 years. He sold that business after conducting dozens of workshops related to workhorses. After selling his business I-9 took a year off and then bought a ranch with a Native American reservation to its front and a national forest to the back that stretches for 200

miles before one reaches the first road. He met I-4 (*Respondent #4*) in 1981 at a Montana community college where I-4 participated in a draft horse workshop.

With the I-4 connection there came a following of clients and the two of them designed a concept for a 5-day workshop in 1998-1999. They ended up with two workshops for the end of summer. The goal was six 5-day workshops per year. They offer four workshops at I-9's ranch per year with four students per class. They also hold one or two off-ranch in the spring and fall when the ranch is inaccessible. At the off-ranch workshops they will take ten people as "hands on" students with an unlimited number of audits.

His clients are acquired through advertising in the *Small Farmer's Journal* as well as through selling instructional videos. The videos are advertised in *Rural Heritage, Draft Horse Journal, and Driving Digest.* I-9 has also set up a website and has had a significant response from his site. I-9's future plans are to hold more general horsemanship presentations and clinics (Appendix D - 25). He uses the Horse Whisperer approach. He doesn't try to keep up to date. He is more interested in learning on his own and sharing the newly acquired knowledge.

As far as work is concerned, he worries about personally overdoing things. He likes the isolated lifestyle and a horse powered farm. He leaves the ranch to attend industry affairs as needed or desired.

University and Extension people have used him as a resource, not the other way around. I-9 feels the higher education people are missing an opportunity. They should offer animal husbandry courses at the Junior College level. His short-term goals are

having more fun with his horses and producing his next three videos. His intermediate goals are to continue to share the brand of horsemanship he has learned from others. 1-9's long-term goals include making a contribution to other countries.

I-9 feels he owes a large debt to old time horsemen who made the effort to train and explain. I-9 believes those people went to extremes to work with horses.I-9 reads a lot of books. He buys on the web as well as buying from the publisher and he sells a lot of books. I-9 tends to read more books than periodicals. He enjoys the study of horsemanship through history.

He believes the resurgence in the draft horse industry came as a result of a vacuum left that was unacceptable to humans that had *that* (what ever *that* is) in their culture. Being able to do productive work or simulated work with a live animal that you can have a relationship with is preferable to having a relationship with an inanimate machine. This is not a conscious goal initially; rather, it starts out as a yearning or intent that calls to you. I-9 believes the skills to work with the heavy horses were acquired by the participants in its revival by reading the *Draft Horse Journal*, the *Small Farmer Journal*, and calling upon the Amish for help. He noted that for years the Amish were the only source of information. The Amish have been an anchor for horses, equipment, and visibility.

There was a meeting held at I-1's (*Respondent #1*) home on the evening of July 1, 2004 with international guests from Colombia and England and the executive committee from the Horse Progress Days event. The researcher was invited to attend this meeting in the role of observer. The question under discussion was whether or not to

focus on expanding the draft horse business to international communities and what, if any, role should be assumed by the various individuals who manage Horse Progress Days. Nothing conclusive was decided. I-5 (*Respondent #5*) thought they had enough business and wanted to make it clear he was not seeking additional business. It sounded to the researcher as though other conversations/religion- or something similar drove his thoughts. He did not make an economic argument against the concept. I-6 (*Respondent #6*), who hasn't got his feet anchored as tightly as he wishes in the business, seemed to be all for expansion into an international market. I-3 (*Respondent #3*), who is interested in providing for long-term employment for future generations of Amish, was interested in going further with the discussions. He noted and recalled from previous experiences in selling equipment to USAID for export to Colombia that the use of draft animals and the equipment must be adapted to the culture intending to use it. He recalled a story of selling to Colombia via USAID and learning the equipment was unloaded at a rural site and left unused in a fencerow. Not only did it not match up with the draft animals, but also nobody knew how to use it.

Respondent I-10

I-10 is 36 years old. He was interviewed in his display tent on July 1, 2004. He is the owner publisher of a major quarterly trade publication serving the interests of the heavy horse industry primarily in North America and occasionally overseas. The interview took place in a lunch tent at the Horse Progress Days site. His father WW founded the periodical in 1964. I-10 acquired his love of draft horses from his father

WW. I-10 used to tag along with his father to heavy horse sales as a youth. Both sets of grandparents owned and used draft horses.

I-10 holds a B.A. in sociology with a minor in criminology. He started working at the journal in 1993 and has owned it since 1998. He acquires his customers by signing them up at horse sales, word of mouth, and using his web site. He says he never had to learn how to market his journal. He advertises his journal in *Horse and Rider* as-well-as *Sport Horse Magazine.*

His future plans include keep doing what he is doing, increasing his customer base, and doing his part to move the market in the right direction. He reckons that 10 years ago cross breeding draft horses with light horses became more popular. He keeps up-to-date by attending events, breeding, showing, and in general circulates in horse circles.

He has never used the universities or extension services in his business. His father has used them as references for historical articles he wrote when he was editor of the journal his son now owns. I-10's short-term goal is to produce the best possible product. His intermediate goal is to cover the issues that need to be covered such as a series of "how to articles." His long-term goal is to build circulation. I-10 believes the draft horse schools have helped his business.

I-10 thinks the resurgence in the draft horse business came about because the timing was right. It was a time when leisure time activities and dollars to spend came together. This additional time and excess money allowed potential owners of draft horses to let nostalgia become more important. It was a time when antique collecting started.

People wanted to be involved in something. His father starting the magazine he owns today played a major role in this resurgence.

Respondent I-11

I-11, interviewed in her display tent on July 1, 2004, is the Secretary of the HHH breed association. She is quick to smile and enjoys her work in the association. It is a non-profit breed registry with reciprocal arrangements with the corresponding horse associations in Belgium and Canada. She learned her trade by working in all aspects of the association as well as through having a background in business administration.

I-11 keeps current in the business by acting as a clearinghouse of information for the members. She receives updates from the directors both by mail and telephone. She doesn't receive much info from the web. She uses the University of Kentucky for JEB work and the University of California, Davis for DNA testing which is used to verify parentage of horses for those wishing to register them.

She stated no short-term goals; her intermediate goals are financial in nature, and her long-term goals call for improving the equine education for the members. Her future plans include maintaining educational tools for breeders in her association. At the present time, she is striving to educate them on JEB, Junctional Epidermolysis Bullosa, an inherited disease where the skin blisters at pressure points and the hoofs slough off in newborn foals.

She also is interested in improving the youth education aspects of the organization. The new people in the organization are not from an agricultural background therefore; they need to learn about fencing, pastures, etc. She wants to be

their resource. She considers the draft horse schools as positive for the growth of the business. The first school emphasizing the breed of her association was in New York. She considers the draft horse resurgence to be cyclical in nature.

Major Themes from Case Study I

Several major themes emerged from this study. Most of the respondents are middle aged. Their present business, in one of the ancillary draft horse businesses, is the second, third, or fourth career for many of them. Most of the respondents in this case study operate their business in rural non-farm locations. Maurice Telleen in his role as founder, owner, and editor of *The Draft Horse Journal* played a key role in the revival/ growth of their businesses. The Amish played a key role in the businesses in this case study. The geography of the respondents in this case study played a key role. All of the respondents in this study either lived in the collar states around the Great Lakes that were in the historical/present day heart of the draft horse businesses or they had strong affiliations within these same collar states.

The Amish equipment manufacturers in this case study targeted their products for the Amish market first. Almost all of the respondents in this case study exhibited self-directed learning and andragogy. Whether the respondent was designing a new piece of equipment or learning how to start, grow, and market a wood shavings business, some form of andragogy or self-directed learning was regularly taking place. The participants in this study lived and worked within clearly defined social systems and/or were joined

by others who shared their personal philosophies of life where self-reliance and independence were necessary qualities for success in the marketing of their products.

The use of University/Extension personnel was limited. Service type businesses were important in this case study. Several of the respondents in this case study invented machinery and equipment to be used by draft animals. Most of these respondents engaged in short, intermediate, and long-term planning. There were connections between these respondents and international agricultural markets. Several of these respondents are publishers, authors and media producers. The equipment manufacturers in this case study designed and produced several lines of equipment that can be used for organic farming. Almost all of the businesses are sustainable agribusinesses. The researcher uses the term sustainable agribusiness in the context that it is a human activity that can be maintained over the long term without adversely affecting the environmental conditions necessary to support those same activities in the future. Many of the respondents in this case study have limited formal education. They also view draft horse schools favorably.

Case Study II - The Draft Horse Industry in East Texas

On October 18, 2003, the researcher went to I-12 and I-13's farm to discuss their draft horse operation. They use Percheron horses and Haflinger ponies as draft animals on their farm. In addition to an intensive rotational grazing system using Coastal Bermuda grass, they raise oats for winter pasture sown with horses and mow their hay with draft animals as well.

I-12 said he has had horses all of his life- the riding kind. He is a tall, thickly made man in his late 30's. The interview took place inside his horse barn as he was harnessing his horses and outside on a field he was plowing with three horses (Appendix D-26). I-12 was working the soil to prepare it for a winter oats crop. He initially became interested in draft horses by reading about them. He went to Holmes County, Ohio – home to the largest Amish population in the country –to learn more about the heavy horses. He had always been fascinated with the craftsmanship of the Amish and their way of life. He was on a business trip to Ohio and had a couple of extra days so he drove up to Holmes county, home to the largest Amish community in the United States. There he met and was befriended by Amishmen who shared his interest in draft horses in general and Percheron horses in particular.

Several Amishmen took him under their wings and showed him how to harness horses, hook them up to equipment, and use the horses with a variety of implements. After he started going to northern Ohio, I-12 started learning about draft horses and their uses by reading books and watching videos.

His first draft animals were Haflinger ponies. He has just recently started acquiring Percherons. He buys horses that are broke to harness and equipment by Amish horsemen. I-12 sells the horses and ponies to people who like to drive carts and carriages with horses in Texas.

I-12 and I-13 have excellent facilities for horses. Their new barn is modeled after a horse barn style commonly found in parts of the country with a strong Amish presence. It is adopted for the hot southeast Texas climate by not having the sides enclosed.

I-12 had a fine array of horse drawn equipment and harness (Appendix D-27). I asked him where and how he acquired it. He told me he is by necessity a dealer for several lines of equipment and harness. When he first got started and needed a doubletree, he couldn't find one in Texas. Now, he makes regular trips up to Northern Ohio and brings down trailer loads of horse drawn equipment and harness- all of which he either uses or sells. Northern Ohio horse auctions are also the source of his draft horses. I-13 told me it takes 24 hours to drive a load back home to Bryan, Texas.

Respondents I-14 and I-15

I-14 is a 55 year-old stoutly made retired career Air Force enlisted man. He was interviewed on October 22, 2003 in his home along with his wife I-15. I-14 grew up in Minnesota on a dairy farm owned by his father JJ, a lifelong owner of draft horses, who taught I-14 how to handle and raise draft horses. In 1974, I-14 bought his first registered draft horse – a weanling stud colt in New York State. JJ had bought a 14- year old mare and foal the year before. I-14 bought the stud colt so his father could breed this 14 -year old mare to a registered stallion. I-14 was living in Texas at that time and delivered his

new colt to his father in Minnesota. From that beginning, I-14 and his wife I-15 have raised and sold horses ever since. Their breed has the fewest horses of the 5 major breeds in the United States. The I-14 and I-15 own a large herd of horses, maintaining some 30 to 35 head on their farm. In the United States there are approximately 1050 registered horses in their chosen breed, Canada has some 300 registered horses in their breed, and England, the birthplace of the breed, counts 250 head. Inbreeding can be a problem.

In 1977, while living in Texas, I-14 bought two mares in Utah and took them to his father's farm in Minnesota. His first registered horse, a stud colt, was born in 1978. The next year one of his mares raised a filly foal. I-14 kept that horse and raised several foals out of her. From 1979 until his father stop raising foals in 1989, all fillies born in Minnesota were moved to I-14's farm in Texas. I-14 retired from the service in 1989 and now lives and farms in Texas. His primary crops are grass and hay. His livestock consist of only draft horses. I-14 is actively involved in his breed association holding and having held many of the associations' elective offices.

I-14 sells most of his horses before they are 2 years old into the Northeastern U.S. with a few going to the Pacific Northwest. The horses perform a variety of tasks such as working as power sources for truck gardens, chore teams on farms and ranches, and in the woods skidding for timber and pulp wood loggers.

I-14 buys most of his horse equipment in Minnesota and Iowa. His family ties to the region coupled with a lack of equipment manufacturers and distributors in Texas draws his supply business back to his birth region.

Respondent I-16

On November 5, 2003, I-16 was interviewed in Richmond, Texas on the front porch of his home. He is a former supervisor for a road commissioner in Fort Bend County, born 63 years ago, who has the easy smile, clear eye, and quick wit of a natural salesman. Other than 4 years in the military, he has lived his whole life in Texas.

Twenty-five or thirty years ago he built a wagon to trailer around his newly built barbeque grill. A friend of his suggested he hook a horse up to that wagon to move it from place to place. His friend also happened to have a horse that could be hitched to that new wagon. I-16 tried out the horse and wagon and liked it. His friend then mentioned he happened to own a perfect mate for the horse he had lent to I-16. This is how I-16 got into draft horses. I-16 had been raised on a farm and knew quarter horses and how to handle them. His grandfather taught him how to drive teams when he was a little boy. After he had owned his first team (buckskin quarter horses) he took a trip to Pennsylvania to visit the Amishmen who were selling him equipment. I-16 was very impressed with the carts that the Amish used to drive around. He asked the Amish shopkeeper he was conducting business with if he (I-16) could rent his carriage to drive around in while conducting his visits. The Amishman said, “Sure.” After 5 days I-16 returned the horse and cart and asked what he owed. The shopkeeper asked him how the horse behaved- I-16 told him everything was fine. The bill came to $300. The next year I-16 rented a different horse and carriage from the same Amishman. After 5 days of use, the Amishman asked if the horse gave I-16 any trouble. I-16 told him everything was fine. The Amishman told I-16, “that horse has never been hooked up.” He had been

breaking these horses for the Amish man. The bill was $50 and I-16 knew he was ready to do anything with draft horses including earning a living.

He presently owns several wagons and carriages. He also drives hearses and caissons. In 2003 he drove a caisson for 108 military funerals, a hearse for 153 civilian funerals, carriages and surreys for 20 weddings and parties (Appendices D – 28, D - 29, and D - 31), and various wagons in 12-15 parades. He donates time and his horses and carriages for charitable events each year. He has been a regular in the opening ceremonies for the Houston Livestock Show and Rodeo. He also drives for the Duchess on the Strand show. Much of his funeral work is attributable to I-16's contact with the American Funeral Service Museum. While he will hire out for $700 per wedding or funeral plus 50 cents a loaded mile, most of I-16 's work is within 100 miles of Richmond. He takes calls from potential customers from all over the country. The only advertising he does is on a web site set up in 2002 for him by the *National Geographic* magazine. He does not subscribe or advertise in any of the draft horse journals. He does not know how to operate a computer beyond reading e-mail.

I-16 has worked in some 10 Hollywood movies. His contacts for the film industry come from the Texas Film Commission and the Houston Film Commission. His first move was with Glenn Ford in the *Final Verdict* filmed in Galveston 1985-1986. His most recent production was the *Alamo,* which was filmed in 2003 (Appendices D32 and D33). All of his movie work is done in Texas. He will be on set anywhere from one to three months at a time, always returning home on the weekends.

His grandfather taught I-16 how to drive. C.D. Kalinowski, a muleskinner, showed him around heavy horses in the beginning. I-16 buys his harness and equipment as needed from the Amish in Oklahoma and Beesville, Texas. He also uses harness makers and wheelwrights in Ohio outside of Cleveland and in eastern Pennsylvania. I-16's son-in-law told him about the Amish community near Cleveland, Ohio. This is Holmes County, the home to many of the participants in Horse Progress Days.

I-16 reckons this is the only hobby he has ever had that paid for itself. He buys 2 to 3 year old horses and mules and, in most cases, keeps them until they die. He likes 2 to 3 year old horses and mules because he can tell what they will look like when they are mature. He appears to like mules as much as horses. He will sell any horse or piece of equipment he owns at the right price. He has sold a stagecoach to a buyer in Spain.

His funeral business started when he received a request to pull a caisson for a funeral. The funeral company had bought the caisson for $17,000 and it proved so popular that it paid for itself in 6 weeks. I-16 has been hired by the Archdiocese in San Antonio to parade the reliquary of St. Theresa on a five-mile journey through the city to a Basilica where it was put on display. The Archbishop of San Antonio blessed his horses and himself. His next blessing came from Buddhist monks during a funeral service. In continuing with his ecumenical activities, his most recent blessing was received at a Sikh funeral. Both the Buddhists and the Sikhs blessed his horses.

I-16 learned the protocol of military funerals (Appendix D - 30) from a 2nd Lieutenant at Arlington National Cemetery. He spent a week with him. This training was arranged by the American Heritage funeral home in Houston. The uniform he wears is

that of an 1860 Senior Master Sergeant's Cavalry Uniform. It is the only uniform that can be worn officially while driving a caisson for the 5 branches of the U.S. military.

Respondent I-17

I-17 is 61 years old. He was interviewed on November 5, 2003 on I-16's front porch. I-17, who looks and moves like the bronc rider he was, boards his horses at the I-16 farm. I-17 owns a real estate company specializing in commercial real estate, farms, and ranches. I-17 has been around horses all of his life. As a youth, he performed at a high level in amateur rodeo. He grew up working cattle and breaking horses for roping events.

His father was a funeral parlor director and I-17 grew up next to a large cattle ranch in Southeast Texas. I-17 learned to drive a team of mules when he was 4 years old. An African American who worked on the ranch let I-17 sit on his lap while the ranch hand drove a horse drawn mower with a team of mules.

I-17 first noticed draft horses in movies. As a board member of a charitable organization with annual holiday celebrations, he met I-16 in 1996 at one of the charity events. I-16 was driving a team of horses and he asked I-17 to help hook up another wagon. I-17 ground drove the team (that is, walking behind them, holding the lines) to the wagon and became hooked on draft horses. He immediately sensed the difference between heavy horses and quarter horses as well as the difference between draft horses and the mules he had driven so many years ago.

