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Operational Benefits of PC Based Navigation

This document is the complete transcript of the Rose Point ECS presentation at the International Work Boat Show held in New Orleans in December of 2008.

Jeff Hummel - Moderator

Thank you for joining us today for our seminar on PC navigation software, my name is Jeff Hummel, I am the director of Sales and Marketing for Rose Point Navigation Systems and I will be moderating today's conference. Today we have Shelby House, Andrew McAllister, and Brook Biddle from Seacor. These guys are going to be sharing with you their experiences of implementing PC based navigation software within their fleets.

So when I decided to do this seminar about, I don't know, 6 or 8 months ago I thought well I could stand up here and tell you about our software and tell you about our features and that sort of thing but what you really want to hear about are the experiences of people that have gone before you, people that have implemented the PC based navigation software in their fleets and hear from them about the actual benefits and experiences that they have had, in things like selecting the software, collecting the hardware and the deployment out to the fleet. So that is what you are going to hear about today.

Rose Point Navigation Systems was founded in 2003 by an ex Microsoft developer named Brad Christian. In august of 2004 we introduced our first product which was called Coastal Explorer. In 2006 we started developing a commercial product and it was basically because some of our customers wanted to have a commercial based product that was based on our recreational product and from that working with the partners that you see here we have developed that commercial product.

The commercial product addresses the needs of several different markets, inland towing market, harbor and coastal towing, offshore supply vessels and commercial pilots. So the product Rose Point ECS was released about two weeks ago in November of 2008.

Some of the questions we hope to answer today with our panelist are why purchase a PC based navigation system, what are the benefits of the PC based navigation system over some of the alternatives and some of the things that the goals of the various companies that purchased the software hope to achieve.

One is to reduce accidents and increase efficiency of their fleets. Another one is to create an enhanced perception of reality. So basically use the information that comes into the wheelhouse, modify that somehow and give better perception of what is in the future.

Another benefit, thing they are looking for is to access and display different types of information. These would be things like tides and currents, weather and other types of data. They also want to use the software to assist in predicting the

future, predicting where the vessel is going to travel in the next 5 minutes or 20 minutes.

Another thing that is important is they want to use the software to assist in hiring and retaining employees. A lot of the new captains that come online expect there to be some sort of navigation system onboard the vessel. The companies that have implemented this technology have found that it is easier to hire and retain employees using a PC based navigation system.

Another area is to prepare for the pending US Coast Guard requirements. In the future there will be a number of opportunities to deploy ECS systems and some of the companies rather than wait for the regulations to come into existence have decided to deploy a PC based navigation system now and work into it in the future.

The other things people are looking to do is to record, share and distribute information. Even though our software has only been out in the fleet for about a year and a half or so it has been used in three accident reconstructions where people have had different situations and they have been able to utilize the information recorded in the software to show clearly who was at fault or to get a better idea of what actually happened.

So the first speaker today is Andrew McAllister of McAllister Towing and Transportation.

Andrew McAllister – McAllister Towing

Thanks Jeff, Thank you for coming I know noon is a tough time and they usually say don't speak after lunch but speaking during lunch is even more interesting. I am going to talk about a couple of things today mostly about how we came to the conclusion of the setup we have put on all of our boats. I will give you a little background of what our company is and what we do and why we picked Rose Point.

McAllister towing is a pretty large company, we are in 13 ports on the east coast, we have a fleet of about 80 vessels, that's about 40 harbor tugs in 13 ports, they primarily do ship docking in those ports. We have about 30 combo tugs that do ship docking and towing and 10 dedicated tugs that just do towing mostly on the east coast. We have made runs through the Panama Canal and to the Caribbean. We also own a ferry company out on Long Island which we put this on as well. As you can see it is a very large disperse and disparate fleet. Our fleet is also, the variance in age is pretty high. We have boats that were built in the 40's and we have boats that were built in 2008. So you are talking about trying to put something in a boat that the electronics are completely different, the space and size of the pilothouse the space and size of crew quarters, engine rooms, anyplace where you thought you could hide a PC is dramatically different.

One of our other big things that we have is that we dispatch locally in all 13 of our ports. It is very important for us that all of our dispatchers and all of our boats, because our crews change from port to port, they will travel from port to port, boats will go to different ports, it's important we have a simple system that everyone is familiar with, we need a single solution.

The fleet also had the same kind of needs. We needed up to date charts, we needed AIS and GPS, but most importantly we needed trip planning for our barge work. We primarily do oil towing so safety is a major issue for them and we looked very hard in making sure we were helping our captains get the job done that they wanted to get done.

As you can see our two major areas where we were looking to track everything pretty much had the same needs and

when you have that you need to figure out how do you solve that problem so the simpler the better. We wanted one piece of software because we are a small family owned company. Our IT department is actually only 3 people; it is really a network guy and 2 people who help with basic computer problems. I don't have any programmers on staff, I have 1 or 2 people who really help me out with business needs and business solutions, so I really cannot afford to do anything elaborate, especially when you are talking about 80 boats in 13 locations.

Basically, one thing that we do know is that we know the PC. So that is why we decided that we are not going to put something unique or different or buy a huge big Furuno to put in every single boat, it just didn't make since for us. We wanted to make sure that we had something that everyone was familiar with. Most of our captains and most of our mates all own their own laptops. One of the things we were finding as we were going on board boats about two years ago, you would see a laptop in the pilothouse and they were already using some version of some mapping software. The problem was we were also finding they were using their laptop on our boat and that they hadn't updated their charts in two or three years, this is not going to help anybody.

One of the other things we decided to do is that we could make it PC based and it would make it very easy for us to pilot different versions of software. In the end you have to make sure the guys on the boats understand what you are buying and also approve of what you are going to be implementing. So what we did is, well I am the nerd of the family business, I am the MBA with the Sic Sigma background so I used a rating system that we use in other projects and I want to quantify all of the different software. When we went out and looked there were probably about ten different pieces of software that we could use. All of them were different generations and all solved different problems. It was very hard for me to figure out, I cannot pilot ten different pieces of software, it just wouldn't be feasible, it would take me 2 years to figure out how to do this. I had to narrow it down as much as I could to make sure that what I was presenting to the captains was something that was useful and that they would pay attention to. You can overwhelm these guys, there job is to drive boats, to dock ships and to move oil. There job is not to play on computers and to pick out software. You really have to make sure you make it a simple as possible.

