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WHEN SECONDS MATTER:

Protecting First Responders with Advanced Radiation Detection

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INTRODUCTIONS

Bobby Salvesen
Co-Host, Co-Founder, & CEO
The Haz Mat Guys

Mike Monaco
Co-Host, Co-Founder, & COO
The Haz Mat Guys

Brandon Dean Morris
General Manager
Outreach and Education
SERTC

Bill Sundstrom
Regional Sales Manager
Blackline Safety

WHAT WE'LL COVER

1. Rising Radiation Risks
2. Radiation 101
3. Recognizing & Measuring Radiation
4. Protecting Responders
5. Detection Gaps
6. Choosing the Right Detection Tools
7. Q&A

RISING THREATS, EVOLVING RISKS

Gamma radiation threats are growing—and harder to detect

- Gamma sources are increasingly widespread
- Commonly stored and transported by hospitals, universities and industry
- First responders often unaware of radiation presence on dispatch
- Illicit use and accidental release pose global concerns especially at public events and mass gatherings
- Multi-threat environments (gas, chemical, radiation) demand sharper situational awareness

15M packages of radioactive material are transported each year on public routes
–World Nuclear Association, 2024

147 radioactive material misuse incidents were reported in 2024
—IAEA Incident and Trafficking Database, 2024

Sept 2024: Samsung fined for exposing chip plant workers to radiation
—Reuters, 2024

WHY IT MATTERS NOW

Threats are evolving—but readiness isn't keeping up

- Outdated tools and low awareness put responders at risk
- Many teams still rely on aging Geiger counters
- Radiation is invisible—often goes undetected
- Without detection, responders spend more time in danger zones
- Urgent, visible threats like EV fires take priority over radiation risks

A NEW MINDSET FOR RADIATION RESPONSE

- Most responders lack training or tools for radiological response
- Radiation behaves differently than gas or chemical hazards
- Hesitation from unfamiliarity delays response and increases exposure
- Fast, accurate detection and long-term exposure tracking are critical
- Radiation must be treated like other high-priority threats—and fully integrated into preparedness plans