I-17 is still affiliated with that same charitable organization. They rent the SRS Ranch every year to give hayrides and cart rides to the handicapped children. After

meeting I-16, I-17 stayed in touch and drove I-16's horses all the while planning to buy his own team. He traveled to Columbia, Missouri, in February 2000 for the Boone County Draft Horse sale and bought a pair of registered black Percheron fillies to give to his wife for their 25th wedding anniversary. The only problem was I-17's wife was very afraid of horses and these young horses were not even broke.

I-17's wife had come to the U.S. from Sweden when she was 19 years old. While still a young lady, a friend put her on a poorly broke horse that injured her. She spent three days in the hospital. I-17's wife did not know he had bought the young horses that were now kept at I-16's place. She and I-17 would go there on weekends and she grew to like the young fillies.

At this point in time, I-17's wife developed breast cancer. I-17 believes she used the fear of the cancer and its treatments to overcome her childhood fears of actually handling and using the draft horses. She started to ground drive the oldest of the young horses. Her treatment for cancer has been a success and her interest in horses continues to develop. She drove her team in the Grand Entry at the Houston Livestock Show and drove her team in the 2003 movie *The Alamo*.

I-17 and his wife bred their mares in the spring of 2003 hoping to raise some foals. I-17 volunteered that he believes the draft horses are coming back because as the horse owner population gets older, it becomes incumbent upon them for safety sake to drive horses rather than ride them.

Respondent I-18

I-18, 45, is a farrier, horse trainer, and carriage service owner-operator who was interviewed in his home on November 12, 2003. Formerly a computer programmer from Newark, Ohio by way of Pittsburgh, Pennsylvania, he started working with draft horses six years ago when he moved to Texas. He learned about horses from his father, who was a ranch hand as a young man. I-18 and his wife owned quarter horses in Ohio before a large firm in Houston lured him to Texas for his computer skills. He first acquired these skills as a programmer/field operator in the Special Forces, with 12 years of service. Three years ago I-18 was laid off from his computer programming position in Houston. A former competitive power lifter and presently a pitcher in a semi-pro baseball league, he is now a full time farrier and horse trainer specializing in draft horses and sport horses (hunter/jumpers).

I-18 has no formal training in breaking horses. Instead, he relies on his life's experiences with animals and his own instincts. He has conducted extensive research on the subject of horses and their training by attending lectures and reading the work of authors such as Monte Roberts (*The Horse Whisperer*). He is constantly staying in touch with trainers throughout the country by e-mail. He will use video instruction, such as Cathy Zahm's excellent horse training productions, to polish his training skills.

For his farrier training, I-18 apprenticed himself for a two- year period with one of Texas's leading corrective farriers, Eli Wolfe from Calvert, Texas. In 1998, I-18 bought his first draft horse a Belgian stallion. None of the farriers he contacted could handle the horse properly. Help was needed and I-18 found it by reading various farriers

bulletin board posters on the net. After hiring Wolfe to work on the stallion's feet, I-18 decided he wanted to learn how to trim and shoe the feet of draft horses. He asked Wolfe if he (I-18) could apprentice with him and Wolfe agreed to take him on as an apprentice. As I-18 acquired customers who needed the services of a farrier, Wolfe would accompany him whenever he needed guidance.

As a journeyman farrier I-18 continually seeks to upgrade his knowledge and skills. I-18 is looking forward to attending a farrier school in Wisconsin with master farrier and blacksmith, Will Lent. I-18 is very interested in continuing his professional education. He frequently will visit with another master farrier, whenever the farrier flies to Texas to work on horses.

In addition to self-directed learning and the andragogical methods of instruction he has received, I-18 has read the John Lyons and D. H. Butler books on farrier work and is a current subscriber to the *Professional Farrier Magazine*, *The Draft Horse Journal*, and is a member of the Clydesdale Breeders Association of America. The Clydesdale breed association and the various journals help keep I-18 current in his farrier and horse training work.

I-18's farrier business is primarily promoted by word of mouth and a web page he maintains. He specializes in working on draft horses. He has acquired an over the road tractor to haul his equipment trailer and horses. He can justify this expense by taking the payments for the truck and trailer off of his income tax. I-18 took a second mortgage on his home to purchase the tractor and trailer. He buys his farrier supplies

from several sources. His primary supplier of shoes and pads is Will Lent of Michigan. Alvin Texas Farrier Supply is his source of hand tools and nails.

For his harness needs, he buys from several sources. His parade harness is purchased in Shipshewana, Indiana. The show harness comes from Northwest Leather in Idaho. It is interesting to note why he buys from so many different sources. At Alvin Texas, I-18 can look at the hand tools before he buys them. Will Lent was chosen as I-18's supplier of shoes and pads after extensive research in *The Draft Horse Journal*, conversation with other farriers, and perusal of Internet sites. The Shipshewana Harness Co. was chosen after similar Internet research. The Northwest Harness Co. was picked after many discussions with other draft horse exhibitors and represented a savings in purchase price. I-18's wagons and surrey were made in Simonton, Texas, 15 miles from his home. His Amish show cart came from Shipshewana, Indiana.

His business is an amalgam of many different activities. He will conduct carriage rides for clients viewing Christmas lights and decorations in subdivisions. He has done carriage rides for weddings, parades, and company parties. If a client wishes to enter his horse or horses into a show but has not the time, skill, or inclination to do the actual work I-18. will do it for him. I-18 uses the Ralston Purina product Strategy Feed for his horse grain. He buys his vitamins in Rosenberg, Texas, and feeds locally grown hay.

He views an expansion of his farrier business as the most effective way to increase his business profitability. He uses showing as a means of advertising himself and his considerable farrier skills. I-18 has found a positive correlation between showing horses and acquiring new clients for his farrier business. When I-18 sells a horse, he has

been frequently able to acquire a new customer for his farrier work. For farrier work the farthest he will travel is Austin.

Before he sells a horse, he makes sure the customer knows how to handle a draft horse. I-18 is very particular about who buys from him and will not sell a horse to someone whom he thinks won't care for it properly. Most of his customers for horses are first time draft horse owners. If the prospective buyer hasn't previously owned a draft horse, before he sells him a horse, I-18 requires him to buy lessons on the care and management of the horse.

I-18 buys most of his horses in Ohio and Texas. The Ohio connection comes from having lived and worked there. The Texas source is used because he is buying from one of the highest quality herds in the country.

Respondents I-19 and I-20

I-19 (age 52) and his wife I-20 moved to Texas from Ohio in 1998. Their interview took place in his office in the main barn and the paddocks around it. Additional conversation was held over lunch at a restaurant in town. I-19 grew up on a farm 45 miles north of Dayton, Ohio. He has the demeanor of a self-contained man with the quiet confidence of a university professor. He learned how to use draft horses and acquired a life long interest in them from his father, who farmed with Belgians. After his father retired, I-19 and I-20 lived on his father's farm. Not wanting to be like everyone else in that part of the draft horse world that owned the TTT and SSS breeds, they bought their first draft horses, a 2 year old, and a 4 year old registered OOO's, both females, from a man in Greenville, Ohio. They learned from the beginning the dos and

don’ts of showing. Their first set of show harness had brass fittings but one season of using that type of harness cured them. The 4-year-old mare bore a filly and they rebred her for the following year. The breeding was successful and they had their first 4-horse hitch.

I-19 and I-20 won a grand champion ribbon at the first draft horse show where they competed in 1989. At their next show they were judged last in their class with the same horse. They became hooked on showing. During their initial years, they competed at 7 to 9 shows and fairs per year. They also drove in 10 to 12 parades a year. The goal of the showing and driving was to earn enough prize money so the horses wouldn’t cost them anything out of pocket for feed and upkeep. Most years they came pretty close to attaining their goal.

Early in their marriage they made a conscious decision that I-19 would be the breadwinner and I-20 would stay at home, raise their three children, and take care of the horses. I-19 spent 18 years at a LTL (Less than Truck Load) terminal eventually becoming the manager. His job entailed the coordinating of loads to be picked up by truckers from all over the country who were passing through his region who needed consignments to fill up their trailers. In his last few years at the terminal, he decided he had gone as far as he could with his horses and limited resources and began to look at how he could move forward in the business.

He was good at what he did with his animals. He could break and train his horses as well or better than most people and he had an excellent eye for top quality draft horses. He could compete with the wealthy draft horse people in hitch classes where the

quality of the horse, while very important, could be offset somewhat by another horse of lesser quality that was better trained and driven. His horses, however, could not compete in the halter classes where everything depended on looks. He just did not have the money to buy the top end halter show horses. By skill and hard work, he was able to acquire a potentially premier OOO stallion whose purchase changed his and his family's life.

In 1997, ZZ, the wife of a prominent businessman fell in love with OOO draft horses. She bought a team of what she thought was great horses and took them home to her ranch in Texas. That same year she went to the National OOO Show and discovered she just had an ordinary team of horses.

She went home and hired LL, a nationally known manager, breeder, and showman, to buy the ten best mares and the best stallion he could find. LL did as she bade and delivered the horses to her. She then told him to go out and buy ten more mares and the best stallion he could find. He bought the mares and then approached I-19 to buy his good stallion. I-19 said the horse wasn't for sale. LL chased after I-19 throughout the show season. It got to the point where I-19 wouldn't return telephone calls. At the Toronto, Canada Royal Winter Fair, LL walked up to I-19 and without announcing his presence put his arm around his shoulder and asked him what it would take to buy the horse. In that same conversation he told I-19 that ZZ needed a draft horse manager as well as that stallion. I-19 and his wife discussed the opportunity on the drive home to Ohio after the show. He interviewed with ZZ at the Great Lakes International show later that fall. He was offered the position and flew to Texas in December to visit the state for

the first time. Since I-19 and I-20 had three school age children, it was important that they visit the community and its schools before they committed to the job.

They accepted the position in Texas. I-20 handles all aspects of the record keeping for the draft horses such as veterinary records and registrations, while assisting with the grooming, showing, and general caring for the horses. She helps with the feeding and works with the young foals as well. I-19 does the breaking and, in consultation with ZZ, handles the buying, selling, and showing of the horses. I-19 is responsible for all the scheduling of show, parade, and breeding activities as well as directing the management of and participating in the hay and pasture production. The herd in 2003 consisted of three stallions (including the one ZZ wanted plus twenty four brood mares and eighteen foals) for a total of forty-five horses.

The ranch synchronizes its foaling in order that the foals are born during cool weather. They try to have their foals born in January, February, and March. With the long hair typically found on newborn OOO's, foals born later than March have a difficult time overcoming the heat in south Texas. As it is, the I-19 and I-20 will put fans on foals to cool them down immediately after they are born even in the first quarter of the year!

The horses compete at all the major OOO shows in the U.S. and Canada. They are shown at Denver, Colorado, Milwaukee, Wisconsin, Indianapolis, Indiana, Columbus, Ohio, Detroit, Michigan, Oklahoma City, Oklahoma, and the Toronto Canada Royal Winter Fair. South Texas is a long way from the center of the circle around which I-19 and I-20 show horses. In fact, it would be exponentially more

difficult to do as much showing as they do were it not for the farm they left to come to Texas. I-19 and I-20 still own it.

When they leave South Texas for the two and a half month swings thru the show circuit, it takes a tremendous amount of planning. They usually take fifteen horses, several carriages, and the necessary show harness all hauled by a semi-tractor. They take one additional hand to help with the work. Horses get stiff and develop swelling in their legs (just like people) when they spend too much time traveling. Horses also need to adjust to changes in altitude and temperature to perform their best in the physically demanding hitches. The I-19 and I-20 usually have just three to five days between shows so rather than drive back to Texas or rent expensive facilities to stable their stock between shows, they take the horses back to their farm in Ohio to rest. While they are there, they will frequently give carriage rides to special needs children and senior citizens for free. Their family farm has become the base of operation to which they return to rest after each show. Their own children spend the summers working with the parents at all of these events.

This draft horse operation buys most of its horses in Ontario, Canada. They complete most of their sales to people living in Texas. Their horse equipment is purchased in Shipshewana, Indiana. They also will buy horse supplies in Pennsylvania and Ohio. These contacts with suppliers of equipment were established over the years primarily at the National Clydesdale Sale in Springfield, Illinois.

I-19 and I-20 use a variety of information sources to keep up on the breed and the draft horse industry in general. Show circuit conversation, *The Draft Horse Journal*,

Canadian Clydesdale Contact, the National Clydesdale Journal, and the Internet are all regularly read and used. They recently completed an Artificial Insemination course at Colorado State University. Unlike the situation in the beef and dairy industries, the draft horse industry in 2003 could only use chilled semen. In preparation for the time when the technology for using frozen semen is perfected, I-19 and I-20 wanted to be as current as possible in their learning curve. They view the use of frozen semen (as it is used in beef cattle) as the next big step for the draft horse industry.

I-19 breaks all of the horses himself. He and I-20 imprint the foals at birth. This process involves handling each foal daily from when it is born until the foal is completely comfortable around people. Each of the foal's feet are picked up daily and tapped on first with a hand and then with a stick or small hammer, sometimes as often as ten times per day per foot. Next, every part of the colts' body is touched and/or petted. From day one, the colt is required to wear a halter.

I-19's long-term plans include continuing his stay at BBB. He is quite proud that his tenure there has lasted for over five plus years. Five years, according to I-19, is the national average for holding onto a job such as his. He currently is on the board of directors for the National OOO Association. In his present capacity with the organization, he is trying to start a national youth program as well as develop the format and bring to fruition a World OOO show. He has proposed to the board of directors a national youth education scholarship program complete with a national youth horse show. He feels strongly that the best way to continue the growth of the draft horse industry is by educating the youth.

Respondent I-21

I-21 and his wife are fulltime Percheron breeders from Texas. At 6'5" and over 250 pounds and in his early sixties, I-21 looks every inch like a man who has lived his life outdoors. The interview took place while seated in his barn and outside by the horse lots near his home on November 19, 2003. I-21 sold his construction company, specializing in insulation work, six years ago to concentrate on his draft horse business. His wife is a rural mail carrier. I-21 is proud to have attended Texas Tech and "escaped without any education." I-21 and his wife have had quarter horses all of their lives and in fact still own two.

They got into draft horses after I-21's wife felt a growing reluctance to ride. Her knees had developed arthritis and she felt to keep her connections with horses she would be better off driving them rather than riding them. Several years ago, they had bought a horse drawn buggy. They bought a set of harness about twelve years ago and then set out to find a horse to use with it. Next they went to a draft horse sale in Ardmore, Oklahoma. There they found a man who had a spotted draft horse that was the best broke horse they ever owned. This horse taught I-21's wife how to drive not only itself but also virtually every other kind of horse. Though the horse itself was well broke, I-21's wife first drove it in a pen pulling pallets until both I-21 and his wife felt comfortable hooking the horse to their buggy. Their new horse was so well broke that when they drove the horse in a parade, it would remember the initial established distance between itself and the carriage in front of it and maintain that same distance throughout the parade regardless of the

speed of the animals in front of it or how many times the parade stopped and started again.

In this, their thirteenth year of raising and owning draft horses, they buy their red top cane and coastal Bermuda hay locally. Their alfalfa hay comes from Oklahoma and they buy corn and oats in bulk from the local elevator. The equipment for their horses is bought in Iowa, Kansas, and Missouri. Horses are bought in Pennsylvania, Illinois, Ohio, Michigan, and Iowa. Their farrier work is done locally.

I-21 and his wife sell their horses primarily in Texas and the southwestern states. They have sold in Mexico. For the most part, the horses they sell are used for pleasure rather than work. The horses they sell are used more for riding than driving. They prefer private treaty sales to selling the horses at public auction. They allow the market to determine the kind of draft horses they raise and sell. The customers they seek are the people interested in hitching and showing. Therefore, they own horses that are high-headed, tall, and high stepping.

In addition to horse sales, revenue is earned by standing two stallions for public service. I-21 breeds an average of 20 outside mares (these are horses they do not own) a year to their stallions. Some of their clients are interested in raising hunter/jumpers and some are interested in raising spotted draft horses along with those who are seeking purebred Percheron draft horses. They also maintain a carriage trade where they will drive for parties and corporate picnics. I-21 would go coast to coast to conduct horse business.

I-21 shows his horses in Oklahoma, Missouri, Nebraska, and Kansas. I-21's wife helped set up the Kansas State Fair heavy horse show in 2004. When a major show was finally made available, they also showed in Texas. They like to compete in halter classes, mare cart, and mare teams. I-21, his wife, and their daughter all drive in the cart classes. With his wife driving the mare team, I-21 planned to show a 4-up of gray mares in the 2004 show season.

The major sources of draft horse information for the I-21's operation is derived from the *Draft Horse Journal*, the *Percheron New*s, nationwide sales lists, and the state Draft Horse Associations of Oklahoma, Kansas, and Texas. He has never received information from the Animal Science departments or Extension Offices of the State Universities about draft horses and how to care for and use them. The Internet ads and e-mail connections help their business. Ninety percent of their e-mail correspondence is from women. Most of the women they deal with have never handled a draft horse. Some have never owned a horse.

The greater Fort Worth suburbs are encroaching upon their farm. They have decided to move east and south of Dallas. I-21 feels he has "one good barn left in him". In other words, he would like to have the opportunity to build the ideal horse barn. He plans to build that barn and an indoor driving and hitching arena. He will not sell a horse to a person who doesn't know what they are doing and offers lessons to those who need them. I-21 feels the new facilities will pay for themselves.

Respondent I-22

I-22 is a 60-year-old horse trader, trainer, and carriage service operator from Temple, Texas. He was interviewed under his carport in the afternoon of November 19, 2003. The interview carried on as we viewed his livestock on his home place as well as on a nearby farm he has rented. He grew up in upstate New York on a dairy farm near Binghamton. His grandfather maintained a herd of eight to ten draft horses at all times. When his grandfather no longer ran the dairy, I-22's father took over. I-22 owned saddle horses as a boy.

I-22 moved to Iowa at age twenty. In Iowa, I-22 managed a hog buying station. He owned no horses there until he was thirty years old. One day he traded a good riding saddle for a team of blue roan mares. He owned that team for several years. In 1982 the buying station closed.

In 1982, I-22 and his wife moved to Texas. In 1982 there was an acute shortage of nurses in Texas. His wife was hired over the phone by the major clinic in the town without an in-person interview. For his first five years in Texas, I-22 drove a flat bed truck over the road for a living. Next he worked in a box factory working his way up to shipping foreman. He quit after five and a half years and started a carriage business in Texas in August 1994.

