



vetergy

ARMS
RELIABILITY

THE INTEGRATION OF ROOT CAUSE ANALYSIS AND HUMAN FACTORS



Integration of the ***Human Factors Analysis and Classification System*** into the ***Apollo Root Cause Analysis methodology***.



Incidents occur every day in a workplace.

The failure of people, equipment, the environment and management systems to behave as expected cause most of these problems.

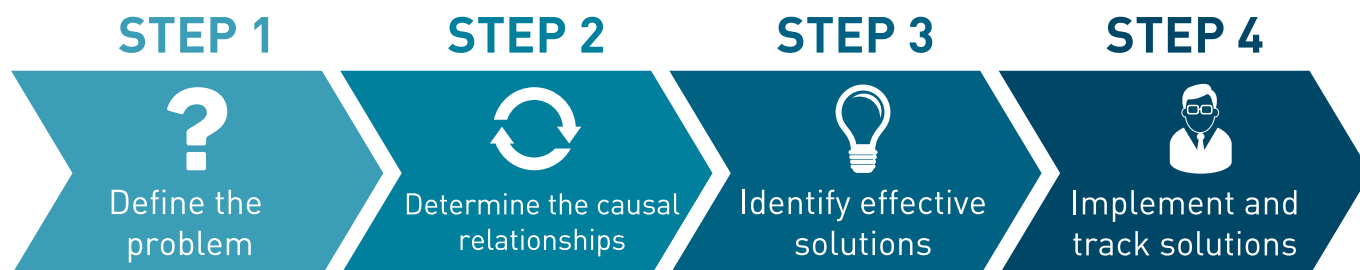
So what can be done to improve safety, eliminate accidents, manage costs, and reduce human error?

What is the Apollo Root Cause Analysis methodology?

The Apollo Root Cause Analysis methodology is a new way of thinking that goes far beyond the traditional root cause analysis problem solving processes. It facilitates the creation of a common reality, using input from all stakeholders to produce an evidence-based understanding of the problem and ensures your solutions address proven causes and prevents recurrence.

The Apollo Root Cause Analysis methodology is a 4 step process which facilitates a thorough incident investigation. It makes problem solving easy and gives those who have been trained the skills to solve real world problems faster, more efficiently and effectively at any time.

At ARMS Reliability, we are firm believers in the Apollo Root Cause Analysis methodology because we've seen it solve real-world problems for numerous clients all over the world, in industries including mining, transportation, aerospace, petro-chemical, utilities, manufacturing, healthcare, and telecommunications.



Key Advantages Over Other Problem-Solving Methods

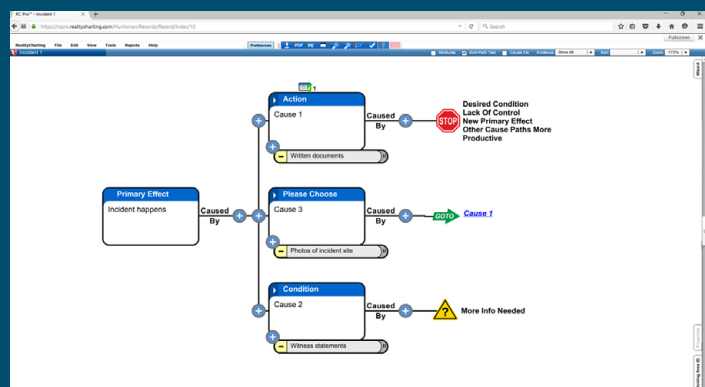
- ✓ Create a common reality and gain buy-in from all stakeholders
- ✓ Eliminate recurring problems through identifying all the solutions
- ✓ Get a definite result – know when a problem is solved
- ✓ Students learn by doing with experiential training courses
- ✓ RealityCharting® Software to make documentation and reporting easier



Software Solutions

REALITYCHARTING®

RealityCharting® software is a powerful tool used to assist facilitators and complement the Apollo Root Cause Analysis methodology. RealityCharting® is user-friendly and helps people better understand their problems and identify effective solutions that prevent recurrence.





What is a Human Factors Analysis and Classification System (HFACS)?

In high reliability industries, error can have devastating consequences on people, operations and the environment. Research shows that 70 to 90 percent of incidents are due to human error.

Most investigations focus on what happened or stop at who; they fail to study the web of precursors that created the conditions and placed the operation on a course for failure.

Human factors analysis is proven to help investigators analyze beyond the immediate “active” failures of a system and expose the subtle antecedents that precede human failure.

Our Strategy

- Teaching investigators to recognize the conditions and actions that influence the decisions that lead to failure and providing them with a defined taxonomy to assist with the analysis and classification of human error
- Promoting a paradigm shift with how front-line operators view human error and their role in achieving operational resiliency within the organization
- Demonstrate to supervisors more effective, efficient and meaningful strategies for correcting and tracking human error within an organization

Deliberate investigation is the most proactive tool available to identify human error. The Vetery Group is a provider of HFACS services, helping organizations investigate human causes of accidents, and develop customized training and prevention strategies.

