Corps of Discovery: Improvisers Extraordinaire

Members possessed an uncanny ability to survive in “make-or-break” situations

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June 16, 1805, Meriwether Lewis determined that "good or bad we must make the portage" around the Great Falls of the Missouri. The following day, William Clark and five others surveyed the river and the portage route. Lewis "set six men at work to prepare [sic] four sets of truck wheels with couplings, tongue[sic] and bodies, that they might either be used without the bodies for transporting our canoes, or with them in transporting our baggage." The portage tested the Corps of Discovery's ingenuity, along with the members' drive and determination. H. Carl Camp's article, "The Corps of Discovery: Improvisers Extraordinaire," demonstrates the corps' ability to come up with creative solutions to obstacles and unforeseen events along their journey.

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Exciting initiatives on tap for 2008

It is hard to believe that the holidays are over and the Foundation is entering its fifth month of the fiscal year! Your national headquarters staff, foundation board of directors, and committee chairmen and chairwomen have been busy for the past four months organizing a variety of crucial initiatives for our national organization.

In this column, I highlight a few of these exciting projects; but trust me, I have only scratched the surface. Many more will be highlighted in future issues of WPO and The Orderly Report (TOR). As you read this column, consider how you can become actively involved. Find your niche—there are many ways to become engaged in your Foundation.

The Third Century Endowment Campaign is off and running. Campaign Chairman Jim Brooke will keep you posted on campaign partnerships and contributions in upcoming issues of WPO and TOR.

This campaign is critical to the stability of your foundation and its programs. The most exciting news in the campaign is the introduction of Honorary Chairman Ken Burns. As you know, Ken, in partnership with Dayton Duncan, produced and directed the fine documentary on the Lewis and Clark Expedition. Ken is the author and producer of many wonderful documentaries on a multitude of engaging historical subjects. He is taking time out from the hectic release of The War to be our honorary chairman.

His commitment to the Lewis and Clark Trail Heritage Foundation and our campaign is summed up by

Stephenie Ambrose Tubbs, foundation board member and daughter of Stephen Ambrose:

As my father used to say, more people get their history from Ken Burns than from any other source. As a member of the LCTHF board, I am most grateful that he has agreed to help us continue to teach the stories of the trail through our Third Century Campaign. As most Americans know, his love for history is infectious and his appreciation for Lewis and Clark will always remain strong. Ken understands what it means to walk in your hero’s footsteps and we welcome his energy and inspiration into our campaign.

We are delighted that Ken has agreed to serve as our honorary chairman, and deeply appreciate his continued dedication to the Lewis and Clark National Historic Trail and its diverse stories.

Lewis and Clark National Historic Trail Superintendent Steve Adams and his staff invited your Foundation staff and me for an all-day retreat in November at the National Park Service Regional Headquarters in Omaha, Nebraska. They were wonderful hosts, and it was an exciting and productive day.

Now, more than ever, it is important that our organizational strengths compliment each other. Philosophically we are on the same page, and our relationship is solid, healthy and energized. Our two organizations are committed to looking for creative ways to partner on a multitude of exciting educational and trail-related projects. I look forward to reporting on them in future publications.

Hopefully you already know about the Foundation’s Monetary Grants program, which we re-instituted this year. We announced the program on
January 1, 2008, and you can access the application and grant criteria on our Foundation Web site at www.lewissandclark.org. Board member Jane Randol Jackson graciously has agreed to serve as chairwoman and has organized a very capable committee to help her. At just under $15,000, this year's grant program is only a start.

As the Third Century Endowment Campaign gains momentum and success, it is our plan to increase the grants program each year. We hope our chapters and other interested groups will take advantage of this program to create wonderful projects across the country. Remember, the deadline for project applications is March 15, 2008.

As I stated in my last letter, I believe that the key to the success of our Foundation is involving youth at all levels. I hope you are taking this initiative to heart and thinking of creative ways to involve them in many of your programs and projects.

The Great Falls annual meeting volunteers are involving youth, and I am delighted to announce that the 2008 annual meeting will embrace this concept. Two pre-conference float trips through the Missouri River's White Cliffs will be geared toward family adventure, focusing on engaging children in the Lewis and Clark experience on the trail.

We also will institute for the first time a teen program during the annual meeting for 12 to 16 year olds. There will now be a full range of exciting adventures for children and youth at all annual meetings to compliment Camp Pomp. Engaging youth is our future, and getting them out having fun on the trail and understanding the many diverse stories of the expedition is key. We also are working with the Boy Scouts of America, the National Park Service and several state educational groups to create more opportunities for youth throughout the year. You will be hearing more about them in TGR and WPO.

Lastly, remember that you, our members and chapters, are crucial to a successful foundation. In my holiday letter to chapter presidents I stated, "As president of the Foundation, it is my personal goal to communicate with and support the Foundation's chapters this year. Your Great Falls staff, the Board and I are committed to visiting as many chapters as possible in 2008, either at Regional or individual meetings. ... I will be working closely with Jim Rosenberger, Membership Chair, and Rebecca West, Director of Operations and Membership Services, in the coming months to maximize our service to your chapter. It is my hope that you will also encourage your members to join the Foundation.

As you read this, many of our initiatives to partner with and serve our members and chapters already are in place. It is my goal to work as partners as we "proceed on" into the third century of Lewis and Clark.

"The Deep End Really Is Where The Fun Happens!"

—Karen Seaberg
President, LCTHF
More on murder vs. suicide: Cruzatte’s eyesight

The details surrounding Meriwether Lewis’s death, particularly those mentioned by Glen Kirkpatrick in his letter (WPO, November 2007), raise for me a haunting question: Did Thomas Jefferson fail Lewis? Other than William Clark, perhaps no one knew Lewis as well as his mentor, the president, who was in the best position to have aided him. When Congress demanded an accounting or the completion of his journals, Jefferson singularly failed to step forward and provide Lewis the staff of scriveners, librarians and bookkeepers who could have pulled the papers together.

Lewis has, and contemporaneously had, a well-earned reputation for precision and thoroughness, but that was a product of his “good days.” When “the dark side” came to him, it all collapsed. Witness the chart with missing thermometric data that accompanied the cover story of the same WPO issue, “Of Thermometers and Temperatures on the Lewis and Clark Expedition,” by Robert R. Hunt, or recall the long and unexplained lapses in Lewis’s journal keeping.

Why, too, were the sergeants allowed to privately publish their journals, when they were the product of the uncanny leadership provided by the captains? Again, if Lewis were vulnerable to melancholy or an anxiety-induced depression, a simple provision of attentive staff to care for the details, pulling together information on the journey from all sources, would have made Lewis to again shine in the leadership capacity he had so recently demonstrated. Indeed, we must ask, where was Mr. Jefferson?

The fractured column at Lewis’s grave, representing unrealized potential, is symbolic of many levels of failed leadership.

JEFFREY NEIL ZIMMERMAN
Sonoma County, California

In response to Glen Kirkpatrick’s letter (WPO, November 2007), Meriwether Lewis had long been subject to “violent attacks of ague” (malaria), which, according to William Clark, always made him “disoriented.” Had Lewis been suffering from the gradual onset of any of the other afflictions and aberrations that have been attributed to him, his detractor Frederick Bates certainly would have noted it. Yet Bates stated, “Governor Lewis on his way to Washington became insane.”

May I also point out that advocates of the suicide theory largely have ignored a number of facts and possibilities regarding Lewis’s death?

1. It was not uncommon for travelers in those days to write a last will and testament.

2. I find it curious no details were ever provided about Lewis’s supposed attempts at suicide on the boat. He was a very prominent man. Wouldn’t someone have talked about it? The crewmen of the boat wore French. Considering possible difficulties in communication, and with Lewis “disoriented” from malaria, were they so unsure of their interpretations of his behavior that they thought it best to say as little about it as possible?

3. Captain Gilbert Russell then placed Lewis in the care of Surgeon’s Mate W. C. Smith. It can be assumed that, as a medical officer, Smith gained some degree of insight into Lewis’s physical and mental condition. He later wrote Secretary of War William Eustis that Lewis had been detained on “charges frivolous in their nature.”

4. Would Captain Russell have loaned $379.58 (a very substantial sum in those days) to a man who was suicidal?

5. Lewis’s words reflect his state of mind. He wrote James Madison, “Provided my health permits no time shall be lost in reaching Washington.” He wrote Major Amos Stoddard to request money he believed Stoddard was holding for him and said, “You will direct to me at the City of Washington until[sic] the last of December after which I expect I shall be on my return to St. Louis.”

As governor of Upper Louisiana, Lewis was charged with the enormous task of commanding a territory larger than the United States, itself a vast region of mixed race left in turmoil by Lewis’s predecessor, General James Wilkinson.
Despite this responsibility, Lewis's failure to find time to write personal letters and a book about the expedition has been trumpeted as evidence of depression, "writer's block," etc.

(6) Much has been made of Lewis's last letter to Clark, with implications that Lewis had confided dark revelations. In fact, the letter appears to have been so unrewarding to Clark that he probably did not bother to reply. Only after he learned of Lewis's death did Clark express a wish to read it again to see if he had missed something.

(7) The nature of Lewis's wounds suggests they were not self-inflicted.

(8) Lewis was robbed of his money and valuables.

(9) How reliable are "witnesses" James Neelly, Priscilla Grinder and John Pernier?

Captain Russell clearly expressed his distrust for James Neelly. According to Russell, Neelly had no money, yet on the pretense he had loaned Lewis money, Neelly made off with Lewis's costly custom-made pistols and certain other personal effects.

Priscilla Grinder's accounts of Lewis's death are inconsistent and may have been tailored to divert suspicion from her husband, a man of seemingly questionable reputation who may or may not have been away at their farm as she claimed. Key among her statements is one that Lewis, supposedly after having just made two attempts on his own life, asked her to "heal his wounds."

After Lewis's death, his servant John Pernier requested back wages from Lewis's mother. She was convinced he had murdered her son.

(10) In 1848, after exhuming and examining Lewis's remains, the Lewis Monument Committee stated that it "seemed probable he had died by the hands of an assassin." Suicide advocates discredit the statement by implying it was made to please William Clark's son, Lewis's namesake, who had expressed a wish to "remove the only stigma upon the fair name I have the honor to bear."

(11) A newspaper in Virginia later recounted the story of an "old Negro" who claimed he was the servant recruited by Neelly to help with Lewis's trunks. He reaffirmed on his deathbed that Governor Lewis had been murdered.

(12) It is impossible to state with any certainty "those who knew Lewis best never doubted he took his own life." William Clark's niece would later say of him, "Uncle had a great love for Lewis. He never believed he committed suicide." There are also references to a letter in which Thomas Jefferson stated that "subsequent evidence" led him to wonder if Lewis had been murdered.

The after-the-fact construction of Lewis depicts him as dark and melancholy, yet his journals reveal him as a man of great intelligence, determination and humor. Yes—humor—as when he described his "curious adventures" at Great Falls, or when he referred to the Shoshone "national hug." At a time when hostile foreign powers were threatening to overrun the western half of the continent, Lewis was instrumental in achieving Jefferson's dream of a powerful nation stretching "from sea to shining sea." Jefferson noted that no one else was willing to undertake "an enterprise so perilous."

Isn't it time we gave this American hero the benefit of the doubt? No one knows for certain what happened at Grinder's Stand.

VERLYNN KNEIFL Crofton, Nebraska

Cruzatte's eyesight in question

I have several points of disagreement with A. Fraser Siehl's article, "The Eyes of 'St. Peter,'" (WPO, November 2007).

The journal records are not very complete when it comes to recording medical events as my medical text (Medical Appendices of the Lewis and Clark Expedition) points out; however, I doubt that a serious eye injury would escape attention since lesser eye injuries were noted on several occasions.

While good eyesight might seem a prerequisite for the hiring of a river guide, any professional pilot of modern-powered river craft on rivers similar to the Missouri of 1803, as well as when white-water river guides, will tell you that reading the water is an art and a science not easily learned by anybody, and is a skill far more important than good eyesight. The river bends, bars, sawyers, currents, boils, eddies and whirlpools, along with hull design, weight and momentum of the boat and wind all impact the guidance of hand-powered craft in turbulent water. (I have been a professional whitewater river guide for more than 12 years.)

As for Cruzatte's famous shot to the captain's rear, it could have happened to any member of the expedition at any time that the hunters were in heavy cover. In fact, on August 25, 1805, Frazier, who presumably could see very well across a 60-yard pond, almost hit Lewis as he shot at some ducks.