I-22 does weddings, parties, and funerals. On the weekends he works in a combination historical/tourist center in offering fifteen minute carriage rides for a fee. During the holiday season, Thanksgiving to New Years', he works seven nights a week. He uses one Percheron gelding to pull his carriage. He will train horses for $750/month.

I-22 likes to buy his horses in Waverly, Iowa. He sells horses only to people he knows will take care of them. The prospective buyer must work the horse or team in I-22's ring before I-22 will complete the sale. He will insist on instructing an individual on how to handle a draft horse if that buyer's skill falls short of what I-22 expects of a horse owner. Most of I-22's sales come by word of mouth. He sells horses that both ride and drive. He breaks his horses to do both. I-22 hires a woman to ride his horses for him. She is an excellent horseperson who was looking for work. He did not need to fall off of any more horses in his life and an excellent relationship has followed. He advertises his stock by attending plow days and trail rides where he pulls a wagon instead of riding a horse or mule. He does not participate in horse shows. His wife maintains a web site for him. He stands his own Jack (Appendix D-34) for public service and uses him to sire his own mules. I-22 buys his harness supplies from Central Illinois Harness in Arthur, Illinois. He buys his carriages and parts from Amish Carriage in Oden, Indiana.

All of I-22's feed is purchased from a feed mill in Temple. Country Acres, a Purina product, is his grain of choice. His hay is bought from I-3 (Respondent I-3). He does most of his own farrier work as well as any vet work that is required.

I-22 keeps abreast of the draft Horse market by reading the *Draft Horse Journal* and from conversations at draft horse sales. When asked how much help he gets from the state Universities and Extension offices he replied, "Most don't know a head from a tail."

Major Themes from Case Study II

Several themes emerged from this case study. Most of the respondents are in middle age. Their draft horse businesses were their second, third, or fourth career. Most of the respondents operate in rural non-farm locations. Maurice Telleen played a key role in the birth/revival of the draft horse industry in East Texas. The Amish played a role in the East Texas draft horse industry. Whether it was supplying horses, equipment, or expertise, the Amish connection was prevalent among the respondents in this case study. The collar states around the Great Lakes provided horses, equipment, and expertise to the draft horse people in East Texas. This geographical phenomenon played a key role in the draft horse industry of East Texas. The respondents in this study chose to sell horses and services to other Texans first before offering the same to non-residents of Texas. Almost every participant exhibited self-directed learning and andragogy.

The respondents' philosophy of life and their own knowledge of themselves helped each to define and work in their chosen market niches. The use of University & Extension personnel was limited. Service businesses were important to the respondents in this study. Some of these respondents were particular about to whom they sold horses. Most of these participants engaged in short, intermediate, and long-term planning. Almost all of the businesses are sustainable agribusinesses. Many of the participants in Case Study II had limited formal education.

Case Study III-Siberian Draft Horse Industry

Background

Towards the end of April 2002, near the conclusion of a class on international agricultural education, the researcher had filled out the forms to volunteer for ACDI/VOCA as an equine specialist. On March 16, 2004 he received an invitation to be a consultant in Siberia. The assignment called for the volunteer to travel to Novosibirsk Russia and from there to the countryside to assist a Joint Stock Company (V) in improving its horse raising operation. The researcher responded in the affirmative within minutes of receipt of the invitation.

The researcher was in Novosibirsk Oblast Russia from June 6 to June 18, 2004. Novosibirsk, the largest city in Siberia, has a population of 1.5 million people. A four-hour plane ride from Moscow (Appendix D-35), it is in the exact center of Russia (Appendix D-36) – when viewing a map from west to east. Located on the 55^{th} parallel, it exhibits a classic continental climate of bitterly cold winters – temperatures of minus 60 degrees Celsius and snow accumulations of 100 plus centimeters are not uncommon, hot summers – temperatures can be in excess of 30 degrees Celsius and a 120-day growing season. Rainfall is typically 38 centimeters per year. In December, the sun will rise shortly before 9:00 a.m. and set a little after 4:00 p.m. In June, the sun will rise at 4:00 a.m. and set at 11:00 p.m. The geographical setting of Novosibirsk is important because it demonstrates along with the locations of the other two case studies the

diversity of the actual as well as potential locations for the renewal of draft horse industries to take place.

Although brought to Siberia for one specific enterprise, three major enterprises were studied in Siberia to ensure the data was organized, categorized, interpreted, identified, and synthesized correctly. The breed of draft horse studied was the Kuznetskaya – a distinct breed developed in Siberia for its meat production and draft work capabilities. Russian was the language spoken by all of the participants of the study. One or two interpreters to translate and read documents always accompanied the researcher. The interviews were ongoing from June 6 through June 18. On several occasions, information was gathered in the morning at one enterprise and in the afternoon or evening at another. Generally the meetings started at 10:00 a. m. and would end around 11:00 p.m.

The Participants

Of the three major horse programs studied, one was located on a stock (50% publicly owned and 50% privately owned) farm, another was a privately owned farm, and the third was a private/publicly owned racetrack whose livestock was both publicly and privately owned.

*Respondents I-23 and I-24.*The first program, (V), is a stock company consisting of 8000 hectares. Of these, 4000 hectares are used for small grain production- wheat, rye, and barley. Historically, it was a state owned collective farm. It converted over to a stock company in April 2004. The farm is 50 percent owned by the state and 50 percent by the people who live and work there. There are 2000 hectares of timber- any harvested

wood is used in the village and at the farm. There are 75 people living in the village (Appendix D-37). A mix of alfalfa, clover, and orchard grass is grown for hay on 2000 hectares. There is one cutting per year. Large round bales are made using balers pulled by Belarus tractors. The farm has 180 head of Kuznetskaya draft horses (Appendix D-38). They are allowed to range freely, overseen by shepherds in three separate herds. The mares foal from March thru May. The stallions are moved from herd to herd with no serious attempt to identify which stallion is sire to which foal.

There is a dairy herd consisting of 240 head of Holsteins. The soil is a black prairie whose depth was observed at 18 inches to 2 feet on the road cuts. The farm has a growing season of 120 -150 days. The grain crops are sold for livestock feed in local markets. All fertilizer, seed, equipment parts and horse equipment are purchased locally.

I-24 (the general manager of V) was the primary mover behind the researcher's trip to Russia. He is a wiry short man with piercing blue eyes complete with a Lenin mustache and goatee. At somewhere in his early fifties, he favors the strong blackish tobacco cigarettes found in the ubiquitous kiosks and open markets in towns and cities of Siberia. A soft-spoken man, he commanded instant and very obvious respect from people everywhere the researcher and he traveled. I-24 is responsible for the hog, milk, and horse production on state farms in a region that exceeds 850,000 square miles – larger than the Louisiana Purchase. A patron of artists in Novosibirsk, he spoke eloquently of his wishes for the Kuznetskaya draft horses.

The short-term goal of the farm is to bring their horses "to perfection level." The intermediate goal is to "develop solid conformation" of the horses. The long-term goal is

"to preserve the breed." The formal plan for horse rearing calls for the Zootech, a technician, to provide husbandry for the herd and assign a stallion to it. Registration is conducted by having the animals formally inspected by state inspectors who review the animals against the ascribed standard of perfection and declare if they are eligible for registration. When they are accepted for registration, a central livestock agency assigns the certificate and registration number.

Horses sold for human consumption and the milk production from the dairy herd are marketed in Cherepanov. The political manager of the farm sees future live horse sales for draft animals as flat while the milk, meat, and grain markets are viewed positively. The farm manager, I-23, feels he has no competition in their horse business. I-23 assigned horse production costs as $500 to raise a foal and $300/yr. to maintain a mare. Stallions are sold to state stables and state farms for distribution to private individuals and state operations for their use as work and production of animals for human consumption. The sale price for the stallions is 50,000 to 70,000 rubles ($1725 to $2415 USD). Occasionally, a mare will be sold for 40,000 to 50,000 rubles ($1380 to $1725 USD).

The managers and the zootech at V farm (I-24, I-23, and I-25, Appendix D-39) plan to increase the sale of stallions to other farms. Their business plan calls for the number of the Kuznetskaya horses to increase, thereby increasing their market shares of draft animals. There are some dozen or more draft horse breeds in Siberia. As part of their long term plans, the managers want to advertise in Moscow and other cities in Siberia to appeal to potential buyers to purchase horses from them. The specific appeal

to the potential buyers is that buying a Kuznetskaya is good for the preservation of the breed as well as the new owner's disposition.

Upon hearing this, the researcher thought of a quote often ascribed to Will Rogers, "the outside of the horse is good for the inside of the man." The farm itself is given a safety net by the government. If there is a crop failure, government crop insurance will provide money for the farm workers. The workers and the managers on the V farm all have generations of experience with draft horses.

Most of them know how to make perfunctory repairs on harness and equipment. There is an infrastructure that will provide all that is needed to maintain a draft horse industry. It really never left Siberia when mechanization came to Soviet agriculture. With winter being the dominant season – up to 7 months a year - horses are needed as a means of transportation for the ice and snow packed roads. Horsemeat has always been a part of the diet. The researcher is aware of at least 12 different varieties of sausages commercially produced that use horsemeat.

Draft horse breed societies are not as formalized in Russia as they are in the U.S. The Russian participants must look in a variety of places to acquire information to improve their horse enterprises and ancillary industries. The participants complained that the Agricultural universities did not train their students in horse husbandry. The participants will and have traveled to Moscow and Germany to learn from others outside their immediate circle. They read whatever they could find.

Recently, the participants from V have been exploring how to sell more animals to the U.S. draft horse market. About 10 years ago, draft horse producers in the U.S.

started to develop a new breed of draft horses called Spotted Drafts. The managers of V have sold several-spotted Kuznetskaya to U. S. breeders for foundation stock in the last 2 years (Appendix D-40).

The Internet, a few U.S. agribusiness firms, and some U.S. government agencies all have been sought out as sources of information for the managers of V on how to improve their draft horse business.

Respondent I-26. S – was the second agribusiness studied. It is a family owned post-collective enterprise, was run by I-26, when it was a collective farm. He is a thickset man- mid 40's - with sharp piercing eyes and a rumble for a laugh. A head of full dark hair crowns a ruddy outdoor complexion (Appendix D-41). His drive to succeed was evident immediately when the researcher visited him. This privately owned farm produces grain and horse meat for human consumption. The grain is sold into Novosibirsk (+ 100k away) and the horsemeat is sold locally. I-26 sees the grain market as being relatively flat and he sees a long term rise in the market for horses as meat producers. This has been his thinking for the past three years. During his first year as the owner of his farm, he did exceptionally well selling his grain for human consumption – he had had the foresight when he bought the farm to build grain storage facilities so he could hold grain until spring, when prices were historically higher. This type of forward thinking was not found in any other interview in Siberia. He used the money to buy a herd of Kuznetskaya draft horses.

He runs 80 mares at his ranch and maintains 2 stallions (Appendix D-42), which he alternately runs with the mares. Most colts are sold for meat consumption. VAV believes his cost of horsemeat production is almost negligible.

The S farm has 1000 hectares under cultivation. The farm annually produces 600 hectares of wheat, 200 hectares of oats, and 200 hectares of hay. While the grain is sold for human consumption, hay not used on the farm is sold locally. The hay is a Lucerne (alfalfa)/ orchard grass mix. The short (120-150 days) growing season dictates one cutting per year.

I-26 is the decision maker for the farm. He gathers information from a variety of sources and arrives at a decision (he reads everything he can get his hands on). His short-term and intermediate-term goals are to increase his horse production. His long-term goal is to establish a registered herd of draft horses. He has not yet decided on a breed, but was interested in finding out more about Percheron horses. He asked for and received a packet of information about the Percheron horse breed from the Percheron Horse Association of America. I-26 is in the process of determining if there would be a market for the Percherons in his community. He would really prefer to have a registered herd of Western Europe/American breed of horses.

He views his neighbors as competitors for his grain markets and the V farm as his sole competitor for the horsemeat market. Among the many differences between S and V is the number of employees and their pay differential. V has 72 full-time employees while S has 8 full time workers. Additional help is added to the employee number at S during harvest. This past season the employees at V received 100 rubles for

a bonus at Christmas. S, as they have from the time they commenced operation as an independent farm, gave each full time employee 10 metric tons of grain at harvest as a bonus.

Respondent I-27. The third enterprise, which participated in the study, is the owner (I-27) of the racetrack at N. He is a man in his early 40's who has worked closely with the political leaders such as I-24 (V farm) to develop and build his facilities and his market.

The facilities are in the city of Novosibirsk. This racetrack is multipurpose in its approach to business. The track has trotters and a few pacers. The harness races run from June to October. There are no thoroughbreds. There are two indoor riding facilities used by students for lessons in dressage and hunter/jumper classes. The track and its facilities enjoy a diverse patronage. There is a newly (1 year old) organized carriage service. Wealthy people who miss the horse aspect of rural life have their children take dressage and hunter/jumper (Appendix D-43) lessons there. The students must be 10 years and older to take the lessons. I-27 has started a program to use horses as a form of therapy for emotionally disturbed children. Horsemen who enjoy racing Orloff trotters (Appendix D-10) keep and train horses at the racetrack. A club for college students is in the process of being organized. I-27's patrons, who stable horses there, buy hay from nearby farms and haul it themselves to the stables. I-27 recently built a harness supply shop underneath the grandstand at the track.

I-27 has a problem hiring qualified knowledgeable help. He can find stable hands. What he needs are people with animal husbandry skills. He constantly is seeking

people who know how to break and train horses. He feels the agricultural schools have let him down. They no longer teach people how to handle and care for horses.

I-27 charges stud fees to customers who wish to breed to his stallions. At his facility there are auctions for the buying and selling of horses. There are no breeder sales. In Russia, there is one academy for all the horse breeds. The academy handles all the paperwork for all the breeds. District inspectors must inspect a horse to insure its conformity to its breed standards before it can become registered.

The stables and the stalls at the racetrack are constructed with massive concrete walls, pillars, and ceilings! He did not want the researcher to photograph any old buildings or buildings he did not use. The researcher was told they would not be there if he came back next year. I-27 has plans to grow his business and was planning to remove the old buildings in due course.

I-27 showed the researcher a fine Hanoverian gelding used by the sport and dressage schools. The researcher asked how a representative of a German bred horse came to central Siberia. He relayed the following story.

As the Red Army marched into Berlin at the conclusion of WWII, they came upon the Wehrmacht officers' stables as well as the stud farms for the Hanover breed that were situated around the German capital. The Russians stole the best horses and shipped them back to the Soviet Union. Several stud farms evolved over the years. With the downfall of the Soviet Union and the ongoing privatization of Russian agriculture, Germans were now regularly traveling to Russia to buy Hanover horses to incorporate the bloodlines into their herds!

I-27 reads everything he can on horses and how to make money with them. He sees the ongoing development of a middle and upper middle class. His plan is to position himself to take advantage of the new economic growth in Russia by offering leisure time activities for those who can afford it. He would like to develop an ecotourism arm to his business. He may try to take advantage of a pony market that seems to be forming by offering stabling and lessons for pony owners. I-27 has recently been instrumental in the starting of a trotter journal. He sells his manured bedding to horticultural enterprises as composted soil.

Major Themes from Case Study III

The major themes to emerge from Case Study III were the same as the first two cases for some themes and different from them in others. In Siberia all of the respondents were middle age. Geography played a key role. Horses were sold locally first. There was an effort to export horses to Central Asian countries and the United States. The respondents exhibited strong tendencies toward self-directed learning and andragogy. Their market niches were tied to their knowledge of self and their personal philosophies of life. Most of these respondents engaged in short, intermediate, and long-term planning. Some of that planning involved seeking international markets.

Their international connections were twofold. First they sought markets outside of Russia for the horsemeat they produced. The Russians also sought to export breeding stock to the United States. Additionally, they were interested in importing new breeds to their country. In Siberia, the researcher found respondents who were publishers, authors,

and media producers. The agribusinesses viewed were sustainable agribusinesses. Most of the respondents had limited formal education.

Cross Case Analysis

The following narrative discusses the unique themes found in all three case studies, unique themes found in two of the case studies, and those themes which were found in only one case study.

Common Themes Found in All Three Case Studies

Seven themes were found in all three case studies.

Theme 1 – Most of the respondents are in middle age.

Theme 6 – Geography plays a key role.

Theme 10 – Almost every respondent exhibited self-directed learning and andragogy.

Theme 11 – Defined market niches for their business was tied to the respondent's philosophy of life and knowledge of self.

Theme 16 – Most of the respondents engaged in short, intermediate, and long-term planning.

Theme 20 – Almost all of the businesses are sustainable agribusinesses.

Theme 22 – Many respondents have limited formal education.

The Meaning of These Findings. The researcher sought out successful entrepreneurs in the draft horse industry. It makes sense they were middle age for to achieve success in their chosen fields takes time. The geographic ties to particular regions have, as their roots, different reasons. In the United States, it appears to be culturally, socially, economically, and environmentally driven. In Russia, Siberia, environment and infrastructure play key roles. That almost all respondents were andragogical and self-directed in their teaching and learning bodes well for them. It does seem to limit the potential impact of Universities and Extension roles in this industry.

The themes revolving around planning, market niches, and philosophy of life seem to act as cement to often stated goals of trying to be better at what they (the respondents) do for a living. Sustainable agribusinesses mean the environment is not negatively impacted by the activity of these business people. The evident environmental stewardship of the respondents should be used as a positive example for all our industries. The general lack of formal education among the respondents was part cultural (the Amish) and part choice – many of the other respondents. For many years the researcher has observed people who choose a life style of manual work are frequently not formally educated.

Common Themes Found in Two of the Three Case Studies

In Case Study I (Horse Progress Days) and Case Study II (Draft Horse Industry in East Texas) there were five common themes.

Theme 3 – Most of the respondents operate in rural non-farm locations.

Theme 4 – Maurice Telleen played a key role in the revival of all of the draft horse industries.

Theme 5 – The Amish played a key role.

Theme 12 – Use of University/Extension personnel was limited.

Theme 13 – Service businesses are important.

