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THE HISTORY OF THE CRAWFISH BOAT

Or, How a Bunch of Cajun and German Farmers and Fabricators Invented a Traditional Amphibious Craft

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I would like to begin today by thanking the Society for its openness and willingness to allow me, a folklorist, to be a part of its proceedings. I have, to use an internet colloquialism, been a lurker in your midst for a few years now, delighting in reading histories of artifacts and systems. My own field of folklore studies permits me to engage in similar activities, and I am here today to give you a glimpse of a machine that I have been fortunate enough to document, even as its history continues to unfold, which doesn't sound like a very folklore-y thing to say. That is, you would not be alone in believing that folklore is the study of things, be they made of words or actions or matter, that are drawn from the past with a careful effort, be it conscious or unconscious, to keep them as they are. And folklorists have, for over a hundred years now, proceeded to document the long lineages of a variety of things that populate our lives and worlds — things like legends and jokes, meals and rites, houses and tools. But in proceeding on a course that would seem directly the opposite of history, in seeking to document those aspects of human existence considered too important to be allowed to change, we have, in fact, compiled a pretty extensive record of change.

CONCEPTION

(Now) Change comes in all shapes and sizes: some welcome, some not. In the late summer of 2005 much of south Louisiana was changed not by one but by two hurricanes. For many of us lucky enough to have homes to sit in and try to sort out what it all meant, it was a strange experience both to have your world turned upside down and then, on a daily basis, to discover that, according to the pundits, our world was upside down in the first place. The storms, it seemed, had simply revealed reality as it underlay us.

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What I am describing, of course, is the discussion in the national news and elsewhere that described New Orleans and much of the rest of south Louisiana as being wetlands and that in being wetlands, imagined as no land. In fact, there is a great deal of land which is

flooded in the region, but it is flooded for the purpose of rice cultivation and is often mistaken by unknowing outsiders, unable to distinguish one tall grass from another when it's standing in water, as simply marsh. And there are equal stretches of land surrounded by levees from which water is pumped so that cattle may graze. The conclusion a careful observer draws is that wetland and dry land are not the operative pair, but whether a stretch of land is being "pumped on" or "pumped off" as residents of the area describe it.

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(Now) The larger goal of my project is to understand the imagination that pumps on and off, that shapes and is shaped by the ambiguous landscape of south Louisiana. As a folklorist focusing on material culture, I begin my work in much the same way that a historian of technology begins his or her work when attempting to trace the complex relationships of an imaginative ecology, by attending to the artifacts of that ecology. Today I would like to discuss with you the artifact at the center of the larger project, the crawfish boat.

PERCEPTION

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It is perhaps best to start with the craft in its contemporary form, which is fairly mature after thirty years of experimentation. The boat retains the essential shape of the commercially-available john boats which were first used but quickly discarded in favor of more durable, hand-made hulls. The hull itself is a hard-chined scow with a blunt bow and transom, though I should note that the farmers and fabricators themselves do not use any maritime terminology, except for hull. (That is, the bow is the front, and the transom is the back of the boat.) The sides typically flare out six inches from bottom to top such that boats built on a four-foot wide sheet of aluminum become five foot wide and those on a five-foot wide sheet become six. Constructed thus, the hull is made up of only a few sheets, a fifteen-foot long sheet that forms the flat bottom to which are welded two fourteen-foot-long by eighteen-inch-high sides, which taper at one end to help form the scow bow. The transom at back determines the angle of the sides and is itself raked forward at its bottom. This cut to the transom keeps the rear edge of the boat from digging into the earth like a bulldozer blade as the boat portages from one field to another. The final principal piece of aluminum sheet is the bow deck, which is attached to both the tip of the bottom hull sheet as well as the side sheets, wrapping back to form the boat's nose and giving the bow the structural stability and strength of a box.

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All this strength is required of a vessel that regularly crashes into a levee, bellies onto it, and then slides itself into the next cut, as the leveed subdivisions of rice fields are known.