Cruzatte's skill with a fiddle contributed greatly to expedition morale and Indian relations. I agree with Siehl that Cruzatte was more than just a "one-eyed fiddle player!"

JOHN W. FISHER Julietta, Idaho

Note 24 of A. Fraser Siehl's article, "The Eyes of 'St. Peter,'" (WPO, November 2007) properly cites Lewis's entry for August 11, 1806, describing the shooting of Captain Meriwether Lewis by Pierre Cruzatte. Siehl added that in his edition of the journals, "Moulton noted that neither Ordway nor Gass seemed to believe that Cruzatte was entirely ignorant of having shot Lewis."

I can find no evidence of this in the corresponding passages of Ordway's and Gass's journals. On the contrary, both accounts indicate that the writers believed Cruzatte was entirely ignorant of having shot Lewis. Also, Moulton's note to Lewis's entry reads: "Both Ordway and Gass seem to believe that Cruzatte was entirely ignorant of having shot Lewis." (Vol. 8, p. 157.)

ALBERT FURTWANGLER Salem, Oregon

EDITOR'S NOTE: Ordway wrote: "... then Peter knew that it must have been him the an exiudant [incident]." (Moulton, Vol. 9, p. 348.) Gass wrote: "... but after some time met with the man who went out with Captain Lewis, and found on inquiry that he had shot him by accident through the hips, and without knowing it pursued the game." (Vol. 10, p. 265.)

WPO welcomes letters. We may edit them for length, accuracy, clarity and civility. Send them to us c/o Editor, WPO, P.O. Box 3494, Great Falls, MT 59403 (e-mail wpo@lewiscleark.org).
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Keepers of the Story - Stewards of the Trail
Letters (cont.)

Cruzzatte’s “other eye”

As is the case with a good many of history’s legends, the legend of the Corps of Discovery’s “one-eyed fiddle player” (Pierre Cruzatte) is clouded in its own penumbra of skimpier facts, suppositions and imponderables. A. Fraser Siehl in his article, “The Eyes of ‘St. Peter’,” (WFO, November 2007) advances the notion that the “one-eyed” fiddler’s vision seems to have been fine in every instance except for the one in which he shot Captain Lewis. On balance, I agree with that assessment, but what could have happened to precipitate such a drastic decline in his visual acuity as has often been associated with the hunting accident in August 1806? Siehl speculates that Cruzatte could have suffered a debilitating illness, injury or accident that impaired his vision by the time the expedition was on its return journey.

However, the possibilities advanced by Siehl are just that—possibilities; they are “iffy.” Moreover, they seem unlikely given the captains’ penchant for chronicling mishaps and maladies that impaired expedition members’ ability to shoulder their share of the day-to-day responsibilities. There is no mention in the journals of Cruzatte having experienced any untoward incident that led to blindness in one of his eyes before that fateful day. I believe there is a very simple explanation for this perplexing aspect of the episode.

In his account of the hunting accident on August 11, 1806, Captain Lewis says this: “I instantly supposed that Cruzatte had shot me in mistake for an Elk as I was dressed in brown leather and be cannot see very well.” [Italics added.] This is a very general statement that falls far short of labeling Cruzatte as being “one-eyed” or blind in one eye or anything of that sort. From the context, it is not even entirely clear whether Lewis was commenting on the acuity of Cruzatte’s vision or rather describing the difficulty anyone would have had discerning objects amidst the thick cover of willows in which the elk herd was hiding.

On August 12, 1806, after the two contingents of the Corps of Discovery had been reunited and Lewis obviously had briefed his co-captain on the shooting incident, Clark has this to say about Cruzatte’s eyesight: “This Cruzaat [sic] is near Sighted and has the use of but one eye. . . .” Here Clark is more clinical than Lewis in that he introduces the notion of “nearsightedness” (or, more properly, myopia). Typically, the closer an object is to the myopic person the better (clearer) the image; the farther the object is away from that person the greater the probability it will appear blurry or indistinct.

We do not know what prompted Clark to issue this assessment of Cruzatte’s reputed visual impairment. Did Cruzatte himself volunteer the information? Did Cruzatte himself volunteer the information? Did he wear spectacles? Did he habitually squint when trying to bring objects into focus? We just do not know the answer. This much is clear: up to that point in the journey neither captain apparently had cause to be concerned about the adequacy of Cruzatte’s eyesight for they did not make mention of any such difficulty in their journals before the day in question. Further, we do know that nearsightedness commonly affects both eyes and such a diagnosis falls far short of signifying profound blindness.

So, our attention must naturally turn to Clark’s concluding observation, namely: “and has the use of but one eye.” In order to put that observation in its proper perspective, one needs to recall the basic sequence of events leading up to the hunting accident. On the day in question, Lewis wanted to get to a place on the Missouri (the “birnt hills” area in present-day North Dakota) where he could make a set of celestial observations, but the corps arrived 20 minutes past noon and the opportunity was lost. Disappointed, but wishing to salvage something from the stopover, Lewis took Cruzatte ashore with him to pursue “a herd of Elk on a thick willow bar.” There appeared to be no hesitancy on Lewis’s part to take the “one-eyed fiddler player,” so-called in later years, as his hunting partner. Lewis killed one elk and Cruzatte wounded another. Lewis then observes: “We reloaded our guns and took different routes [sic] through the thick willows in pursuit of the Elk. . . .”

At this point, it takes very little imagination to visualize what happened next. As Lewis prepared to fire on the wounded elk a second time, Cruzatte spied movement and a brown patch in the willows about 40 paces away (the distance Lewis subsequently estimated, based on the sound of the rifle report, his shooter was from him). Seeing what he assumed to be his quarry, Cruzatte raised his loaded rifle to his shoulder, closed one eye, took aim with the other and fired at the partially concealed patch of brown, severely wounding his captain in the buttocks. In the act of aiming with one eye closed, “he has the use of but one eye,” Clark factually reported in his journal entry for August 12th after having heard the whole story as recounted to him by Lewis. Using a nearsighted eye (if Clark’s diagnosis is to be believed) and peering down his rifle barrel at a patch of brown partially obscured by a thickets of riverine willows some 100 or more feet away, Cruzatte fired at an object that was probably a bit blurry and indistinct.

Note that Clark speaks of “the use of but one eye” and NOT “the sight of but one eye.” [Italics added.] He says nothing—absolutely nothing—about the visual acuity of the other eye, which remains closed in the aiming process. In a sense, every riflemen is “one-eyed” at the moment he aims his weapon at a target he wishes to hit, but that is a temporary condition and not a lifetime impediment such as has been imputed to Cruzatte by an assortment of historians, interpreters, commentators and re-enactors down through the intervening years.

I don’t know who first came up with the “one-eyed fiddle player” characterization, but it was colorful enough to catch on and, thus, a legend was born. It’s a myth, I believe, based on an understandable, but unfortunate and slipshod, interpretation of a fairly skimpy, but still straightforward, account of the mishap, absent the appearance of probative evidence that definitively affirms that Pierre Cruzatte was indeed blind in one eye. I believe we, as “Keepers of the Story,” should restore the sight to his “other eye” and stop using an overworked, and very likely fictitious sobriquet: “the corps’ one-eyed fiddle player.” All these years Cruzatte has gotten a bum rap and we should begin to make amends.

H. Carl Camp
Omaha, Nebraska

February 2008 We Proceeded On — 7
On June 4, 1804, William Clark wrote in his journal: “here the Sergt. at the helm run under a bending Træ & broke the mast.” He didn’t identify who was to blame, but Sergeant John Ordway was more specific: “our mast broke by my Stearing the boat <alow> near the Shore  the Rope or Stay to the mast got fast in a limb of a Secamore tree & broke it very Easy.”
THE CORPS OF DISCOVERY: IMPROVISERS EXTRAORDINAIRE

When "make-or-break" situations arose, the Corps of Discovery showed an uncanny ability to improvise and proceed on

BY H. CARL CAMP

"im - pro - vise . . . 2a) to bring about, make, or do on the spur of the moment [to improvise a solution to a problem] b) to make, provide, or do with the tools and materials at hand, usually to fill an unforeseen or immediate need."

The Lewis and Clark Bicentennial commemoration did its best to focus the nation's attention on the exploits, accomplishments and consequences of that storied expedition (1803-1806). Over the bicentennial years, there was an outpouring of books, essays, articles, poems, musical compositions, films, TV specials, signature events and performances—and speeches galore. Seemingly every conceivable aspect of the history-making voyage of discovery has been by now subjected to minute scrutiny and critical commentary.

Numerous authors have commented on the many months of meticulous planning that went into preparations for dispatching the Corps of Volunteers for North Western Discovery up the Missouri River into the far reaches of the Louisiana Purchase—and beyond. The success of the expedition regularly is attributed to the vaunted leadership skills of the co-captains, Meriwether Lewis and William Clark, and their careful planning. That planning stretched from Thomas Jefferson's Monticello in late summer of 1802, back to Washington, D.C., in early 1803, and on to the national armory at Harpers Ferry, to Philadelphia, Pittsburgh and Clarksville (Indiana Territory), ending in the spring of 1804 north of St. Louis when the expedition embarked up the Missouri River from Camp River Dubois.²

The complexity of those preparations is well-documented in readily available primary and secondary sources that detail Meriwether Lewis's whirlwind of preparatory activities in the months immediately following the U.S. Congress's authorization and funding of the expedition; however, there is no intention to recount those events here. Rather, attention is focused on certain of the challenges encountered by the Lewis and Clark Expedition once it began its journey up the Missouri River.

Little noted in the extant literature are those instances and situations when all the advance planning and preparation proved inadequate once the Corps of Discovery, as it came to be called, was in the field. In such circumstances the men of the expedition (and, eventually, one woman and her child) were challenged to find solutions to often unexpected developments that impinged upon the success of the venture or the well-being of its members—or both. Workable solutions generally required cool-headed logic, flexibility, and a good measure of ingenuity and inventiveness; in short, the ability to improvise by making the most of the resources at hand and doing so in a timely manner.

The available evidence clearly establishes that the Lewis and Clark Expedition was not a "cut-and-dried" affair no matter how meticulous the advance planning. Some of the Corps of Discovery's improvisations
worked; some did not. Fortunately, the journals kept by Lewis and Clark and a few of the men during the transcontinental journey provide instructive examples of their “make-do” efforts. And they are more numerous than one might imagine.3

Blocked from entering the Missouri River by Spanish caretakers upon their arrival at St. Louis in December 1803, the expedition went north of the city and established its winter quarters on the American side of the Mississippi River, awaiting the official transfer of the Louisiana Purchase from France to the United States (which occurred on March 10, 1804). There, over the next five months, the co-captains continued to recruit, train and discipline the men of the corps while gathering a small mountain of supplies and equipment, as well as useful information about the route ahead.