The Meaning of These Findings. These themes have a North America orientation. If one is living in rural Siberia where the researcher worked, farming was the occupation of the people involved in draft horses. Maurice Telleen has a dedicated following in several English speaking countries. The researcher is not aware of *The Draft Horse Journal* being translated into Russian and would therefore not be easily read by the respondents in Siberia. At least no one he spoke with had heard of the journal. The researcher is not aware of any Amish living in Russia. In Russia and in Siberia, Universities and their Extension agencies do try to work with the draft horse industries. Service businesses enabled the draft horse business owners in the U.S. to earn income predicated on livestock without owning production ground.

Unique Themes Found Only in Case Study I and Case Study III

Theme 17 – There were international connections.

Theme 18 – Respondents are publishers, authors, and media producers.

The Meaning of These Findings. There is a definite interest among these two groups of respondents in establishing business connections beyond their traditional borders. That this looking ahead and far-sighted approach would also include the two case studies with publishers, authors, and media producers is probably not coincidental.

Unique Themes Found in Only One of the Three Studies

In Case Study I (Horse Progress Days) four themes were found that were not found in the other two studies.

Theme 8 – Amish horse equipment manufacturer's target the Amish market first.

Theme 15 – Respondents invented machinery and equipment.

Theme 19 – Organic farming was important

Theme 21 – Draft horse schools are viewed favorably.

The Meaning of These Findings. The Amish have a bias towards working with their own communities first. In conversations with the researcher, this has often been expressed as an axiom for preserving the Amish way of life. As part of this need for self-containment, the Amish communities have always rewarded innovativeness. Organic farming was often mentioned as a niche marker not only by farmers but by the manufacturers of equipment. Draft horse schools provide a flow of new customers for the goods and services draft horse communities offer.

In Case Study II Two Stand Alone Themes Were Found

Theme 7 – The Texans chose to sell horses and services to other Texans first.

Theme 14 – Some of the respondents were particular about to whom they sold horses.

The Meaning of These Findings. There may be a certain comfort level in working on only a local stage. The researcher believes that because horses and equipment must for the most part be brought into the state, higher prices can be found among local buyers because of the scarcity of horses and equipment. When the researcher was conducting his study in East Texas, there was quite number of news stories about individuals who had mistreated livestock in another part of the country. Perhaps the respondents were reacting to those stories. Another plausible explanation is that they are truly committed to making good matches between horses and people.

In Case Study III One Theme Found Not Found in the Other Studies

Theme 9 – Siberian draft horse industry respondent's focus on local markets.

The Meaning of These Findings. The researcher believes this is a different theme from Theme 7 because opportunity options are not always available to the Russians. Their geographic locale and the lack of infrastructure such as American style highways make it almost impossible, particularly in the wet of spring and the cold/snow of winter, to move livestock to parts of their country efficiently. The sense the researcher received from the respondents in Siberia was that given the opportunity they would expand their markets as far as was economically feasible.

In Chapter V the objectives of this study, a summary of the methodology, and summations of key findings/conclusions for each emergent theme, implications, and recommendations for further study are presented.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to delineate contextual applications in agricultural education used for acquiring the knowledge and skills necessary for the operation of contemporary businesses supporting or supported by the use of draft animal power. The researcher sought to determine if the reacquisition of knowledge and skills is in part historically, culturally, or geographically driven. Another objective was to determine whether the methods used by the study participants in their reacquisition of the knowledge and skills necessary for success could be used as a role model for how other rural industries can start and flourish.

Summary of the Methodology

Type of Research

This research was conducted using qualitative methods. In particular the researcher used unstructured and semi-structured interviews while making the necessary adjustments to the questions as the interviews proceeded. The interviewer did not pass judgment on the answers to his questions, and the respondents were expected to answer with thought and veracity. Document analysis and long term observation was also employed.

Participation by the respondents in this study was voluntary. The answers from the interviews were coded and kept confidential. Throughout the study the answers were

written down and recorded during the interviews. There was a set of questions the interviewer had prepared and he would refer to them throughout the interview (Appendix C). Each participant's responses were written down. With the semi-structured interviews, the interviewer was prepared to delve deeply into the respondent's answers to gain further information.

On several occasions the participants would be asked an opening question and they would start talking and would basically continue to talk without any prompting or questions for the rest of the interview. These interviews became unstructured interviews. The researcher would simply write down their thoughts. Unstructured interviews do not have a set schedule of questions. The interviewer asks questions and, as the answers flow, adjusts his questions and focuses on the responses received to tweak out the most information he can from his subject.

In order to determine where and from whom the data would be collected, the inquiry's focus was provisionally defined (Lincoln & Guba, 1985). The focus of this study required using participants who were successful in their business enterprises which required purposive sampling. Thus the researcher would ask people who were interviewed to whom else he should be talking – snowball sampling.

Summary of Key Findings/Conclusions

On a macro level, agricultural education is the subject of this study. It has a strong history of affiliation with draft animal power, ancillary industries for production agriculture, and international agriculture (Simalenga & Jongisa, 2000; Craske, Davis, &

Moss, 1999). Agricultural education can be defined as the discipline arising from the intersection of the knowledge bases of the hard sciences such as animal science, crop science, and soil science, with the social sciences of education, sociology, and psychology (McLean, 1997). The resulting blend of information is often influenced by history and the geographic location/distribution of the elements being studied. These subjects may be offered on the platform of human resource development, acquired formally or informally, taught either pedagogically or andragogically, or learned in a self-directed fashion.

The participants of this study acquired expertise in sustainable agriculture and entrepreneurship primarily through andragogical means and/or self-directed learning rather than through formal educational institutions. The participants in this study live and work in rural regions or small towns and communities. They choose to sustain themselves in an economically entrepreneurial fashion and are self-employed, utilizing sustainable agriculture without resorting to traditional employment in factories or mainstream agricultural pursuits. Staged Self-Directed Learning (Grow, 1991) in the draft horse business and its attendant supporting industries provided the explanation for the structure and framework within which the participants were freed to teach themselves.

The contextual applications of agricultural communications, informal interactions with international agricultural leaders, and the processes of securing adoption and transfer of technology all emerged as mediums for the development of knowledge and skills by the participants in this study. They did not seek knowledge and

skills from extension education or university resources. The participants particularly sought “agricultural education” in the ancillary businesses supporting the draft horse industry such as knowledge, business expertise, manufacturing skills, and training in risk taking. These knowledges and skills were primarily acquired through andragogy and self-directed learning, rather than through formal, more traditional educational methods.

Major Themes

Major themes emerged from the three case studies presented in Chapter IV. The participants as a group have keenly developed senses of identity (very much at ease with who they are) and philosophies of life. This whole phenomenon of rebirth of an agricultural industry occurred without the support, resources, or even investigation - until now - by institutions of higher education. This research has shown that the culture of practicality, inventiveness, and risk taking has allowed communities of individuals to achieve financial success where others have been forced to abandon their businesses and seek other sources of livelihood.

Of the many themes to emerge, some are intertwined with one another. Others seem to stand alone with little connection to the rest of the building blocks of this study. The following themes are found throughout this study. They were responsible for the primary renewal and engagement of individuals in the draft horse industry revival. They are not listed in any particular order. This is deliberate. The scope of the study did not include a method to determine which theme or series of themes influenced the others.

Most of the Participants Are in Middle Age

Almost all of the participants of this study were middle aged. This tied in with the concept of the participants' businesses being their second, third, or fourth career. It makes sense that the participants would tend to be middle aged given that they had worked in the draft horse industry all of their lives and were successful at their work. This is certainly true in the Amish communities. For those participants who were middle aged and not Amish, the likelihood of them taking the time and assuming the expense to attend Horse Progress Days or grant the researcher an interview at their homes and places of business would be less likely if they were not successful. If in fact most of the successful people in the draft horse industry are middle aged, what are the long-term implications for the industry? The answer could be that it is a short lived business cycle or the whole process of andragogy and self-directed learning will again come to the forefront when the industry renews itself (Rindos, 1980). The ages of the participants would also suggest that andragogy and self-directed learning will remain an important part of their learning styles into the future (Verbitskaia, 2004). The researcher would recommend additional emphasis on draft horse schools as a menu for continued recruitment of new interested parties to the draft horse industry.

The Draft Horse Business Was The Participants' Second, Third, or Fourth Career

This was a frequent response. This theme would fit in well with the independence that comes from self-directed learning. It also could be derived from those seeking a sustainable lifestyle. On the other hand, it also happens to people who become easily bored or are marginalized by choice, circumstances, or society and/or "intensely

internally curious" (Courtenay, Merriam & Baumgartner, 2003). The implications of this theme bode well for the future of the draft horse industry if people with a self-directed learning style or if people who are internally curious gravitate toward it. Self-directed learning and curiosity should be considered positive assets for any industry. Kohler's (1947) explanations of Gestalt psychology help to explain how self-directed learning works. He believed learning was tied to association, since association is derived from organization. No recommendation is needed here.

Most of the Participants Operate in Rural Non-Farm Locations

This is an important finding because it implies there are economic alternatives to traditional farming in rural areas. Traditional paradigms in financial agricultural education need to be reviewed (Gustafson, 2002). There were a few participants in this study who farmed. Most of them did not. Brown (2002, p. 228) observed "the importance of self-knowledge as an outcome of learning." Those who did not farm were involved in ancillary businesses supporting the draft horse industry or they were actively engaged in a service business, which required the use of draft horses.

Harpaz (2005, p. 136) defined learning as "listening" and postulated that it took place best in a "Community of Thinking." For those interview participants who did not farm, working in a segment of the draft horse industry afforded them the opportunity to live and work in a community or environment of their choosing while attaining economic success. This finding runs parallel with Page's (1996) postulation that it is important to have local and regional development. This is a theme that should draw the

attention of Universities and Extension personnel who are interested in fostering and supporting rural entrepreneurship.

Maurice Telleen Played a Key Role in the Revival of the Draft Horse Industries

Telleen has been an opinion leader since the start of this revival (Rogers, 1983). The revival of the draft horse industries should and could have occurred without the writings and direction given to the whole industry by this one man. However, this researcher seriously doubts that it could have occurred in the fashion and speed with which it moved forward without Telleen's voice, insight, direction, and written word. Rogers (1983) suggested that before adoption takes place, awareness, information seeking, evaluation, and trial must take place. Gamon, Harold, & Creswell (1994) called for new educational platforms and techniques to address the needs for disseminating information on sustainable agriculture. Alonge & Martin (1995) determined that needs assessment and analysis must continually take place in order for sustainable agricultural practices to be completely comprehended and adopted. Adeline & Foster (1990) found that extension clients believed they had an attenuated influence on extension educational programs. Telleen single-handedly offered a whole community of people, through his publication, *The Draft Horse Journal*, the opportunity to learn how to position their livelihood in harmony with their community and the environment as a whole. Hundreds of stories of successful entrepreneurs in businesses related to draft animal power have been captured over the years in *The Draft Horse Journal*.

With every issue he offers an economic rationale for using animal power and an encircling philosophy while appealing to the readers' sense of history. A theoretical

construct of structuration states that the future is anchored in the past (Jack & Anderson, 2002). The historical references are not limited to any one subject. Telleen addresses historical show results, the lineage of top horses, and the lives of the breeders while directly and indirectly suggesting to present day readers the worth of emulating past successes. He does not call for a return to the past.

Rather, he demonstrates to *The Draft Horse Journal* readers the practical worth of mixed power in enterprises that utilize updated and improved technologies of the past (e.g., Cumberland Contest – self directed learning) and appeals to their inner yearnings (e.g., show results, sales reports, and excellent photography) with a straight forward writing style readily understood by the reader for acceptance or rejection – their choice. When Telleen perceives a need, he unabashedly suggests in his writing that a solution must be found. A central attribute of a learning society is the skills that it possesses. Balatti and Falk (2002) consider skills and knowledge to be central attributes of a learning society. Telleen is quick to praise the efforts of start up companies and the men and women who founded them. He proposed the formation of organizations and the offering of intense weekend schools to facilitate learning opportunities for those residing in parts of the country without a history of draft horse enterprises (another instance of andragogy). It is interesting to note that Telleen is probably the one person most surprised by the renaissance of the draft horse industry. His son told the researcher that he (Maurice Telleen) still cannot believe “how big” this all came to be. The “voice” of Telleen’s typewriter chronicled the past and in a large measure helped shape the present draft horse industry.

The participants in this study have recognized his value to the industry for a long time. The long term implications of what he helped start are just beginning to be formally examined and researched. The recommendation for this theme is that Universities, particularly Agricultural Communication Departments, study Telleen's model of success. If academic bodies understand and train future communicators to emulate his work they will have done a true service for rural communities and the country as a whole.

The Amish Played a Key Role

Without the Amish, there would not, in all likelihood, have been enough seed stock to re-establish the draft breeds to the prominence they hold in 2005 (Personal communications with the researcher from several prominent draft horse breeders). Without the Amish, the technological revolution (andragogy and self-directed learning) that has occurred in draft animal powered equipment would not have occurred. The Amish sustained, maintained, and perhaps even safeguarded the necessary skills from the 1930's through the 1960's for the next generations to enable the production of the technologically advanced equipment that is available today. The Amish methods of learning and training have provided a paradigm for sustainable community development and, even more importantly, growth in the rural United States. The Amish methods of learning as expressed to the researcher in his interviews and photographic data presented in this research meld well with the cited works of Harpaz (2005), Knowles (1972), Tough (1967), and Grow (1991,1994).

The Horse Progress Days 2004 event was held in Northern Indiana at Middlebury, Indiana. The surrounding counties, Elkhart and LaGrange, located at the southern tip of Lake Michigan, are home to the largest Amish community in the United States. This researcher has never seen a more prosperous looking rural locale in the country. The breadth and diversity of economic enterprises are truly remarkable. Scattered throughout the two counties are labor-intensive light industries such as trailer and furniture manufacturers whose companies sell to customers throughout North America. Export markets are served in part from duck grower units. Ducks are fed out in building units that house 100,000 ducks at a time. An “all in, all out” approach is taken with the birds. In other words, all of the ducklings to be fed out in a building are brought in to the building all at once. They then are shipped to processing plants all at the same time for slaughter and packaging for export to Western Europe. There are numerous cottage industries providing support to the community in the form of clothing, processed food, and agribusiness equipment. Most of the industrial trades are represented in the counties. Most of the Amish employed in the trades have gone through apprenticeships, as described by Respondent I-3 from Horse Progress Days during personal conversations with the researcher.

The implications of this theme should be viewed within the framework of sustainability. The Amish use the draft horse industry as a tool for their sustainable economic lives, communities, and environment. The Amish communities provide a blueprint of how to flourish and grow in scaled down economic entities where local is the market of first choice for purchase and sale of many goods and services, thereby

sustaining and continuing the economic vitality of the community. The researcher recommends these communities be more thoroughly studied and those parts which could make economic and social sense be more frequently shared with individuals seeking alternative methods of livelihood in rural settings.

Geography Played a Key Role

This study demonstrates unequivocally that geography has played a role in the resurgence of the draft horse industry. The blend of information was often influenced by the history and the geographic location/distribution of the units of information being studied (Doubleday, Mackenzie, Fiana & Dalby, 2004). The states that were listed as the top ten states in 1900 in terms of ancillary businesses supporting the draft horse industry, and the states that were listed as the top ten states in terms of draft animals, are the same states listed as the top ten states in their respective categories in 2003 (Appendixes D-3, D-4, D-5, and D-14). The rebirth of the industry took place in the collar states of Wisconsin, Ohio, Pennsylvania, and Indiana, along with outlying Iowa. The business has spread across the width and the breadth of the United States, but not equally and certainly not in all states.

In regions where historically there was a large presence of draft horse businesses and activities, businesses and activities have redeveloped 100 years later. Even more intriguing is why some parts of the country have not participated in this resurgence. The opportunity to adopt and develop similar rural growth exists in many states that have not participated in this rebirth. These phenomena are consistent with the findings of Jack and

Anderson (2002), who stated a theoretical construct of structuration calls for the future to be anchored in the past.

Direct connections (residences, the purchasing of supplies, horses, equipment, or information) with the collar states around which the draft horse revival took place can be found in the interviews I-1 through I-3, I-5 through I-8, I-10 through I-15, and I-18 through I-27. A review of the documents D-1 through D-27, D-37 through D-39, and D-41 through D-43 reveal geographic connections with the collar states. Several interview participants suggested culture (a geographical phenomenon) as the reason for adoption/re-adoption of draft animal power. For example, Respondent I-8 from Horse Progress Days tied the readopting of draft animal power and the resulting growth of the ancillary industries to those regions where people grew corn – a geographically determined agricultural practice.

The implications of this theme are the continuing economic and cultural ties to the historical geographical locus of the draft horse industry by the new draft horse industry. The implications for those wishing to study these phenomena include the need to determine why the economics/culture of the industry continues to flourish in these locales. Finally, the success of some of these businesses would suggest a need for scholarly research investigating how to emulate these successes in other rural areas of the country. It is further recommended to seek out other economic phenomenon and ascertain if parallel success stories exist. Perhaps there are success determining factors that should be explored.

The Texans in Case Study II Chose to Sell Horses and Services to Other Texans First

This was almost a uniform response to the question, "Who do you sell to?" The one notable exception was Respondent I-16 who would "go as far as the money will go" to find work. Many of the respondents were willing to travel great distances outside of the state to purchase horses and equipment. In the researcher's experience, people attending horse and equipment sales frequently will load up something (equipment or horses) to sell so as to at least offset the cost of the journey, if not make a profit from the trip. The sense the researcher received when talking with the East Texas respondents was that they felt a kind of comfort in selling only to Texans or at least identifying Texans as their market of choice. This is not unlike some of the responses the researcher received when discussing target markets with the Amish equipment manufacturers in Case Study I, Horse Progress Days, 2004.

The implications of this are either that there is an attempt (conscious or unconscious) to develop a strong draft horse community in East Texas, or that the business in Texas is not mature enough for the participants to work beyond state borders. The recommendation for this theme is not to limit oneself to local markets.

Amish Horse Equipment Manufacturers Target the Amish Market First

This preference to serve and work for the Amish farming communities makes sense to the researcher. Culturally driven, it allows for a stable community platform to grow and flourish. This directed market positioning has not hurt the manufacturers' business. It has helped them focus on a select group of customer wants. This in turn has helped the manufacturers to focus on raising the level of technology to a higher degree

of sophistication by continually adopting new innovations or creating the same when needed. The Amish manufacturers know they have a knowledgeable local customer base. This provides the manufacturers a ready market to test and refine new concepts. The long-term apprenticeship given to the Amish craftsmen enables the manufacturers to take the time to develop solutions to problems that their customers bring to them. The manufacturers are able to develop short, intermediate, and long term plans. A truly symbiotic relationship exists between the Amish manufacturers and their immediate communities.

