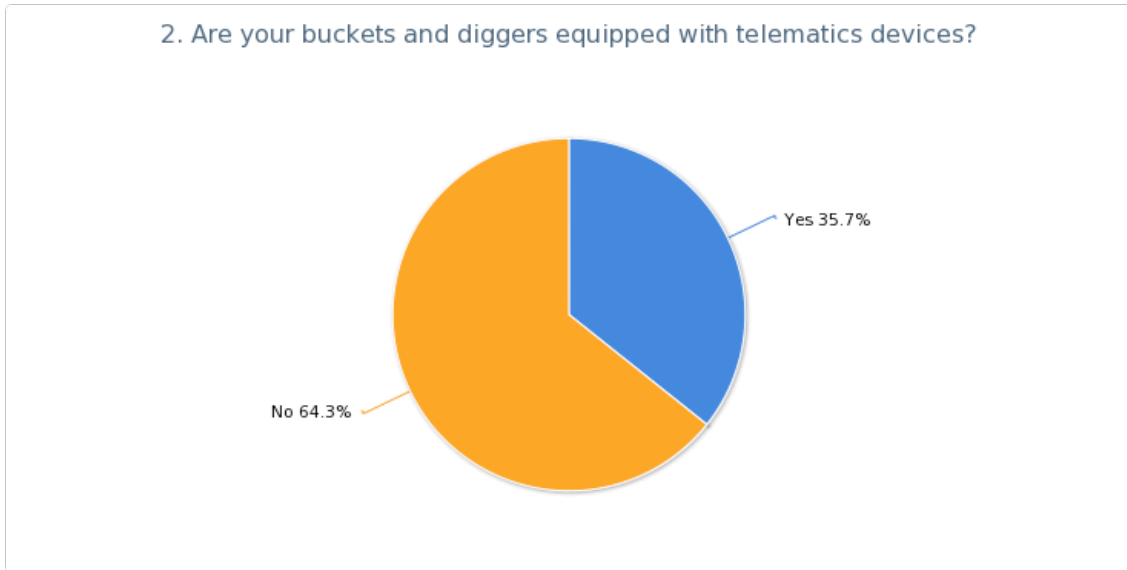


Boom Operation Monitoring Survey

February 2014

Utilimarc

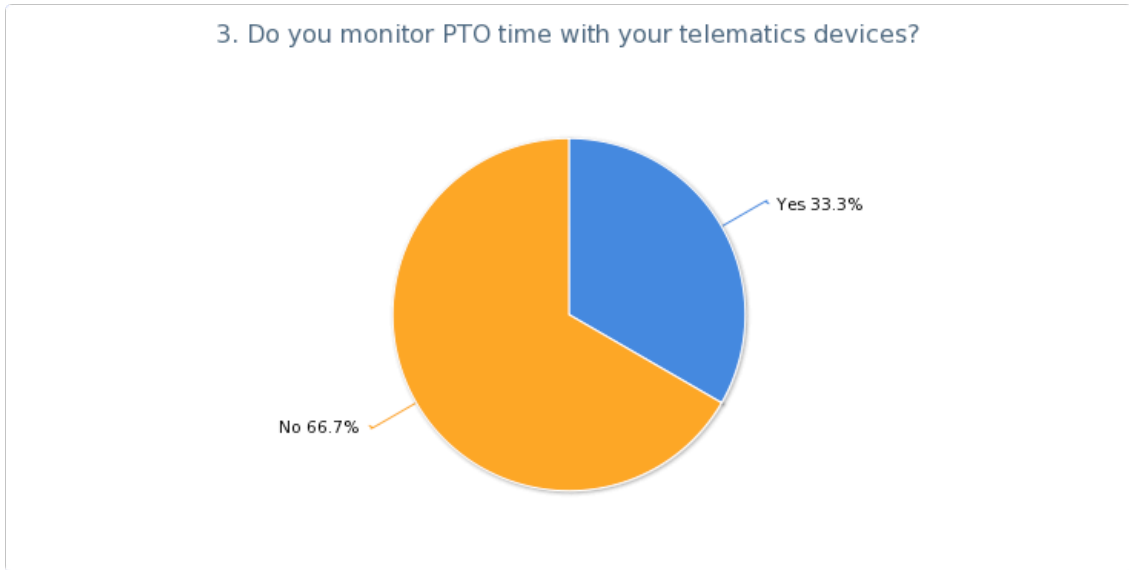
Are your buckets and diggers equipped with telematics devices?



