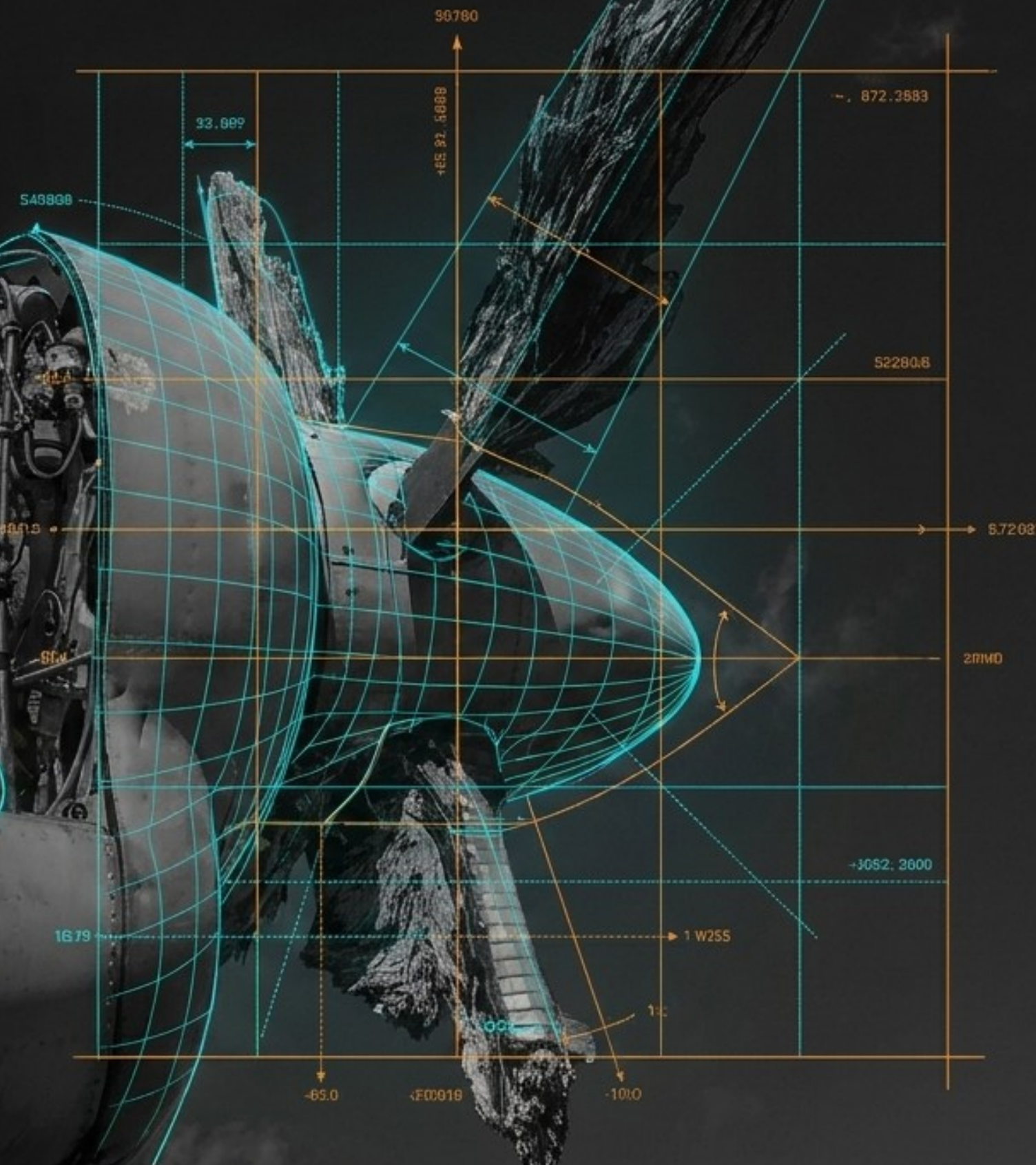


AVIATION ACCIDENT SITE SAFETY

Forensic, Occupational, and
Operational Risk Management
at Aircraft Accident Sites

Module 1: Operational Framing & The Forensic Blueprint

An Intensive Training Programme for Investigators-in-Charge (IICs),
Site Safety Coordinators, and Regulatory Authorities.



No evidence is worth uncontrolled exposure.