To do so requires a great deal of power and an extremely robust yet incredibly articulate channel for that power.[1] Every modern crawfish boat has a steel arm at its rear that grasps a cleated steel wheel. The drive unit, as it is called, is hinged to move up and down in order to allow the wheel to float, in the mechanical sense of that term, so that it may find the bottom of a flooded rice field but later swing up, in relation to the thrust line of the boat, when the boat angles up over a levee. The unit must swing down again as the boat clears the levee but the arm itself has not. It is usually at this moment that the operator uses a hydraulic ram to push the arm down to force the wheel to maintain traction. Another ram swings the boat from side to side, but how that turn is accomplished varies from maker to maker. All the arms are, on average, about six to eight feet long and hold wheels that are anywhere from two and a half feet to three feet in diameter.[2]

6 What you have is a big aluminum box attached to a steel wheel. The problem for each builder is that the drive unit is so powerful that it is quite capable of taking the hull and crumpling it much like you or I might an aluminum can. (In fact, that's what it wants to do.) The marriage of the two parts is challenging because aluminum and steel cannot be married to each other through welding but must be accomplished through some other arrangement, usually bolting. (Most use braces, typically mounted in pairs both high and low, but one maker has adopted the use of a pod, an aluminum box welded into the structure of the hull itself and onto which he bolts his drive unit.)

7 This engineering is required in order to accommodate the demand placed on the boats to be able to power through muddy water and muddy land, and usually by someone trying to get the job done as quickly as possible since crawfish season begins in winter when there is a great deal of wind that cuts all the more sharply as it races across mile after mile of flooded rice fields. All the boats are powered by small-bore engines running at a high, fixed RPM. The two engine makers who dominate this particular market are Kohler and Honda.[3] The engines drive a pump that simultaneously feeds three hydraulic circuits: the drive wheel, the steering ram, and the ram that raises and lowers the drive arm. The

[1] Most makers use rectangular tubing to fabricate the arms of their drive units, while one cleverly uses three-quarter-inch-thick flat steel bent somewhat like a "P" not only to put the wheel on center with the arm itself but also to give the flat bar greater rigidity to prevent it from twisting.

[2] Where the boat turns depends upon the maker: one maker's drive units are hinged at the back of the boat; another's are hinged just ahead of the fork that holds his twinned wheels; and yet another's turn at the wheel itself.

[3] Yamaha, Vanguard, and Kawasaki are popular elsewhere in the region and are regularly used in surface-drive boats.

operator of the boat sits in the rear and controls each of these three circuits through a collection of valves.

8 Immediately in front of the operator is a sorting table onto which he, or she, dumps the contents of a crawfish trap.[4] The individual simultaneously sorts the keepers into sacks hanging off the table, dumps the small fry as well any debris in the trap back into the water, and then re-baits the trap.[5] All of this is done in the time it takes to reach the next trap, so that the one in hand can replace the one being picked up. The operator does all this while operating a set of rocker pedals at his feet that steer the boat left or right through the field.[6]

INCEPTION

9 A fuller history of the crawfish boat has its beginnings in the ethnic revivalism that followed the Second World War, in which Cajun servicemen, having often served as interpreters in France and French North Africa, returned with a new sense of the importance of their heritage.[7] While this impulse had a variety of impacts, of importance to our current discussion is the elevation of crawfish from a low status food to one of social significance across a number of dimensions.[8] The rise in status increased demand, which quickly outstripped traditional sources.[9]

10 The search for additional sources, as well as a desire to find non-commodity crops, led area rice farmers to experiment with rotating crawfish instead of soybeans in their rice fields. This rotation had the added advantage of allowing them to keep levees up, instead

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[4] Since its inception, the modern crawfish industry has been a family affair with women, whether they are wives or daughters, playing as much a role as husbands and sons in gathering, sacking, and selling the crawfish. Like other agricultural contexts where women are typically less involved with farm equipment and more involved in the business of the farm, women have played less of a role in the formal development of the boat, but it should be noted that Cheryl Venable, herself a Leonards from Roberts Cove, is an integral part of Venable Fabricators and her contribution and those of other women is one yet to be fully understood.

[5] It may be worth discussing that like other introductions of self-powered technology, the crawfish has transformed what was a once more social activity into an individual one.