The implications of this theme include the continued development of innovations for animal powered equipment. Andragogy and self-directed learning will continue to drive these developments. The Amish communities continue to evolve their production techniques and adjust to their varied consumer markets. The recommendation for this theme is the Amish should not change their methods of doing business. It is working quite well.

Siberian Draft Horse Industry Participants Focus on Local Markets

In a manner somewhat similar to both the Amish and the Texans, the participants from Siberia in this study chose to first sell to their local markets. The key difference between the Texans and the Siberians was the Siberians were actively seeking to find new markets – including an international market – for their horses. The implication of this unit of information is that the Siberian markets is not developed enough or mature enough to move beyond their locale. For example, Respondent I-25 hoped to develop a registered herd of Percherons to help him move into larger markets in the future. The

researcher would recommend further efforts of the Siberian farmers to develop their local and, when possible, their international markets.

Almost Every Participant Exhibited Self-Directed Learning and Andragogy

In keeping with Knowles's (1998) definition of psychological adulthood (assuming responsibility for managing their own lives), the participants were for the most part self-employed, learned in an andragogical fashion, and were self-directed.

Self-directed learning has and continues to be the leading learning paradigm for the new participants as well as the veterans in the draft horse industry. Almost all of the participants who were involved in this study used self-directed learning techniques. Leaders in established communities that rely at least partially on draft animal power promoted the use of self-directed learning and andragogy. Students, or new learners, acquire skills by observing, practicing, and asking questions of experts during the training process. The experts/participants' primary sources of information were trade periodicals, the Internet, and word of mouth.

Participants, including Amish participants, noted the Internet as a source of information. In Case Study I, Respondent I-2 stated that he has a friend who used the Internet on his behalf. The researcher has carried on active correspondence with participants from Siberia, from Case Study III, via the Internet since his site visit. Most of the participants in Case Study II, East Texas, use the Internet professionally and personally.

Those who were self directed made a variety of comments that supported their learning techniques. In Case Study I, Respondent I-1 answered the question concerning

how he acquired so much knowledge about registered horses by replying that he had trained himself by attending horse sales, seeking the advice of successful breeders. He never draws out plans for new equipment; rather he visualizes the plans in his mind and perhaps will draw them out in the dirt. He displayed his self-directedness when he first started to alter tractor-drawn hay equipment in order that it might be used with horses.

In Case Study I, Participant I-2 provided another clear example of self-directed learning. I-2 determined that a need for more wood shavings existed amongst the buying public. He sought out owners of wood shavings manufacturing equipment. He learned how to operate the equipment (andragogy) and how to set it up at his work site. I-2 has grown his business from a front yard operation to a soon-to-be interstate enterprise. I-3 started manufacturing animal drawn equipment in the 1970's. He noted he learned to market his products through observation. He reads a lot because he enjoys learning. With only an eighth grade education, he has taught himself how to design, manufacture, and market highly sophisticated equipment. See Appendix D-20.

Respondent I-4 taught himself through reading. He practices the science of farming, and the art of writing, and the business of publishing. Respondent I-5 develops and manufactures high tech farm implements and hydraulic manifold valves. He is totally self-directed in his manufacturing business and has an ongoing andragogical approach to learning how to work with the human relations aspect of his employees as well as how to handle company personnel problems. I-6 displays self-directed learning by owning and operating several small lines of business that he has seemed to have designed to feed off of one another.

I-7 acknowledges that the purpose of his corporation is to “preserve, study, and exchange low-capital technologies that increase the sustainability and productivity of rural peoples.” For over 30 years he has taught himself the skills and techniques he now passes on to others. I-9 has taught himself to work with horses and create instructional videos, eventually marketing the two as a package.

In Case Study II, I-12 and I-13 learned to use draft horses and ponies by traveling to Holmes County, Ohio, to learn how to harness and work animals from the Amish. They made several trips and eventually learned enough to start bringing horses and equipment to Texas for resale. I-16 used self-directed learning to acquire the knowledge necessary for earning a living using the draft horses and mules he owns. He was andragogically taught how to conduct military funerals. I-17 used self-directed learning when he approached I-16 to learn how to drive teams of draft horses. I-16 taught in an andragogical fashion.

I-18 learned his farrier trade in a self-directed/andragogical manner. His acquisition of horse training skills was entirely self-directed. I-19 and I-20 learned how to operate and manage a professional show string of horses in a self-directed manner. They are self-directed in their efforts to stay current in the business. They learned andragogically new skills such as artificial insemination of draft horses. I-21 is proud to have attended Texas Tech and “escaped without any education.” He taught himself the nuances of the draft horse industry after retiring from his construction company. I-22 taught himself how to operate a carriage service and market it to the public. He teaches

students wanting to learn how to drive draft horses and mules in an andragogical fashion by using a fairly sophisticated hands-on approach throughout the process.

In Case Study III, I-26 personified self-directed learning. Though reared in the Soviet Collective Farm system, he has -- on his own without formal education -- learned modern methods of cash flow, management, and marketing. In fact, he has sought to create new ways of building his farm operation through emphasis on producing food for direct human consumption rather than the traditional animal feed production of his region. Respondent I-27 has used self-directed learning to develop and grow his racetrack.

He set out without formal training to produce and market a quarterly periodical publicizing and promoting the primary breed of horse at his track – the Orlov trotter. I-27 learned how to run a horse-boarding program at his stable by reading and speaking with other track and stable owners. Among the implications of this theme are success is very much possible without traditional learning methods of the classroom. These themes are found in a variety of cultures, geographic locations, and economic endeavors. These themes work and it is recommended that Universities and Extension Departments redouble their efforts to include this type of learning paradigm in all of their programs.

Defined Market Niches for Their Business Were Tied to the Participants' Philosophy of Life and Knowledge of Self

All of the participants worked in very defined market niches. They had a clear understanding of where they fit in to the market place. All were philosophical in describing their life and lifestyles. This theme stresses the importance of needing to

understand oneself to become successful. It is recommended that educators focus on enabling learners to understand themselves and develop personal philosophies as a part of any curriculum. Philosophy, in this researcher's experience, is underrepresented in the traditional degree plans.

Strong Personal and Business Philosophies Were Exhibited

The participants were quite comfortable with their knowledge of their business and themselves. People who chose to begin or continue using draft horses as their power source on farms and ranches did so out of conviction that their way made sense environmentally, economically, socially, and personally. As a group, this study found few participants who had been formally educated beyond high school, yet they often seemed very sensitive to society-at-large and the role they saw themselves playing in it. The implication of this theme is the importance of an awareness of oneself and the role that that plays in forming long-term lifestyles not only for the individual but also the community in which he lives.

Use of University / Agricultural Extension Personnel Was Limited

Adeline & Foster (1990) found that Extension clients believed they had an attenuated influence on Extension educational programs. Almost universal disdain for University and Extension personnel existed among the participants in this study. The fact that this feeling was prevalent amongst the participants in Siberia is particularly noteworthy for it hints at a potential universal component to the problem. The researcher asked several probing questions as to why the various participants felt so negative about academia in general and Extension in particular. The problem appears to be a complete

lack of knowledge and understanding of draft horses and their potential place in business on the part of University/Extension advisors. The participants in this study arrived where they are on their own or through an acknowledged network of friends and neighbors. They constructed their own successful community and today are proud of it.

The implication of this theme is disheartening. There is still almost no evidence of university involvement or interest in this subject. Even though there are many users of draft animals as power sources, because universities have chosen to ignore this phenomenon for over 40 years, until now, future studies of this subject will have to review and understand the historical background before examining it as a contemporary event. The recommendation is that Universities and Extension departments need to study this industry. It has been successful in many parts of the country including places where traditional agriculture has had difficulties. This industry should be viewed as a successful alternative to other economic endeavors which have failed.

Service Businesses Are Important

The interviewed participants described a wide range of service businesses that they successfully initiated and maintain, using draft animals. The implications for rural and even urban dwellers are there are ways to earn income outside production agriculture with draft animals. The recommendation is this should always be explored as a viable alternative to production agriculture for those who wish to own and use draft animals.

Carriage Services

One or more of the participants offered carriage services everywhere the researcher conducted his inquiry. This can be a very profitable enterprise for the participants. The men and women who operate this type of service often offer party and funeral services as well. Carriage services can be found in both large cities (e.g., Moscow and New York) and small towns (e.g., Middlebury, Indiana).

Training Horses and People

Training horses and people was a universal theme. In both the United States and Russia, more money was to be made by training people than could be earned training horses. In the U.S. people who chose to be trained generally came from one of two groups: the young, ages 8 to 16, and the middle aged. As a rule, older people sought training to learn how to drive a horse or team when they could no longer ride a horse comfortably. The researcher did not hear or observe older people in Russia learning how to drive a horse or team. This may be because most of the older Russians in the rural area where the researcher worked already knew how to drive a horse or team. Perhaps as *a result of this phenomenon, all of the observed students in Russia were young people.*

Private and Corporate Parties

The researcher found draft horse owners offered to provide horse and carriage services at parties in every community he visited except for the Amish communities. The parties were held in a variety of venues. The horse owners frequently would trailer their horses and wagon/carriage to the party site and give rides to those in attendance. In other instances the horse owners would host the party at their home, giving rides to the

partygoers around their neighborhood. Corporate work was much sought after. The whole notion of a service business such as carriage rides was shown to have widespread appeal to carriage and horse owners alike.

Weddings

Several carriage and draft horse owners in Case Studies II and III offered their vehicles, equipment, and themselves, or hired help, as drivers. This is a business that earns a significant sum of money for the men and women who engage in the activity.

Civilian and Military Funerals

Funerals have definitely shown themselves to be moneymakers in Case Study II. They were frequently mentioned as something draft horse owners would do and in fact often sought to do, for they are a well-paid service.

Horse Shows

Participants in the draft horse industry often use horse shows as advertisement to promote the breeding behind their livestock or the services of the exhibitor. This was true in Russia (Case Study III) as well as the United States. The Amish do not show their horses or equipment. However, they do sell both horses and equipment to those who show.

Charity Work

The respondents in Case Study II often mentioned charity work as something they did with their horses. The men and women who participated in these activities were justifiably proud of their philanthropic work.

Standing Stallions and Jacks

All of the respondents who owned stallions or jacks, whether they were located in Russia or the U. S., stood them for public service, that is, for breeding mares owned by the public.

Some Respondents Are Particular About Sales of Their Livestock

Only the respondents in Case Study II, East Texas, were concerned with whom they sold horses to and under what circumstances they would be used. There appeared to be real concern over selling an animal that the new owner couldn't handle. "*In loco parentis"* ruled the day, meaning that the Texas horsemen felt parental responsibilities for their customers and in some instances for the horses they were selling. The implication of this theme is the self imposed limitation on selling livestock may limit sale price. The recommendation would be to always maintain a mature approach to business.

Respondents Invented Machinery and Equipment

The draft horse industry has been responsible for a tremendous surge in innovations in equipment used for agricultural purposes. Beginning in the early 1970's, as the population of draft horses and their users began to climb, numerous cottage industries sprang up to provide equipment and implements for use. The Cumberland Contest in *The Draft Horse Journal*, as discussed in Chapter II, was able to provide a platform for demonstrating solutions for real life needs of draft animal users. As the cottage industries matured, some grew into relatively large and specialized companies whose sole purpose is to provide equipment and machinery to draft power users. As seen

in Appendix D-15, major equipment and machinery manufacturers are spread across the U.S. The large numbers of states with manufacturers of short and long lines of livestock drawn equipment suggest a strong demand for draft animal power. This implies a successful return of animal power utilization in the United States. The recommendation for this theme is to continue in the same manner. This manufacturing is a win/win for all. It provides creative outlets for those so inclined while providing services and products for a market that is vibrant and growing.

Most of the Respondents Engage in Short, Intermediate, and Long-Term Planning

This study's respondents are comprised of a mix of people: they are from two continents, they have multicultural backgrounds, and many have minimal formal education. Yet most of them are engaged in short, intermediate, and long term planning. This implies that a fertile business and life style planning attitude may be found among people who choose to use animal powered equipment in their livelihood. The recommendation for this theme is for the respondents to continue as they are.

Respondents Have International Connections

There is a strong international element beginning to appear in the U.S. draft horse industry. The Russians are interested in trading in draft horses with the United States and have done so on a small scale (Case Study III). In Case Study I, the discussion with respondents in part addressed the participation of Western Europeans in the Horse Progress Days, 2004. In the winter 2004-2005 issue of *The Draft Horse Journal*, Dale Stoltzfus discusses the expected large number of European visitors planning to attend the upcoming Horse Progress Days in June 2005. Exporting U.S. draft horses and modern

draft equipment to European draft animal users implies that a circle of agricultural education and technological exchange is at last being completed after starting some four hundred years ago. The recommendation here is continue to develop this market. It can only help the stakeholders to grow new markets and customer bases.

Respondents Are Publishers, Authors, and Media Producers

Several of the respondents were involved in publishing. I-3 and I-5 publish catalogues of the equipment they manufacture. I-4, I-10, and I-27 publish quarterly journals for draft horse users and enthusiasts. I-4 is the author of numerous books. I-6 publishes calendars. I-7 publishes newsletters and communicates nationally and internationally through his website. I-8 and I-11 publish breed association journals. I-9 is a successful producer of instructional videos on horsemanship. These materials have value for people engaged in andragogical learning or self-directed learning. The implication of this theme is that andragogical/self-directed learners are providing the resources for other andragogical/self-directed learners. This innovativeness should be applauded and supported by all who value intellectual growth and economic development.

Organic Farming Is Important

Many of the participants were involved in sustainable agriculture at some point in time as either a producer of organic crops or as a manufacturer of equipment. Their role in organic crop production and the tie-in with the draft horse industry became apparent when the researcher was discussing the organic farming industry with its participants. Since organic gardening and farming is often small scale, we may conclude

from this theme that the use of small draft animal equipment in this industry will continue. There are no further recommendations.

Almost All of the Businesses Are Sustainable Agribusinesses

Sustainable agriculture is important because it is a vital business component practiced by forward-thinking entrepreneurs (Geraci, 2004). Restaurant owners (Rainsfeld, 2004) across the country are seeking organically grown produce and meat from entrepreneurs practicing sustainable agriculture. Peterson (2004) found chefs across the country to be driving forces behind the development of the sustainable agricultural practices of farmers in areas of rising land prices and urbanization. Sustainable agriculture has become an international trend (Shi, 2004). Shi noted that sustainable agriculture promotes "self-sufficiency, rural employment and income generation to alleviate poverty" (p.114). "The philosophical core of this emerging practice is that economic development and environmental protection could be coordinated" (Shi, 2004, p. 114).

Martinot, Chaurey, Lew, Moreira, & Wamkonya (2002) found a connection between rural entrepreneurship and sustainable development. Chaurey et.al.(2002) noted that the melding of rural entrepreneurship and sustainable development led to applications in agriculture, small industries such as household energy providers, and social services in rural environments. Kruger (2004) suggested sustainable agriculture provides climate-friendly farming and energy recovery.

Geraci (2004, p. 438) noted that agricultural success illuminates entrepreneurial energy. Leger-Jarniou (2001) called for entrepreneurial teaching programs at universities

to focus on changing students' mindsets and attitudes toward entrepreneurial activities and to develop an orientation to engaging in the process. Petrin & Gannon (1997) suggested entrepreneurship is the vehicle whereby individuals may improve the quality of their lives, families, and communities. Lohmoller (1990) believed that entrepreneurship in rural areas was the cornerstone for economic development and growth. Culture was found to play a role in providing the necessary environment for entrepreneurial success (Mueller & Thomas, 2001).

Firebaugh (1990) noted sustainable agriculture enables a stronger socio-economic footing to exist in rural communities and farms. Alonge & Martin (1995) found farmers were willing to look at new ideas and methods in their operations. Williams & Dollisso (1998, p. 51) suggested that sustainable agriculture is a "global philosophy" that directs the development of agricultural systems, which in turn, "address economic, social, and environmental issues in a multidisciplinary manner". Williams (2000) postulated sustainable agriculture is more a philosophy concerned with the economic, social, and environmental benefits than a knowledge base of suggested farming practices.

Gamon, Harrold, & Creswell (1994) called for new educational platforms and techniques to address the needs for disseminating information on sustainable agriculture. Alonge & Martin (1995) determined that needs assessment and analysis must continually take place in order for sustainable agricultural practices to be completely comprehended and adopted.

The draft horse industry has amply demonstrated alternative and sustainable ways to earn a living (in a farm related manner) without actually farming in rural America. With its low input costs, often in a mixed power operation, it has demonstrated an alternative way to farm without the strangulation of debt. The implications for rural America and society as a whole could be large if the concept were more freely offered to the American public as an alternative to existing rural opportunities for employment. The recommendation for this theme is for Universities and Extension services to learn about these businesses and then offer to the public how to duplicate their successes.

Draft Horse Schools Are Viewed Favorably

Uniformly, all respondents who were familiar with draft horse schools thought the andragogical method of teaching found in these schools was helpful. Those who had never heard of the schools (Case III, the Russians) practiced a form of them in their training programs for young students anyway. The self-directed aspect of the schools was the same in both Russia and the U.S. This theme implies that education is a very positive and desirable event for both individual learning and the promotion of a business. The draft horse community uses draft horse schools to acquire new customers by offering them a glimpse of the joy that comes from working with draft animals. It is recommended that more schools be made available as the need arises.

Recommendations

This study has demonstrated that there is a way to learn how to succeed in rural environments. Those who have chosen to learn relic technologies and apply the solutions

they give have been rewarded with satisfying work environments and communities. The skills learned are grounded in the past and have been improved by present technologies. The skill learning and training techniques were the same regardless of the location of the participants.

It is important to determine which theme(s) responsible for the renewal process of the draft horse industry come first. Future research is needed to determine which additional roles geography has played in sustainable rural entrepreneurship and innovation. Are the revival and renewal of rural communities tied to the history and locale of the targeted community? Is the history and economic rebirth of a community or even a society predicated on geography*?*

There is a connection between sustainable agriculture, the Internet, and the promotion and use of relic technologies. Why not explore bringing this connection to the Universities and Extension offices here and abroad?

