Visual Literacy, Human Performance & Risk Assessment – How They Depend On Each Other

NECA Conference 2019

Our Purpose: Our people and products make the world a better place.

Using These Circles, Make Pictures
How Do You Define Visual Literacy?

Research reveals that most, as much as 90%, of what you think and see, is actually your brain filling in blanks based on memory and past experience. But, making assumptions and overlooking what’s right in front of you, can lead to preventable mistakes or omissions.

Memorize the Details of This Picture

[Image link: https://www.youtube.com/watch?v=QeSPtBcjdeQ]
Draw the Boat from Memory

Draw the Boat From Memory
Do You See The Whole Picture?

How many people are in the picture?

Do You See What I See?
What Is The Story In This Picture?

What Is The Story Now *(big picture)*?
Does Having The Complete Story Matter? (deconstruct to better reconstruct)
| Incident Description | On March 28, 2018, at approximately 11:20 am, a fire was reported at the 3-Tab Shingle Machine. Permitted Hot Work was being performed by a contractor on the shingle machine since 6:30 am. At approximately 9:00 am, a second contractor with Videojet Technologies, came into the area and started work on 2 Videojet printers located at the stairs of the shingle machine area. To clear a fault, the Videojet contractor placed the head of the printer into a 5-gallon bucket and starting a cleaning cycle that applies a consistent amount of Makeup Fluid, a low flash point material, through the printer head to clear a blockage or viscosity issue (standard procedure). This process atomizes the Makeup fluid and with the adjacent Hot Work being performed by the other contractor, a fire was ignited inside of the 5-gallon bucket from the fugitive sparks. The fire was contained by use of a fire extinguisher by the contractor fire watch. The resulting property damage was the Videojet Printer Head and umbilical cord. |

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![Bucket with Makeup Fluid](image1.png) 3-gal bucket was behind the printers on a platform | Videojet Technician | Welding contractors
Hazard Recognition
(Potential Risks/Losses)

Identifying Potential Risks/Losses

You cannot eliminate, reduce, or manage risk until you know what risk is?

https://www.youtube.com/watch?v=cNcsTRQNZLE
Electrical Contractor Worksite Challenges

- Worksites vary from site-to-site, and day-to-day
- Unfamiliar with “hidden” risks – worksite orientation
- Don’t know what you don’t know
- Resistance to addressing unsafe acts or conditions
- Project budget v. safety compliance expense
- Project deadlines v. taking time to do the job in the safest (most compliant) manner
- Git R’ Done mentality
- Understanding the full scope of the project and the individual tasks to be completed

What Do You See?
Evaluate Risks at all Phases of the Work

- Travel to Worksite
- Project Site Walk-Scope
- Site EHS Orientation
- Project Setup
- “Individual” Project Tasks
- Upset or Non-Routine Tasks
- Project Completion
- Project Takedown-Cleanup
- Travel from Worksite
Conklin
Human Performance Improvement (HPI)

What is HPI, and How Does it Intersect with Visual Literacy?

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Error is not a choice…

It’s the notion that if you depend on a person doing something 100% right 100% of the time…

YOU WILL BE DISAPPOINTED…

…A LOT!!!

(Baker, 2014)

Why Do People Make Errors?

1. Time Pressure
2. Repetitive Actions
3. Lack of Clear Standards
4. Distractions
5. Confusing Controls
6. Change
7. Fatigue
8. Lack of Knowledge
9. Assumptions
10. Inaccurate Risk Perception
11. Multi-tasking
Before the Event ....

The Gray Area: Uncertain Interpretation of Safe work

Clearly Safe to do Work

Clearly Unsafe to do Work

Rumble Strips

Risk Assessments

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What risks are present?

How can we protect ourselves from the risks?
Upset Conditions

What Is An Upset Condition?

- An unplanned condition or outcome
- Any condition that has the potential to result in an injury, defect or loss
- Any condition that is not addressed in the original project scope
- Any local (client) condition change that results in a project change
Why Visual Literacy, HPI, and Thorough Risk Assessments are Critical for Electrical Work

As safety professionals, we are focused on safety and regulatory compliance, but we can never forget that our actions and inactions impact the lives of our workers and their loved ones.

Eddie’s Story:

//www.youtube.com/watch?v=hfnEuRA7-vo

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