[6] Steering is an important part of the rear-wheel drive boats: when the drive wheel is in front, the boat simply follows. When the drive wheel is in back, the boat is always seeking a direction and must be more actively steered.

[7] See Pat Mire's *Ma Cher Camerade* for a fuller documentation of the Cajun experience during and after the war. Revon Reed, who was also a veteran, was particularly active in the revival movement and authored *Lache pas la patate*.

[8] A bellwether of this trend was the Louisiana legislature's designation of the town of Breaux Bridge as the crawfish capitol of the world in 1959. In 1960, the town held its first Crawfish Festival.

[9] The principal extant source was the Atchafalaya Basin, which remains a significant source of crawfish.

of pulling them down for soybeans and pulling them up for rice. Farmers placed traps around the perimeter of the cuts in a field and accessed those traps by walking along the rice levees with a five-gallon bucket, or two, in hand. Their routine was to empty the traps into one bucket and then re-bait the traps from the other bucket, returning to a provision point when either the crawfish bucket was full or the bait bucket was empty.

The problem was how to work the middle of a cut. Walking in a flooded field is a tiresome affair, as one's boots plunge into and out of not only a foot of water but also several inches of sticky mud. Hardier individuals put some traps down in the middle and worked their fields by pulling washtubs or toddler pools behind them — if it floated and could hold crawfish reliably, it was pressed into service. Some truly hardy individuals pulled or pushed johnboats through the fields. There are even photographs of one farmer who hitched his boat to a horse. No matter what other equipment went into a field or pond, the farmer followed and waded until either all his traps were empty, all his sacks were full, or all his energy was gone.

This state of affairs lasted for about a decade, until there seems to have been an explosion of experimentation beginning in middle of the seventies as a wide variety of individuals attempted to come up with a solution to the common problem. As one person remembered it: "There were all kinds of jack-leg contraptions. Some ran. Some didn't. Those that did usually didn't hold up."

The central problem comes down to managing gear ratios. The power plant for any small craft is going to be a small bore engine, which does not have much power at lower revolutions but really delivers energy best at high RPM. Humans, however, work at a somewhat slower pace. Spinning a blade or monofilament or propeller at high speed is a great way to harness the power of a small engine. Getting it to grind out at a walking pace is not. A variety of mechanical efforts ensued, none of which worked or worked for long. (E.g., the Sears "tiller foot" arrangement.)

What happened *when* is difficult to determine, since much of it relies upon memory. Many of these early craft were cobbled together from parts that were lying around, and so few receipts are available, especially forty years later. All of these craft were largely considered to be part of the overall operation of a farm, and as such few were ever documented. (Few farmers take snapshots of their new John Deere either.)

What we do know is that in the fall of 1982 Ted Habetz decided to improve upon the monstrosity his brother had built — an eighteen foot long double hull boat pulled by a

spoked wheel turned by a worm drive — and was invited to show his boat at the first ever crawfish field day held by Louis Kramer. [Will this audience know what a field day is normally?] Habetz, a college-degreed engineer, adapted a technology he had learned while apprenticed to a shop floor mechanic at the Pittsburgh Paint plant and attached the small engine to a steering-wheel pump from a combine and ran hydraulic lines out to a hydraulic motor that turned a steel wheel attached to the front of the boat.

The boat electrified his audience, one of whom was Harold Benoit who had been experimenting with a similar arrangement. Benoit turned to his friend Lawrence Adams and said, "That's my boat."

Working entirely independently, Benoit had arrived at much the same conclusion as Habetz, though he had not yet figured out how to get his boat down to a workable speed. As soon as he had done so, a number of friends and acquaintances immediately pressed him into making them boats, just as Habetz reluctantly founded Crawfish Combines with his partner David Louviere, and they would go on to make three hundred boats over the next ten years.