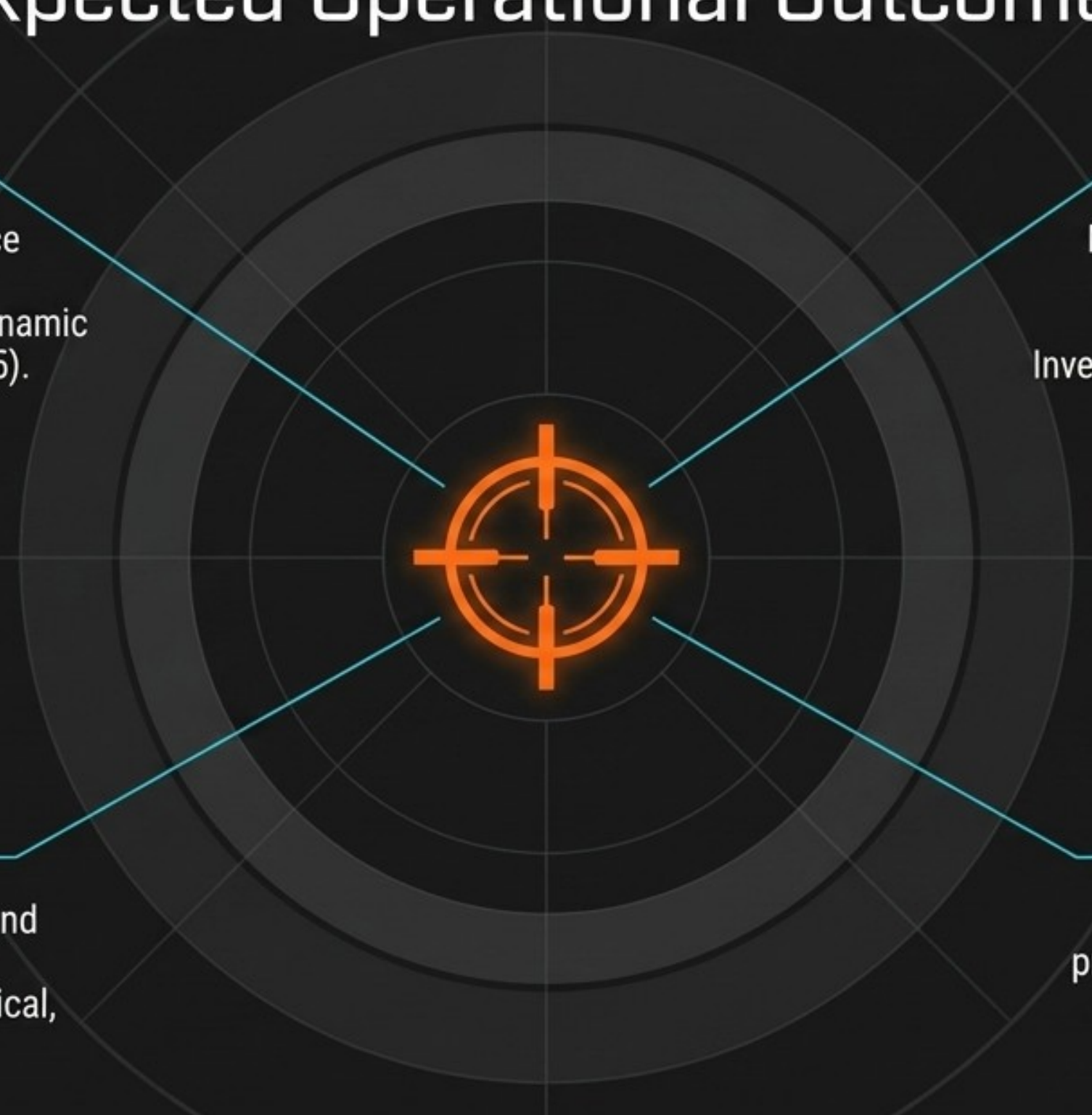
THE PARADIGM SHIFT

Aircraft accident sites are dynamic, contaminated, legally sensitive, and psychologically demanding environments.

THE FOUNDATIONAL RULE

In this environment, the site safety system is not an administrative layer. It is the architectural foundation of the investigation itself. Without site safety, there is no forensic integrity.

Expected Operational Outcomes



Risk Architecture

Transition from reactive compliance to proactive, architectural risk management using generic and dynamic risk assessments (ICAO Doc 10205).

Command Interface

Master the operational overlap and command friction points between Emergency Response, Site Investigation, and Wreckage Recovery.

Exposure Control

Dismantle 'PPE-first' mentalities and implement rigorous hierarchy-of-controls strategies against biological, chemical, and physical vectors.

Forensic Admissibility

Secure the chain of custody and preserve evidence integrity through uncompromising site zoning and decontamination protocols.

The **4 Anomalies**: Why This Is Not a Normal Workplace



Psychologically Demanding

High-stress conditions compounding fatigue, driven by mass trauma, human remains, intense media scrutiny, and victim family proximity.



Contaminated

Invisible vectors of risk. Pervasive presence of blood-borne pathogens (BBP), toxic combustion residues, and respirable polymer composite fibers.



Dynamic

The site is chemically and structurally unstable. Unspent stored energy (BPRS, hydraulics), shifting wreckage, and degrading weather continually alter the risk profile.