I kind of broke it down to functionality; compare the functionality of the different systems. A main thing is ease of use and then, of course, just a general rating. I basically labeled everything 1 through 10 and this is the score card I made. It is a little hard to see here but as you can see it was pretty elaborate. You had Rose Point up at the top and you had functionality up at the top, was it available, not available, rated it 1 to 10 on ease of use and then just a general rating of that type of functionality. In the end you have your total score card. I did this with all, I think it was eight or I think seven pieces of software that I did this with. What we found out of course was that Rose Point cleaned everyone's clock with ease of use. I do not know if it was because it was the latest generation or the way they developed it or because the guys were from Microsoft so they know how to make it simple. KISS, Keep It Simple Stupid is definitely a hallmark with these guys. I have 80 boats, I cannot go out and hold hands with every single mate and captain to make sure they know how to use this software.

After doing this for about 2 months or maybe 3 months, of elaborating through this work hard, working with different captains and mates and figuring out what we like, we decided to run a pilot. We came down to two companies that we really liked. One of the great things about the guys at Rose Point, they were more that willing to help us out, whatever we asked for, for the pilot, they really had a lot of faith in their software, they knew it was going to sell itself. They basically

they were saying (sic), “how can we make sure this happens, how do we make it easy for you, so it made it very simple”.

Basically what we did is run a pilot. I ran it in New York Harbor, which is probably our biggest harbor, probably where AIS is used the most, it is also where we do a lot of our towing. I was able to do both ship docking and towing and probably use a very hard user group with our captains and mates inside New York Harbor. It is easily our busiest. The important thing is that when you go out and put software on boats is that you really have to make sure that they are the ones choosing the software. They have to take ownership in it. They are the ones who have to live and breath the software. If it came from me no matter how good it was, it was poor for shoving it down their throat (sic). Many of you know anytime you try to do something like that it is very hard and you will get a lot of kickback, no matter if it is better for them. No one really likes to be told what to do outside of the parameters of just docking the ship or pushing oil up the river. They were actually very excited, they got very involved, we got a lot of input, there were a lot of things that they wanted. Tides and Tidal Currents were I think the winner for, definitely for our guys who move the barges around. They do a lot of route planning, in the rivers and creeks around New York it is very much based on the tides and currents and so they run different routes and they have their different spots where they sit and wait for the tide to change. When they know they will go in and plan their trip for the week. They will make 2 or 3 runs out to Port Jefferson say from Staten Island pushing an oil barge. They will know what the tides and currents are for the week and they plan their route and have their different way points Monday for the trip they are going to make on Friday.

Probably our biggest issue that we ran into is that we were still working out some of the things like communication is that when our captains move boats I get the phone call like, I did not bring a laptop from the Christine over to the Rowan so I do not have my routes, how can I get them? We try to figure out a way to run a thumb drive over, pull those routes off and bring them to them. These guys have really become dependent on this. It is so simple to use and it is so easy to create routes and to make sure that your trip is planned for timing for when you have to be at the terminal. They run pretty regular so they have their whole routine set up in these things and it really makes their life easy. It has been basically a real success for us.

The things we really like in the dispatch, we love the quilting, the charting and the quilting, our guys in the dispatch booth have like a 42 inch monitor in it, all 13 ports, they zoom in and out. They find out when ships are waiting on line they find out where the anchorage is, where our tugs are. Very simple for them to use, just a couple of mouse clicks and everything just pops up where they need it. The AIS, of course, is great. They know when things are at anchorage, when things are moving. Tides and currents is also big, it is important for us when we are conserving fuel when we are going up river, at some of our ports we can save river time, we run with the tide to save a little on the fuel.

We purchased the Fleet Server but haven't launched it yet because of other hardware issues, I am redoing all of our ports, onto a new system network. Once that is done they (Rose Point) has a compiler for us where I will be able to, in New York, see the whole coast and I can see what all of my boats are doing, where they are going, where they are not going, what they doing.

Another big thing that was important to us is that our general managers would walk in a dispatch booth and they can see what the speed was of all of our ship docking tugs. Of course with oil at $150 a barrel there was a lot of, “you guys need to tap on the brakes”. There is no need to make a fast break move to someplace where you do not need to be. We actually

saw a dramatic reduction in our fuel consumption through the summer and the late spring because they were monitoring it from the home office. It was no longer just put up a sign in the pilothouse, “please mind you speed”, you actually can monitor it from the dispatch booth. Most of our general managers now have it running on their desktops. They don't even walk in the dispatch booth anymore they just get on the radio, they say “you know you are going too fast”, there is no reason for you to be going 8 knots, you can sit at the dock for a while because I know what your next job is, it is all up on the screen.

The fleet, the charting, the switching, the quilting you know it sounds simple but not a lot of other pieces of software offer it as smooth and as easy as Rose Point does, our guys love that. They bounce between the raster and the vector charts all of the time. They zoom in where they want to feel comfortable were they don't know things, it's just a quick drop down. The other thing is that they have a great hot keys function. The hot keys, basically, when you are driving a boat you do not have to go find the mouse, they literally just go to the keyboard and they know where to go in and out of stuff. They can also do a lot of things very quickly by just pressing one key.

Another big thing that you would be shocked that not a lot of other pieces of software have, our guys really love the day, twilight, night modes. It really is effective, some people do not have that twilight and you would be surprised by how much the captains really appreciate a twilight mode. It is amazing what a difference it made.

The help function, it is just like any other Microsoft product, you go to the question mark you type in something and the answer is there. We get very few calls to our office learning how to do stuff. It allows them as the crew to go in on down time and literally just read the help function like it is a manual. It has been a very, very effective training tool, not just a help tool.