Neither Benoit nor Habetz intended to become manufacturers of crawfish boats, but a revolution had begun and they found themselves its suppliers. Within a few years, it became a common sight to see a farmer sitting in a boat being pulled by its own front-wheel drive. Over the next two decades, others joined them. Some were welders, like Greg Frugé of Eunice and Clayton Courville of Kaplan. Others were fabricators like Kurt Venable of Rayne and Mike Richard of Richie. Others were agricultural equipment makers and/or repairmen like Gerard Olinger of Robert's Cove or Jimmy Abshire of Kaplan. And thanks to vocational agriculture programs still active in area high schools, some farmers were able to weld together the necessary parts to turn a fishing boat into a crawfish boat.

While the first boats were front-wheel drive, almost all modern crawfish boats are rear-wheel drive, a change that occurred around 1985 when one maker, Gerard Olinger, responded to increasing complaints by farmers about the difficulties they were having crossing levees with the front-wheel drive boats. The problem was twofold: first, most of the boats were using fairly lightweight engines and wheels, in part to keep costs down (because no one was sure if anyone would pay more), and, second, there is the impossibility of the physics of pulling a boat across a levee from a wheel attached to its bow as that same bow noses up into the air. There is just not much traction on air. A lot

of farmers had working solutions, but they mostly involved driving a post in at a crossing point and winching the boat across.

Olinger put the driving wheel in the back of the boat, creating a boat that could crawl over levees. The durability of the custom hulls that had replaced the commercial hulls combined with the ease of use of the rear-wheel-drive proved popular.

So popular, in fact, that it led to the next problem: farmers were wearing out the hulls of their boats very quickly. One farmer after another would bring in a boat whose hull needed patching. It was Olinger who finally asked and learned that what they were doing was driving their boats from one field to another, instead of, as had been the practice, of trailering them. Sometimes they even drove their boats down a gravel or paved road. His response was simple: "I thought as long as they were going down the road, they might as well have wheels."

To Olinger, the idea was a commonsensical response, but the effect in 1985 was to turn the crawfish boat into a full-fledged amphibious vehicle. As the boats matured during their first decade in production, so did the business of making boats, always with about a half dozen builders actively producing craft. The first two, Benoit and Habetz, eventually left the business, and others, like Greg Frugé and Clayton Courville, manufactured for a time and then left the field as well to do other things. The current makers are Kurt Venable, Mike Richard, and Gerard Olinger as well as Dale Hughes of Jennings, and Michael Quirk of LeBeau. Mike Cormier and his sons, who farm near Church Point, always build a few extra boats each year to sell to neighbors and acquaintances. Jimmy Abshire and his brother Robert build a boat now and then in their shop down in Kaplan.

APPERCEPTION

The crawfish boat is indigenous to the landscape it works, hand-made in a variety of shops and sheds on the Louisiana prairies. More interesting, I think, to members of this Society is that the history of the crawfish boat reveals that the extraordinary imagination that produced the boat did not exist within one individual but existed across a network of individuals. There are several dimensions of this distributed imagination that are worth considering.[10]

[10] In *Cognition in the Wild*, Edward Hutchins describes the complex system of men and machines that is part of the practice of maritime navigation in the U. S. Navy. His argument is that in order to think of the system *qua* system we need to determine how cognition is distributed within and across the system.

First, each of the individuals within the network has to be understood as someone not only with particular abilities and self-perceived roles—only a farmer, a farmer who occasionally fabricates something when he needs it, a farmer who actively fabricates for himself and others, a fabricator who farms, or strictly a fabricator—but also in terms of personal proclivities. For example, one fabricator is a tinker by personality, another is a born competitor and must win in whatever domain he enters, and yet another is a raconteur of exceptional abilities. Together they make up not a homogeneous community, not even a cohesive one, but rather a loose network of individuals who, through their presence, maintain a network of ideas that has evolved over time. (Those ideas are, of course, situated in a value matrix that has remained fairly stable for at least three decades, and it is reasonable to assume the stability extends further back in time.)

Second, within this network, the makers, as a kind of primary node for the creation and dissemination of ideas, are not in any kind of regular, direct contact. While it is true, for example, that Olinger and Venable occasionally talk on the telephone, because both are dealers for Kohler Engines and because Olinger buys seats from Venable, those contacts are so intermittent as to be negligible in the larger scheme of things. The communication from one node to another of this network takes place via the farmers who, as mostly customers in this regard, could be considered a kind of secondary node.