The expedition finally got underway May 14, 1804. Clark marked the event with these words: “I set out at 4 o’clock P.M. in the presence of many of the Neighbouring inhabitants, and proceeded on under a gentle breeze ....” The little flotilla, consisting of the keelboat and two pirogues (one red, one white), paused a few days in St. Charles where they were met by Meriwether Lewis who arrived overland from St. Louis. There they also picked up their last two recruits (François Labiche and Pierre Cruzatte), thereby bringing the corps’ roster to 45 men.4

The next weeks and months were spent learning to navigate the swift, swirling currents of the unruly Missouri River, avoiding sandbars and dangerous debris, and coping with clouds of mosquitoes and hordes of blood-thirsty ticks. Early on, Sergeant John Ordway, an inexperienced helmsman ran under an overhanging tree and broke the keelboat’s mast. They improvised a replacement from a suitable tree, the first of several such replacements before the keelboat was sent back to St. Louis the following spring from Fort Mandan. As the expedition’s tow rope broke repeatedly and finally was beyond repair, the corps began improvising substitutes from strips of animal hides woven together (elk and deer, initially, but eventually including buffalo hides). These challenges, and others like them, came fast and furiously, taxing the men’s resourcefulness almost daily.5

By July 22, 1804, the expedition had passed the mouth of the Platte River, a milestone in river travel in those days, and stayed for several days at a site they called “White Cat Fish Camp,” named after a large whitish-colored catfish caught there by Private Silas Goodrich. While encamped, they made repairs, dried wet articles, and selected timber to make oars and poles to replace those lost in accidents or worn out or broken from hard use. Clark worked on his draft maps and Lewis on reports to be sent back to President Jefferson. Leaving that location on July 27th, they made their first contact a short time later with tribal representatives of the Otoes and Missourias. Just north of present-day Omaha, Nebraska, on August 2nd and 3rd, they held the first in a series of councils they were to have with a succession of Indian tribes during the course of their transcontinental journey.6

Proceeding northward, the Corps of Discovery made camp August 15 a short distance northeast of the Omaha tribe’s Big Village, Tonwontonga, near today’s Dakota City, Nebraska. A creek and several ponds were nearby. Clark suddenly felt the urge to go fishing, probably hoping to add some variety to the men’s somewhat monotonous diet. Lacking a cord seine, or net, he and his men improvised a “brush drag” from willow switches and bark. They “haulted [hauled it] up the Creek, and Cought 318 fish of different kind ... caught a Srimp [crayfish?] prosisely of Shape Size & flavour of those about N. Orleans & the lower party [sic] of the Mississippi.”7

Appropriately Lewis liked Clark’s bountiful catch so much that the next day he took a contingent of the men back to the creek and ponds for another haul. According to Clark’s journal entry, they “Caught about 800 fine fish with a Bush Drag ...” In a second entry describing this venture, Clark added: “& Srimp.” He obviously meant shrimp, but he did not say how many. Unsurprisingly, Clark on his draft map of the area designated this encampment as “Fish Camp.”8

If there were a prize for the most resourceful improviser among the Corps of Discovery’s personnel, a leading contender would have to be Private George Shannon, its youngest member and one of the “Nine Young Men from Kentucky.” At the outset of the expedition he was a greenhorn, still “wet behind the ears.” He was not very adept as a hunter or as a boatman and, as it turned out, not very skilled at orienteering in the wilderness either. Whatever he lacked initially in frontier skills he made up for with his youthful enthusiasm for the adventure, his eagerness to learn and his brawn.

On August 26, 1804, the expedition was on the Missouri River in the vicinity of present-day Cedar County, Nebraska. Overnight two of the expedition’s scout horses wandered away from the encampment. As the corps prepared to push upriver, the captains sent George Drouillard and George Shannon to find the strays and bring them back. During the quest, Shannon and Drouillard became separated. The next day
Drouillard, without the horses, returned to the flotilla; Shannon did not. Over the next several days, the captains dispatched a succession of searchers to find Shannon, but no one could catch up with him. Finally, after a 16-day absence during which Clark fretted daily over his whereabouts, the expedition came upon Shannon sitting dejectedly on the riverbank. Malnourished, weak and despairing of ever overtaking his colleagues, Shannon sat beside the river hoping to flag down a fur trader heading downstream to St. Louis.

After a joyous reunion and some food, Shannon told his remarkable story. When he and Drouillard became separated, he continued to track the errant horses, which led him farther and farther across the prairie and away from the river. When he eventually overtook them, he figured the keelboat and pirogues already had proceeded upstream. Over the ensuing days he tried to “catch up,” not realizing the boats had been delayed and were actually behind him.

Day after day passed. He exhausted his meager supply of lead balls, but not his powder. At one point, desperate for food and not wanting to sacrifice his one remaining horse (the other had played out and was abandoned days earlier), Shannon charged and primed his rifle and inserted a stick in place of the lead ball he didn’t have. Miraculously, he bagged an unwary rabbit with this improvised projectile. That welcome repast was gone all too soon, however. For days on end, he thereafter consumed only wild grapes, which were in season on the riverbank and in the draws and ravines along his route. Born of desperation, Shannon’s makeshift ammunition had worked. It showed a lot of gumption on the part of the greenhorn—or plain dumb luck. With this near disastrous adventure under his belt, Shannon was well on the way to shedding his “wet behind the ears” tag.9

As the river travel season was drawing to a close in late October 1804, the Corps of Discovery arrived at the Mandan and Hidatsa villages near the junction of the Knife River with the Missouri. These largely sedentary people grew crops of corn, squash, beans and tobacco and carried on a brisk trade with other tribes from near and far, as well as with representatives of the Northwest and Hudson’s Bay companies to the north in Canada. They were hospitable and welcomed the expedition in their midst. The captains located a likely site for winter quarters across the Missouri River from the southernmost Mandan village of Minitanka. By November 27th, the corps had finished building its “huts” and moved in; however, the protective log palisade was not completed until December 24th. They named the establishment Fort Mandan after their nearby neighbors.10

The corps soon fell into a wintertime routine of hunting, socializing and fraternizing with their Indian hosts and gathering as much information as they could about the tribes and the challenges they would encounter when they resumed their journey. The immediate challenges, of course, were to keep food on the table and cope with the bitter cold of the Great Plains winter. As time went by and game became scarcer, the hunters had to range farther and farther afield from Fort Mandan, eventually extending 40 to 50 miles from home base. When they did succeed in bagging large numbers of deer and elk, and an occasional buffalo, there was always the problem of getting the mounds of butchered meat back to the fort through the bitter cold and over the rough, snow-packed terrain.11

This challenge triggered the corps’ improvisational proclivities. Not only did they borrow horses from their Indian hosts and agents of the Northwest Company to help with the chore, but the carpenters also constructed several crude wooden sleds, or “slays” as Clark was wont to call them. These transporters, sometimes pulled by borrowed horses and sometimes by the men themselves, greatly eased the physically demanding task.12

Once the palisade-enclosed fort was completed, the keelboat and pirogues were unloaded and partially pulled onshore using a nine-ply braided rope made of animal skins. As the river rose and froze over, the boats were caught in the grip of the thickening ice. In mid-February, anticipating the resumption of the journey with the coming of the spring thaw, the corps began trying to free the vessels from their icy anchorage. The task was easier said than done. The ice was stone-hard. They tried to free the boats by heating water and pouring it alongside the hulls. Due to the thickness of the ice and the bitter cold, that technique proved ineffective. They tried heating stones in a fire and laying them alongside the vessels, but the heat shattered the stones instead. They then tried prying the boats loose with heavy timbers and metal pikes, but without success. Therefore, day after grueling day, work details were assigned the task of chopping the boats loose with hatchets and axes.

Looking ahead to when the boats would be freed from their icy imprisonment, the carpenters built a crude windlass and hooked it up to multiple elk and buffalo hide ropes with which to draw the boats onshore.13 Coordinating their efforts, and under incredibly harsh conditions, the corps finally succeeded in dragging all
On February 28, 1805, Captains Lewis and Clark had moved a detachment of 15 men under the command of Sergeant Patrick Gass upriver to build a number of pirogues. Various tools were required for constructing the pirogues. In addition to felling axes that dropped the trees, specific tools were used to create the final shape. The man in the pirogue is swinging an adze, which chips the wood away from the roughly hollowed out interior. Smaller hand adzes might have been used to finish this area. His partner is shaping the gunwale with a drawknife. Two of the men are shown with broad axes. These were used to make flat surfaces and were of various sizes, shapes and weights. The handles often were offset so the workmen’s knuckles kept clear of the surface of the wood.

The daily pace of activities at Fort Mandan picked up in February 1805. A work detail was assigned to make charcoal for the forge at the corps’ small blacksmith shop. Another detail was busy building crates, boxes and cages to receive the animal, plant and mineral specimens, artifacts and live animals that were soon to be shipped back down the Missouri to St. Louis and from there to President Jefferson in Washington, D.C.

While these activities were moving along, the corps’ blacksmiths were simultaneously engaged in brisk trade with their Indian neighbors, sharpening knives and axes, repairing guns, kettles and implements, and making hide scrapers and arrowheads from the metal of an old “burnt out” stove. In high demand was a popular style of battle axe. In return, they earned copious quantities of corn, beans and dried squash from their eager customers. In this manner the corps was able to augment its food supply while conserving for later use its limited store of staples such as grease and salt pork, as well as the collection of Indian gifts and trade goods.

In mid-February, a large detail of 16 men under the command of Sergeant Patrick Gass was dispatched some five miles upriver to a copse of trees with orders to hew four dugout canoes from the largest cottonwoods. As work progressed, it was determined that two more canoes would have to be constructed in order to accommodate the 33 members of the expedition who would continue the journey to the West Coast. Hence, a total of six newly made vessels eventually would accompany the two pirogues. All of the dugout canoes were finished and brought down to the fort by March 27th.

The keelboat, with a crew of nine under the command of Corporal Richard Warfington, left for St. Louis on April 7, 1805. The “permanent party” headed westward up the Missouri with a flotilla of eight vessels that same day. Lewis was ecstatic to be underway once more.
In early June, the Corps of Discovery arrived at a fork in the river which their Indian informants at Fort Mandan had not told them about. The two channels looked to be about equal. One coming from the north was muddy and cloudy and resembled the Missouri River from a southerly direction, was less turbid. Which was the “real” Missouri? In order to avoid making a wrong choice, each of the captains took a small reconnaissance group and explored the streams for several days.

By June 6th, Lewis had become convinced the northerly stream he was on bore too far to the north to be the “true” Missouri and prepared to head back to the confluence to rejoin the rest of the expedition. While en route, the party had killed five elk and taken their hides in anticipation of their use in assembling the 36-foot collapsible, iron-framed boat Lewis had designed and pre-tested with the help of the ironworkers at Harpers Ferry in the spring of 1803. He and his men quickly built two slim rafts from small trees and bushes in the vicinity of their last encampment, expecting a swift and easy descent. Once loaded with the men, their baggage and the elk skins, however, the rafts proved unequal to the task. They were unstable and did not offer enough flotation to keep the men and their belongings from getting wet. When the rafts’ shortcomings became evident, Lewis and his men abandoned them—and, reluctantly, the elk skins as well. On this occasion Lewis’s well-intentioned improvisations were a flop.

Once they were back together, the co-captains compared notes, polled the corps as to their perceptions on the question of which of the two streams to take, and then overruled the unanimous opinion of the men by choosing the less turbid southerly stream. Theirs proved to be the right choice. Meanwhile, Lewis had named the other stream Maria’s River, after a favorite female back in Virginia. Over time it became known simply as the Marias River.

The expedition’s arrival at the Great Falls of the Missouri in late June 1805 presented a set of challenges that were to tax severely the men’s powers of improvisation. Over the winter at Fort Mandan, the captains had learned of this awe-inspiring landmark from their Indian hosts. Their informants said the falls could be bypassed in a single day. However, that estimate did not take into account the expedition’s dependence on the waterlogged dugouts to transport themselves and their supplies and equipment: all had to be portaged around the series of cataracts.

In a few days, Clark and a small survey party laid out an 18-mile portage route over the prickly pear cactus-studded prairie adjacent to the falls. The Corps of Discovery already had beached and hidden the red pirogue at the mouth of the Marias River, some 70 miles downriver from the falls. There they consolidated their baggage and supplies, placing “surplus” items such as heavy kettles, kegs of salt pork and the blacksmith tools (among other things) in caches dug for the purpose of concealment. At the lower end of the Great Falls they repeated the process, drawing the white pirogue onshore and concealing it under some brush. The swivel gun, which had been detached from the prow of the pirogue, was stashed in a rocky niche nearby, and additional caches were dug to conceal still other supplies and equipment they thought they could do without. They then wrestled the remainder of their possessions, plus the six dugouts, up the bluffs from Portage (Belt) Creek onto the plains above.

At this point, the corps began building some crude carts, or wagons, to help move the heavy burdens to Upper Portage Camp near the White Bear Islands above the falls. They found several trees in the timber-deficient area and sawed off sufficient rounds of wood from the trunks to make wheels. The mast from the white pirogue and some sweet willow saplings were used for the axles and couplings. Once the wagons were assembled, the men loaded each with a dugout and a portion of the baggage and, making multiple trips, laboriously dragged the cumbersome contraptions across the prairie to the upper end of the falls. The progress was slow and the labor exhausting. Axles, couplings and wheels broke from time to time and had to be replaced with whatever could be scrounged from the countryside.