The solution to overcoming the loss of rural jobs and population and their resulting tax bases is developing sustainable communities whose economic vitality is not necessarily predicated on the markets hundreds or thousands of miles away. Rather it is incumbent on us as researchers to promote learning and training paradigms whose outcomes provide logical, workable, alternative economic platforms that can be self-sustaining on a local level. Self-directed learning and andragogy have worked in reviving the ancillary businesses in the draft horse industry in rural America. These learning and training techniques should be utilized for the furtherance of additional economic growth in all parts of the country.

Further Implications

The results of this research have implications for higher education and for Cooperative Extension Services. The subjects of this study uniformly tapped informal sources of information – family and friends, personal contacts with subject matter experts, books, videos, and magazines, interest groups and associations – rather than formal institutions of learning. The resources for this revival of an industry were not generated through the wisdom, leadership, or instruction provided by institutions of higher learning or their Cooperative Extension services. The researcher suggests that Agricultural Education Departments in universities and colleges, along with the Extension Services they support, rethink their traditional role of supporting and providing resources for agricultural enterprises. Rather than expecting entrepreneurs to approach educators for assistance, educators should approach the draft horse community for ideas and solutions.

The almost universal use of self-directed learning and andragogical methods of training among the study participants implies that these methods of learning hopefully can be used to help rural communities revive. We should seek to apply these methods to topics and subjects other than the draft horse industry. If these techniques work for as complicated a subject as this industry, why should they not be used to solve other problems in rural communities?

We have much to learn from these self-directed adult learners about developing an economically successful agriculture-based industry. Perhaps most importantly,

educators can then analyze the model and disseminate it to others who seek a way to sustain themselves in today's agricultural environment.

This project studied a core group of motivated adult learners, hungry for information about ways to make their environments economically sustainable. Results indicate that these learners do not turn to formal educational institutions in their search for knowledge and skill building. Understanding *why* they do not utilize these resources is beyond the scope of this study. Further research may determine the reasons. But clearly there is an opportunity for agricultural educators to carry their success story outward, and it is believed that if these self-directed learners are tapped, they will respond. After all, they are lifelong learners, and agricultural educators are providers of lifelong learning.

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APPENDIX A

AUDIT TRAIL

Audit trail themes and their explanations.

Theme 1 – Most of the participants are in middle age.

Theme 2 – The draft horse business was the participants' second, third, or fourth career.

Theme 3 – Most of the participants operate in rural non-farm locations.

Theme 4 – Maurice Telleen played a key role in the revival of all of the draft horse industries.

Theme 5 – The Amish played a key role.

Theme 6 – Geography plays a key role.

Theme 7 – The Texans in Case Study II chose to sell horses and services to other Texans first.

Theme 8 – Amish horse equipment manufacturers target the Amish market first.

Theme 9 – Siberian draft horse industry respondents focus on local markets.

Theme 10 – Almost every participant exhibited self-directed learning and andragogy.

Theme 11 – Defined market niches for their business were tied to the participant's philosophy of life and knowledge of self.

Theme 12 – Use of University / Extension personnel was limited.

Theme 13 – Service businesses are important.

Theme 14 – Some respondents were particular about to whom they sold horses.

Theme 15 – Respondents invented machinery and equipment.

Theme 16 – Most of the respondents engaged in short, intermediate and long-term planning.

Theme 17 – There were international connections.

Theme 18 – Respondents are publishers, authors, and media producers.

Theme 19 – Organic farming is important.

Theme 20 – Almost all of the businesses are sustainable agribusinesses.

Theme 21 – Draft horse schools are viewed favorably.

Theme 22 – Many respondents have limited formal education.

	THEMES																					
INTERVIEWS	T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12	T-13	T-14	T-15	T-16	T-17	T-18	T-19	T-20	T-21	T-22
I-1	x	x		x	x	x				x	x				x	x	x			x	x	x
I-2			x		x	x		x		x	x	x				x				x		x
I-3	x		x		x	x		x		x	x	x			x	x	x		x	x	x	x
I-4	x	x			x					x	x	x	x		x	x	x	x	x	x	x	
I-5	x		x		x	x		x		x	x		x		x		x		x	x	x	x
I-6	x	x	x	x	x	x				x	x	x	x			x					x	x
I-7	x	x			x	x				x	x		x		x		x	x	x		x	
I-8	x	x	x	x		x						x	x				x	x		x	x	
I-9	x	x		x	x					x	x	x	x	x		x	x	x		x	x	
I-10			x	x		x					x	x	x			x	x	x		x	x	
I-11		x	x			x					x		x			x		x		x	x	
I-12		x			x	x				x												
I-13		x			x	x				x												
I-14	x	x				x					x		x					x				x
I-15	x					x					x		x					x				x
I-16	x	x	x							x	x	x	x							x		x
I-17	x												x									
I-18	x	x	x	x		x	x			x	x			x						x		
I-19	x	x		x		x	x			x	x					x				x		
I-20	x	x		x		x	x			x	x					x				x		
I-21	x	x		x		x	x			x	x	x	x									x
I-22	x	x	x	x		x	x			x	x	x	x	x						x		x
I-23	x					x			x	x	x					x	x			x		x
I-24	x					x			x	x	x					x	x					x
I-25	x	x				x			x	x	x	x				x	x			x		x
I-26	x	x				x			x	x	x	x	x			x	x	x		x	x	
DOCUMENTS																						
D-1						x																
D-2						x																
D-3						x																
D-4						x									x							
D-5						x									x							
D-6						x																
D-7						x																
D-8				x		x																

	THEMES																					
DOCUMENTS	T-1	T-2	T-3	T-4	T-5	T-6	T-7	T-8	T-9	T-10	T-11	T-12	T-13	T-14	T-15	T-16	T-17	T-18	T-19	T-20	T-21	T-22
D-9				x		x																
D-10				x		x																
D-11						x																
D-12				x		x																
D-13						x																
D-14						x							x		x							
D-15						x									x							
D-16	x				x	x				x	x					x				x		
D-17	x				x	x				x	x					x				x		
D-18	x				x	x				x	x				x	x				x		
D-19	x				x	x				x	x				x					x		
D-20			x		x	x		x		x	x		x		x	x	x			x		x
D-21			x		x	x		x		x	x		x		x		x		x	x		x
D-22			x		x	x		x		x	x		x		x		x		x	x		x
D-23			x		x	x		x		x	x				x		x		x	x		x
D-24	x	x				x				x	x		x		x	x	x	x	x		x	
D-25	x					x							x								x	
D-26				x		x	x			x	x											
D-27						x	x				x											
D-28	x	x	x							x	x		x							x		x
D-29	x	x	x							x	x		x							x		x
D-30	x	x	x							x	x		x							x		x
D-31	x	x	x							x	x		x							x		x
D-32	x	x	x							x	x		x							x		x
D-33	x	x	x							x	x		x							x		x
D-34	x	x	x				x			x	x	x	x	x						x		x
D-37						x			x								x		x			
D-38						x			x								x					
D-39	x	x				x			x	x	x					x	x					x
D-40																	x					
D-41	x	x				x			x	x	x	x				x	x			x		
D-42						x			x		x						x					
D-43	x	x				x			x	x	x		x			x	x	x			x	

APPENDIX B

VERIFICATION OF EXPERTISE

ACDI VOCA

January 21, 2003

Mr. James Hynes
3780 Copperfield Dr., Apt 1018
Bryan TX 77802

Dear Mr. Hynes:

Thank you for volunteering your time and expertise with ACDI/VOCA. Your efforts made the **Horse Raising** assignment in **Russia** a success. We hope the assignment was as rewarding for you as it was beneficial for those with whom you worked.

Please accept the enclosed certificate as a small token of our appreciation.

We would also like to hear about any post-assignment activities you have undertaken since the completion of your assignment. If you have not already done so, please take a few moments to complete the on-line **Post Assignment Volunteer Activity Report** located on our website (www.acdivoca.org) or the hard copy included in your Volunteer Briefing Book.

Additionally, we encourage you to share information about your experience with friends and colleagues who might be interested in becoming ACDI/VOCA volunteers. For additional information, please refer them to our website for answers to **Frequently Asked Questions about Volunteering** and all of our **Current Volunteer Opportunities**.

Once again, thank you for all the hard work you have contributed to ACDI/VOCA and our overseas partners.

Sincerely,

Marcia Nicholson
Assoc. Director of Recruitment

Enclosures

50 F Street, N.W. • Suite 1075 • Washington, D.C. 20001 • (202) 383-4961 • Fax (202) 783-7204 • www.acdivoca.org

APPENDIX C

SEMI-STANDARDIZED INTERVIEW

The interviews themselves were conducted over a 5-day period wherever the participants could meet with the researcher, such as the show site, in homes, or at the bar in the motel where the researcher was staying. I-1 gave several names at his first meeting with the researcher at his farm. The researcher had arrived several days before the show to start the interview process. He sought out the people who were suggested to him for interviews. All but one person on his list was willing to visit with him and discuss their business. After each interview, he would ask the participant “Whom else should I be talking to?” and names would always flow. The participants were a loquacious group of people. They required little prompting.

The researcher would start his mornings by meeting with participants and asking when they would be free during the day of their choice for a 90-minute interview. He let them write his calendar. All of the interviews started with one of two questions – “How were their skills acquired?” or “Where did they learn their trade?” In no particular order, additionally he sought answers to the following questions:

- Where did their customers come from?
- How were the customers acquired?
- Where did they learn to market their products?
- Future plans?
- What are their sources of materials?
- How do they keep up-to-date in their business?
- What is their preferred method of acquiring new information?

- Do they ever use the land grant institution as a resource in their state?
- Do they use extension?
- What are their short, intermediate, and long-term goals?
- How are their products transported and delivered?
- What do they see as the role of the draft horse schools?

In their opinion, what was the largest contributor to the resurgence of the draft horse industry?

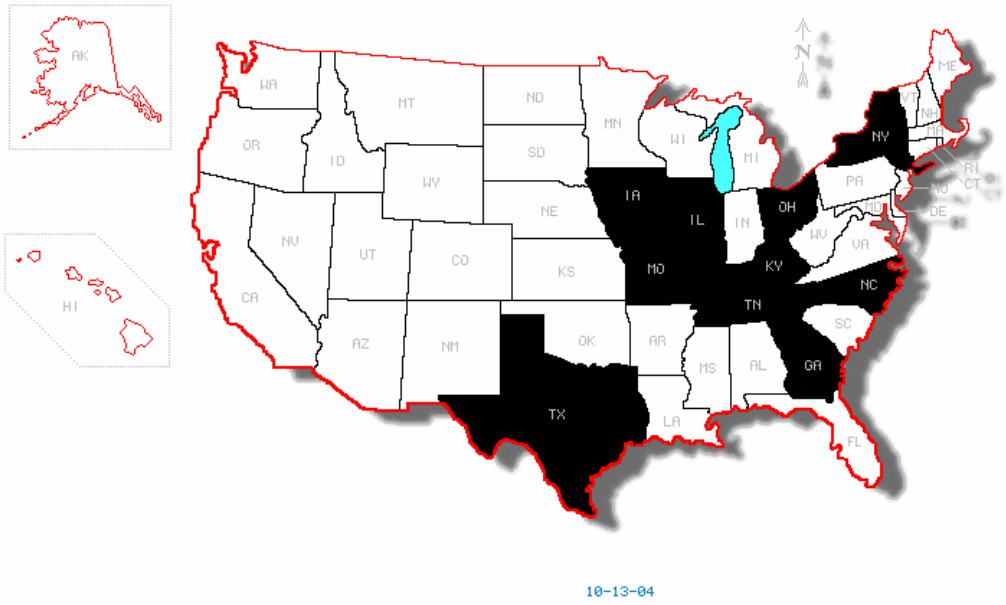
APPENDIX D

DOCUMENTATION

MAPS CHRONICLING GROWTH

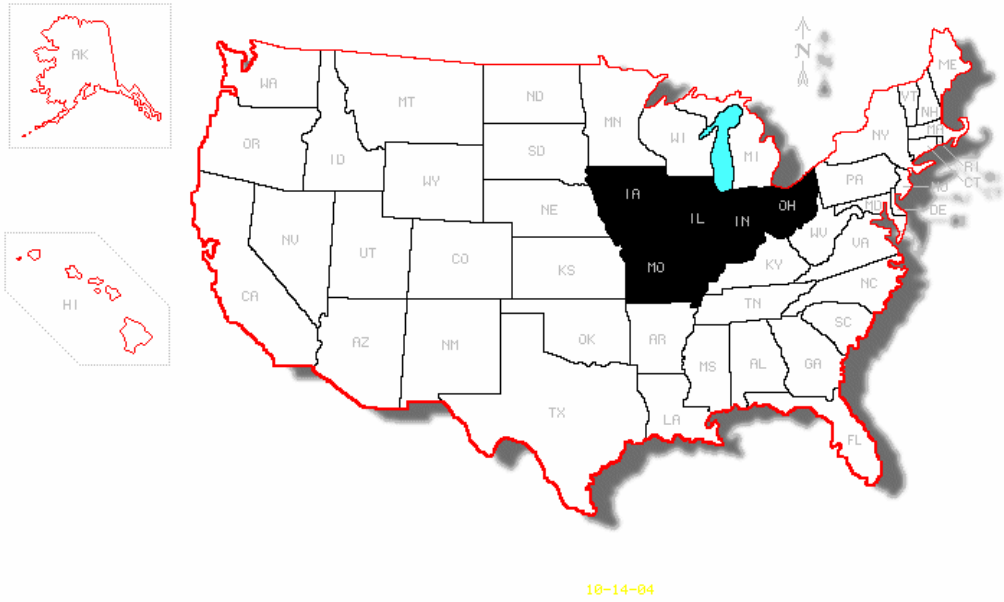
Appendix D-1

The ten states with the largest number of farms were (in descending order) Texas - 352,190, Missouri - 284,886, Ohio - 276,719, Illinois - 264,151, Kentucky - 234,667, Iowa - 228,622, New York - 226,720, Georgia - 224,691, North Carolina - 224,637, and Tennessee - 224,623.



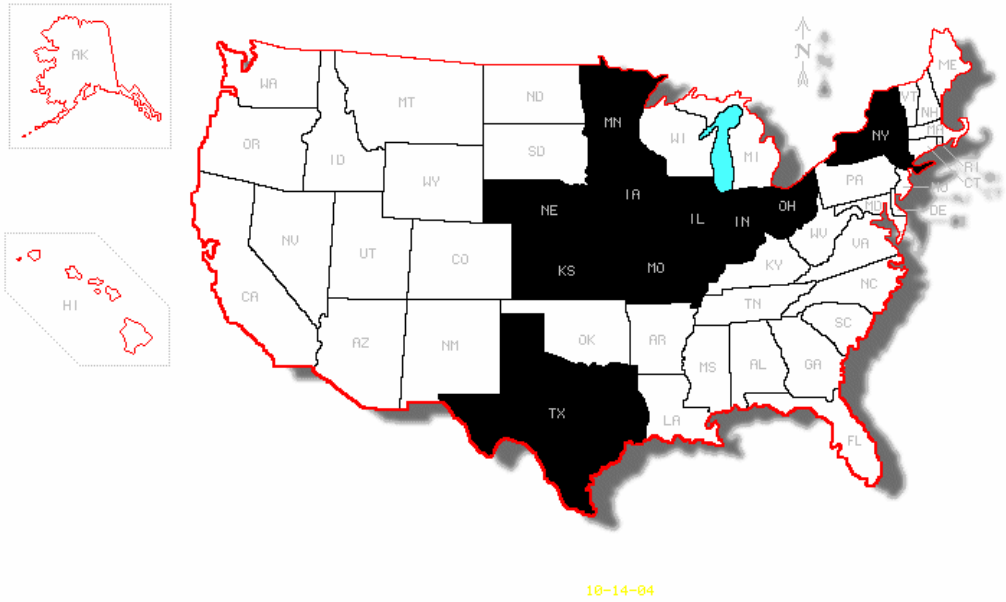
Appendix D-2

The 1900 census listed the top five states for livestock farms as Missouri - 151,451, Iowa -133,625, Illinois - 113,674, Ohio - 113,520, and Indiana - 107,887 farms



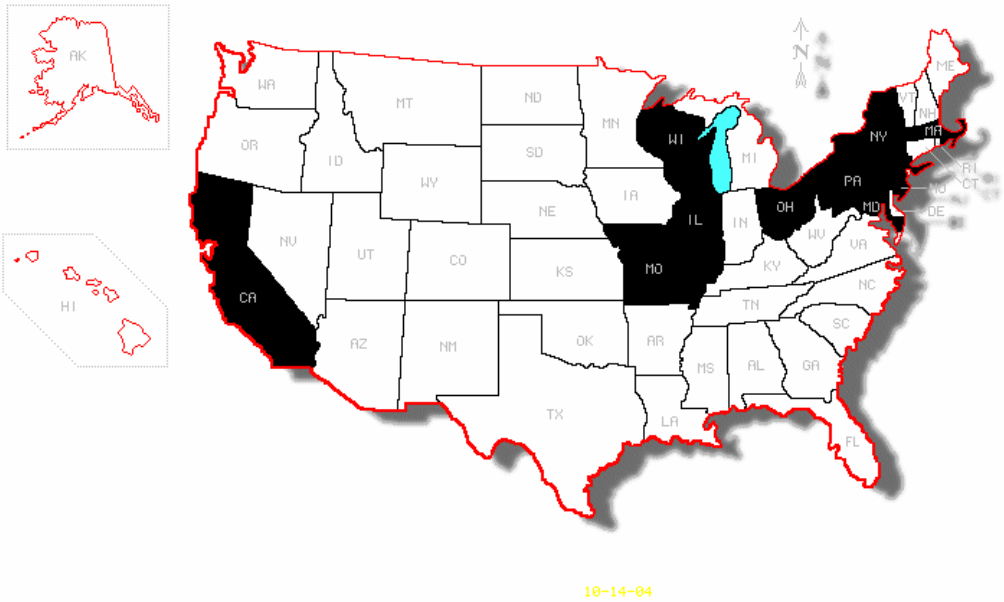
Appendix D-3

The top ten states in terms of number of horses on farms in 1900 were: Iowa, Illinois, Texas, Kansas, Missouri, Ohio, Nebraska, Indiana, Minnesota, and New York. Pennsylvania and Michigan had slightly lower numbers than New York.