Scrolling modes and the route and trip planning, again route and trip planning has been great for us. As I mentioned before we do a lot of things on a regular basis. We pretty much run the same oil barges to the same terminals and this really improved their efficiency, they are a lot more comfortable with the runs they are making, they are a lot more comfortable with the tides, and they are a lot more comfortable with the markers.

Our biggest complaint right now is that we haven't figured out a way to centrally share and communicate different routes. There is efficiency in using the same route, but we have 3 different tugs that have 3 different barges doing the same route. Those guys are now getting together and figuring out what they like and don't like. Mostly because they have been bouncing around from different tugs and they realize the routes they had on the Rowan they have to move over to the Christine. Now they are just sharing information among the crew and putting it all in one route to be used on all vessels.

I just want to say that we did a very long, extensive process to make sure we picked the right software. I do not want to say that we picked the software for you but basically one of the opportunities you have here is that we researched it for about a year and we are very happy with the solution we came up with. Every time you call Rose Point in Redmond, they are always willing to help they are always willing to figure out how to resolve any issues. We (Shelby House and Brook Biddle) where actually talking before the seminar, we just met as a group, and one of the things I noticed is that whenever one of the other customers has a problem Rose Point will contact the others and ask if they experiencing the same issue, “have you seen this”, “how are you handling this issue”. So it is really kind of like they have created a great community. Maybe because it is new it has kind of helped that they are working hard to make sure we are all trying to get to the same

place.

Thank you.

Brook Biddle - Seacor

My name is Brook Biddle and I work for Seacor in the Systems Advanced Technology Department. Seacor's interest in the electronic charting program started back 2006. In response to some minor grounding accidents, I'm glad to say the groundings have been curtailed but really that is just the tip of the iceberg in terms of the value the program has added to the company. I am not the only one at Seacor that is a part of this, my boss Rick Groen, Gary Nicar and Dave Pitalo have all helped me. We are doing this as a team.

Andrew has mentioned a number of the benefits of the program and I am not going to go into them again. The IMO standards are incorporated into the program, this is a big step forward, this means that when ECS comes in as mandatory we are already one step ahead. When the day comes that we can eliminate paper charts we are going to be ready to do that. That is a huge thing, sometimes I will ask Brad Christian (founder and chief architect of Rose Points software), how come the targets have to flash at three minutes, I do not like that it drives me crazy? He will say, oh that is an ECDIS requirement. I will say OK but I am a skeptical Yankee so I will look it up myself that up and see that it is true. Rose Point has built this thing from the ground up to comply with the ECDIS standards.

Another feature we like when using a vector charts is that you can set the shoal water limits, you can see the deep water limits. These are all IMO requirements they are not just something Brad decided to do, they are an actual requirement in the IMO and part of ECDIS. Eventually, Rose Point will be ECDIS approved and that will make it easier.

Probably the most important thing, the most important reason for use choosing Rose Point was their willingness to work with us to develop the product. Rick Groen selected the product before I was actually involved in the program. It started off as a customization of Coastal Explorer which was their recreational product. Right away it became apparent that Rose Point was more than willing to work with us and change the product to suit our needs. Originally the recreational product had limits, like the AIS display, it could only have 100 boats, then it went to 200 and eventually unlimited.

I clearly remember the day I realized how important Rose Point's ECS had become to the company when I got a call on Sunday night from Joe McCall. Joe McCall is the head of the crew boat construction division. He called me up, I am thinking, Sunday night, Joe McCall, why am I getting a call from Joe McCall on Sunday night, this cannot be, what is this about. He calls up and he says the monitor is broken on the Cheetah, they cannot sail for Cameroon, the monitor is broken the guys have to have a new monitor today, and I am thinking, since when did Rose Point ECS become so important, and the answer was now. At 42 knots you do not want to be running back and forth to the chart table.

This is the inside of the Alice G. McCall. We have a great reliance on the system; it calls for maximum reliability of performance. We are beginning to build the systems into the boats. Originally it was kind of on a platform that got stuck on the boat after it was built or retro fit. We are now actually building the system right into the boat. You can see the Rose Point ECS monitor there. The next step is that we are tying the Rose Point ECS into the DP systems, so now you are going to have a top grade GPS a top grade gyro all tied into the ECS giving you the absolute most reliability and accuracy

that you can get.

Before we went out to the fleet we decided that we were going to have a minimum set of inputs. There was going to be 2 GPS, AIS, heading, depth and wind. One of the problems we had with this was that the computers that we were looking at mostly had only one or two serial ports. The first computer we tried to work with was a little mini computer and we used a sock card on it with a four way octopus but that computer turned out to be kind of a bust. The solution turned out to be this Big Bay computer, from Big Bay Technologies and they were actually willing to customize it and they added 4 extra serial ports for us. In this way we were able to avoid the need for a MUX (multiplexer). We have been told to try to avoid NMEA multiplexers, they can alter performance, they create another break point and they cost money. That was a good solution for us.

The monitor was a big issue for us. The first monitor we supplied was from Argonaut and it was a very nice yacht monitor. Super daylight bright, rugged and even water proof. The problem was we found the guys were turning the thing off at night. The twilight colors are great the night colors are good but mostly we found that the guys do not like the reverse colors of night mode. They really like to have the day colors or the twilight colors turned down. The dim to black with a knob, kind of became the holy grail for us and we went off in search of one of those. At first we were looking at DP monitors and a couple of other companies but the price of the monitor was more than we wanted to spend for the entire system. The solution turned out to be these guys, Kent Modular Electronics. They are willing to customize the monitor for us, they add that knob, actually that is an industrial monitor in which they place the guts of their marine monitor. It has been a very good solution for us, it dims to black it is a very good price point and we have had good success with them. We have got about 40 of them in the fleet, I think we have had 4 failures and they were all replaced on warranty.

Mounting is a big issue when you are dealing with retrofits. We are trying to pack these things into small wheelhouses, you've got a PC, you've got a monitor, you've got speakers, you've got mouse, you've got all this stuff you are trying to pack in there. We used this ram mounting systems mount, that has been an absolute winner. The thing is supper strong, versatile and easy to adjust, it's not cheap but it is a good mount.