The wagon crews were alternately sweating and gasping in the summer heat and being pelted by driving rain, buffeted by fierce winds, and bruised and bloodied by large hailstones. The sharp spines of the prickly pear cactus, which grew in profusion everywhere along the route, turned the journey into a painful nightmare. In an effort to protect their pitifully abused feet, the men reinforced their moccasins with extra layers of buffalo hide. Still they suffered. At one point, a stiff wind enabled a portage crew to raise the sails on a wagon-mounted dugout and “sail” some distance on dry land. That boon was a rarity, however. Finally, on July 2nd, the portage was completed, but the journey upriver could not be resumed just yet. Still other tests of their improvisational skills awaited the Corps of Discovery.
The time had come to put Lewis's meticulously planned and pre-tested, lightweight boat into service. It was at this point that Lewis realized he had a problem: there was no pine pitch (naval resin) with which to seal the seams where the hides were sewn together and attached to the frame. Back East he had assumed the substance could be readily obtained from trees encountered anywhere along the route. Big mistake! There were no pitch-bearing trees at the Great Falls. Lewis, however, would not give up easily.

A specially chosen detail of men accompanied Lewis to the Upper Portage Camp where they began assembling the iron frame on June 23rd. Hunters continued to bring in elk and buffalo hides. Still other expedition members collected scarce wood with which to make braces and struts to reinforce the frame. On July 1st, the final stages of assembly began in earnest with the sewing of the animal hides to the augmented frame. In the meantime, another special detail feverishly was trying to obtain a usable supply of resin by boiling pieces of driftwood fished from the river. When, as Lewis suspected might happen, that endeavor proved futile, the work crew began making charcoal as they had done for the blacksmith shop at Fort Mandan. Once a plentiful supply had been accumulated, the charcoal was pounded into a fine black powder. That was then mixed with about 100 pounds of buffalo tallow and some melted beeswax. Satisfied the concoction had reached the right consistency, Lewis had the men apply it to the seams of the leather-covered hull. In fact, Lewis had the black compound smeared all over the exterior of the craft. Then, for good measure, he had the men apply a second all-encompassing coat. By July 9th, the boat was dry and, according to Lewis, looked as if it were made from a single piece. Now came the crucial test.

"The Experiment," as the boat was called by the men, was placed in the water. In his journal entry for that day, Lewis exulted: "she lay like a perfect cork on the water." Sergeant Gass was a little more candid: "She rides very light but leaks some." Suddenly a dark cloud had appeared on the horizon—both figuratively and literally. That afternoon one of the area's legendary wind and thunderstorms struck. The wind and wave action loosened the caulkling compound, which peeled off in big chunks. The leather seams opened and the boat leaked like a sieve, eventually filling with water.

It was clear Lewis's "favorite boat" could not serve its intended purpose. A "mortified" Lewis had to concede failure and defeat. On his orders, the boat was taken apart the next day and the iron frame was placed in a cache at the Upper Portage Camp along with the wheels of the carts "and a few other trivial articles of but little importance." Afterward, Lewis consoled himself by going fishing. He said he caught "a few small fish."

In the meantime, Clark took a work detail upriver about eight miles to a stand of trees. They found several wind-shaken cottonwoods from which they made two dugout canoes to replace the white pirogue and the ill-fated "iron boat." The corps' success in "making do" with these alternate vessels took some of the sting out of the recent series of reversals. By July 15th, the expedition was once more on the way to its rendezvous with the Continental Divide, the Shoshone tribe, and those "horrible" mountains—the Bitterroots.

Barely a month later, the expedition had passed the important landmarks of Beaverhead Rock and the Three Forks. They were nearing the headwaters of the Missouri River, they thought, at the Continental Divide. Toussaint Charbonneau's Shoshone wife, Sacagawea, assured the co-captains that her people would soon be found nearby. Lewis went ahead of the main body of the corps with a three-man advance party.

Eventually, Lewis and his men arrived at a spot where it was obvious the expedition no longer could navigate with the dugout canoes due to the shallow water. As they were preparing to cross the Continental Divide, Lewis wrote a note to Clark instructing him to lay-by at that location until the advance party returned. He used a convenient and conspicuously placed sapling on which to post the note so that Clark would be sure to see it. Having improvised a wilderness "mailbox," Lewis took his men across the Continental Divide at Lemhi Pass and on August 13th made contact with Chief Cameahwait's Shoshone tribe.

Lewis was desperate to obtain Shoshone horses and to secure the tribe's help in getting the expedition and its baggage onto the western slope of the Continental Divide. Urgently negotiating with Chief Cameahwait and his people, Lewis finally succeeded in securing their acquiescence to his entreaties, but the agreement appeared to him to be peculiarly fragile. Many of the tribe feared they were being set up for betrayal despite Lewis's assurances that he, Clark and their entourage had only the friendliest of intentions. Eventually, a good portion of the village agreed to accompany their chief back across Lemhi Pass to meet Clark and the rest of
the expedition at Lewis's designated rendezvous point. When they arrived on August 16th, Clark and his men were nowhere in sight—nor were the Shoshone woman and her baby that Lewis had told the tribe about.

Lewis was in a panic. Really desperate now, he decided to engage in a bit of play-acting. He went to his "mailbox" and recovered his note to Clark. Then he pretended to read a note from Clark saying the corps had been delayed and would come on the next day. That seemed to mollify the more querulous members of the tribe, as well as the chief. Feverishly improvising, Lewis managed to buy a little more time before the tribe could decide to turn back and flee to the safety of the mountains.

After a fretful, largely sleepless, night Lewis arose early the next morning. He dispatched Drouillard and an Indian companion to meet the expedition and urge Clark to hasten to the place where Lewis and the tribe were assembled. A few hours later, Clark, Charbonneau and Sacagawea walked into a joyful reception, and then a strange turn of events transpired: Chief Cameahwait and Sacagawea were brother and sister!

Following that emotional reunion, the greatly relieved captains got down to the serious business of bargaining for the horses they needed and acquiring intelligence about the route ahead to the Columbia River. With the indispensable interpreting assistance of Sacagawea, Charbonneau and François Labiche, the captains eventually obtained a herd of 29 horses of varying quality. As some members of the corps sank to streams that would lead to the Columbia River. Thusly outfitted, and with the help of an elderly Shoshone guide whom they called Old Toby, the expedition was now ready to tackle the forbidding, snow-covered heights of the Bitterroot Mountains.

The Corps of Discovery's passage through the Bitterroots was prolonged and perilous. Some of the horses slipped and fell down the steep mountainsides. Although bruised and scraped up, none were killed. The bone-chilling cold and a wet snowfall were demoralizing and debilitating, but still they pressed on. Perhaps the worst moments came when their food supply had been
reduced to some canisters of portable soup, a little bear grease and a few candles made of tallow. Little or no game was to be found in that snowbound wilderness. Wasting away from lack of nourishment, they finally killed a colt and ate it; and then another and another, as well as a stray horse Clark and his advance party found along the trail before reaching Weippe Prairie and the Nez Perce nation. Even those desperate acts had been anticipated by the co-captains back among the Shoshones as the horse trading came to a close. Clark, for example, in outlining one scenario for getting the expedition to the West Coast, made the following observation regarding their meager food supply: "...depending on what provisions we can procure by the gun added [added] to the Small Stock we have on hand depending on our horses as the last resort." Ultimately those words proved prophetic as the men reluctantly sacrificed a few of their most expendable livestock in order to keep body and soul together.

The Corps of Discovery straggled out of the mountains in late September 1805. They were weak, emaciated and ill almost to a man. The Nez Perce tribe nourished and nursed them back to health, relatively speaking. At their Canoe Camp on the Kooskooskee (Clearwater) River, members of the expedition fashioned five dugout canoes from ponderosa pine logs. By now they were experienced canoe-builders (having made eight from scratch up to this point in the journey), but they learned a new technique from their Nez Perce hosts: the burning method of hollowing out the center of the logs. Corps members branded their herd of horses and left them in the care of the Nez Perce until their return, picked up several more guides, and once more were waterborne as they resumed their quest for the Columbia River and the West Coast.

For the first time since leaving the Ohio River, Lewis and Clark and their men were traveling with the current, not against it.

Our attention now shifts to the West Coast. The weather was stormy and rainy when the expedition arrived there in early November 1805. Within a few weeks they had decided to winter on the south shore of the Columbia estuary near the ocean where game was more plentiful, the climate somewhat more equable and the chances of hailing a trading vessel much improved.

The corps needed shelter from the elements, and quickly. By December 25th, they had built and moved into winter quarters, which they named Fort Clatsop after a local Indian tribe. The protective palisade, with a lockable gate, was finished on December 30th. This was the third such installation they had built from scratch in as many years. By this time, the members of the expedition were experienced builders and, as such, could hardly be said to be improvising while engaged in this task.

The expedition now had been a year and a half in the field, and its supplies were severely depleted. Clothing, by then mostly buckskin, was wearing out—literally rotting off people's backs. The tents were long since in tatters and of little comfort. They had hoped to encounter a trading vessel once on the West Coast, which would have enabled them to replace their worn out clothing and replenish their diminished supplies, Indian trade goods and gifts. That opportunity never presented itself. Consequently, they would have to improvise some more to survive and make it back home.

To remedy the lack of salt, which was grievously missed by most members of the corps (excepting Clark), the captains dispatched a three-man detail to the coast to mount a salt-making operation. The men set up kettles in late December and boiled seawater in a continuous process until February 21, 1806. When they ceased operations, they had harvested about 20 gallons of salt, most of which was put up in kegs for the return trip.

That winter the hunters took scores of elk from the surrounding countryside. The skins were processed and made into much-needed articles of clothing. In a marathon effort, they had accumulated a good supply of "shirts, overalls and capoes of dressed elk skins," plus an inventory of 358 pairs of moccasins by the time the Corps of Discovery left Fort Clatsop for home on March 23, 1806.

When the Lewis and Clark Expedition returned to Nez Perce country to recover its herd of horses and trade for more, the snow still lay impassably deep on the peaks and trails of the Bitterroot Mountains. The expedition had to delay its departure for a month while waiting for the snow to melt. They called this encampment Camp Chopunnish, later to be known as the "Long Camp." The forced hiatus in the journey resulted in still further improvisation as expedition members socialized and traded with their Nez Perce neighbors.

The corps needed to build up stores of food for the difficult passage that awaited them; memories of the privation and suffering of the previous year were still vivid. However, game was scarce and the salmon were not yet running in the streams. Hunting details went out daily, but the take was often meager or nothing at all. As best they could, they traded with their Nez Perce hosts to make up the deficits in their supplies. Trade goods were negligible and the Nez Perce, while generous
The Corps of Discovery’s salt makers were able to cook three quarts to one gallon of salt per day. Meriwether Lewis wrote that they found the salt “excellent, fine, strong, & white.” Lewis also noted that making the salt was a “very tedious” operation that required keeping the kettles boiling day and night.

With their gifts, were sharp bargainers when it came to business transactions. Expedition members began trading personal items such as articles of clothing, knives, a rifle or two, handguns, the brass buttons off their uniform coats, even a saber.

Probably the most novel act of improvisation occurred when Clark “played doctor,” exchanging his medical services for food items. His reputation as a doctor had spread far and wide from his few medical successes when he had ministered to some ailing Nez Perce patients the previous year. No sooner had the corps set up its encampment than the sick and the lame began to beat a path to Clark’s door. He did a brisk business dispensing eyewash for inflamed eyes; salves and poultices for sores, rashes and sprains; and draining boils. He even fashioned a “cure” (sweat lodge therapy) for a partially paralyzed elderly chief! Clark confessed to some feelings of guilt over his posing as a physician, but consoled himself with the thought that the medications he dispensed would do his patients little or no harm and could do a lot of good. In any case, his improvised clinics brought in a much-needed supply of foodstuffs and produced generous expressions of goodwill toward the “red-haired medicine man” and his entourage.

With the help of Nez Perce guides, the expedition made its way in record time through the Bitterroots and returned in early July to the Travelers’ Rest site where they had camped the previous year. Lewis and Clark on July 3, 1806, divided the corps into two groups for the purpose of exploring additional territory on the way home. This change in plans, made in secrecy by the co-captains, was in itself an audacious exercise in improvisation. Clark first took his 23-member contingent across country to the Camp Fortunate site on the Beaverhead River. There they opened the caches, reclaiming the hidden supplies, and recovered the canoes that had been sunk for safekeeping in nearby ponds. A short time later, Clark divided his group once more. The 10-man contingent assigned to the canoes, headed by Sergeant John Ordway, was designated to meet up with a portion of Lewis’s reconnaissance group that he left at the Great Falls when he took a smaller group onto the Marias for a survey of that river’s course. Clark took the remaining 13-member contingent from the Three Forks area through what was to become Bozeman Pass and onto the Yellowstone River.