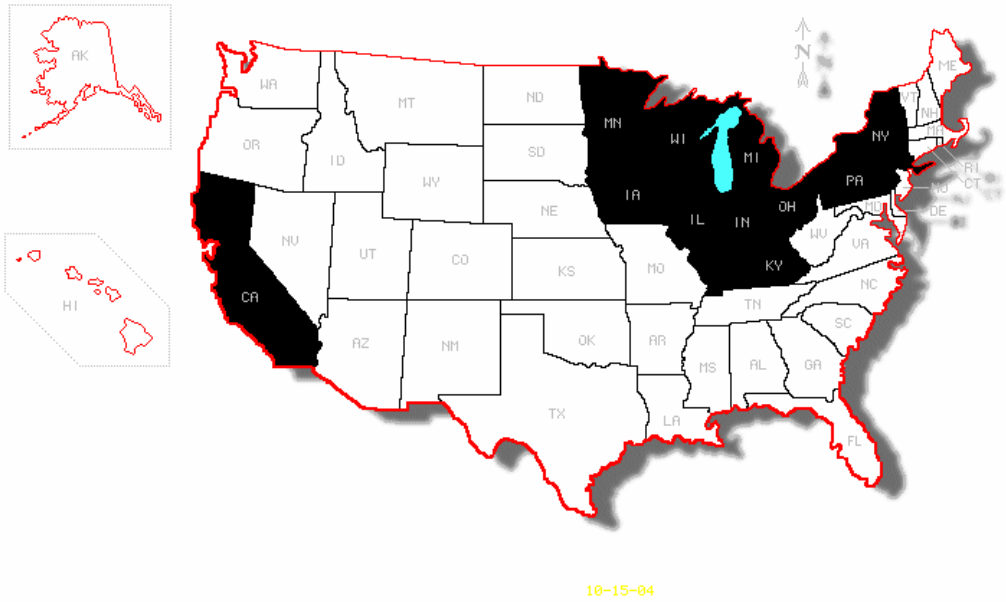
Appendix D-4

Harness manufacturing was conducted across the breadth of the United States. The census reported the top ten harness manufacturing states in 1900 as New York – 579 manufacturers, Pennsylvania - 301, Illinois - 261, Massachusetts - 225, Ohio - 215, Missouri - 143, New Jersey -116, California - 102, Maryland - 85 and Wisconsin -70.



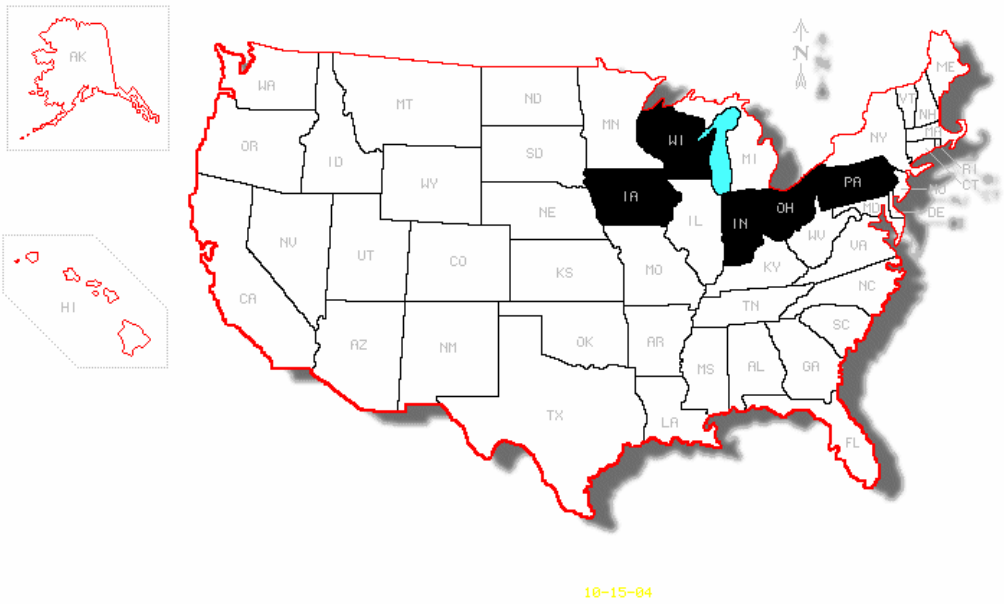
Appendix D-5

In 1900 agricultural machinery was manufactured throughout the United States (United States Census Office, 1900c). Illinois accounted for almost 40% of the capital invested in manufacturing equipment. Illinois was followed in descending order by Ohio, New York, Wisconsin, Indiana, Michigan, Pennsylvania, Minnesota, Iowa, California, and Kentucky. Missouri and Massachusetts filled out the top twelve agricultural equipment manufacturing states.



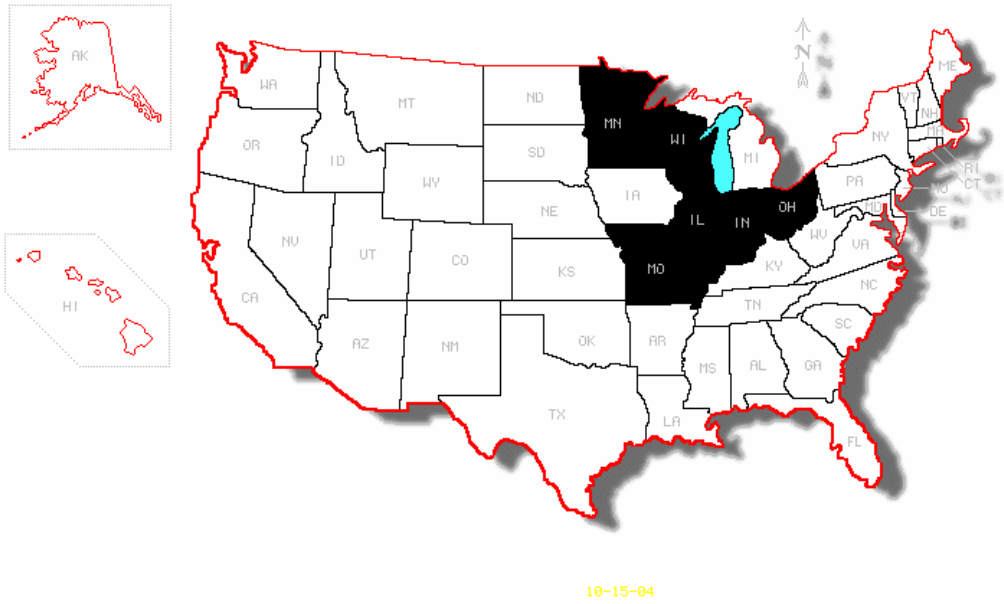
Appendix D-6

In 1964, the states that had the largest contingent of registered horses were Indiana, Iowa, Ohio, Pennsylvania, and Wisconsin. The states with the biggest public sales were Iowa and Ohio. Pennsylvania, Ohio, Iowa, and Indiana had the largest overall number of heavy horses.



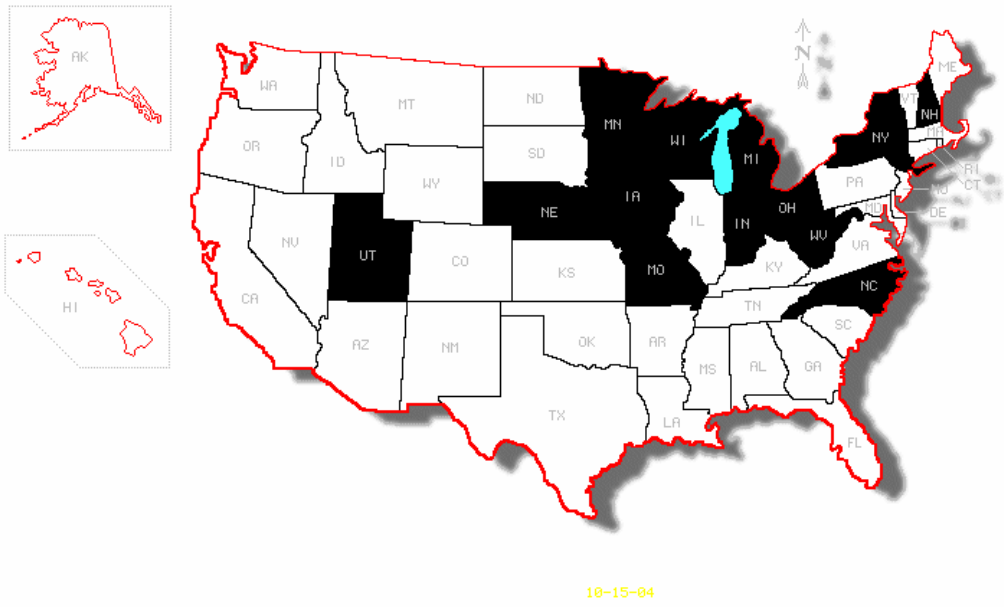
Appendix D-7

While there were small draft horse shows in the west, the large shows for draft horses at the state fairs in the mid-west dominated the show scene. In the mid ‘60’s the Wisconsin State Fair had the best Clydesdale show in terms of prize money and entries. The Percherons were shown at Wisconsin, Illinois, and Indiana and the Belgians at Ohio, Minnesota, Missouri and Indiana (Telleen, 1991).



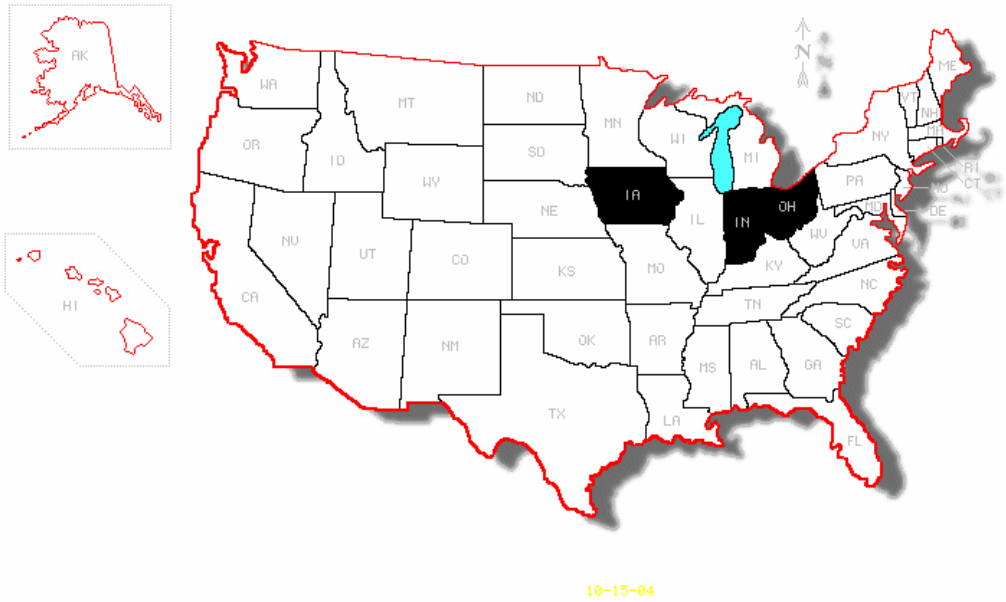
Appendix D-8

There were 21 draft horse shows and fairs with draft horse classes advertised in the spring issue of the 1969 *Draft Horse Journal*. They clustered around the upper mid-west. Michigan led the way with four shows, followed by Iowa and Ohio with three each. One each was held in Wisconsin, Nebraska, Missouri, Indiana, Minnesota, New Hampshire, New York, West Virginia, North Carolina, and Utah.



Appendix D-9

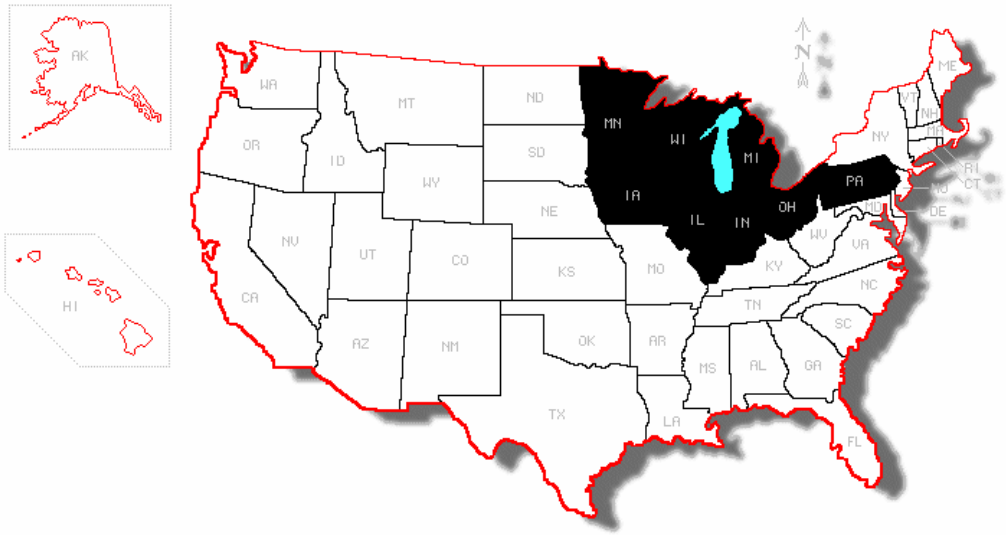
The spring 1969 issue of the *DHJ* used three pages to give the sales reports (*Draft Horse Journal*, 1969*).* One hundred twenty-seven head sold at the Columbus, Ohio sale. One hundred twelve head sold at Indianapolis, Indiana. Cedar Rapids, Lindsay Ontario, and Waverly Iowa accounted for 86, 107, and 347 head respectively. Another 35 head were sold at a farm auction in Indiana. Sale prices averaged around $450 per head.



Appendix D-10

The two major breed associations were active at the end of the 60's. The Belgian Horse Association reported a record 684 new registrations and 1,081 transfers for the 1969 fiscal year. A transfer occurs when the ownership of a horse changes hands and the registration papers are transferred to the new owner, reflecting the change. Registrations were received from 27 states representing 339 breeders. The top five states for registrations were Indiana -149, Iowa-116, Ohio-87, Minnesota-46, and Illinois-43. Transfers came from 27 states. The top five states transferring Belgian horses were Indiana-229, Iowa-188, Ohio-134, Michigan-98, and Minnesota-73, (*Draft Horse Journal*, Winter 1994-1995). (See Map)

The Percheron breed recorded 175 new registrations and 252 head transferred in fiscal year 1969. Registrations were received from 20 states. The top five were Ohio-50, Wisconsin-16, Pennsylvania-15, Michigan-14, and Minnesota-13. The top five states for transfers were Ohio-58, Minnesota-21, Illinois-20, Wisconsin-15, and 13 each in Iowa, Michigan, and Pennsylvania (*Draft Horse Journal*, Winter 1994-1995). Percheron Horse Association membership was 227. The two major breeds, Belgians and Percherons, were starting to increase in size.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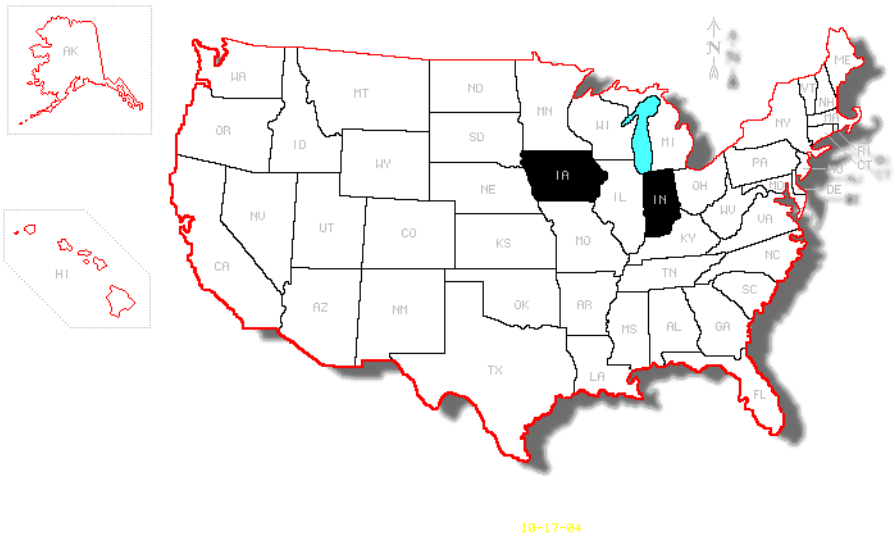
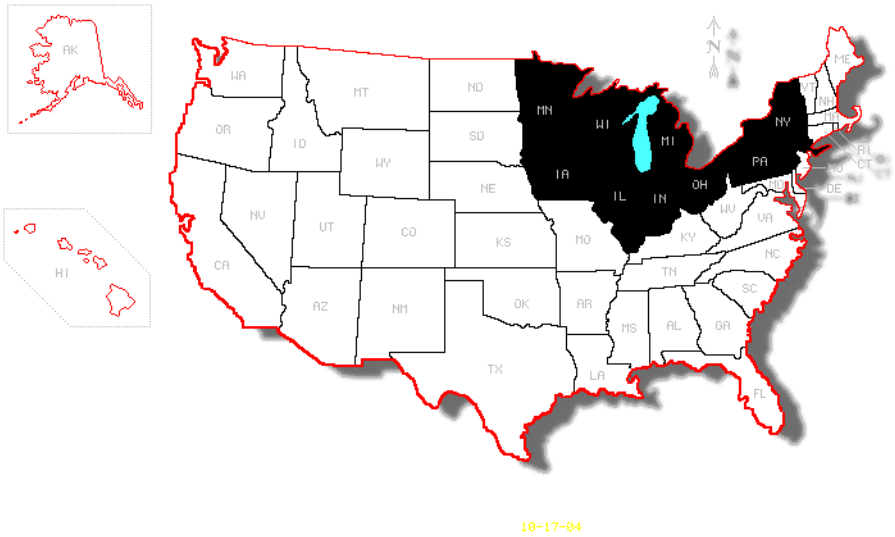
Appendix D-11

The four major sales in the early ‘70’s were the Eastern States Sale at Columbus, Ohio, the Indiana Sale at Indianapolis, Indiana, the Waverly Sale at Waverly, Iowa, and the Tri-State Sale at Cedar Rapids, Iowa.



