

Digitalization of hay baling monitoring in Australia

Challenge

[Big Bale Co](#) is a leasing company offering special machinery for hay baling in Australia. It is used to press the hay and pack it into piles. The company is offering its services to farms that need to turn the grass into hay piles. Each farm usually rents equipment as the machinery is costly, around 350,000 AUD for the tractor and 250 000 AUD for the hay baler.

- Hay balers are in the fields for 24 hours a day to finish the work before the end of the season. Considering such a tight schedule, **it is essential to make sure that the utilization of machinery is done in the right way to prevent breakdowns.**
- **The number of hay bales produced must be calculated** because farmers pay not only for the time they rent machinery but also for the number of bales. Before solution implementation, the customer could not directly get the information about the number of bales produced, or it was sent with delays and was inaccurate.
- **No one from the management team could reach the location** if there was an issue with reporting, as the equipment is often leased by farmers in remote areas.
- Some **conflicts arose** with farmers who reported fewer bales produced.
- **It was impossible to track rebales.** The pile would often fall apart and somebody would have to fix it manually. The so-called rebale wasn't counted in this case.



The company's tractor with a hay baling machine

Solution

The Wialon partner [GPS Tracking Systems Pty Ltd](#) approached the customer with a solution to their requests.

- [Digital Matter Dart trackers](#) were installed on hay balers to track their location, speed, some other parameters, and the info from additional equipment.
- A sensor was added to calculate the rotation of the arm inside the baler to count hays produced. 4 rotations mean that 1 bale has been made. The counter was connected to the tracker and sent info about the number of piles produced.
- A standard Digital Matter iButton reader was used to identify drivers and connect them to work performed.
- A buzzer was set up to notify drivers about the necessity to use identification tablets.
- Waterproof boxes and proximity sensors completed the hardware part of the solution.
- All the data was sent to Wialon, [the GPS tracking platform](#). There, geofences were created to know how many bales can be produced for a particular area. With returning customers, it allowed to compare how many bales were made last year, plan and estimate future works. Notifications were used to see when the bale drops off.
- A special button was installed to calculate rebales. As soon as the driver presses the button, the rebale is counted. It's also recorded in Wialon via the notifications module.



The white box with a tracking device, an iButton reader, and the button that a driver presses to record rebales

- The Wialon reports module is used to show the number of bales and rebales to the management team.
- The solution was implemented in the middle of a baling season. So there was not much time to install the equipment. That's why the client chose this solution type instead of relying on the built-in CAN bus. The mentioned GPS trackers and sensors are less expensive and quicker to mount.

Results

The implementation of the telematics solution allowed the leasing company to accurately calculate the number of hay bales produced and report it to the management.

✓ Accurate data

The exact data about hay bales made is now reported to management in time.

✓ Customer satisfaction

The data is collected automatically. So there is no human factor that can influence the reports. The company relies on actual work reports rather than on info from seasonal workers or farmers.

✓ Time savings

All the manual back-and-forth with drivers and clients is eliminated; the info is collected automatically and is used as proof of the completed job and as a reference for closing any fraud attempts or customer issues.

Company profile

IoT project of the year nomination: Agriculture

Country: Australia

Industry: Agriculture

Website: [bigbale.com.au](#)

Solutions

Wialon

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