

# WHAT IS A HUMAN SENSOR?

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August 9, 2019

Four DuPont employees died after inhaling methyl mercaptan fumes from a leak at a now-closed insecticide plant outside of Houston, Texas, in 2014. A series of miscommunications during shift change were a contributory factor, and those families will never be the same.

When critical information wasn't shared between onshore staff of the BP Deepwater Horizon and its drilling partner Halliburton, the well exploded in 2010, causing the men of 11 different families to die and the spillage of almost five million barrels of oil into the Gulf of Mexico. Legal settlements, fines and cleanup costs totaled nearly \$62 billion.

At the Kleen Energy Natural Gas facility in Connecticut, only a portion of the workers had been notified that a maintenance activity in 2010 would create a fatal situation inside the building. Six families had to be notified of deaths, and 50 other families were notified of injuries due to deficient information exchange between management and staff.

The list of fatal incidents due to poor shift handover is tragically long, leaving behind grieving families, wary workers and huge corporate losses.

While many industrial settings carry inherent risk, these incidents – and countless others – didn't have to happen. What you can't see CAN hurt you.

Humans see things that machines can't; by adopting a Shift Excellence mindset that powerfully combines human procedures with real-time data on one operations management platform, you can allow your personnel to become "human sensors".



When driving **Shift Excellence** with a documented, well-implemented shift handover strategy, all necessary parties know all the critical data on a job site. Data for ongoing maintenance activities is dynamically shared between shifts, so that the necessary work gets done.

With that in mind, let's revisit the DuPont catastrophe: During troubleshooting operations, personnel relied on verbal communication to convey the technical team's plan to the incoming shift. After the event, it was impossible to determine who knew what because there was no documented communication delivery.

While most plants have digital control systems to collect real-time information using data historians, the accompanying human processes are often recorded using inadequate tools. These poor operations management processes have caused **catastrophic incidents**.

The truly safe facilities require more efficient, consistent, detailed, integrated data across day-to-day operations.

Unfortunately, there are still inadequate time-consuming **Human System Interface** (HSI) data

collection methods being used at many industrial sites, such as spreadsheets, white boards and radio calls. The shift crew forgets to hand over checklist items at the end of a shift; shift supervisors are unable to see shift crew logs; shift crews become fatigued from manually collecting and collating shift information.

It is now accepted that the use of these inadequate data collection methods has contributed to the cause of many industrial disasters. The high risk of poor shift handover procedures has been highlighted on numerous Incident Investigation Reports over many years, and these information holes lead to wasted personnel time, employee frustration and increased exposure to injury.

According to the white paper "How Does the Stock Market Respond to Chemical Disasters" (Marie-Aude Laguna and Gunther Capelle-Blancard), a company's value is indeed impacted by catastrophic incidents, on top of the expense of clean up and repair of facilities. Of 14 pollution accidents studied, the average dollar value loss was \$180 million.

By driving Shift Excellence, your "Human sensors" are more alert to potential issues, are eager to suggest improvements, and can have more faith in their operations processes. Humans see things that machines can't.

“What you  
can't see  
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hurt you.”

Don't ask your shift crew to do double work ... writing their processes on paper and then punching it into a system. It creates a perfect storm of miscommunication. Take your operations to the next level by equipping your personnel to become human sensors so they can get home to their families at the end of their shifts.

**Contact us** today to get on the road to Shift Excellence or contact David Dollar directly via **LinkedIn** or **email**.

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