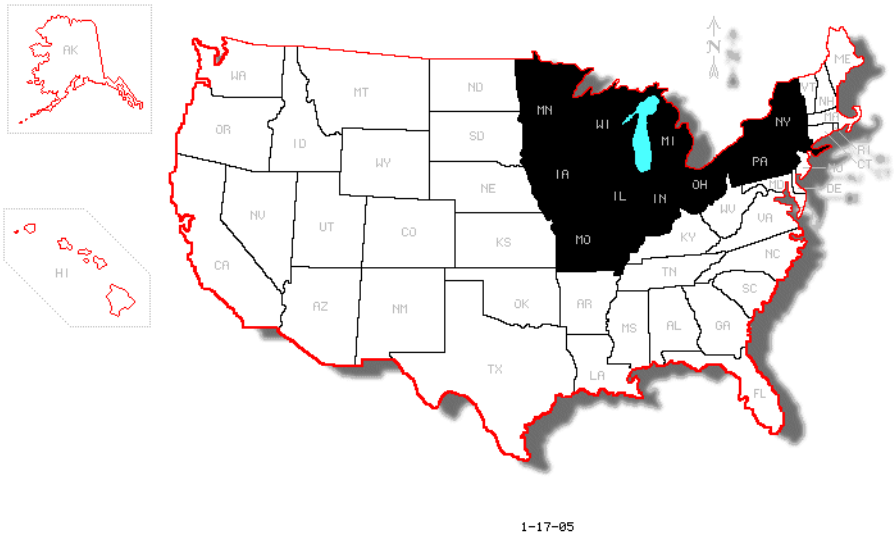
Appendix D-12

Ohio, Michigan, Wisconsin, New York, Iowa, Indiana, Minnesota, Pennsylvania, and Illinois had more than 500 subscribers each in 1975 (*Draft Horse Journal*, 2000).



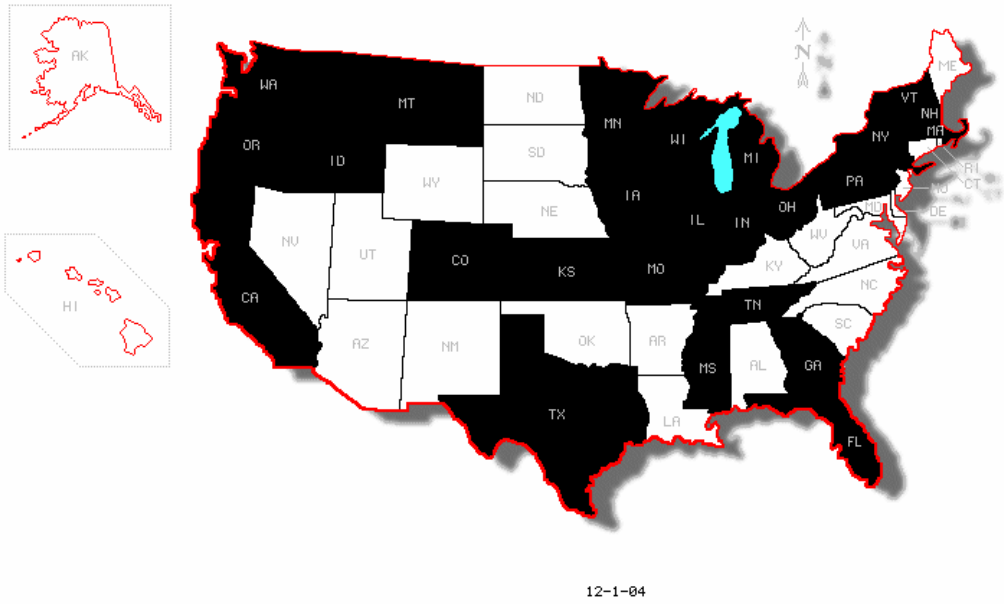
Appendix D-13

The top ten states with registered draft horses in 2000



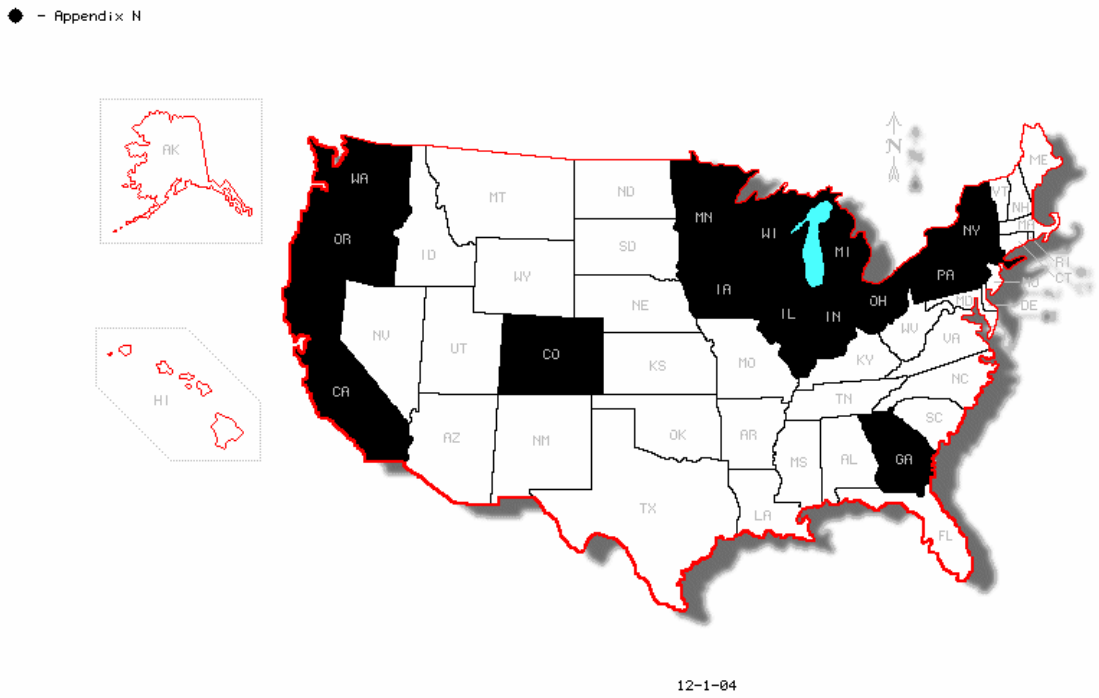
Appendix D-14

States with major ancillary draft horse businesses in 2003 (Miller, 2004)



Appendix D-15

The location and number of major horse equipment manufacturing businesses by state in 2003 are as follows: California, Colorado, Georgia, Illinois, Michigan, and Washington each have 1 company. Indiana, Oregon, and Wisconsin had 2 major equipment manufacturers each. New York had 3 companies. Iowa has 4. Pennsylvania had 12 companies and Ohio was the leading horse equipment manufacturing state where 23 businesses were located (Miller, 2004).



HORSE PROGRESS DAYS, 2004

TECHNOLOGY, EQUIPMENT, AND LIVESTOCK

Appendix D-16

The Senior Herd Sire for I-1's Belgian herd. The horse stands 18 ½ hands and weighs approximately 2600 pounds.

Appendix D-17

I-1 kept his mares and foals on a concrete dry lot for the duration of Horse Progress Days. The fence is electrified using a solar powered fence charger.

Appendix D-18

I-1's homemade forecart hooked to a Claas 1500 lb. round baler imported from Germany. Most Amish use horse powered implements to farm. In order to use modern farm implements, the Amish have designed forecarts that are pulled by horses enabling them to use horses as a power source instead of tractors. F B constructed this forecart and attached a 100 hp turbo charged John Deere diesel engine to power the equipment he pulls. He also has attached a hydraulic system with four outlets.

Appendix D-19

I-1 demonstrating his invention of a rope and pulley modification to the McKesson hitch. Here he is plowing with a four bottom plow hooked to his forecart. There are 12 horses in this picture. Note their lines of pull are even. If one horse pulls more on his tugs than the horse in front or to the side of him, pressure is applied to make him slow down and the horse which is slow move faster.

Appendix D-20

A new 2 bottom gang plow designed and constructed for modern farms with large horses. The shares are available in many farm supply stores. It is constructed out of heavy tubular steel and weighs 1230 pounds. The beams are 2 – piece reinforced medium carbon steel and the axles are precision machined medium carbon steel. The overall quality is readily observable.

Appendix D-21

2-way hydraulic reset plow.

Appendix D-22

An example hydraulic reset chisel plow showing a view of the independently controlled hydraulic cylinders. Note the iron wheeled moldboard plow in the background. Potential owners have a choice of wheels. Both implements are manufactured to operate behind motorized forecart or, should the operator choose, a small tractor with a drawbar. This allows the manufacturer to penetrate more than one market.

Appendix D-23

Electric (battery) operated hydraulics working with a 2 –way hydraulic reset plow. Note the tandem rope and pulley hitch and how even the doubletree is kept.

Appendix D-24

A team of well broke oxen (mature steers) used by I-7 for training future teamsters and work on the corporation's farm. These milking Devons weigh approximately 1750 pounds apiece. They are driven by voice command and a stick.

Appendix D-25

A clinic was held at Horse Progress Days. Here, a four abreast of Fiord ponies are put through their paces.

EAST TEXAS DRAFT HORSE INDUSTRY

Appendix D-26

I-12 preparing to plow a field for a fall oat crop.

Appendix D-27

Ground driven manure spreaders are one of many lines of equipment carried by I-12.

Appendix D-28

This fine surrey is used for parties and special events.

Appendix D-29

This carriage is used for weddings and parties.

Appendix D-30

Some veterans prefer having the caisson pulled by a white horse.

Appendix D-31

I-16 uses this carriage for anniversaries as-well-as weddings.

Appendix D-32

I-16 waiting for his turn on the movie set of The Alamo, 2003.

Appendix D-33

The “Runaway Serape” scene in the film The Alamo, 2003 required several well-broke teams of horses.

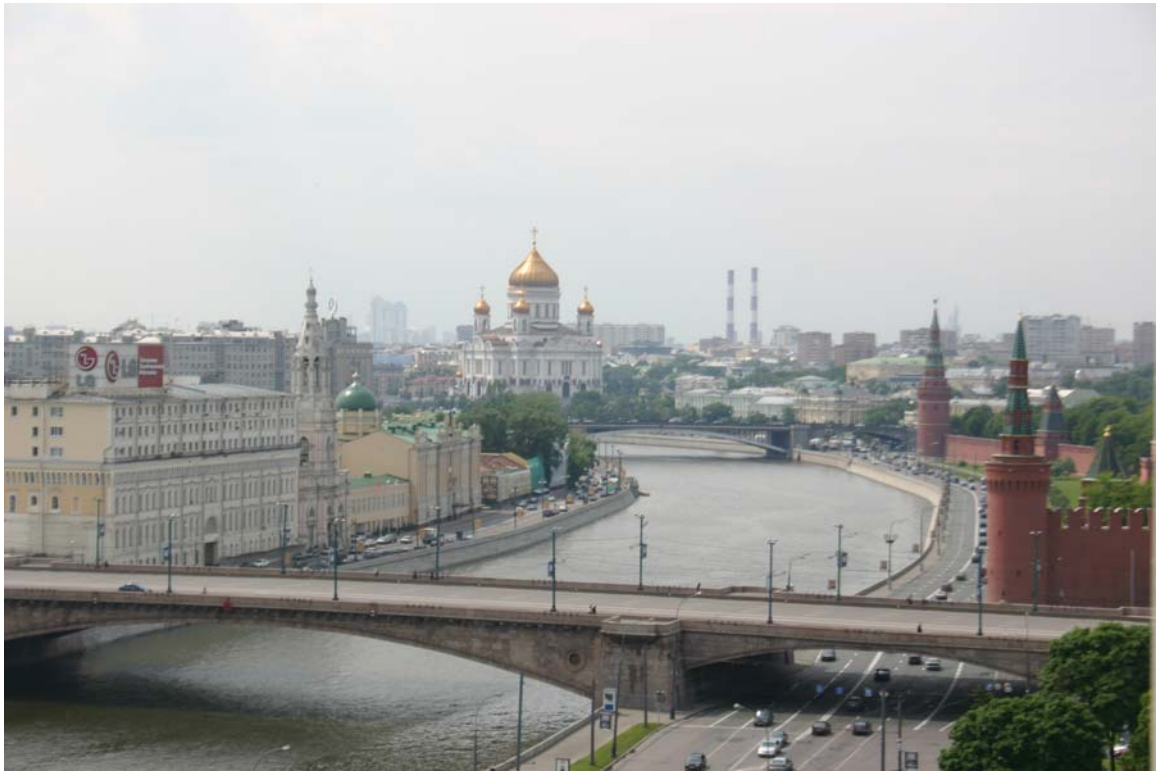
Appendix D-34

This gray mammoth jack has sired many mules over the last 20 years. His excellent disposition allows his owner to hand breed mares or run him in a pasture with them. This jack will also share his paddock with geldings and stallions – not something one finds every day.

SIBERIAN DRAFT HORSE INDUSTRY

Appendix D-35

The Moscow River runs alongside the Kremlin as it winds its way past a newly constructed Russian Orthodox Church.



Appendix D-36

The west to east geographical center of Russia is marked by a Russian Orthodox Church.

Appendix D-37

The village on the V farm showing a typical layout of home, garden, and barn. The gardens grew both flowers and vegetables. Note the high grass in the foreground. It is cut for hay by a hand scythe and fed to a sheep, milk cow, or horse owned by the farmer. The researcher never saw a lawn mower, not even in Novosibirsk. All the grass was cut by hand or an animal staked out to consume it.

Appendix D-38

Kuznetskaya mares and foals grazing on an alfalfa and orchard grass pasture at the V farm. These horses have never seen the inside of a barn. Most of the foaling takes place in the springtime – often with a touch of snow on the ground. The heavy muscling is much sought after for its yield of meat. The long hair on the coat of the foal at the far left is an indication of worms – a major ongoing problem.

Appendix D-39

The researcher, center, his interpreter – wearing shorts, and the management of V farm viewing grazing mares on a pasture of alfalfa and orchard grass. The prairie stretched to the horizon interspersed with beach wood forests, streams, and wheat fields.

Appendix D-40

Spotted Kuznetskaya mares grazing on an improved pasture.

Appendix D-41

The owner/manager of S farm drove everywhere on his property with the four wheel drive vehicle viewed in the background. It was heavy, weighing over 6000 lbs, and reportedly, could travel over ground one couldn't walk.

Appendix D-42

This is a picture of one of VAV's stallions. Massive bone and heavy muscle combine to give this horse a weight approaching a ton. Note another herdsman in the upper right hand of this picture. When we arrived to view this particular band of mares, we found two herdsmen asleep in the grass and their riding horses standing over them.

Appendix D-43

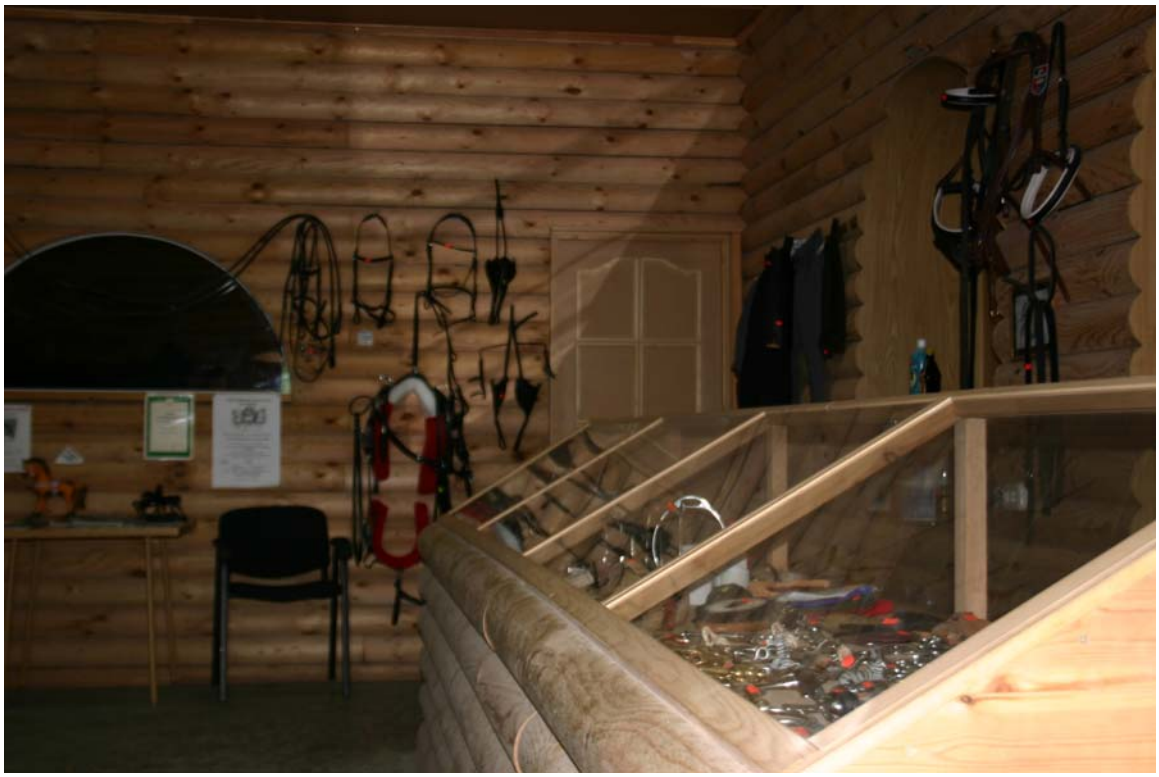
This is a group of students proudly showing one of their favorite horses – a black Hanoverian at the conclusion of the day's lesson. When the Soviet army moved into Germany at the conclusion of WWII, they liberated many fine specimens of this sport horse breed and sent them back to Russia. Today, the Hanoverian horse is prospering in Russia. German nationals are now returning to Russia, buying Hanoverians, and exporting them back to the stables in Germany!

Appendix D-44

This is a two year old champion Orloff trotter filly. The horse is iron gray and will become white with age. Held by her owner/trainer, she won her race the day after this picture was taken.

Appendix D-45

The tack store at the Novosibirsk racetrack offered excellent quality harness and hardware.



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