

We Make Your Plant Run Better.

Jeremy Miller Hotmix Parts & Service

## **The Problem**

- Every truck cab incident is an expensive repair bill (\$25,000 or more) assuming there is not a severe injury or OSHA fine and plant shutdown
- Unnecessary dumping of mix onto the truck scale is costly and takes away productive time elsewhere







- Systems with transmitters and receivers will bypass all silos when operator initiates bypass mode, negating the purpose and allowing for accidents to occur
- Visibility from nighttime production, dust, blue smoke, obstructions further complicate the loadout process

## **The Problem**





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## **The Initial Solution**

- Widespread attempt to solve a longstanding industrywide problem
- Concepts provide separate truck positioning sensors for each asphalt silo
- Configurable sensors help driver position the truck under the silo gates
- Systems include safety override button so maintenance can be performed
- Cameras are often placed strategically so operator in the control tower has better line of sight than before
- Cameras only provide line of sight and are inadequate when nobody is watching them







### **Improvements Needed**

- Conventional solutions require strategy, thought, and design to help fully maximize potential of product
- Contractors have spent vast amount of time and money in R&D to build their own system with same results
- Different size trucks plague this technology and prevent consistent, unreliable accuracy
- Widespread misuse of the necessary function of being able to Bypass the system for maintenance
- Ability to bypass one silo at a time instead of all silos simultaneously
- Human Error still prevalent in this era of equipment
- Innovative technology that dug further than other systems prior, but still doesn't prevent user error and pails in comparison to the use of Artificial Intelligence and Modern Software
- Potential downfalls of loadout mistake range from bad to worse with insufficient safety precautions



## **Technology Based Solution**

- The bypass function is a necessary nemesis; however, operators often choose to run in bypass completely
- With the Look, Lock 'N Load, we have integrated our Linux (OS) based software and created the Bypass Log
- The necessary bypass function is monitored with a bypass log that accounts for all activity of the system
- This not only discourages widespread, neglectful use of this feature, but also keep track so it can be reviewed
- Screenshot of computer screen is taken every time bypass is enabled, stored on server for review





## **Artificial Intelligence Based Solution**

- Using a training A.I. (artificial intelligence) model, the Look, Lock 'N Load system has "computer vision"
- The system mathematically utilizes images to train the neural network Shared by all end users
- The Look, Lock 'N Load digitally scans an image of incoming trucks and differentiates between the truck's cab and its loadout bed.
- The system recognizes the truck's position, it links to the silo loadout system to confirm when a specific truck is in the designated loading zone, approving the silo gates to open
- The display indicates a red zone for the tractor cab and a green zone for the loading bed, default is red





## Look, Lock 'N Load

- The Look, Lock 'N Load easily interfaces with any brand loadout system
- Reduces stress by providing assurance that the silos will never allow loadout when unsafe conditions exist
- The AI is compatible and communicates with equipment
- Two options available SAVE and IPOV









## Look, Lock 'N Load

### **SAVE** (Side Angle View Exposure)

- Standard side facing option from conception
- One option available.
- Capable of viewing 1-4 silos per scale
- One system per truck scale
- 30'+ distance required from truck scale
- Elevated installation may be required







# Look, Lock 'N Load

#### **IPOV** (Individual Point Of View)

- Due to obstructions or preference, alternate to **SAVE**
- One imaging module per silo, mounted underneath the silo
- View is directly into the truck bed
- One system per truck scale
- IR allows for use at night and in presence of blue smoke
- Easy installation using magnets











## Trailblazers

- Companies have instituted pilot projects nationwide, ranging from CRH and Colas to Privately Owned Businesses
- Several users have already bought additional systems, some for all facilities
- Immediate solution for customers with reoccurring problem
- Zero accidents have occurred at any plant with a Look, Lock 'N Load
- Operational in 13 states within first year of implementation
- Currently operating in 26 states and Canada
- United data nationally allows for the A.I. to improve its capability
- Contractors across the country assisted in helping this technology improve to today's capability
- Users are excited to give testimonials, allow site visits

**"I witnessed the Look, Lock 'N Load not allow my** operator to mistakenly dump on a truck hood. That one SAVE **paid for the system itself."** 