Captain Clark still had 50 of the corps’ horses (49 and a colt) when he reached the Yellowstone and finally located timber big enough to make two new dugout canoes. The plan was to send Sergeant Nathaniel Pryor and three companions overland with the horses to the Hidatsa-Mandan villages where they would be traded for additional foodstuffs and also be used in further diplomacy to convince Indian delegations from there to
On July 20, 1806, Clark ordered his party to make two canoes, 28 feet long, 16-18 inches deep and 16-24 inches wide. He determined they would lash them together to make them sturdy enough to transport the party and its baggage downriver. The canoes were complete and the party was on the Yellowstone River by July 24. The following day, the party encountered a "large gange of Buffalow." They were delayed for an hour and a half while hunters killed two buffalo and two deer and the party had breakfast.

accompany Lewis and Clark back to Washington, D.C., to meet President Jefferson.46

In near record time, for they were now experienced dugout canoe builders, the expedition members transformed two skimpy cottonwood logs into 28-foot canoes that would permit the remaining nine members of the corps to become waterborne once more. The cargo holds of the vessels, however, were narrow and cramped and the individual canoes were unstable. To compensate for these deficiencies the men lashed them together catamaran-style, thereby producing a more stable craft. Improvisation came to the rescue once more.47

Before Sergeant Pryor could leave with his men and the horses, half of the herd was silently spirited away in the still of the night by a stealthy Indian raiding party, probably from the Crow tribe in the area. Pryor left with the remainder of the herd on July 24th.48 Their second night on the trail, the rest of the herd disappeared, probably taken by the same group of Crow raiders. Pryor and his men tried to give chase on foot, but they never caught up with their tormentors. Giving up the chase, they struck out cross-country for the Yellowstone River once more. Arriving in the vicinity of Pompey's Pillar, and far behind the now waterborne Clark contingent, Pryor and his companions killed several buffaloes and proceeded to make themselves two Mandan-style bullboats. They apparently had learned well the rudiments of constructing this type of vessel while at Fort Mandan. Afloat in these strange but accommodating crafts, they paddled with the Yellowstone's current and finally caught up with Clark and his unit on August 8th.49

Elsewhere, on their return eastward from Travelers' Rest, Lewis and his 10-man contingent, like Clark on the Yellowstone, engaged in some improvisation of their own. When they arrived at the river known today as Clark's Fork on July 3, 1806, the party paused and built three rafts to ferry across their equipment and belongings. One raft crossing almost ended in disaster, but once safely ashore, the group reassembled and proceeded on through what is known today as Lewis and Clark Pass, arriving at the junction of the Medicine (Sun) River with the Missouri on July 11th. They were now across the river from their White Bear Islands encampment of the year before—the Upper Portage Camp.

Several buffaloes were killed and their skins were used to build two bullboats: one round in the traditional Mandan style, the other oblong in the style of the iron-framed boat—"the boat that didn't float." Once more, they swam the horses across without incident, while the bullboats fetched the party and their belongings safely across the Missouri.50

Again in familiar territory, Lewis chose three companions (Drouillard, Reuben and Joseph Field) to accompany him on the planned reconnaissance of the
Marias. Before he left, he had the men open the caches where the expedition had stored “surplus” items the previous year. While some of the specimens, papers and medicines had been ruined by invading water, the cart wheels were found to be in good condition and still usable. The iron-boat frame, exhumed at the same time, “had not suffered materially.”

On July 16th, Lewis took his men and left with six horses on the Marias excursion. Six men and four horses remained at the falls under the command of Sergeant Patrick Gass. This detail was to join forces with the 10-man canoe contingent coming down to the falls from the Camp Fortunate site under the command of Sergeant Ordway. The augmented group of 16 men was then to make the portage around the falls and later join Lewis and his men at the junction of the Marias with the Missouri.

The “canoe party” arrived at the falls on July 19th. They set to work rebuilding the carts with which to transport the canoes, baggage and equipment. This time, though, they had the added advantage of horse power. In order to make the plan work, however, they had to improvise harnesses and ropes from tree branches and buffalo hides. This labor-saving combination worked well. Without the benefit of horses the year before, the strenuous portage going west had consumed eleven agonizing days. The return portage took only six days and exacted a less debilitating toll on the men. Once again, their well-tested ability to improvise worked in their favor.

On the Marias reconnaissance, Lewis’s group had an unfortunate encounter with an eight-member Piegan Blackfeet raiding party. Warily, the two groups camped together overnight on the Two Medicine River. At dawn the Indians attempted to take the men’s rifles and horses, according to Lewis. The ensuing scuffle left one brave dead from stab wounds inflicted by Reuben Field and Lewis shot another in the belly. Lewis and his men hastily gathered their horses and weapons and fled the scene. Riding all day and night, the following morning Lewis and his men made a rather fortuitous rendezvous with the 16-man canoe/portage party then coming down the Missouri from the Great Falls area. Back together, they made good progress in the next weeks and rejoined Clark’s Yellowstone reconnaissance unit on August 12th just east of the junction of the two rivers. Lewis by that time was recovering from a bullet wound in the buttocks suffered as a result of a hunting accident the day before when the nearsighted Pierre Cruzatte apparently mistook him for an elk while they were hunting in a densely wooded area.

As the reunited Corps of Discovery rushed on to revisit their Hidatsa and Mandan hosts of the previous year, the members of the expedition apparently had little cause or inclination to improvise. From this point on, the journals are devoid of any examples of improvisation in the day-to-day activities of the adventurers. By this time, they were eager to get home. Several of those who had been keeping journals already had stopped making entries, notably Joseph Whitehouse and Meriwether Lewis, who was recovering from his wound. The remaining journal-keepers tended to record only perfunctory observations. William Clark was the exception. He continued to make quite detailed entries in his journal right up to the Corps of Discovery’s arrival in St. Louis at noon on September 23, 1806. On Friday, September 26th, Clark made his last and most succinct journal entry: “a fine morning we commenced writting &c.”

Over the course of the Lewis and Clark Expedition, the co-captains and their men resorted to “make-do” improvisations on many occasions. In some instances these endeavors were rather mundane in nature: as when they fabricated tow ropes from braided elk, deer and buffalo hides to replace the hemp lines they started out with, or wove a seine from willow brush with which to harvest an abundance of fish at the “Fish Camp” in what was to become northeast Nebraska. In other instances, however, their efforts at improvisation were fraught with more serious consequences for their comfort and well-being, if not their very survival: as when they fashioned primitive wagons from scarce timber with which to transport their water-logged dugout canoes, supplies and equipment on the difficult 18-mile portage around the Great Falls of the Missouri, or traded Clark’s “medical services” at Camp Chopunnish for urgently needed food supplies.

On balance, the Corps of Discovery’s record of accomplishment in the face of great odds is an impressive one. Even when events did not go as anticipated, they improvised, persevered and proceeded on.

Having immersed himself for years in the voluminous written records of the expedition, Professor Donald Jackson, the eminent Lewis and Clark scholar, was moved to declare: Lewis and Clark were “the writingest explorers of their time.” In that same vein, they were the “improvisingest” as well.

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NOTES

1 An earlier version of this essay, sponsored by the LCCTHF Mouth of the Platte Chapter, was presented at the 50th annual meeting of the Missouri Valley History Conference on March 3, 2007, in Omaha, Nebraska.


3 Gary Moulton, ed., The Journals of the Lewis & Clark Expedition, 13 volumes (Lincoln: University of Nebraska Press, 1983-2001). All quotations or references to journal entries in the ensuing text are from Moulton, by date, unless otherwise indicated.


6 Ibid., pp. 400-442.

7 Ibid., p. 483. Clark’s entry for August 15, 1804.

8 Ibid., pp. 485-486. Clark’s entry for August 16, 1804.


11 Ibid.

12 Ibid., pp. 285-297. There was no problem of spoilage since the temperature in dead of winter often hovered around zero. Frostbite was an ever-present threat to members of the hunting parties, and some did suffer from it. A different kind of threat came from marauding wolves and an occasional Sioux raiding party.

13 No journal-keeper bothered to describe the construction of the windlass, but it probably consisted of a cross-section of a log cut from a medium-sized tree mounted on a securely anchored frame. Some sturdy staves or spokes would have afforded the necessary leverage to “reel in” the ropes with the vessels attached as the “spool” was ratcheted around.


15 Ibid., Vol. 3, pp. 281-313. The blacksmiths were John Shields, Alexander Willard and William Bratton.

16 Ibid., pp. 304-321; Vol. 9 (Ordway), pp. 118-124; Vol. 10 (Gass), pp. 74-75.

17 Moulton, Ibid., Vol. 4, pp. 7-11. The keelboat was accompanied by a canoe manned by two Indians.

18 Ibid., pp. 241-277. There were at least seven other occasions when members of the Corps of Discovery built rafts to fill a temporary need for water transportation. Those endeavors were notably more successful than on the Marias River.

19 Ibid., pp. 269-272.

20 Ibid., pp. 283-324.

21 Ibid., pp. 325-329.

22 Ibid., p. 332.

23 Ibid., p. 323. The “boat crew” included Sergeant Patrick Gass, and Privates John Shields and Joseph Field. They were later joined by Private Joseph Whitehouse who was recuperating from a debilitating illness.

24 Ibid., pp. 349-369.


26 Ibid., Vol. 4, p. 368.

27 Ibid., Vol. 10, p. 110. [Italics added.]

28 Ibid., Vol. 4, p. 369 and 371. Lewis’s entries for July 9 and 10, 1805.

29 Ibid., pp. 373-382.

30 Moulton, Ibid., Vol. 5, pp. 68-108. His three companions were George Drouillard, John Shields and Hugh McNeal.

31 Ibid., p. 64 and pp. 71-84.

32 Ibid., pp. 87-106.

33 Ibid., pp. 105-106.

34 Ibid., pp. 109-113.


36 Ibid., p. 163. [Italics added.]

37 Ibid., pp. 179-230.

38 Ibid., pp. 219-250.

39 Moulton, Ibid., Vol. 6, pp. 33-137.

40 Ibid., pp. 140-333. The initial members of the salt-making detail included Privates Joseph Field, George Gibson and William Bratton.

41 Ibid., pp. 186-407.


43 Ibid., p. 7 and pp. 209-350; Vol. 8, pp. 7-34.


46 Ibid., pp. 208-212.

47 Ibid.

48 Ibid., p. 209.

49 Ibid., pp. 283-285.

50 Ibid., pp. 104-107.

51 Ibid., pp. 107-112.

52 Ibid., pp. 111-112; Vol. 9, pp. 337-338.


54 Ibid., p. 372.

Identifying Lewis and Clark’s exact trail in the Lolo Trail National Historic Landmark is next to impossible

BY ERIKA KARUZAS

Lewis and Clark historians and enthusiasts long have been interested in identifying the route of the Corps of Discovery, particularly along the non-water portions of their journey. The expedition’s legendary crossing of the Bitterroot and Clearwater mountains has attracted hikers, historians and expedition buffs to the Lolo Trail National Historic Landmark looking to retrace their steps. The corridor, which is a dynamic system in a constant state of change, existed long before the Corps of Discovery crossed it. It includes the Lolo Trail, the Nez Perce National Historic Trail, and the Lewis and Clark National Historic Trail, which in many locations are one and the same. Human activity and environmental impacts have altered the corridor considerably over the past 200 years, presenting significant challenges to those who wish to retrace the Corp of Discovery’s exact route.

The Lewis and Clark Expedition spent 11 days on the Lolo Trail during their westward journey in 1805 and six days on their return trip the following year. The impacts of three dozen people and a few horses on the trail would have been minimal and only vaguely recognizable on the well-established route. The segment of the Lolo Trail in Montana was so well used, Private Joseph Whitehouse of the expedition described it as a road. However, once they reached the muck of Idaho’s Clearwater Mountains, the well-worn path narrowed into a trail hidden beneath patches of snow.

Lewis and Clark had been directed by President Thomas Jefferson to record directions and distances along their journey so that others could follow their route. By the time they reached the Lolo Trail, the expedition had been traveling nearly 16 months and journal entries describing their route oftentimes were vague.

They expected that the people following their trail would be trappers and traders, not the ladies of Philadelphia, and they would need only basic descriptions of the general area to pursue the expedition’s route. Ambiguity appears in their journals with notations such as:
as, “We went round this falling timber, and round a hill, and got into the road again.”