Value	Count	Percent
Yes	10	35.7%
No	18	64.3%

Statistics	
Total Responses	28

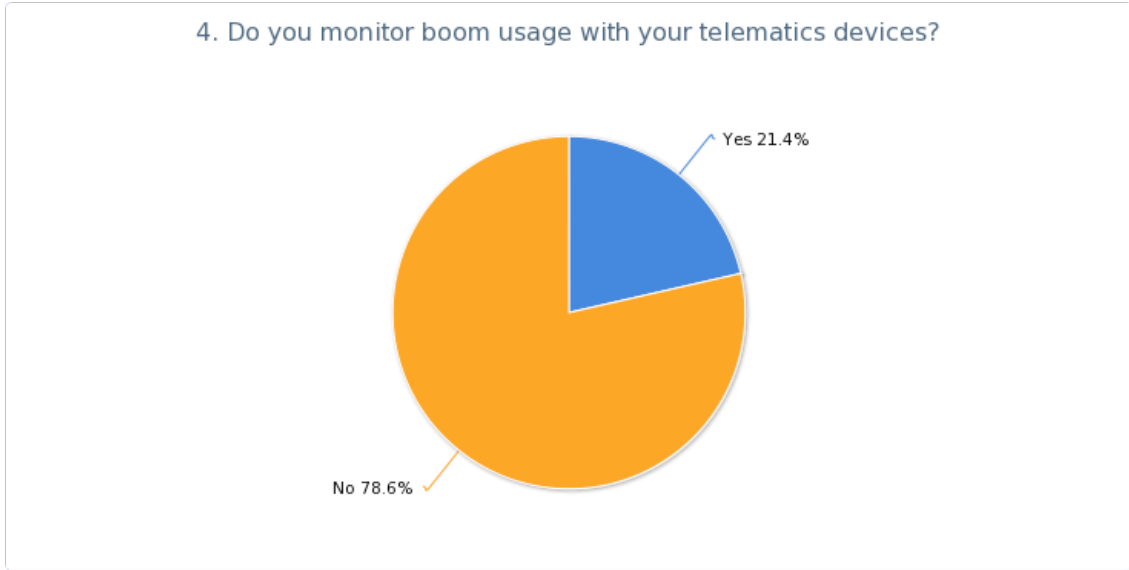
Do you monitor PTO time with your telematics devices?



Value	Count	Percent
Yes	9	33.3%
No	18	66.7%

Statistics	
Total Responses	27

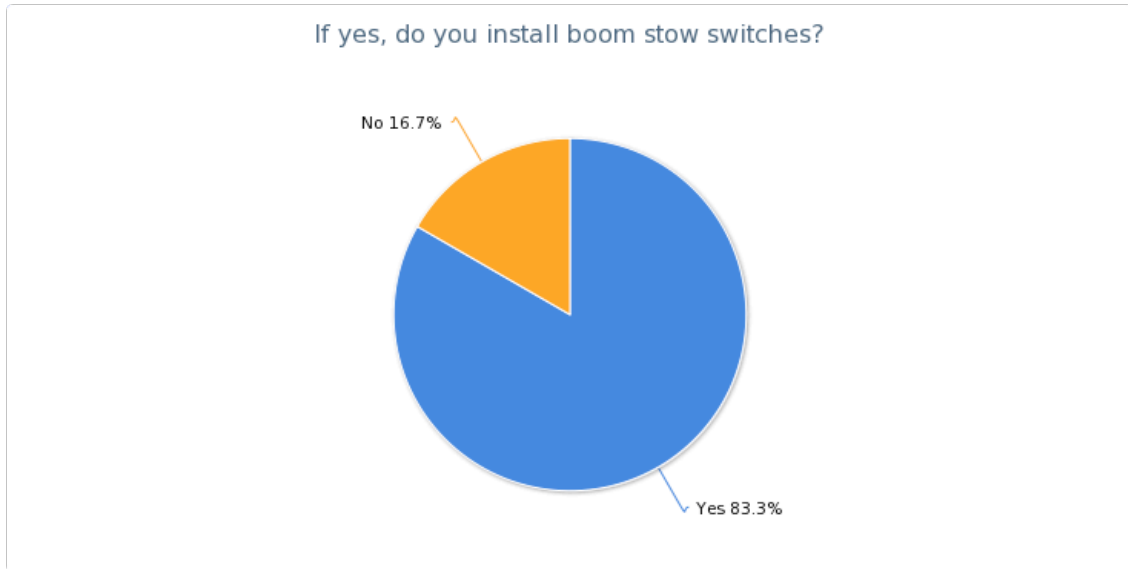
Do you monitor boom usage with your telematics devices?