Keyboard was another issue. If you guys have worked with the program much you know that the keyboard is really useful, you can bounce back and forth from modes, you can bring the boat right back into the center of the screen. One of the things that Brad actually customized for us, you see on the screen there it says default tap three times. That was something that they developed so that our captains could find a way back to the middle of a chart no matter what they were doing. In the middle of the night you have a captain saying, hey man let me show you were I parked my boat over here, so he's over there in Mobile or something and then the deck hand comes in and says captain what are you doing, well that tap three time thing is that you hit that thing three times real quick and you automatically default to the center of the chart, in a certain mode it is perfect for running inland waters. Brad did that for us. Back to the keyboard. We were looking for a mini keyboard but it had to have a dedicated F12 key. In ECS if you push the F12 key it toggles you back and forth in the different modes so it is very valuable to have a dedicated F12 key. It was hard to find a mini keyboard that had a dedicated F12 key. We also wanted one that had backlighting and it had to be adjustable backlighting because when we first got the backlit keyboards it ends up the guys were turning those off. So this turned out to be the solution. It is the TG Electronics backlit keyboard. It is even splash proof. We were pouring a whole cup of water into it and it kept running. It also has the customized keys for almost no extra charge.

Mouse, mouse is important. The nice thing about the Logitech Mouse is that it is a thumb wheel mouse so you can fix it down to a counter and operate it with your thumb. You can screw it down, you can Velcro it down, it has a right button and a left button and a scroll wheel. You do not want a mouse without a scroll wheel; you are in and out all of the time. Most of the guys when they are operating, they are in and they are out, you have got to have a scroll wheel.

Speakers, the program has some excellent learning functions. It will tell you when you have a close situation coming up, a passing situation, it will tell you about shallow water. The problem is if you want to turn it off you have to go into the program and you have to shut down that setting then go back into it again and what we find is that the guys are generally busy they do not want to mess with this, they just want a big old knob they can turn up or down. This way when Microsoft is saying to you in your ear, shallow water ahead, shallow water ahead you can just turn him off and turn him back on again, more importantly, when you get offshore. Those speakers right there are the HP speaker bar and the guys from Kent Modular Electronics customized their monitor so we could bolt that right onto the monitor.

The last bit of the kit I would like to talk about is the sensors that we use. These are two sensors that we add. It is real important with ECS or any charting program to have a good heading sensor. It shows up on the boats if the guys are heading along and they have a cross current they can see what their headings doing versus what their boat is actually doing and that can help them line up a passage. Another place that this is really huge is when you are doing an accident investigation. If you have a boat that comes in and then has to reverse for some reason if you don't have a heading sensor the boat is going to turn around because basically it thinks I am going this way now so it puts its bow in. With a heading indicator it will actually show it backing up, moving sideways, it will maintain its attitude, which is absolutely crucial for accident investigation.

That is the kit all together there. It was really important to us to develop a complete package that we felt was going to give the guys everything they needed, easy to operate and would be very reliable. We have a fleet of 78 boats right now we're installed on, this stuff has got to work. We cannot be going back to every boat all of the time to fix a broken computer or a broken keyboard. We have had pretty good luck with all of this stuff. The keyboards we have 80 of them, we have had 1 failure, never a mouse failure. The computers we switched horses in mid stream on the computers but of those Big Bay computers we have about 45 of those in the field and we have only had about 2 failures, all replaced on warranty.

The second thing Jeff Hummel asked me to talk about was what we call our lockdown. We were really concerned that we would have guys up there and putting a computer next to them and the next thing you know they are watching DVDs and movies or playing solitaire. Unfortunately in the history of the oil field everyone knows there has been a number of head on crashes with people caught up playing with computers. It was really important to us to have what we call a lockdown computer. With our system the user is completely locked out. He can't have any access to windows, he cannot add programs, he cannot delete programs, he cannot mess with the voyage recordings, and it stays a nice clean computer that runs only ECS.

The basic setup of the lockdown is like this, there are two users in Windows. You have one Windows user that is a standard user and all he can do is see Rose Point ECS. He boots up the computer he sees our custom splash screen and he goes right into ECS. The second user is an administrator that basically can operate the computer like anyone else can. This is the same way it works on a DP system which we also have many in the company. You fire it up and Windows is

there running in the background but you cannot see it.

The second layer of the lockdown is inside the program itself. Within ECS you can set roles, grant permissions, and generally decide who can do what. This is an actual slide that shows you within ECS. Basically we have three different users within ECS. We have our standard user, we have our master and we have our administrator. The standard user can really only do anything but, he can only operate the alerts and the AIS functions. He can also change his depth contours and anything else required by the IMO but he is locked out of other features that would allow him to change things we do not want him to change. A master can do a little bit more and an administrator has an open computer. One of the nice things we found with setting these parameters is that there is actually a file within Rose Point that allows an administrator to set various resets and functions and it turns out that once you go through all of the misery of setting this all up it saves this one file and if you copy that over into any other ECS it brings it right back up the way you want it. This whole reset thing is another thing that Rose Point has developed as part of the commercial package. It basically makes the administrator a customizable platform. If you guys want your users to use it a certain way you can decide that with how you set up the program, it is up to the administrator.

Another thing that has been very, very important to the implementation of the charting system at Seacor is training. some of these guys have extensive computer experience, some of them have their own charting systems, some of them have laptops with Captains program on it already and some of them basically have no experience at all. We have gone ahead and set up an in house training program at Seacor. We have got a dedicated room with 6 computers setup and our captains come in and get trained up. It is actually a pretty structured system. We have our own curriculum that we have devised, we have a text book and each student gets their own computer that they can work on. They can make routes they can put boundaries out, they can set no go zones. Then using the simulator function within Rose Point ECS they can actually go out there and they can run these patterns and they can see what is going to happen, they can see how the alerts work. We also have an AIS feed to the office so they can see live AIS targets coming at them while they are practicing their routes.