Even if Lewis and Clark had written finely detailed descriptions of their journey across the Lolo Trail, modern-day explorers would find their route difficult to trace. Trails change over time due to a variety of factors including fallen trees, herd animal activity, human development and wildfires.

Segments of the Lolo Trail have ridges wide enough to hold multiple paths. Mountain and forest trails generally begin as game trails that later are followed by people. Wild animals have a tendency to go around small obstacles, creating new trails that eventually reconnect with the main trail. This creates a “braided trail” system, which is present throughout the corridor.

Forest fires play a significant role in the creation, destruction and redirection of trails. Fires often leave hazardous conditions in their wake, which necessitate the rerouting of trails around dangerous sections of forest, thus causing some segments to be abandoned for new ones that eventually connect back into the main trail system.

A study on the eastern portion of the Lolo Trail in the Clearwater National Forest reported that four catastrophic fires and a smaller one occurred in the corridor between the 1500s and Lewis and Clark’s arrival in the area. These fires left severe marks on the forest, creating a mosaic timber stand where immature and mature trees pieced together like a jigsaw puzzle. Over the past 200 years, there have been nine major forest fires in the area that significantly altered the landscape. Additionally, 100 years of fire suppression by the U.S. Forest Service has created a forest dense with trees awaiting a catastrophic fire event to restore its health and balance.

The Great Burn in 1910 annihilated the vegetation along the Lolo Trail, giving it the appearance of a moonscape. Old vegetation was replaced by an increase in browse vegetation, which attracted grazing elk. Larger elk herds created more game trails, which enticed big game hunters to the area.

The Lolo Trail generally traverses southerly facing ridges because the vegetation is less dense. The vegetation is drier and consists of lodgepole, ponderosa pine, subalpine and Douglas fir. The forest floor usually includes huckleberry bushes, bear grass and menziesia. These areas are easier to pass through than the northerly facing slopes, which are dense mixtures of coniferous forests, and lower elevations where red cedar dominates and the forest thickens with willow, alder and other dense, six-foot-tall shrubs. Trails along the river bottoms, such as in Hungrey Creek, are thick with vegetation. Lewis and Clark inadvertently passed through Hungrey Creek in 1805 when their Nez Perce guide led them off course and down the wrong ridge. The slopes were steep, the alder thick and game scarce.

**DEVELOPMENT ALONG THE TRAIL**

Human activities have modified segments of the trail as much or more than natural influences for many generations. The Nez Perce used and maintained their trails, traveling from present-day Idaho to Montana to procure bison and trade with the Plains Indians. Shoshone and Salish generally just crossed over the
pass to the Lochsa River headwaters to catch spawning steelhead, but a few would traverse the entire trail.12

Since Lewis and Clark passed through, many activities have modified the Lolo Trail. Attempts to build a wagon road in 1866 followed portions of the original Nez Perce Trail from Musselshell Meadows (in Idaho) nearly all the way to Weippe Prairie. To avoid steep grades, builders contoured their road instead of climbing up and down the ridge.13 More than 700 Nez Perce and 2,000 horses used this road in 1877 as they fled from General Oliver O. Howard during the Nez Perce War. They felled trees, criss-crossing them over the trail in an attempt to hamper Howard's pursuit.14

In 1897, the Bitterroot Forest Reserve was established as the first federal agency to manage the Lolo Trail Corridor. They used the trail to assist with fire patrol and suppression.

Congress created the Forest Service in 1905 and within two years, one of its top priorities was to build and maintain trails for communication and forest fire patrol and protection. As often as possible, they maintained existing trails built by local tribes, fur trappers and traders.15

Construction of the Lolo Motorway between the 1920s and 1930s was the leading cause of the original Lolo Trail's demise. The motorway was built over the top of established roads and trails, avoiding grades too steep for the early automobile.16 The motorway facilitated animal husbandry efforts from the 1920s to the 1940s, allowing for the establishment of sheep and cattle camps throughout the forest.

Herding activities impacted established trails and created new ones throughout the corridor.17 The area's first regional forester, Elers Koch, said the Lolo Trail was "... beyond recognition after the development of the Lolo Motorway."18

Over the past 70 years, the Lolo Trail has attracted hunters, campers, horseback riders, hikers, bicyclists and all-terrain vehicle users, leading to the creation of countless trails throughout the Lolo Trail National Historic Landmark.

Additionally, the Forest Service allowed timber sales in the Lolo Trail's viewed until the 1980s. Private
Making sense of the Lolo Trail National Historic Landmark and its national historic trails

The Lolo Trail is an ancient Indian route that follows the ridgetops parallel and to the north of Highway 12 in Idaho. The trail provided access to buffalo on the eastern plains for Indians on the Columbia Plateau, and led people living east of the mountains to salmon-rich waters in the West. It became a National Historic Landmark in 1962 and was listed on the National Register of Historic Places in 1976. There are three Nez Perce National Historical Park sites on the Lolo Trail: Musselshell Meadows (site #22), the Lolo Trail (site #23) and Lolo Pass (site #24). The Lolo Trail is a segment of the Nez Perce National Historic Trail and the Lewis and Clark National Historic Trail.

Congress established the National Trails System in 1968 and the Lewis and Clark National Historic Trail was among the first trails designated that year. It officially covers about 3,700 miles from Wood River, Illinois, to the mouth of the Columbia River in Oregon, following the route taken by the Lewis and Clark Expedition from 1804-1806 on their quest for a Northwest Passage.

Congress designated the Nez Perce National Historic Trail in 1986. The approximately 1,170-mile route extends from the vicinity of Wallowa Lake, Oregon, to Bear Paw Mountain, Montana. During the Nez Perce War of 1877, Chief Joseph and nearly 750 Nez Perce fled General Oliver O. Howard's army along this trail to reach the Bitterroot Valley.

The National Trail System Act states:

"National historic trails follow as closely as possible and practicable the original trails or routes of travel of national historic significance. ... National historic trails shall have as their purpose the identification and protection of the historic route and its historic remnants and artifacts for public use and enjoyment. Only those selected land and water based components of a historic trail which are on federally owned lands and which meet the national historic trail criteria established in this Act are included as Federal protection components of a national historic trail.

"... To qualify for designation as a national historic trail, a trail must meet all three of the following criteria:
(A) It must be a trail or route established by historic use and must be historically significant as a result of that use. The route need not currently exist as a discernible trail to qualify, but its location must be sufficiently known to permit evaluation of public recreation and historical interest potential. A designated trail should generally accurately follow the historic route, but may deviate somewhat on occasion of necessity to avoid difficult routing through subsequent development, or to provide some route variations offering a more pleasurable recreational experience. Such deviations shall be so noted on site. Trail segments no longer possible to travel by trail due to subsequent development as motorized transportation routes may be designated and marked onsite as segments which link to the historic trail.
(B) It must be of national significance with respect to any of several broad facets of American history, such as trade and commerce, exploration, migration and settlement, or military campaigns. To qualify as nationally significant, historic use of the trail must have had a far reaching effect on broad patterns of American culture. Trails significant in the history of Native Americans may be included.
(C) It must have significant potential for public recreational use or historical interest based on historic interpretation and appreciation. The potential for such use is generally greater along roadless segments developed as historic trails and at historic sites associated with the trail. The presence of recreation potential not related to historic appreciation is not sufficient justification for designation under this category."

There are 17 national historic trails in the National Trails System.

-Wendy Raney
companies harvested timber on portions of the trail they owned and were accused of re-routing the trail around their harvested areas. Timber projects have declined, however, due to outside pressures and increased recreation on the Lewis and Clark National Historic Trail.

**FINDING THE TRAIL**

Given the multiple changes that have impacted the Lolo Trail corridor, it may not be possible for visitors to retrace the corps' exact footsteps. C. Milo McLeod, archaeologist and manager of the Lolo National Forest's heritage program, noted in his master's thesis, "The Lolo Trail was never built and probably seldom maintained ... rather the trail represented a travel route that developed through continued use and basically it followed the 'path of least resistance' with respect to vegetation and topography. ... The trail will change over time due to natural phenomena."

Do we really need to know the expedition's exact route when we can identify the ridges they traversed? I assert that it is the general area, the set of contiguous ridges, that is important for interpreting the past. The expedition should be viewed as one of several episodes on a well-used trail system. Working with the MacFarland Family Nez Perce Trail Crew in 2005 and 2006, I learned that to many treaty and non-treaty Nez Perce, it is not the exact trail that is important, but the ridges that connect one side to the other.

Erika Karuzas assisted with an archaeological survey of the Lewis and Clark National Historic Trail for the Clearwater National Forest during the Lewis and Clark Bicentennial. She is a resource trainee with the Ninemile Ranger District in the Lolo National Forest.

**NOTES**

7. Ibid., p. 23. Barrett's description of Wendover Ridge includes the change in vegetation and the clustering of burned debris from previous fires.
10. The Clearwater National Forest deliberately has not disturbed the Hungrey Creek trail segments in order to provide Lewis and Clark enthusiasts with as authentic a hiking experience as possible.
13. Space, full text.
15. Ibid.
16. Historical Research Associates, p. 44.
"Big-Horned Anamals with Circular Horns"

The Corps of Discovery provided American scientists with the first detailed descriptions of bighorn sheep, but questions have arisen regarding which subspecies they saw

By Kenneth C. Walcheck

Meriwether Lewis was the first to provide detailed information on bighorn sheep, *Ovis Canadensis,* to the fledgling American scientific community. Bighorn sheep had been observed, collected and even preserved long before the Corps of Discovery saw them, but American scientists apparently were unaware of it.

Sufficient evidence of the existence of bighorn sheep was etched and captured in Native American rock art long before the Spanish set sail for the Americas. Numerous petroglyph sites throughout the West identify historical bighorn distribution patterns.

Francisco Vasquez de Coronado and his conquistadors reported sightings of bighorn sheep as early as 1540 in portions of today's Arizona and New Mexico. Bighorn sheep were mentioned in the records kept by Franciscan missionaries from 1687 to 1710, when native sheep were an important part of the diet of the Pima and Papago Indians in southern Arizona.1

Intrepid geographer and explorer David Thompson and his companion, Duncan McGillivray, first collected and preserved a bighorn specimen in 1780 near the remote upper reaches of Canada's Bow River just east of what is now Banff National Park.2 The specimen was sent to the Royal Society of London in 1803 for further study and evaluation.

Lacking detailed knowledge of these previous sightings, the corps made their observations with fresh perspectives. Their journals contain 39 entries with references to bighorn sheep, covering distribution, relative abundance, physical description, habitat and number of kills.3

Expedition members first learned about bighorn sheep at their meeting with the Teton Sioux. On September 26, 1804, Clark wrote, "... Saw a Spoon made of a horn of an animile of the Sheep kind the spoon will hold 2 quarts."4 A few days later, on October 1st, expedition members encountered three French trappers who had spent the previous winter a considerable distance up the Cheyenne and Belle Fourche rivers at the "Black Mountain" (Black Hills of South Dakota) and observed "... a kind of Animale with large Circular horns ... nearly the Size of an Argalia Small Elk."5
They gathered additional information that winter during their stay at the Mandan villages. On December 22, 1804, Clark noted, "we procured two horns of the animal the French Call the rock mountain Sheep [bighorn] those horns are not of the largest kind— The mandans Indians Call this Sheep Ar-Sar-ta it is about the Size of a large Deer, or Small Elk, its Horns Come out and wind around the head like the horn of a Ram and the texture not unlike it— much larger and thicker, particularly that part with which they but or outer part which is [blank] inches thick, the length of these horns which we have is [blank]." An examination of the list of articles sent to President Thomas Jefferson from Fort Mandan on April 7, 1805, mentions four mountain ram horns that were packed in trunk number five. The journals do not mention where the two additional horns were obtained.

In the context of the day, Lewis was an unusually objective, systematic and capable naturalist and possessed an all-inclusive interest in understanding the natural world.

It does not appear, however, that he entertained thoughts on how the forces of geology, climate and evolution affected distribution of animals such as bighorn sheep. Did he ever question why the “Argalia,” as he sometimes called the bighorn, lived only in the rugged badlands and mountainous terrain of the western portion of the Louisiana Purchase?

