



ICAO Regional Accident Investigation Workshop (Bangkok, Thailand, 5-6 October 2026)

DOCUMENTING THE ACCIDENT SITE

Photography & perishable evidence • Initial assessment • Team coordination
Evidence control & site logistics • Site survey & wreckage diagram • Distribution analysis

Alfred Idau Nana | Manager Investigation Operations

The first hours determine how much evidence survives

OPERATING PRIORITIES

01

RECORD

Begin photography without delay. Capture wreckage, location and the condition as found.

02

PRESERVE

Collect and protect perishable evidence before weather, movement or recovery changes it.

03

COORDINATE

Set priorities and work to one agreed plan so evidence is not lost or duplicated.

PERISHABLE EVIDENCE

Ground scars and impact marks

Aircraft fluids and stains

Aircraft and flight documents

Human remains and personal effects

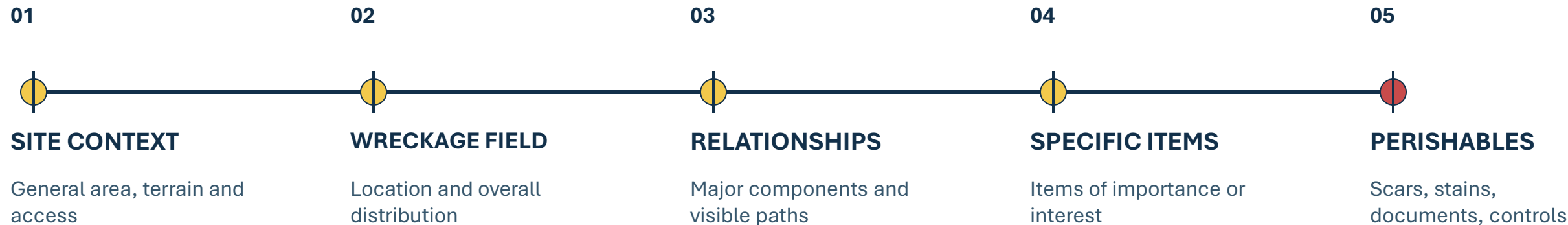
Cockpit instruments and switch positions

TIME EXPOSURE

Start with broad coverage then tighten the frame

SYSTEMATIC PHOTOGRAPHIC RECORD

The sequence should preserve context before attention shifts to individual evidence.



AERIAL PHOTOGRAPHY

Arrange without delay whenever it is appropriate to the accident type.

Use the aerial view to retain site-scale relationships that ground images may not show.

The first walk-through is assessment, not reconstruction

OBJECTIVE

Gain a general feeling for the accident sequence while determining what the investigation will require next.

- 1 DYNAMICS** Form an initial sense of the accident sequence.
- 2 REQUIREMENTS** Identify heavy equipment, special tools and specialist needs.
- 3 PRIORITIES** Decide what must be documented or protected first.