Seacor has developed their own AIS network; we currently have 13 land based sites, 4 offshore sites in the gulf of Mexico and 6 more planned. We also use our vessels as offshore AIS gathering stations. Any where they are they pick up AIS gathering information send it through the network back to the office and we can do that. That has come in very, very handy for vessel locating, it helps the ops managers to make their plans for making a voyage and planning fuel stops. If you have an emergency, a man overboard or a fire we can locate our vessels immediately, in real time. This is the coverage footprint of the AIS network right here. The blue targets are live real time AIS targets and the orange targets are received by our global wireless single side band network. This is another thing that Rose Point has helped us do. They have customized their program to accept our single side band targets and this gives us world wide coverage.

This is our control center and here are the dispatchers, 24 and 7, they can monitor everything in real time and by using the globe targets they can see vessels all over the world, which is not real time they are actually reported every hour or two. This is a shot of the AIS coverage, it is supposed to move but it is not.

That about wraps it up for me. does anyone have any questions or do you want to do that afterward? OK Shelby House next.

Shelby House - ACL

My name is Shelby House with American Commercial Lines. We are an inland towing company, operating primarily on western rivers. We have about 105 installations. When we first started out and we decided to get a charting system, we had two primary goals. One was to enhance safety in navigation and the other was to increase productivity.

We had two goals to enhance safety in navigation and increase productivity. Some of the specific areas that we wanted to address or thought that we could address with this was to increase situational awareness to the pilot, it's a pilotage environment, so collision avoidance is pretty important and improved communications both between the shore and the vessels and vessel to vessel. Increased productivity we wanted to leverage the knowledge and experience of the fleet. Generally within a company you have always got a range of experience. You know you might have 30 year captains and you might also have people that are training and they are all at various levels. If you can get the experience of the 30year captain to pass that on to someone that is training you can convert that to a company asset and improve your training program as well. This also addresses the range of user skills in the fleet. A lot of times the way we use it, if you wanted to as your coming down the river, a guy that is not used to using the computer, for example, he can use this very passive system, he can put the chart up there and the AIS information and it doesn't require a whole lot of interaction from your pilot while he is navigating. On the other hand he has got a full set of tools he can use if he chooses to do so to get a lot more functionality out of it.

One of the most powerful things is that when you combine an ECS with an AIS it really does a whole lot of things for you. First of all it makes it practical. On western rivers a minimum keyboard display really just doesn't cut it. You have got a small screen, it gives you a list of targets and those are always as the crow flies and the rivers or your route are always sort of winding around and it is really not very accurate. When you put the AIS into the ECS it gives you graphic display, which is lot better than just a list or a range on a target. It actually uses the recommended sailing line on the charts to calculate your location and CPA and it is pretty darn accurate. It is not perfect but the sailing line and the charts are not perfect either. It is pretty close and it works well.

A lot of times, everybody knows, we get a pretty good rain it can knock your radar out pretty much and we have found that the ECS in combination with the AIS will really outperform the radar in inclement weather like that. That has worked really well for us on several occasions.

We can automatically track moving targets and for each target it displays your location and CPA. This has been extremely helpful because in the process of navigating on the river you are constantly trying to manage your voyage and manage your speed so you can be passed or overtake other vessels at an appropriate place where you have got the most room. Some of the bends in the river are pretty narrow and different vessels move at different speeds. Based on the current real time situation you want to manage that to meet targets at the best place.

One of the things we found in implementing this, we started out by saying we wanted to track all of the targets. You really cannot do that, especially in an area that, in one of Brook's slides you saw all those targets, by the time you zoom in we pick up a lot of traffic from the gulf, down below Baton Rouge there is quite a bit of traffic and it is just not practical to track every target. The program is very flexible and you can track targets for only the ones that the pilot selects. If you get to where there is too much clutter you can just turn all of that off and the pilot can interact with the system and specify which

targets he wants to track until they are past and clear, that works out very well. If we get a lot of lock delay for example, if you are inland and there are a lot of boats around it works well there also.

We can track passing arrangements for each vessel, a lot of times when you get quite a bit of traffic in an area by right clicking on the target, if I make passing arrangements with another vessel to pass on the two or the one, one whistle or two, we can track those arrangements on there, it will turn their location, where it shows their location or CPA, closest point of approach, will actually color that according to the arrangements that we have made. That works really good for communication as well, especially for changing watches. If a pilot is getting ready to come on and relieve me I can go ahead and fill in all of my passing arrangements, make sure I do not forget anyone, that works pretty well.

Another thing that I think is a pretty amazing feature is being able to save tracks of an AIS target. We can very the lengths, say 15 minutes, 30 minutes or an hour and you can actually save the track of an AIS target and you can see where they ran. Because the river bends allot you cannot always see other targets. Even if they are just 5 miles ahead of you a lot of times it is a blind bend or they are around a bend far enough that you do not have them in site visually. By being able to monitor other vessels and save their track it works really good especially in certain circumstances where buoys are missing or your not sure of the best way to make it or exactly where the buoy should have been. You can monitor that and save their track on your screen and when you get around to that bend a little bit latter, that can really give a pilot a heady advantage because when you get to that bend, as long as you can stay within the limits of the boat ahead of you, you know you are going to be in the channel and at least in a safe location. That has been really advantageous for us.

We've got an AIS target list in the program. We have to really manage our pilothouse, it gets busy up there we have a lot of interruptions, the mate needs stuff, other crew members need things, things get busy sometimes. A lot of times maybe you hear a boat call for traffic for example on the channel but maybe you did not hear where it was or where he was located at the time. Of course with your handy hot keys and keyboard shortcuts, all you do is type in the name and it will automatically move the chart and show you right where that vessel is. It is a very handy feature.