HFACS helps corporations in complex industries improve reliable human performance and achieve organizational resiliency.



Improve safety,
eliminate accidents
and manage costs by
reducing human error.



Our Services

The Vetergy Group uses a set of defined steps to introduce and improve the operational resiliency of high-risk and high-reliability organizations. The design and management of HFACS helps organizations learn from, respond to, monitor and anticipate human error by providing the following services:

Training and Support for Investigators

- Human Factors Theory
- Human Factors Taxonomy and failure levels
- Investigating Human Factors
- Developing Interventions
- Reporting
- Tracking and Monitoring
- Practical Application

Implementation

- Trends Analysis
- Sustainment / Refresher Training

Developing Policy and Team Member Guidelines

- Program Interface/ Dependency
- Resourcing
- Strategic Communication
- Implementation

Third-party investigations

- Support / Augmentation as Consultant to Internal Investigations
- Independent third-party Investigations when warranted

The Vetergy Group: HFACS Expertise and Leadership

HFACS was initially used by the U.S. military to investigate and analyze human factors in aviation incidents. The Vetergy Group was born of a team of U.S. Marine Corps and Naval officers with Human Factors and Safety responsibilities in their military aviation and nuclear propulsion commands. As commanders, pilots, Top Gun instructors, test pilots, accident investigators, safety officers and HFACS instructors, these individuals bring more than 40 years of combined experience in accident investigation and human factors analysis. Their culture of excellence and dedication to reducing human error is derived from an environment where there are no second chances.

We have a deep understanding of each client's desire for reliable human performance and the reduction of incidents. Our knowledge enables us to help with a guided investigative approach followed by training, coaching and mentoring from military veterans. The result is a problem-solving culture that helps balance protection and production.



"Because our trainers are experienced military leaders and motivators, our instructional techniques are more effective than a purely academic approach. Team members get energized through our trainers."

-David Wilbur, President, Vetergy Group

EXTERNAL OBSERVABLE ACTIONS

Simple Analysis
Addresses Symptoms

UNDERLYING CAUSES

Systematic Analysis
Resolves Root Causes

DORMANT HUMAN FACTORS

Formal Analysis Changes
Organizational Culture

ROOT CAUSE ANALYSIS

WHY?

HUMAN FACTORS ANALYSIS

WHAT WERE THE CONDITIONS?

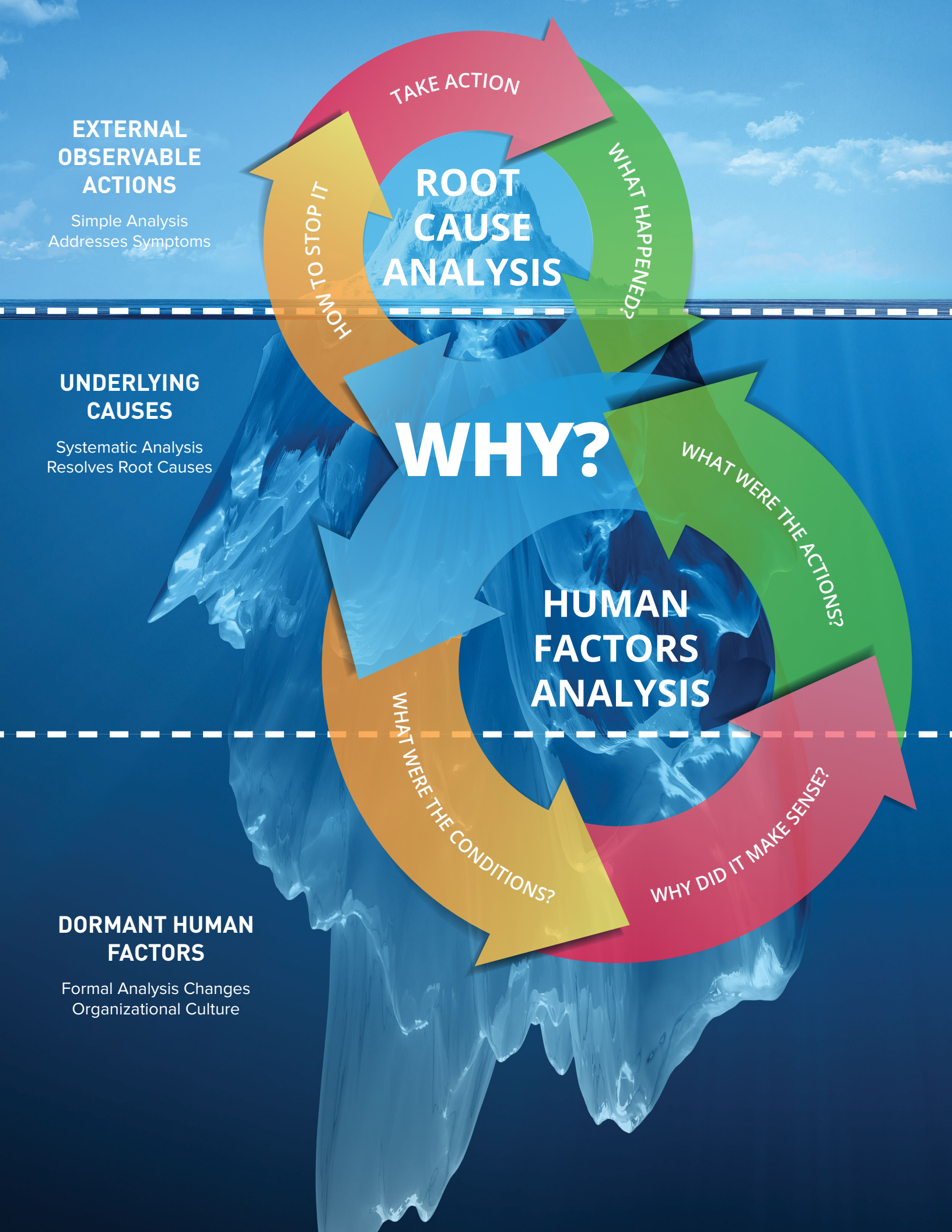
WHY DID IT MAKE SENSE?