RADIATION 101

What you need to know

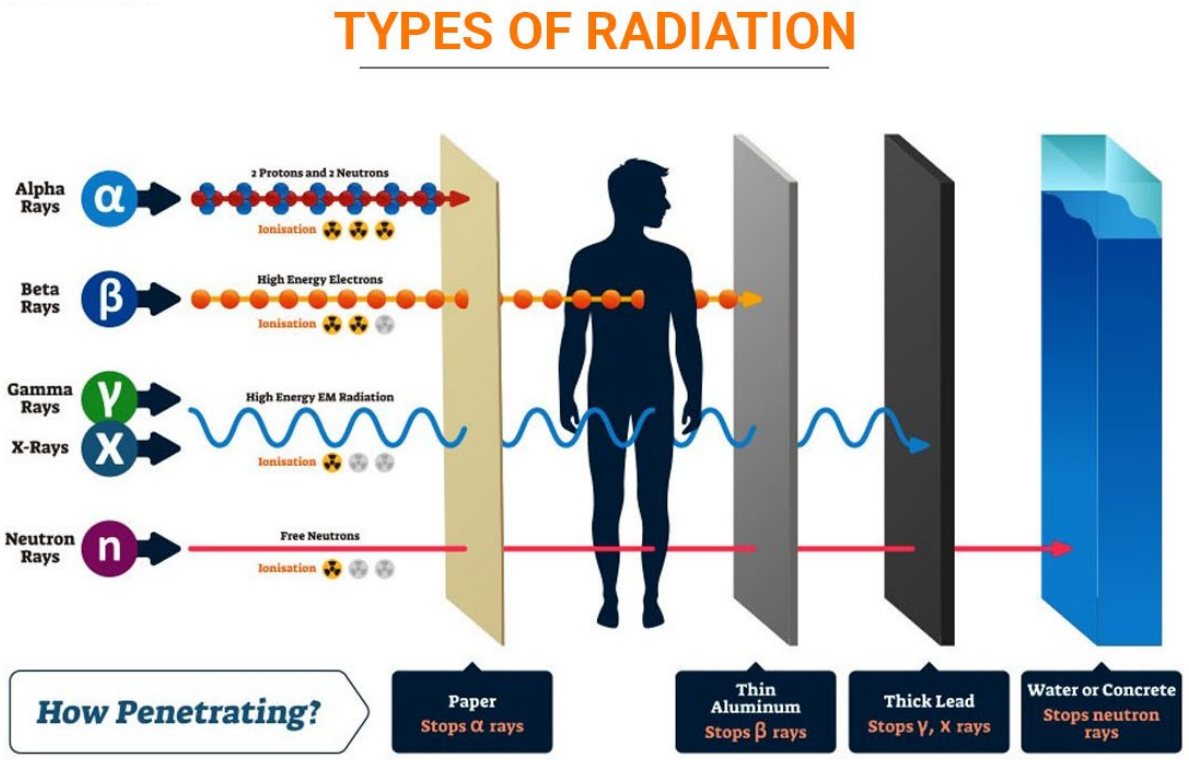


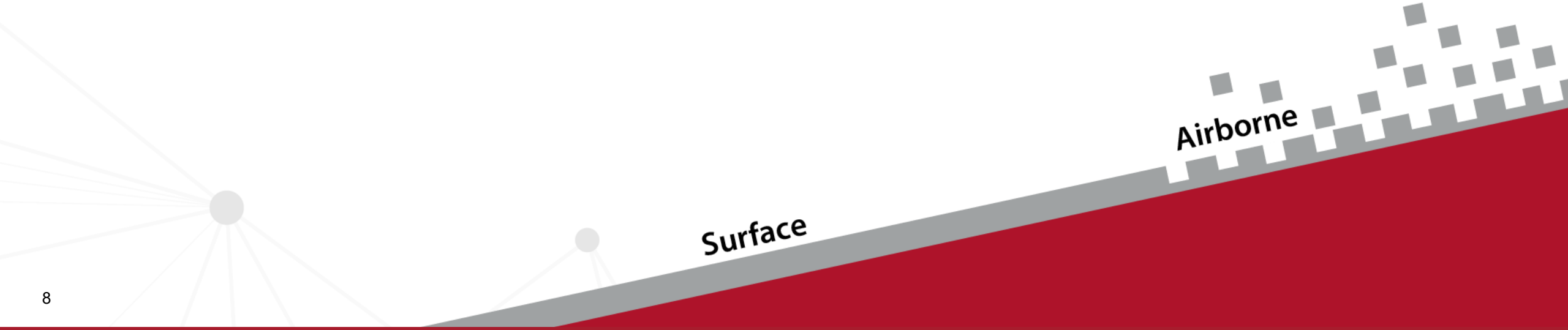
Image sourced from: www.telgurus.co.uk

- Radiation is energy released from unstable atoms
- Comes in alpha, beta, gamma, or neutron forms
- Unlike alpha and beta, **gamma** can reach a responder from a **distance**
- Risk increases with **exposure** time and proximity
- Understanding the basics leads to faster, safer decisions

AIRBORNE VS SURFACE CONTAMINATION

Understanding the difference

- Airborne contamination can be inhaled, ingested, or absorbed
- Surface contamination affects skin, gear, or equipment
- Response depends on type—decontamination vs. respiratory protection
- Isotopes are the source of radiation, not the radiation itself
- Identifying the isotope guides PPE, distance, and response tactics