These are just a couple of screen drafts that I did to give you an idea. At the top of the screen we have the City of Vicksburg and it is showing he is transmitting on AIS his overall dimensions and I have agreed to meet that boat on the one whistle, our own ship is at the bottom of the screen moving towards the top. I made passing arrangements with the City of Vicksburg I am going to get him on the one whistle so he is colored red, that's port to port. The Steven Venable I have agreed on the two whistles with him and he is going to be moving across the channel over into the fleet and I have not made any arrangements with the OT Atkins, he's actually in the fleet there moving up river, southbound. That just gives you an idea of how you can track the passing arrangements. You will notice that you can see the name for the, as an example, the Steven Venable, you can see where his target is on there and you can also see that his name is associated with the lines going across perpendicular to the sailing line and you can see with his name there at the target and at the location of CPA that is predicting where we are going to meet that vessel. His name is there, it shows the speed and that we are going to meet in approximately 19 minutes. That is configurable as well, which information you want to show there. Again all of this is automatic it doesn't require any interaction from the pilot. It is really a good thing, if a target shows up it just starts tracking, pretty handy.

This is another bend in the Mississippi, the lower Mississippi not far below Cairo Illinois. Our own ship at the bottom left of the screen is proceeding southbound near Parker Landing. At this point we cannot see around the bend. I have previously marked up the sand bars you can see there, this is showing up yellow in the screen draft, they are actually different contours and we fill those in with different colors where I marked up the sand bars. On the top right of the screen, sage orange light, for example, or actually a little below there at about mile 917 there is an AIS target that is going southbound ahead of us. I have clicked on that boat and saved his track around there. There are actually some buoys missing. When I get to that point as I proceed downriver, go around the bend, when I get to the area where the buoys are missing I have got his track right there and all I have to do is follow the line. That is a pretty handy feature. It works very well northbound especially, a lot of times northbound boats are trying to get to slack water, will actually run the buoy line or where the buoy line should be, a hole lot closer, trying to get to as much slack water as they can so that gives you an even better idea a lot of times of how close you can get to the buoy line or how much stream you have available at a particular spot. Again you can vary the length and so on.

One of the things that in a pilotage environment like western rivers there is a lot of small details. There is a big difference between what you get from the Corp of Engineers and their charts and the amount of information you really need to navigate. The buoy boats, the buoy tenders run approximately every three weeks or so to set the buoys. It doesn't take long before a lot of them are missing, for example, it depends a lot on the river stage as to where the buoys are going to be. A lot of time we think that some of the gauges can vary by well over 40 feet in height between low water and high water. Some of those conditions are pretty extreme but it can vary quite a lot. It is kind of like learning several different rivers. You have to learn 1 river for low water and learn another river in extreme high water, maybe another river in normal high water and maybe another river somewhere in between. The river level really makes a big difference on how much room you have available, where that room is and therefore how you can meet other boats.

What we have done is implemented a system of background layers and these layers are made available. We have put some different marks, these marks are a good example of that, we put in some of the buoys, some of the sand bars and just basically anything that the charts are lacking. We get the charts whether they be vector, raster whatever type they are. A lot of time with some of these kinds of details we have better knowledge than the government on that kind of stuff. We can mark up the river or otherwise profile the river or a route of that waterway. We can actually profile it and put in our own contours and so on and display that. When we save these marks, all of these marks we are putting into a regular standard document native to the ECS. The only thing is we make it read only and put it in a background layer. The user then, depending on what the current water level is can either turn 1 layer off and 1 layer on, so you have a set of marks that are good for 20 feet on the Memphis gauge. Well you turn the other ones off and you just mark a check box in a menu and you turn on that layer or whichever layer is appropriate for that river stage. One of the things that is really neat about this is that you can turn off all of the layers and a captain can use his own set of marks. Generally we like to quarantine that every vessel has a minimum set of data. He has got at least one minimum saved track so that no matter what, when he is going through the waterway it is at least available. He doesn't have to use that information but it is always available to every mariner. If you have a guy, a pilot, that is more proficient in using an ECS then maybe he has more marks or better marks, ones he likes or feels more comfortable with, he can still use those in addition to what we provide from the company or he can turn those off altogether. That way you kind of get the best of both worlds. We Quran tee he has a minimum safe track available or he can use his own. That helps the pilots and captains generally to take a lot more ownership in using the system and that seems to be very important. We have even found that a lot of times some

guys are more trusted than others. You know, if captain Joe over here, If he says that is good than that is good enough for me. I have worked with him before so I know those marks are good. We have seen quite a bit of that.

Another thing that the system allows us to do through some of these layers is that we are able to, basically we can geographically index nearly any information. If you can open it in Windows, say for example, a PDF file. HML, a text document, as long as you can double click on it and open it in Windows you can index that information within the charting system. That opens up, you know a lot of times you can provide, I guess the way I think of this system is that we can only go so far in providing controlled aids in the forms of these background layers. You can put a lot of them out there that will cover a wide range of situations but in the end your captain is the one that has to make the final decision about what is actually displayed on the screen and decide to determine if that is appropriate for that situation. We really cannot replace that. The captain has to be able to decide what is going to be shown. You can provide all of these controlled aids, as many as you can, you can load up the system pretty good but this makes it really flexible. Whatever format your information is in if you can open it in Windows you can drag it into the charts and open it there, it puts a link on the screen. You just have to double click on it and it really opens the door to managing your layers or information.

We tend to organize these layers in multiple ways, usually we will organize it first by waterway, then it depends on the information, it is very flexible, each layer has its own name. You can name it whatever you want. We organize it by source a lot of times, maybe where it comes from. Does it come from the Coast Guard, does it come from the Corp, some other government site, NOAA. After that we tend to organize the layers by frequency of update, or is it dynamic data or is it static data. There is a whole lot of information especially textual information that can be put in a background layer, for example, this fling here at mile 900 for example they stand by mile 67, here is the phone number, the name of the tug is this and the pilots name at that location is such and such or whatever might be appropriate to the captain or helpful to the captain at that point. A lot of that stuff is fairly static. Dynamic information might be, for example river stages, information that is updated more on a daily basis. There are several ways to organize the data. It is very, very flexible that way. It also helps to reduce band width. We use cell cards to connect on the boat and by separating out the static data, that is not updated very much, and instead of updating all of the information all of the time you are able to restrict it a little bit, you know the dynamic data since it is in its own layer, if you need to update a layer you do not have as much to push out to your boats.

