

100% Cotton

The cotton picking 920i[®]

MASTER SCALES' SPECIALTY IS HARVESTING EQUIPMENT and data management systems. Their Agricultural Weighing & Data Management systems have simplified cotton and grain test plot harvesting for major seed companies and research universities. Clients include Monsanto and many university research teams and equipment buyers from the U.S. cotton states to Australia, Brazil, Costa Rica, Greece and Turkey.

Owner Jason McDonald's indicator of choice is Rice Lake's 920i[®]. "In our eyes, Rice Lake puts out a superior product. One factor is the 920i's ease of setup and programming. We like the fact that we can program with a PC and check things through the front panel.

"We toured the factory in Rice Lake and compared the commitment from Rice Lake to the commitment we were getting elsewhere. We switched to the 920i about four years ago because it had a bigger display and gave us full control to divert air, open and close doors, replace the air diverter and move the tramper auger.

"The I/O action on the 920i is cleaner, smoother, more accurate and efficient. The operator can see the last eight weighments with iRite IDE[®] programming the display." Functionality can be customized to provide the customer with an HMI that supports their application and can be instantly reviewed and recalculated if necessary.



A gust of wind—and in Texas the wind blows continually—can affect weight accuracy. Stable weight is achieved through five filtering parameters and sample settings for environmental influences like wind.

“The standard weight is 30 pounds per plot. In some areas the standard is 50 pounds per 40 foot plot. The picker can hold 1700 to 2000 pounds of cotton or 350 plots before it dumps the load into cotton boll buggies. There is a screen in the cab and a camera is mounted on the back of the picker so the operator can see the weigh basket and monitor the process—if the gates are closing properly and if cotton is building up under the scale.

“There are up to nine definable databases that can support as many as 20 columns per record. Before the operator harvests the field he enters the location and range number. The first plot is 01024 then 02024 then 03024 to finally 10024, picking the rows in a serpentine pattern.

“We use 500-pound capacity S-beam load cells in the weigh basket. The cotton is blown into the main basket where a tramper auger packs it. The 920i captures a sample weight every 37 seconds and stores the data. At the end of the day the operator downloads the data on a laptop running a Windows® application called 920i Interchange® that allows the data to be transferred into Excel® in a comma delimited file, opens Excel and transports that data onto a spreadsheet.”

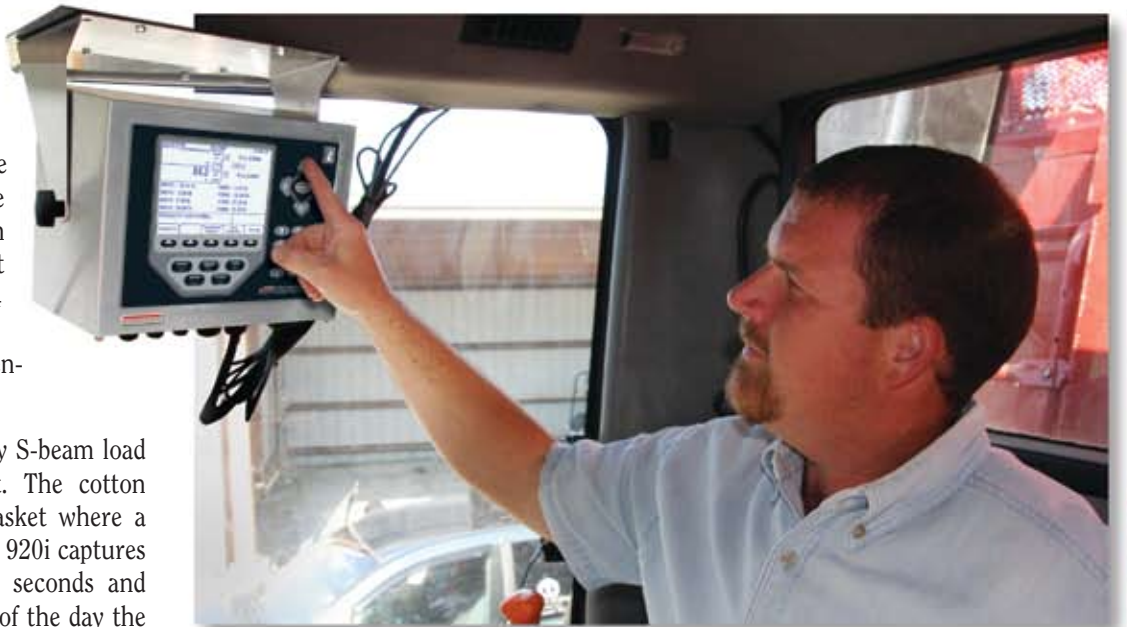
In a research cotton field every two rows are a different type of cotton. All but four percent do not make the weight for maximum yield. Jason says the research team is out in the field taking notes from the time the cotton is planted. “They capture data like how much fertilizer and chemicals they use, how many blossoms, then squares, then bolls are on the plant. They want to know the lint length and tensile strength. Before this system it took up to ten people to do the same work. One driv-

er, two people to put bags on the chutes, two people to take them off when full and throw them off the field, and two people to catch the bags and throw them into trucks. Two others weighed the bags with a crane scale or a hanging scale. One researcher wrote down the data.”

That was then, this is now. Jason and Sandy Land, sales manager, are visiting Rice Lake with a group of researchers from the University of Arkansas where they conduct grain research. The 920i will be able to handle that as well.

per. This sample will be tested for moisture level and possibly temperature. The sample will then be weighed separately from the rest of the grain, which is also weighed. We are able to store this information in the 920i. With coordinates entered by the user before harvesting, we are able to put all the location and weight data together for their studies. This will be the first time we have put together this type of system.”

Jason runs the company with his wife, Annette. “I’m the tech. That’s what I like to



The 920i captures and stores a sample weight every 37 seconds.

The flexibility of the 920i allows adding multiple scales, serial interfaces and memory for devices like GPS locators to capture plot coordinates.

Jason says, “We plan to install a 920i and cantilever beam load cells for the grain weigh-hopper we’re developing. Grain will be weighed after a plot of grain is cut. During the cutting process a sample will be caught separately from the main hop-

per. Get out of the office. The 920i is easy to service, and Rice Lake is willing to send factory personnel to help figure out any problem. Paul Cernick, Rice Lake training coordinator, talks about customer service in his presentation. Rice Lake certainly does that.” ■

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All cotton is not created equal

The word "staple" refers to fiber length. The longer the fiber, the softer the cloth. The longer the fiber, the more difficult it is to grow and process and the more expensive. Cheap shirts made with short staple cotton go limp and become pilly when ends of the short fibers slip out of the twill.

There are five types of commercially grown cotton:

Sea Island cotton is in exceedingly limited supply and is very expensive to grow and process. Very spendy men's shirts and women's dresses are sometimes made of Sea Island cotton.

Egyptian cotton has exceptionally strong fibers about 1½" long and is used in the best quality embroidery thread, the finest sheets, down bedding covers, and duvet ticking.

Pima cotton is between Egyptian cotton and American Upland long staple in length and price.

American Upland Long Staple cotton is long staple only as compared to **American Upland Short Staple cotton**. The two varieties account for 90 percent of the world's crop. They are easier to grow and process and are used to make cheaper goods. The thread is all right for medium quality fabrics, but poor for down-filled garments or bedding. They will eventually leak feathers. American Upland Short Staple cotton is less expensive and is suitable for denim. ■



Left: Jason McDonald, Master Scales.
Above: Five hundred pound S-beam load cells are used in the weigh basket. The picker can hold 1700 to 2000 pounds of cotton or 350 test plots before it dumps the load into boll buggies.