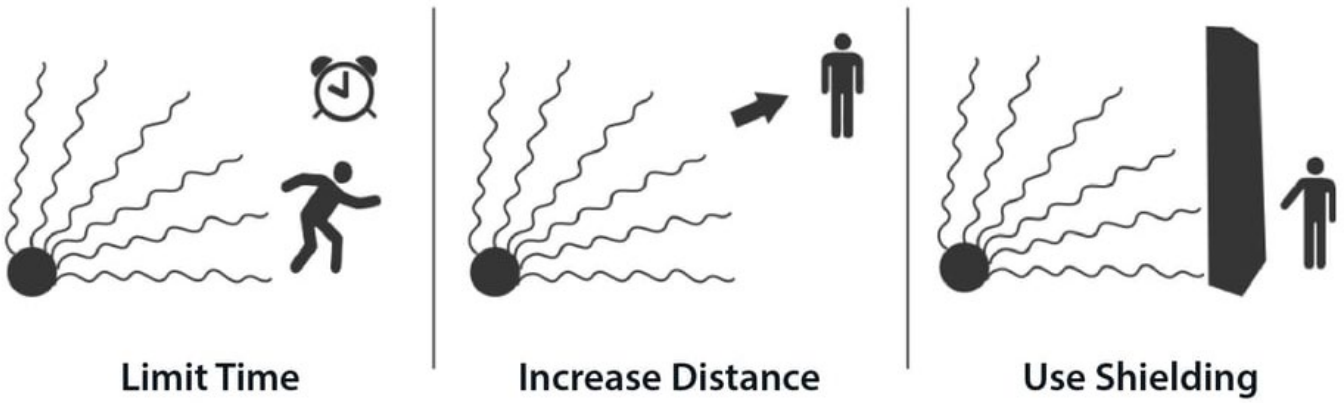
RADIATION DOSE RATE

What do the numbers mean?

- Radiation is measured in sieverts (Sv) or rem
- Dose rate (µSv/h or mrem/h) shows exposure per hour
- Meters/Monitors are essential-–there’s no other way to assess exposure
- High readings may require evacuation, shielding, or rerouting
- Low readings help determine safe working time
- Misreading dose rates increases risk

REDUCING EXPOSURE: ALARA IN ACTION

As Low As Reasonably Achievable (ALARA)



- Built on three principles: **Time, Distance, and Shielding**
- Helps responders reduce exposure during radiation incidents
- Supports smarter decisions about **entry, rotation, and withdrawal**
- Awareness of dose rate + exposure time = safer response

STORIES FROM…

THE HAZ MAT GUYS

DETECTION GAPS

- Many teams respond with little or no radiation detection
- Legacy tools don’t meet today’s complex threat landscape
- Slow or missed detection delays critical decisions
- The right tools enable early action and more informed response

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CHOOSING THE RIGHT DETECTION TOOLS

- Sends real-time alerts to both field and command
- Shows responder and device location in real time
- Delivers fast, reliable, accurate readings under pressure
- Built for rugged use and extended deployments
- Simple to set up, deploy and use — no calibration required

Blackline Safety's G7 EXO was already my go-to monitor for its versatility and real-time data.

With EXO 8's gamma detection, it's even more valuable for hazmat teams, offering broader protection and the ability to use it in public safety scenarios.

It will also keep our people more protected because we can detect more gases.

– Chris Johnson, Hazmat Technician, Westchester County Department of Emergency Services

Link

EXO 8 GAMMA AREA MONITOR

The world's ***only*** direct-to-cloud portable area monitor with up to 8-gas and gamma detection for early warning and protection.

Drop-and-go deployment	**Real-time data streaming to the cloud**	**Up to 100+ days battery life**
Post-incident reporting & insights	**Built to perform in extreme conditions**	**24/7 live monitoring**

SMARTER AREA MONITORING, EARLIER DETECTION

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INDUSTRY-LEADING GAMMA RADIATION DETECTION

- Detect gamma up to 3 times the distance of comparable units
- Monitor low energy ionizing particles for improved early warning and faster response
- Operate continuously, without cycling on and off
- Instant response to changing radiation levels