I have already covered how layers addressed the range of user skills in the fleet. We talked about how we have trainees, we have got 30 year captains or sometimes longer than that, 35 year captains. If you have a new guy or even an older guy that has got some experience but maybe not very much experience on a computer or a chart system, it really only takes one guy. If you have got 1 guy in the fleet that can get the information into the computer all you have to do is copy. We can take that information and we can push it out to the entire fleet in the form of a layer and now we have leveraged that experience or that knowledge from 1 vessel to all of our vessels. That works out pretty well. It helps reduce your training time required for new guys and streamlines the training process. Layers are managed centrally and pushed out to the fleet on demand. All you need is a computer and an internet connection whether that is on the boat of somewhere else. All users contribute to the layers in some form or another, even if they use the system passively by virtue of being there and making a successful voyage. We can still get information from the boat and incorporate that into the layer. Even if it is nothing more than his past track in an area. That works pretty good on the upper Mississippi a lot of time when it closes down for the winter, you have got a lot of ice up there, and it takes out all of your nav aids. When you first open it

up next spring before they set the buoys you have got your tracks from the last known good channel. You can put that out to all of your upper boats and that is pretty beneficial.

In this whole process using this concept of layers it really converts any individuals' asset, which is knowledge of the river, it converts it into a company asset, so it is pretty beneficial to the company. We spend all this money we put all these systems on the boat and this is an asset that can really be utilized if you choose to do so. Once you have this information, just by virtue of recording it and keeping it, that is now your asset.

Some of the other features, there were way too many to fit everything in here. These are some of the more important ones, they were more important to us. The search feature I felt was very important, again you can hit control F or Alt D on the key board and type in any search term and it will take you, as long as it finds a search hit, it gives you a search list of hits. It is going to take you right to it. You can search for AIS targets, that has been very beneficial. Also mile points, in a river. That is handy because a lot of times as an example we get information from other pilots, it might be on the telephone, cell phone, by radio, side band or any number of ways. Also you have the local notice to mariners, for an example, of course it is sorted by waterway or river and it usually has a mile point. Generally when I get it I am on the boat, I might have information, lets say I start out at Brownsville Texas, I have planned my voyage to go across the Gulf Intercoastal Waterway, come up the lower Mississippi and then up to the Ohio. That is a pretty big bit of ground to cover. Right now I am in Brownsville or maybe I have just left and I am still on the Gulf Intercoastal Waterway but I have a vested interest in keeping up with information about the Ohio River because that is part of my voyage. I can take the local notice to mariners that I get and at this point type in a river code and a mile point. The chart will take me right there I can put in a mark or some kind of a reminder about what is going on, on the Ohio. It is automatically there, it is set, when I get to that part of my voyage it is there I do not have to worry about remembering it, It is there and it makes it quick and easy. That has been a very important feature. if I hear of a wreck or some barge or some other information, I know the mile point type it in and go, it is great. It takes a lot of load off of the pilot and captain, them trying to remember all of this stuff or keep up with a whole bunch of notes. put it right in the chart and it makes it much more efficient. It also improves communication, that way if I know the pilot happens to be the one on watch when he catches that, it is still right there on the chart for him. I just works very well.

I have covered this a little bit, support for drag and drop. If you put the chart system in a window, we have not locked our system down completely. We can still use internet explorer we have internet access on all of the boats. There is a lot of information out there. River stages is probably one of the best examples. If I have river stages on an internet site, all I have to do is to drag that short cut right into the chart system. Let's say, maybe I have marked up a bar and we have got the gauge at Memphis, for an example is 20 feet, we have got 20 feet on the gauge and I have drawn in a bar, a contour that represents a sand bar and I know that that sand bar in this area is all wet and it is covered in 20 feet at Memphis. I can look up the river stages on the internet drag those right over there put a date on it so I know that that area was wet with 20 feet on the gauge, here is the gauges here is the date. At any time in the future I can use that to my advantage when I get to that area again, transit that reach, you know it really makes it, in terms of a bar book, it gives you a standard format throughout the fleet and helps you manage all of these little details.

Any document that you can double click on and open, whether it is Note Pad, HTML, Internet Explorer, PDF whatever. It also opens, supports, you can put in supports for the PDF open parameters. That gives you, I thought that was worth

mentioning, because depending on how you want to organize data that you want to present to the pilot or captain, it may be more convenient to manage that information, for example, company policy. Suppose you have a company manual and maybe you have so many pages it is in PDF format, if you know that at this particular spot I want to reference page 25 in our company, I can drag the link over there and adjust the parameters in that link to open that PDF file to page 25. Now of course the user doesn't have to look through every page in the manual to find what he is looking for, I can take him right to it. That allows the company to manage that information in a single document. When there are updates I can just update that one document but the user still sees whatever page he needs to go to.

There is a lot of, Microsoft is pretty cool, there are a lot of little subtle things that makes all of this work. Once you get a system going like that it really smoothes it out, it makes it work for everybody.

Import and export has been really important. We import data from a wide range of sources. There is a whole list of formats and I am not going to go through all of those for you but there is quit a few of them. You can get information from a lot of other chart systems for example. Let's say you have been using a different chart system for a while and you've got some asset in that file format and you want to import or convert that format and still use that. If we get pilots, I guess we have a little thing I call churn, a little bit, for lack of a better term, that sometimes pilots will leave one company and go to another company. That was mentioned before that a lot of them expect to have some kind of a chart system but it is not always the same chart system. If a pilot has marks from, you know he has been working at another company or whatever and he has a lot of assets in a different format, if he comes to your company you can import that information and he hasn't lost all of his hard work. He has been there for however long and you can still take advantage of that.