Lewis, no doubt, would have listened attentively if he could have heard the theories advanced by future scientists on the evolution of mountain sheep and speculations about their origin in the mountains of central Asia, western Mongolia and Tibet some two and a half million years ago. The history of mountain sheep as wild sheep begins somewhere in the early Pleistocene, but because of the fragmentary fossil record, little is known of their exact origin.

Primitive sheep similar to the Marco Polo sheep of central Asia migrated into North America via the Bering Sea land bridge, which formerly connected the regions now known as Russia and Alaska. When the glaciers of the ice age inched south from polar centers, sheep
became isolated in two ice-free areas, or refugia, one in central Alaska and the other south of the Columbia and Snake rivers.

Sheep in the Alaska refugium evolved into the thin-horned Dall sheep, *Ovis dalli*. Those farther south in the continent's interior developed into the heavy-horned Rocky Mountain and desert bighorns, *Ovis Canadensis*, which occupy a broad area of the West from Canada to Mexico. On the basis of radiocarbon dating of fossilized remains, naturalists have estimated that bighorn sheep arrived in the interior of the continent from 12,000 to 21,000 years ago.8

An important factor in the success of mountain sheep was their remarkable adaptability as a pioneering species. These glacial followers were physically well designed, socially well developed, and possessed an effective digestive system allowing them to exploit and thrive on a hard, abrasive dry forage of poor quality where many other herbivores could not. Additional survival traits included alertness, remarkable eyesight, specialized molar teeth, a large rumen allowing for an extended period of bacterial digestion and large, heavy horns in rams that assist in determining dominance rank. When danger is detected, sharp, hard-edged hoofs surrounding a softer, concave area provide for secure footing on steep rocky terrain.

Private Joseph Field was the first member of the expedition to observe a bighorn sheep on April 26, 1805. He reported seeing sheep about eight miles upstream from the mouth of the Yellowstone River in present-day McKenzie County, North Dakota. Lewis reported that Field "saw several of the bighorned animals in the course of his walk; but they were so shy that he could not get a shoot at them; he found a large horn of one of these animals which he brought with him."9 Clark further reported the horn was "large and appeared to have laid several years."10

Field had observed what later would be classified as an Audubon sheep, *Ovis canadensis auduboni*. In 1901, natural historian C. Hart Merriam classified the Audubon as a subspecies of the Rocky Mountain bighorn sheep, *Ovis Canadensis*, naming it in honor of ornithologist and renowned naturalist, James Audubon, who traveled up the Missouri River to Montana's eastern border in 1843.

Expedition members made all but one of their observations of bighorn sheep in present-day Montana. The first sighting was April 29, 1805, east of Big Muddy Creek in Roosevelt County. It was a fitting introduction to this vast terra incognita on whose threshold the band of explorers now stood. Expedition members were captivated by the incredible sure-footedness of the bighorns as they bounded from ledge to ledge on the sides of high and nearly perpendicular precipices. "They are
very Subtle, nimble & Run very fast,”
Private Joseph Whitehouse wrote.
In his journal Clark noted, “had not proceeded far eer we Saw a female &
her faun of the Bighorn animal on the
top of a Bluff lying, the noise we made
allarmed them and they came down
on the Side of the bluff which had but
little Slope being nearly purpindicular, I
directed two men to kill those animals,
one went on the top and the other man
near the water they had two Shots at
the doe while in motion without effect,
Those animals run & Skipped about with
great ease on this declivity & appeared
to prefur it to the leavel bottom or
plain.”

Lewis and Clark took their first
bighorn specimen on May 25, 1805,
below Two Calf Creek in present-day
Fergus County. Lewis wrote a detailed,
783-word description of a sheep killed
by George Drouillard, which was the
first bighorn kill in Montana. (They also killed two
sheep in North Dakota.) Lewis wrote: “the females have
already brought forth their young indeed from the size
of the young I suppose that they produce them early in
March.”

Clark added a note on the size of the lambs three days
dlater: “I Saw great numbers of the Big horned animals, one
of which I killed their faunas are nearly half grown—”
From a practical viewpoint, it appears doubtful that
those bighorns lambed in March. They were subjected
to the same environmental pressures that deer and elk are
exposed to in the Missouri River Breaks country, which
have May birthing dates. Lambs are extremely active
within a week of birth, which may have been a factor in
confusing both Lewis and Clark.

On May 31, 1805, the Corps of Discovery continued
to forge its way up the Missouri River, winding through
the White Cliffs segment, past delicate galleries of wind-
and water-sculpted sandstone, through formations
pierced with vertical sheets of igneous dikes and extruded
buttresses of basaltic rock. The expedition had reached
the heart of bighorn sheep country.

On this date, Lewis observed a large number of
sheep and his nose informed him that, “the sides of
the Cliffs where these animals resort much to lodg,
have the peculiar smell of the sheepfolds.” This was

Historians believe that Alexander Lawson used a specimen collected by members of the
Lewis and Clark Expedition, and housed in the C.W. Peale Museum, as a model for his
engraving of a bighorn sheep.

Journey’s end: fate of the Lewis and Clark
Expedition’s bighorn specimens

At the end of the expedition’s 28-month journey,
numerous bighorn specimens collected in eastern and
central Montana in 1806 were shipped to Kentucky
and Washington. Clark collected four sheep horns, two
bighorn skeletons, five bighorn hides and an assortment
of sheep bones along the Yellowstone River, which were
forwarded to Louisville, Kentucky. Lewis’s collection
of six bighorn hides, three female and three male bighorn
skeletons and one additional sheep hide were forwarded
to Washington, D.C.

It is uncertain whether any of the specimens still
exist. The passage of time and the death of key figures complicate the issue. Some of the specimens likely ended
up at the C.W. Peale Museum in Philadelphia.
Paul Russell Cutright, author of Lewis and Clark:
Pioneering Naturalists, noted that the Quadruped Room
in Peale’s Museum displayed a full mount of a bighorn
ram brought back by the expedition. Alexander Lawson
likely used the museum’s specimen for his engraving of a
bighorn sheep.

Due to financial difficulties, many of the Peale Museum
specimens were sold at auction in 1846. Four years
later, P.T. Barnum purchased approximately half of
the specimens for his American Museum, which was
destroyed by fire in 1865.
Lewis's eighth journal entry on bighorn observations in Montana.

Bighorn sheep supplemented the expedition's daily rations and the two captains had a difference of opinion regarding the edibility of the meat. Lewis found it to be tender and well flavored while Clark thought the meat was inferior to that of the common deer.

On the westward journey, they did not record observations of sheep west of Montana. During their meeting with the Shoshone Indians in Idaho, Lewis noted with interest how bighorn sheep horns were used in constructing bows by laminating pieces of horn together.

Lewis wrote, "the bows of the bighorn are formed of small pieces laid flat and cemented with glue, and rolled with sinews, after which, they are also covered on the back with sinews and glue, and highly ornamented as they are much prized."16

The journals do not mention sheep again until Clark's observation July 4, 1806, of "a gange of Ibea"17 on the west side of the Bitterroot River in present-day Ravalli County, Montana. Expedition members killed sheep on July 5 (1); July 16 (2); July 17 (2); July 25 (2); and August 3 (1).18

Lewis, after separating from Clark at Travelers' Rest, did not observe bighorns in the mountains east and north of Missoula or while exploring the Marias River. He and his party finally spotted bighorns July 29, 1806, above the mouth of Arrow Creek (Lewis and Clark's Slaughter River), where they killed nine bighorns, and preserved the hides and bones of two ewes and one ram.19

The following day, they took nine additional sheep and preserved the hides and bones of one ewe and one ram.20 They killed two more sheep on July 31st21 and the last bighorn observation and kill occurred on August 6th in McKenzie County, North Dakota.22

**AUDUBON RACE QUESTION**

The bighorn species comprises nine living races (forms not different enough to be judged distinct species) plus the badlands or Audubon bighorn sheep, *Ovis Canadensis auduboni*, the sheep first spotted by Private Joseph Field.23 Despite extensive research, there is disagreement among wild sheep authorities as to whether the Audubon should be classified as a distinct race.

Subspecies are geographic races or fractional groups of populations that differ in color, size or other taxonomic characteristics from populations within the same species, but nevertheless interbreed with them freely, regularly and successfully where their ranges come into contact.

To the non-scientist, minor differences occurring in subspecies are negligible, and most observers of wild sheep simply call them mountain sheep rather than by their subspecies classification.

The first pioneering attempt to identify unique and specific racial characteristics of the Audubon based on skull comparisons was made by taxonomist I. M. Cowan, who cautiously stated that "O.c. auduboni based on its slight cranial characters presented by a small number (7) of specimens is to be regarded as a weak race."24

A recent study conducted by population research biologists John Wehausen and Rob Roy Ramey examined geographic variations in skull and horn characters of 694 bighorn sheep from the Great Basin north to British Columbia and Alberta to test previous subspecies hypotheses including the Audubon and other races.25 They concluded that they did not support the recognition of Audubon bighorn sheep as a subspecies separate from Rocky Mountain bighorn sheep, *O. c. Canadensis*. Based on their research, they declined to recognize Audubon bighorn sheep as a subspecies separate from the Rocky Mountain bighorn sheep.26
DEMISE OF THE BADLANDS SHEEP

The various factors responsible for the extinction of Audubon sheep were related in a complex way still not fully understood. Undoubtedly, man played a chief role. To understand what happened to the Audubon, one has to step back into the pages of history between 1870 and 1900. Through a combination of expanded livestock competition, habitat loss, disease, unregulated hunting, homesteading, railroad introductions and possibly other factors, wild sheep numbers dropped below a threshold level from which they could not recover. Faced with such adversities, it is not surprising that they disappeared from the landscape. A diligent search of Montana's historical wildlife records indicates that the last Audubon sheep was killed in the Missouri River Breaks in the Seven Blackfoot Creek area in 1916.

The exploitation of the prairie environment by man weakened the bighorn sheep's biological momentum and there was no chance for a successful (until more recent reintroductions) recovery once sheep numbers dropped below a survival threshold level.

The Corps of Discovery provided the scientific community with the first reliable information on bighorn sheep. Lewis's meticulous attention to detail provided a wealth of information on bighorns as well as other natural history discoveries. With reliable and accurate information, it is possible to reconstruct wildlife observations and trends for specific localities. Although such early documentations are by no means a definitive work and should only be considered a starting point from which to begin a serious investigation into pre-settlement habitat and wildlife, they can pave the way for the development of more comprehensive theories. Meriwether Lewis, with observant eye and active pen, provided us with a beginning framework, highly colored with enlightening biological events.

NOTES

3 Gary E. Moulton, ed. The Journals of the Lewis & Clark Expedition, 13 volumes (Lincoln: University of Nebraska Press, 1983-2001). All quotations or references to journal entries in the ensuing text are from Moulton, by date, unless otherwise indicated.
5 Ibid., p. 135. Clark's entry for October 1, 1804.
6 Ibid., p. 260.
10 Ibid., p. 74. Clark apparently was referring to the sheep's growth rings (annuli) on the conical shaped horns, which produce a prominent check line, or annulus, each winter when horn growth slows. Annuli, like tree growth rings, provide a convenient means of telling age.
11 Moulton, Ibid., Vol. 11, p. 170.
12 Moulton, Ibid., Vol. 4, p. 86.
13 Ibid., p. 194.
14 Ibid., p. 213. Clark's entry for May 28, 1805.
15 Ibid., p. 227.
16 Moulton, Ibid., Vol. 5, p. 150. Lewis's entry for August 23, 1805.
17 Moulton, Ibid., Vol. 8, p. 163.
18 Ibid., p. 165, Clark's entry; Moulton, Ibid., Vol. 9, p. 336, Ordway's entry; Ibid., p. 337, Ordway's entry; Moulton, Ibid., Vol. 8, p. 225, Clark's entry; Ibid., p. 276, Clark's entry.
19 Moulton, Ibid., p. 140. Lewis's entry for July 29, 1806.
20 Ibid., p. 141. Lewis's entry for July 30, 1806.
21 Ibid. Lewis's entry for July 31, 1806.
22 Ibid., p. 282. Clark's entry for August 6, 1806.
23 The 10 subspecies of bighorn sheep, Ovis canadensis, are: O. c. Canadensis; O. c. auduboni; O. c. californiana; O. c. sierra; O. c. nelsoni; O. c. mexicana; O. c. texiana; O. c. gaillardi; O. c. cremnobates; and O. c. weemsi.
25 John D. Wehausen and Rob Roy Ramey II, “Cranial Morphometric and Evolutionary Relationships in the Northern Range of Ovis canadensis,” Journal of Mammology, Vol. 81, Issue 1 (2000), pp. 145-161. The researchers used 50 measurements to determine skull anatomical structures on seven skulls from Montana, North Dakota and South Dakota. They found no “significant differences” between them and skulls of Rocky Mountain bighorn sheep. They determined the California bighorn race from Washington and British Columbia was not distinguishable from Rocky Mountain bighorn sheep.
26 Scientists are now turning to biological DNA analyses to study objects found during archaeological digs such as ancient hairs. Robson Bonnichsen, director for the Study of the First Americans at the University of Oregon, reported that his team of researchers extracted DNA from a 9,400-year-old clump of hair from a desert bighorn sheep in a cave in eastern Nevada, which was genetically similar to modern bighorn sheep.
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Members of the LCTHF who took part in the Foundation's annual meeting in Portland, Ore., in August 2005 may recall a visit to the replica of Fort Clatsop, near Astoria, and their shock, a mere two months later, to learn that this Lewis and Clark landmark had burned to the ground in a spectacular blaze.