Third, the nature of the farmer's custom is itself multi-dimensional. The shops themselves can often act as social centers for farmers, who embrace the opportunity to talk a bit with fellow farmers who also happen to be in a shop. (Olinger and Abshire keep coffee pots on in one corner of their shops.) Some farmers visit a shop only to buy a boat; others for other kinds of fabrication or repair work. Typically farmers go to the closest shop, but this is more complicated than it first appears (e.g., Jerry Leonards frequenting Olingers or the Zaunbrechers buying boats from Venable).

These differences in custom are a function of the fourth dimension that needs to be considered, the differences in the businesses themselves. Venable is strictly a fabrication shop; Olinger repairs agricultural equipment and fabricates a selection of agricultural tools and machines; Richard does a wide variety of custom aluminum work; Cormier is primarily a farmer who takes on the occasional fabrication job. (And so on.)

Fifth, the way the makers know each other's work, the way the network is actualized, is through the forms of the boats themselves, which are extended in conversations with their customers. In some cases they get to know another maker's boat because it comes into their shop for repair or customization. In almost all cases there are extensive

conversations among the farmers about the properties of each maker's boats, their strengths and weaknesses, their peculiarities of design and operation. Some farmers cleave to a particular maker in the same way that some cleave either to John Deere or Case-IH tractors — the latter can also be the reason for fights in local high schools. Farmers come into a shop having seen, or used, another boat and describe what they liked and what they did not like. In some cases this leads to one-off customizations, but in other cases it leads to the adoption of an innovation found in another maker's boat that is considered too useful, too adaptive to be ignored.

And so our social network is one in which farmers compare notes among themselves and then also with the makers. The makers take these verbal inputs and combine them with their own material observations and make adjustments accordingly. A recent example of just such a moment can be found in the latest Olinger boats having their wheels mounted to the outside instead of in an open well. Olinger had long noted their use by Richard, but his adoption was precipitated by his concerns for the hull integrity of his boats.[11]

Particularly interesting is one facet of this network not yet mentioned: there are no meaningful patents on any part of the crawfish boat.[12] This is not because the men who make them are not fierce competitors, nor is it because they are unaware of intellectual property laws or contemporary trends in patents and copyrights. In addition to his boat business, Kurt Venable mills a variety of custom parts for other manufacturers using his own CAM system. On more than one occasion, Gerard Olinger has remarked that local fabricators always fill niches perceived as too small or unprofitable by large manufacturers. Both of these men are fully aware of the full force of the contemporary legal apparatus surrounding technology, and, like any of the others, are fully capable of pursuing the legal steps necessary to mark some facet or another of the crawfish boat as belonging exclusively to himself.

And yet no one does. As far as each maker is concerned, their reputations as builders, and the reputations of their boats—obviously, the two are intertwined—are well known throughout the community.[13] Each has also borrowed ideas from the others. Innovation,

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[11] That is, he was unhappy with his hulls too often developing hairline cracks that often originated near a well corner.

[12] There are, in fact, patents but they are by individuals who have never built a boat and who have not sought to enforce any dimension of their filings. (The enforceability of the patent I have seen is something to be discussed.)

[13] Reputation systems are commonly discussed within the context of online communities or domains, where the automated systems are subject to scrutiny for their vulnerability to attack. But a peopled system is

in the case of the crawfish boat, draws from the deep well of both common and individual knowledge and experience, and it is distributed across a network of diverse nodes.

Fabrication, like any other domain, presents a series of problems to be solved, but how those problems are solved are largely determined by how they are framed or understood, and that understanding is itself a function of individual and collective experiences that are constantly being negotiated not only in terms of content but also in terms of context. Thus, innovation is distributed across a larger system of ideas and practices which we could perhaps call an ecology, and there could be no more striking example of the creativity of such an ecology than a modern metal machine gracefully wending its way through the water to the clatter of its small bore engine and then lunging itself onto dry land, where it blithely rolls down the road to the next bit of water.

a much more complex and interesting affair and recent scholarship has explored how such systems, and their peopled networks, might lead to more humane economies (Benkler and Nissenbaum 2006).