Exporting, a couple of things that I thought were kind of neat, you know if you have marks or a particular layer that you want to look at or study in a little more detail you can export it to KML or pull it up in Google Earth and do all kinds of neat stuff that way. I found it especially helpful to do. You know there is a lack of detail sometimes on the Army Corp vector charts, for example, and some other charts also but I found it very helpful for land marks. If I want to get a Lat - Long on the top of the red light on top of the pyramid in Memphis Tennessee, for example, I can go to Google Earth get that and get the Lat - Long or I can pull up Landmarks ***See View,*** for example, and that has been pretty helpful. A lot of times you can see things there that you might not see otherwise and actually locate water towers and different things, roads.

Garmin Nuvi crew change places you export it to a GPX format if you know where a particular boat ramp is or something, that is pretty handy, you pull it right up in your Garmin and navigate right to it, especially for crew members. We use of course the import, export feature to exchange data between vessels. If I make a reach and go around the bend, the buoys are missing, I do not have time, maybe it is Sunday night or Saturday night, it is not something that I want to wait in order to let it go through the office and get it pushed out to all of the boats. I want to get it to the boat behind me, he's going to be coming through in 2 hours. I can export that 1 small reach and send it right to that boat.

Another import feature that is very important, filters, duplicate objects, so if I am importing information from other boats quite a bit, every object, navigation object whether it is a buoy, boundary area whatever has a unique identifier UID, and I can filter, so that I am not importing more than once.

I want to talk about voyage recording and tracking a little bit. This has been very important or a big benefit. All of the sensory data is recorded, whatever it is, whether it is your heading sensor, any name of strings coming into the PC is

recorded. Used to replay voyages underway at any speed, this works especially well if you just want to review the way you went around the bend for example. It is especially helpful to have a trainer captain and a trainee pilot, if there is any question it gives you something to talk about, some real meat and taters, you can back it up, look at it and say OK, look at it again. Voyages can be pulled from a vessel on demand, this has been very helpful for managers. It is not always an accident there could be a close call or some other issue. You get some kind of report from a boat and you can just pull that voyage from any boat in the fleet. Usually within an hour or so depending on when it is and connection speed and that kind of thing. It has been very helpful because it gives management an unbiased opinion, an unbiased view. If you have got some kind of issue, maybe a boat gets a buoy in the wheel or some kind of issue happens or I had a bump and go or something like that and they say man it wasn't my fault, you know whatever. You have got an unbiased opinion right there, pull it off of the boat and the manager can look at that, then it gives you something to talk about. You can make more informed decisions. Another advantage of recording this, if you have extreme conditions, let say for an example, you have got a 50 year flood, a 100 year flood or even just a 10 year flood for example. You have got extreme high water, river conditions are pretty tough, it doesn't happen all the time, and when you are training new guys they may not have encountered these conditions before. They do not happen very often, it is a lot tougher to keep track of those conditions because they do not happen very often. Now that you have a recording the next time you get that sort of a situation you can pull that up and review it, put out a safety briefing for example. Also you can put it right on the boat, the user can replay that voyage once you push it out. A good example would be Vicksburg Bridge in high water. Let's say you had 45 feet on the gauge at Vicksburg you put a short voyage on every boat if they encounter that or want to review a successful voyage through that bridge they can pull it up and replay it and it will show right how it is done. Again this is one more asset, company asset, that can be used for simulation, training or planning.

Trainees or anyone else that has a personal version of the software on their notebook, the personal version of the software becomes a personal simulator, in effect. Think of the impact of that because the way we have done it before it has been on the job training and it takes a pretty good while because you make a stretch and a lot of your training is determined by situations you happen to be in. Let's suppose you have an experience with a trainee you know made this one bend in 20 feet on the gauge. Now he can take that where ever he is, put it on his computer and he can go back and review that and really expand the impact of that one experience or each and every experience. He can go back and think about that and review it. It just really increases the impact of your training.

Basically ECS brings together a comprehensive set of tools in a professional manor. A lot of stuff, I have only mentioned a few here. We have addressed situational awareness by using AIS and controlled aids, controlled aids being any decision you could make ahead of time. Provides a means to profile a route or waterway or otherwise study and mark it up, focus on problem areas. Provides a means to leverage the experience of the fleet and the industry if you record their tracks as well. Provides another means for constant improvement.

That is all I have for you today, thanks for your attention and your participation I appreciate it and I will turn it over to Jeff.

Jeff Hummel - Moderator

So I think we have a couple of minutes left for questions if anyone has any questions? Also there are still refreshments outside there are lots of cookies outside so please grab a cookie when you leave. Does anyone have any questions they

would like to ask at this time? These people will be at our booth for a short time if you want to come and ask some individual questions.

Q -What is your booth #?

A -We are at 2831

Q -It was Seacor that used a custom computer and custom monitor, are the others just using a laptop.

A - Jeff - you know it is different with every company, for example McAllister is using laptops on all of their vessel. Andrew do you have any plans to go to monitors?

Andrew - We are all IBM ThinkPad, the way we went, it offers some of the best service, you pay a little price for it. The other thing is that the keyboards are also waterproof, with IBM, you can spill on them and it just runs out the back. Because of the diversity of our pilothouses they really struggled with finding something that worked everywhere and a laptop is the easiest thing. Also if you run into a problem with backups you just do a quick switch.

Q - How are you controlling nighttime glare from a laptop screen in the wheel house?

A- Andrew - One of the things we actually do use is that they have a twilight, which is probably the most popular mode, they also have an evening version but I think we have found that the twilight is most effective with the captains. they can dim it and control it and the IBM has the ability to dim with just 1 button. they actually like what Rose Point offers, just a twilight function and it really works very well.

Shelby - One of the things that we found works pretty well is to use a combination of the twilight mode and in the case where you cannot dim the monitor we got some 50% colored, smoke colored Plexiglas. Get 4 little pieces of Velcro and put it on in the evening and you are good to go.

Jeff - On the ACL vessels there is this ritual that takes place right around dusk, that is the pulling up of the shades and then the Plexiglas goes on the computer screens, it is something they do every day and that is how they are dimming their screens.

Brook - I will tell you that the big dimming knob was a huge seller, everybody that sees that if their boat did not get it, they are begging for it.

Jeff - Any other questions? Thanks again for coming and you can visit us in our booth 2831, thanks.