WHAT WERE THE ACTIONS?

WHAT HAPPENED?

TAKE ACTION

HOW TO STOP IT



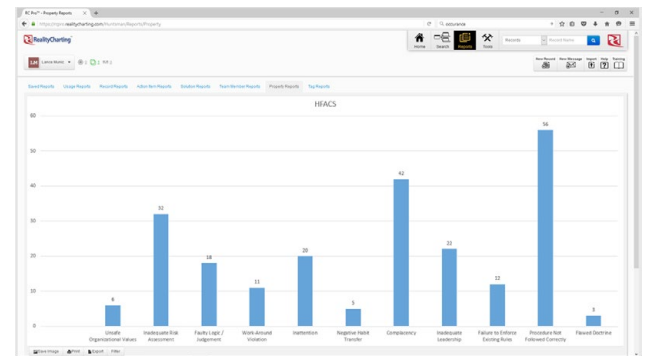
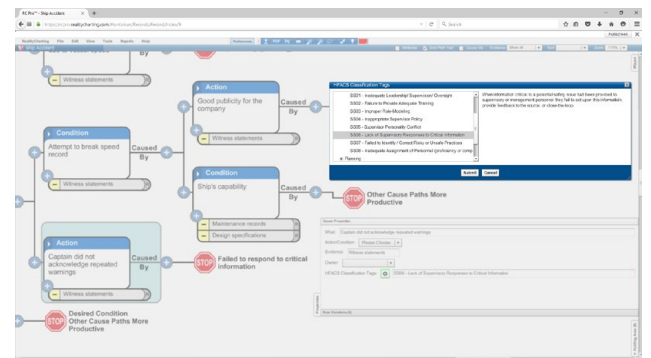
A Proven Solution to a Complex Problem

The Apollo Root Cause Analysis methodology seeks to produce an evidence-based understanding of problems to ensure solutions address proven causes and prevents recurrence. It simplifies problem solving and equips individuals with the skills to solve real world problems faster, more efficiently and effectively at any time.

HFACS looks beyond the active failures to expose the hidden, subtle latent precursors to human failures. These human causes are then systematically classified to enable the user to build effective solutions focused to achieve the best results and to effectively trend performance over time.

A 360-degree view

ARMS Reliability has teamed with the Vetergy Group to provide clients with a comprehensive approach to asset reliability. Our partnership integrates HFACS with a unique blend of consulting, education and software solutions including Apollo Root Cause Analysis methodology and RealityCharting® software. Together, the ARMS team and Vetergy Group broadens the investigative platform and the depth of services available to our clients.



RealityCharting® is the software platform to diagram the root cause analysis and facilitate a data driven approach that incorporates HFACS to improving performance.




EMPOWER | EDUCATE | EQUIP

ARMS Reliability provides solutions to help companies achieve optimal asset performance and improve problem solving skills through a unique blend of consulting, education and software solutions.

ARMS Reliability is the authorized global training provider of the Apollo Root Cause Analysis methodology. Since 1996, over 110,000 people have been trained in this effective problem solving technique. Today, it is used successfully by people in a wide variety of industries, such as resources, petro-chemical, utilities, manufacturing, aerospace, telecommunications and healthcare, to help guide them through the intricacies of formal problem analysis.

To learn more about our services, software, and training options please contact ARMS Reliability at **+1 512 795 5291** or info@armsreliability.com

 +1 512-795-5291

 +1 512-795-5228

 info@armsreliability.com

 www.apollorootcause.com