Legally Sensitive

Every action is subject to international scrutiny (ICAO Annex 13), potential criminal litigation, and strict chain-of-custody requirements.

The Phase Demarcation & Command Interface



Emergency Response

Primary objective: life safety and fire suppression. Commanded by local emergency services. Site is highly volatile; investigation is secondary.

Investigation & Evidence Preservation

IIC takes jurisdiction. The site transitions into a controlled forensic environment.

Wreckage Recovery

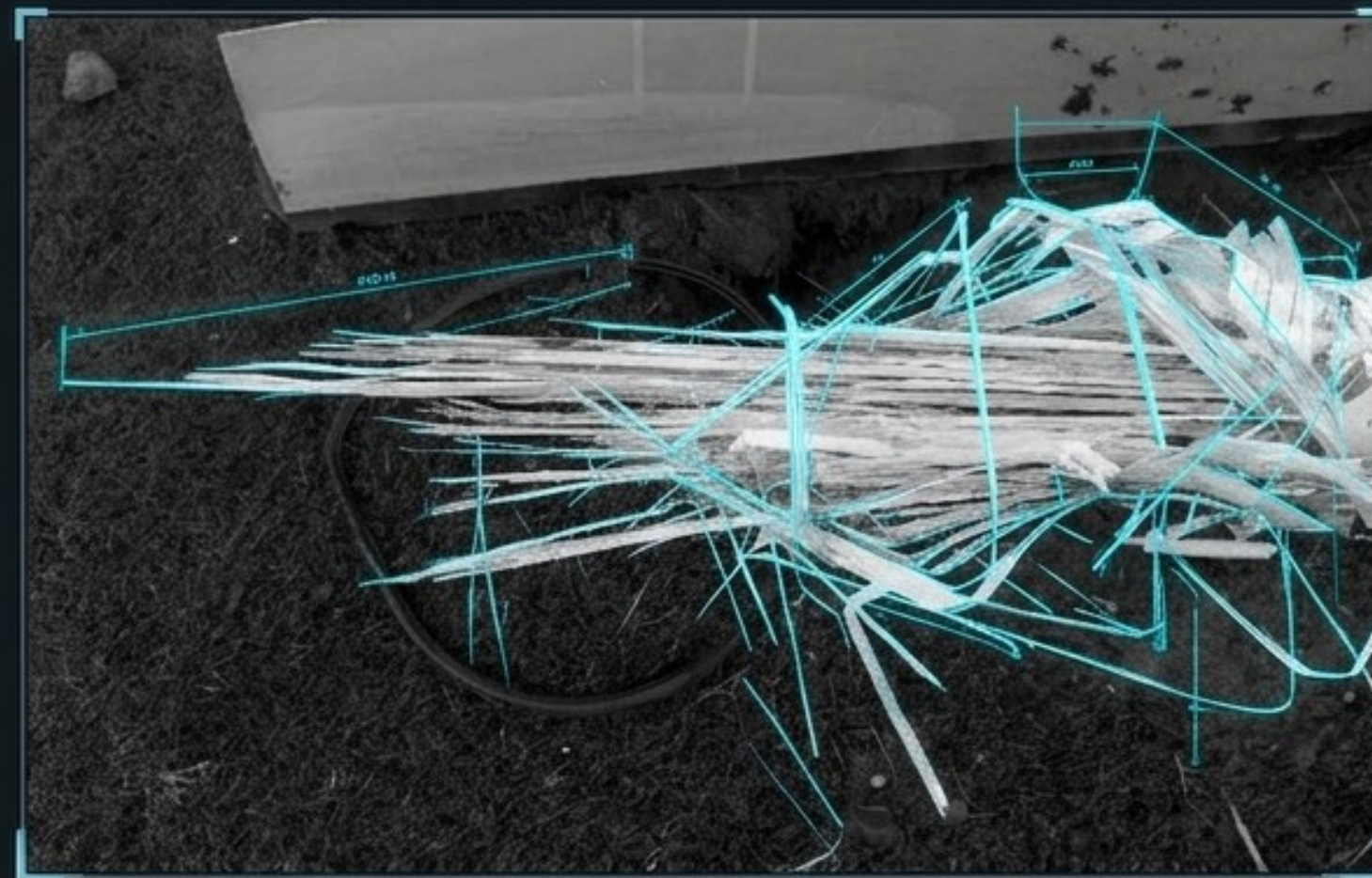
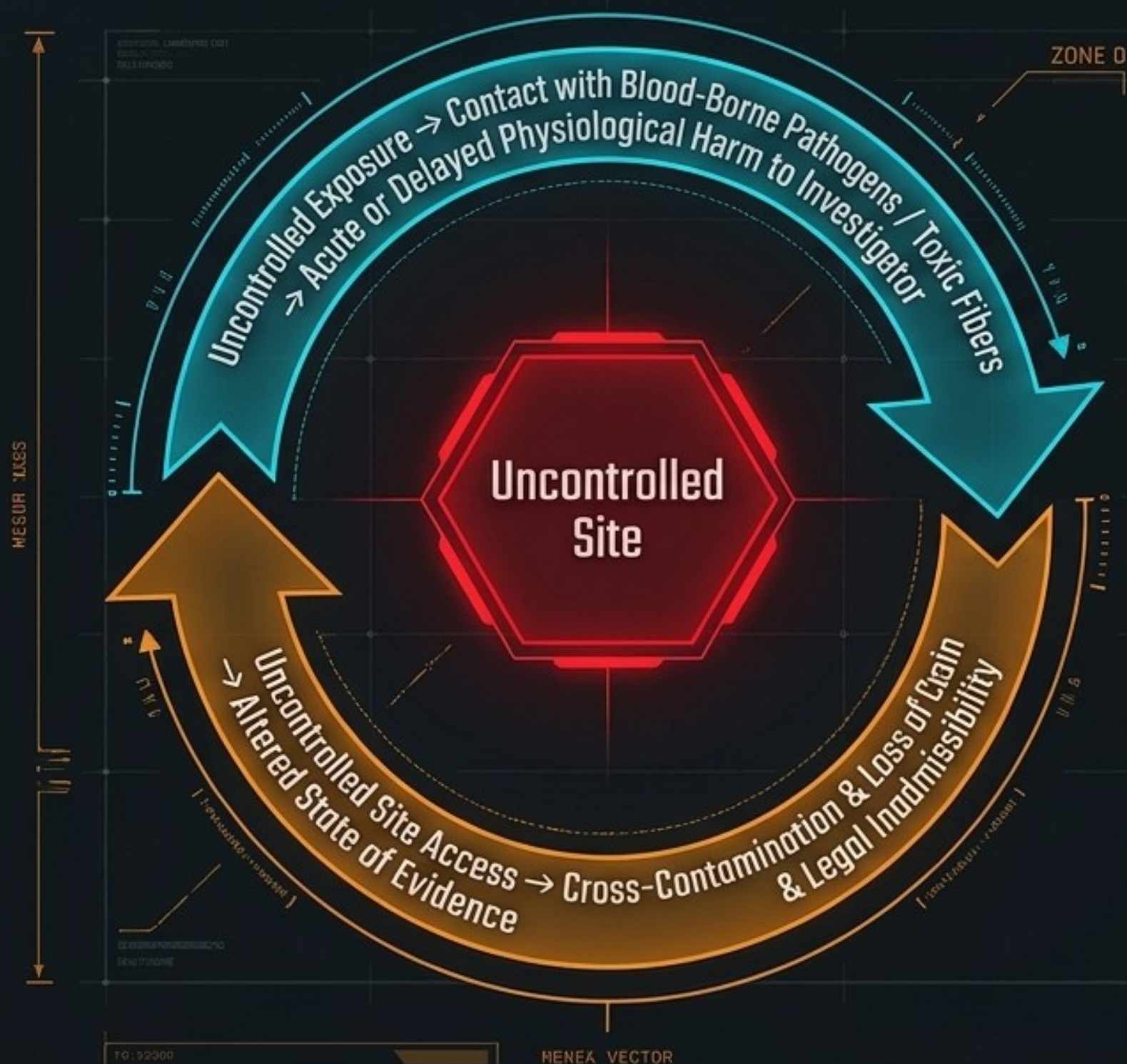
Heavy machinery, cutting, and lifting.

Friction point: Securing evidence before destruction by rescue operations.

Friction point: Managing structural collapse while maintaining chain of custody.

Key Insight: The boundaries between these phases are rarely clean. Dynamic risk assessment is mandatory at every phase transition to prevent uncontrolled exposure.

The Forensic-Safety Nexus: Dual Vectors of Failure



Site Safety = Forensic Integrity

If an investigator is exposed to a hazard, the evidence they are handling has simultaneously been compromised. You cannot protect the evidence without protecting the personnel.

Synthesis: Safety as Investigation Architecture

Legacy Thinking

Safety as an administrative burden and compliance checklist.

"PPE-First" – suit up and walk into the hazard.

Static, one-off risk forms filled out before arrival.

The investigation must proceed at all costs.

Architectural Thinking

✓ Safety as the tactical foundation and enabler of forensic science.

✓ Hierarchy of Controls – eliminate, isolate, and control exposure before donning PPE.

✓ Continuous, dynamic risk assessments updated at every phase change (ICAO Doc 10205).

✓ Stop-work authority is absolute. Reassess, delay, or modify tasks to ensure zero uncontrolled exposure.