Value	Count	Percent
Yes	6	21.4%
No	22	78.6%

Statistics	
Total Responses	28

If yes, do you install boom stow switches?



Value	Count	Percent
Yes	5	83.3%
No	1	16.7%

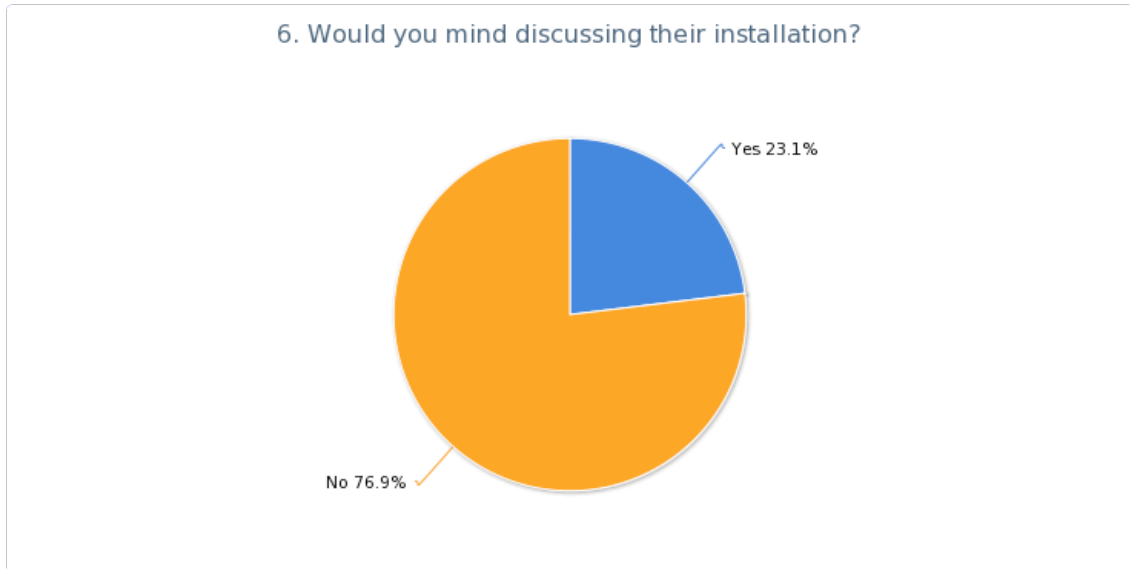
Statistics	
Total Responses	6

How do you monitor boom usage? Boom stow switch, outrigger deployment, etc? Please describe below...

Responses:

- Boom out of rest switch.
- Boom stow switch.
- Do not currently monitor boom usage, etc.
- Do not monitor our 2,000 lbs. booms.
- Hydraulic pressure switches are installed
- PTO Hrs.
- PTO engaged. Out of rest.
- PTO hour meter.
- PTO operated switch with hour meter on turret.
- Usage through shop and user monthly PTO readings.
- We do not currently monitor.
- We do not currently monitor boom usage.
- We don't do a lot of monitoring. We use elapsed (calendar) time to set service schedules.
- We don't. PMs on the booms are based on bi-annual cycles.
- We have an engine hour meter and a PTO hour meter.
- We presently have no monitoring devices on our booms.
- No current monitoring, but plan to use telematics going forward.
- PTO hours.
- We have meters that monitor boom usage and the data is collected during their PMs.
- We do not, however for a time study we did look at PTO hours in assisting in determining our inspection intervals.
- PTO hours off the carrier boom stow switch are by micro switches. Same with outriggers. If the switches are not made up, the boom will not work.
- We compare boom out of stow hours with PTO Hours, each has its own hour meter that we take reading from and manually enter into our Fleet Management System.

Would you mind discussing their installation?



Value	Count	Percent
Yes	6	23.1%
No	20	76.9%

Statistics	
Total Responses	26