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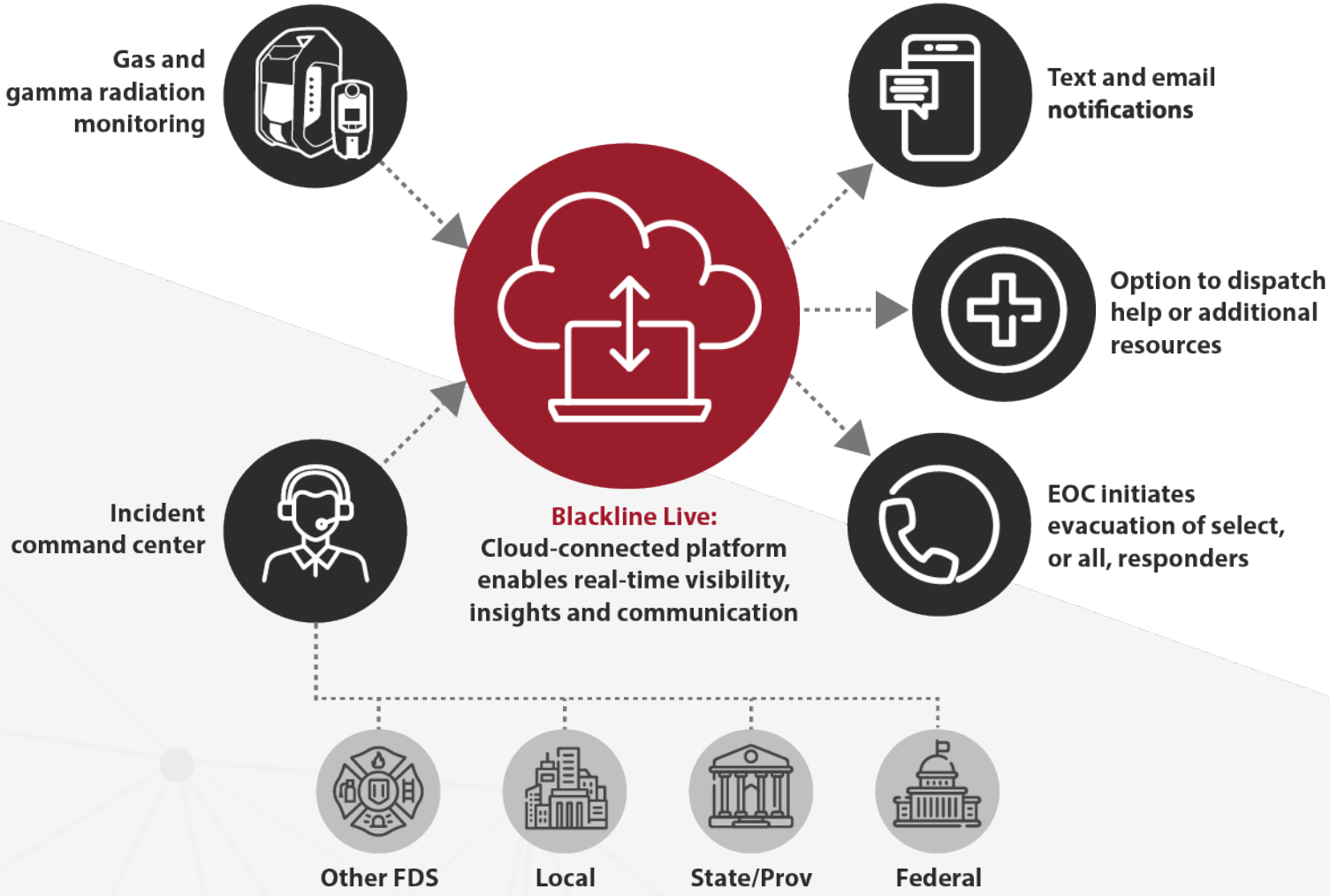
BLACKLINE CONNECTED SOLUTION



ADVANCING RESPONDER AND PUBLIC SAFETY

Q&A