Although arson was at first suspected, investigators identified embers from an open-pit fireplace in the enlisted men's quarters as the probable cause. The fort, built in the mid-1950s to commemorate the 150th anniversary of the Corps of Discovery's arrival at the Pacific Ocean, was a charred ruin. Showing the same grit and determination as the explorers who had built the original fort 200 years earlier, hundreds of volunteers teamed with the National Park Service, which owns and administers the site, to construct a new replica.

The Phoenix-like resurrection of Lewis and Clark's home on the Columbia estuary is told in Fort Clatsop: Rebuilding an Icon, published by Ooligan Press of Portland State University.

The book has no stated author other than The Daily Astorian. It is a collaborative effort between the newspaper's staff and the publisher's. The text is written in a journalistic style and liberally sprinkled with photographs and sidebars adapted from the paper's feature stories. The narrative begins with the first replica's destruction and ends with the dedication of its replacement 14 months later. (The exact date, never mentioned, was December 9, 2006.) There are chapters devoted to the fire itself, construction of the original replica, new historical insights on the explorers' winter on the Pacific, the regional Lewis and Clark Bicentennial signature event that took place a month after the fire and construction of the new replica. An appendix lists Internet sources for more information, but there is no index—a glaring omission. A list of print sources also would have been helpful.

The 1950s Fort Clatsop replica mostly was based on a diagram in William Clark's journals. Clark made this sketch before the fort's construction, and later entries in the journals of Joseph Whitehouse and John Ordway lead to different interpretations about its layout. (Like so many journal entries, these are incomplete and maddeningly ambiguous.) The first replica's destruction gave National Park Service historians an opportunity to reexamine the record and build a new and presumably more accurate rendering of the original, but in the end, alternative evidence was deemed inconclusive. No substantive changes were made, and the new Fort Clatsop replica was built on the footprint of the old. An exhibit still in planning when the book went to press would discuss alternative models and "allow visitors to create their own fort, perhaps with Lincoln logs, based on what they believe the journals show."

Whatever Fort Clatsop's actual floor plan, the explorers, with little more than axes and sweat, threw together their winter quarters in a mere three weeks—a fraction of the time it took to construct the two modern-day replicas, both of which were probably much better crafted. Fort Clatsop I succumbed to the elements within a few years of the Corps of Discovery's departure.

Fort Clatsop II lasted 50 years. With luck, Fort Clatsop III will still be here when our descendants commemorate the Lewis and Clark tricentennial. When that day arrives, this volume will be a useful source on how it was built.

— J. I. Merritt
The LCTHF recently announced its 2008 Monetary Grants Program with $13,900 available for programs and projects that further the mission and vision of the foundation. Grant applications must be submitted by March 15, 2008.

The foundation’s vision statement reads: The Lewis and Clark Trail Heritage Foundation, Inc. provides national leadership as keepers of the story, stewards of the Lewis and Clark National Historic Trail, and its vibrant, engaged membership promotes inclusiveness and cultural diversity.

The mission statement is: As “Keepers of the Story – Stewards of the Trail,” the Lewis and Clark Trail Heritage Foundation, Inc. provides national leadership in maintaining the integrity of the trail and its story through stewardship, scholarship, education, partnership and cultural inclusiveness. To accomplish this mission, LCTHF will:

1. Advocate for the Lewis and Clark National Historic Trail, from sea to sea, and the preservation and protection of its physical, historical and cultural resources for future generations.
2. Demonstrate commitment to a vibrant, financially secure organization.
3. Serve as a catalyst for an enhanced network of trail partnerships and stakeholders.
4. Foster increased cultural awareness.
5. Promote the education of youth and life-long learners about the Lewis and Clark story and its many facets.

The grant program provides funding in three general areas:

- **Stewardship Fund**: $8,900 available
- **Heritage Fund**: $5,000 available
- **Holland Fund**: $1,000 available

Projects funded by the “National Council of the Lewis & Clark Expedition Bicentennial Legacy Project” should emphasize preserving, protecting and interpreting the natural, historical, educational and cultural resources of the Lewis and Clark National Historic Trail. Examples include heritage site monitoring, protection of cultural resources, coordination and sponsorship of stewardship projects and programs, and interpretive programming along the trail.

**Projects**

- **Holland Fund**: $1,000 available
  - The Holland Fund assists in research of topics held in esteem by Leandra Holland. These include, but are not limited to, food, nutrition, native relations, spiritual values and medicine; food history of the West; historical meal re-creations; and spiritual values linking traditional Western systems with Native American values. All Holland Fund grant projects must lead to publication of a report, article, Internet site or book that is publicly accessible. Any grant that does not directly lead to a publishable product must report to the Grant Committee at least annually from the date of the grant until the project is complete.
- **Shattuck Fund**: $5,000 available
  - Any project that supports the mission of the Foundation is eligible.

All grant projects funded by the foundation must follow the following additional requirements:

- **Grant dollars must have a 1:1 match in volunteer time, in-kind support and/or dollars spent on the project.**
- **Project dollars will be reimbursed on a cost-reimbursement basis, after an accomplishment report has been filed.**
- **Grant recipients must join the foundation and, if applicable, donate a copy of their final product to the foundation’s William P. Sherman Library and Archives.**
- **Grant recipients must acknowledge the foundation’s financial support in all printed materials.**
- **Foundation chapters in good standing are given preference.**
- **Partnerships, especially with chapters, are strongly encouraged and the roles and responsibilities of the partners should be clearly spelled out in the grant application.**
- **Funds will not be disbursed to individuals. Applicants must have a 501-c-3 organization serve as their fiscal agent in the project.**

The Foundation’s Monetary Grants Committee will review the applications to determine if the proposed project meets the foundation’s grant criteria and helps achieve its mission. Board member Jane Randol Jackson is chairwoman of the Monetary Grants Committee and Rebecca West, director of operations and member services, is the committee’s staff liaison.

The foundation’s board of directors makes the final determination on the awards based on recommendations from the committee and available funds. Approved grant recipients are required to:

- **Join the foundation.**
- **Document volunteer hours spent on the project and include them with the final project report.**
- **Submit the final project report by June 30, 2009.**

Applications should include a sample of the work project, if appropriate, letters of support from each partner and letters of recommendation.

Grant recipients will be notified of their selection by June 30, 2008. Recipients are required to submit a project accomplishment report with any reimbursement request.

Information is available on the foundation’s Web site at www.lewisa ndclark.org or by calling Rebecca West in the office at 1-888-701-3434.
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February 2008  We Proceeded On — 35
Trail extension proceeding; landmark threat continues; new volunteer opportunities

Efforts to extend the Lewis and Clark National Historic Trail took another step forward in December when the U.S. House of Representatives passed legislation calling for a feasibility study of the proposal to include the preparatory and return routes of Meriwether Lewis and William Clark in the federally designated trail.

Rep. Jo Ann Emerson of Missouri sponsored the original house bill, which was bundled with other legislation into House Resolution 3998. Sen. Jim Bunning of Kentucky, a veteran supporter of trail extension, sponsored the senate bill, which prior to Congress's holiday recess also was bundled with other legislation. It is included in Senate Bill 2483, section 343, and at press time was still under consideration by the Senate Energy and Natural Resources Committee.

The bills call for a study to determine the feasibility and suitability of extending the Lewis and Clark National Historic Trail, which now includes the routes followed by the Lewis and Clark Expedition from Wood River, Illinois, to the Pacific Ocean and back to St. Louis. The foundation supports an extension that would include the routes followed by Lewis and Clark, independently or together, during the preparation phase of the expedition starting at Monticello, near Charlottesville, Virginia, and traveling to Wood River. It also would include the return phase of the expedition from St. Louis to Washington, D.C.

The extended trail would include sites in Illinois, Missouri, Virginia, Maryland, Delaware, Pennsylvania, West Virginia, Ohio, Kentucky, Tennessee, Indiana and the District of Columbia.

Following approval in the Senate, the foundation's Eastern Legacy Committee will pursue a federal appropriation to pay for the National Park Service suitability and feasibility study.

The status of trail extension study legislation can be found at http://thomas.loc.gov/ by inserting the bill number in the search bar near the center top of the page. For more information, contact Eastern Legacy Committee Chairman Jim Mallory at jmjmallory@cs.com.

Portage landmark threat continues

Southern Montana Electric and Transmission Cooperative continues to pursue its proposal for a 250-megawatt coal-fired electric generation plant in the Great Falls Portage National Historic Landmark east of Great Falls, Montana. The State of Montana recently issued an air quality permit for the plant.

Additionally, the current landowners have applied to Cascade County to change zoning at the site from agricultural to heavy industrial. The Cascade County Commission held a 12-hour hearing January 15, which went until 3 a.m., to hear public testimony regarding the requested zone change. The foundation joined the National Trust for Historic Preservation, the National Park Service, the Montana Preservation Alliance and many other groups and individuals in opposition to the plant's construction in the landmark. The commission had not voted on the request when WPO went to press.

The cooperative has applied to the U.S.D.A. Rural Utilities Services for roughly 85 percent of the funding for the plant; the total cost is now estimated at close to one billion dollars. The City of Great Falls is committed to funding the remaining portion of the plant.

Volunteer opportunities abound

Once again, the foundation is offering volunteers the opportunity to monitor cultural and heritage resources on the Lolo Motorway in Idaho. The foundation, in cooperation with the U.S.D.A. Forest Service, will conduct two projects on the motorway this summer. Nine volunteers are needed to monitor resources July 15-17 and another nine are needed to complete a work project, yet to be determined August 26-28. Food and transportation to the motorway from Powell Ranger Station on Highway 12 are provided. Volunteers need to bring a tent, sleeping bag and weather-appropriate clothing. No training is necessary.

Additionally, we have two opportunities for volunteers to participate in weed management along the upper Missouri River tentatively planned for August. We will be recruiting 10 people to pull spotted knapweed during a one-day trip to Pablo Island, and a smaller number of volunteers to take part in a four- or five-day trip to pull salt cedar in the drainages between Judith Landing and Fred Robinson Bridge. More information on these projects will be available on the foundation's Web site in the coming months.

The Bureau of Land Management has asked us to recruit an individual or couple to serve as campground host(s) at Coal Banks Landing for the summer. It is a great place to spend the summer and is the center of activity on the upper Missouri River. The job primarily is to register and educate boaters and provide visitor information. Light maintenance is involved. The hosts work four days a week from early May through the end of September and are compensated $29 per day for expenses. The BLM would entertain splitting the season between two couples or individuals. For more information on hosting at Coal Banks Landing, contact Wade Brown at (406) 622-4005.

We will be offering several other opportunities to volunteer along the trail in 2008. Visit the foundation's Web site at www.lewisandclark.org for updates on projects and watch for more information in future issues of The Orderly Report.

— Wendy Raney
Director of Field Operations
Publications Editor
Using Maps as Metaphors: Tracing the Journey

Using the maps of Lewis and Clark as metaphors for the many stories of the Trail and the Expedition, the Foundation's 40th Annual Meeting will trace the journeys of Lewis & Clark and the Native Americans they encountered. Presentations by Jay Buckley, John Logan Allen and Jack Nisbet will include latest research on William Clark's 1810 map, and the influence of native cultures on nineteenth century maps. George Horse Capture will trace the ancient journeys of native peoples into the Americas.

Join us at the Great Falls. Register today.

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