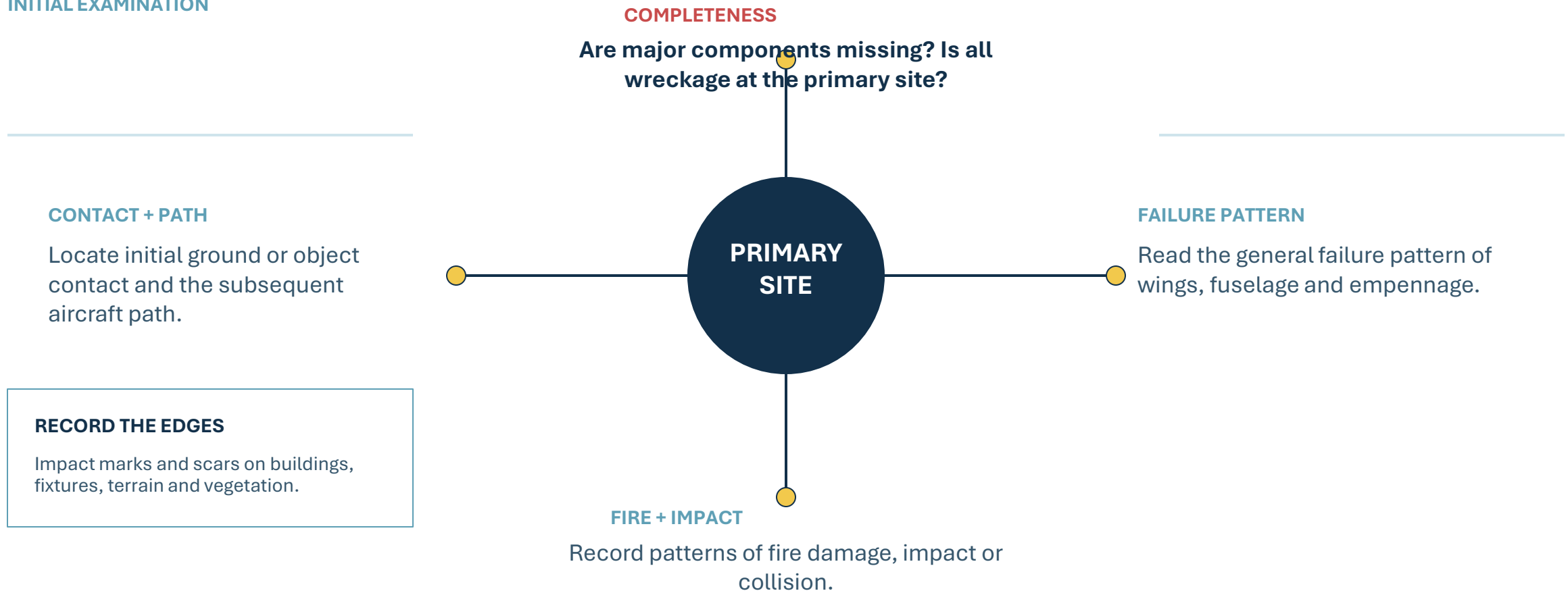
FIELD CONDUCT

- Move carefully; protect ground scars until fully examined.
- Make notes or an audio record of general impressions.
- Photograph the general area and items of importance.
- Prioritise perishable evidence during the walk-through.

DO NOT DISTURB THE WRECKAGE

A disciplined scan tests whether the wreckage field is complete

INITIAL EXAMINATION



Preserve the scene while the team builds one plan

COORDINATION SEQUENCE

01



OBSERVE

Investigators may conduct the walk-through separately.

02



COMPARE

Gather in one location and reconcile notes.

03



PLAN

Agree priorities, roles, methods and site controls.

04



EXAMINE

Begin detailed wreck as a coordinated team

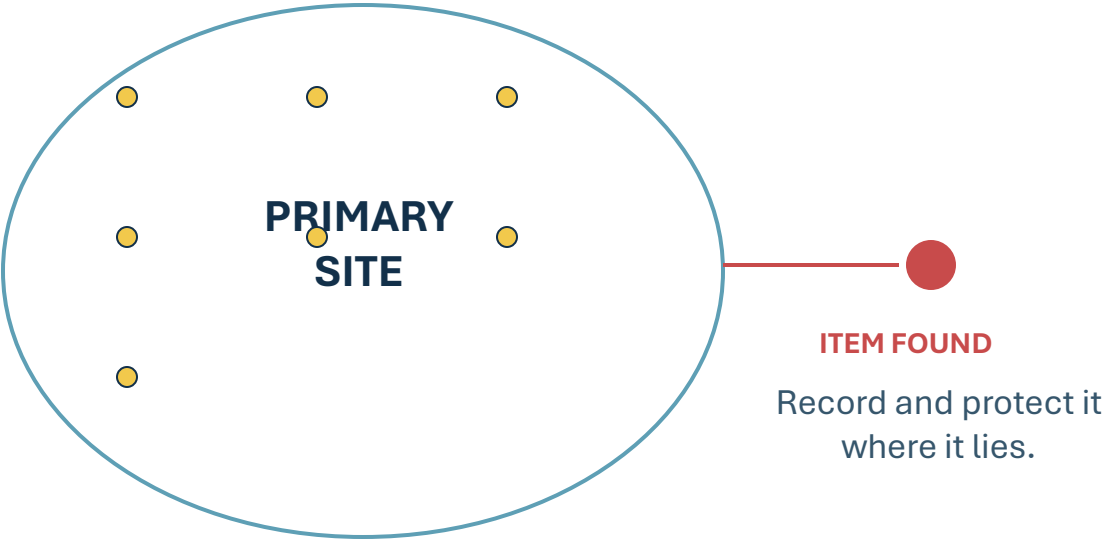
ONE COMPREHENSIVE PLAN

Protect evidence • avoid double effort • coordinate every group and individual task

**NO HAPHAZARD
INDEPENDENT INVESTIGATIONS**

Anything outside the boundary becomes a controlled evidence item

OUTSIDE-SITE DISCOVERY



CONTROL SEQUENCE

01	RECORD + MARK	Fix the original location.
02	PHOTOGRAPH	Capture the item in place.
03	TAG	Tag before moving to a secure area.
04	LOCATE	Plot on the survey chart; use GPS for major items.
05	CATALOGUE	Record identity and position.
06	NUMBER + MOVE	Only after photo, catalogue and position are complete.

NUMBER ONLY AFTER STEPS 1–5

Site logistics protect people, evidence, and continuity

OPERATIONAL DECISIONS

Plan support functions early—but do not let logistics create new evidence loss.

AREA	BASELINE ACTION	CONTROL / THRESHOLD
NIGHT OPERATIONS	Arrange lighting and generators for security if required.	Avoid site work after dark unless necessary—such as protecting wreckage from tide or water.
SECURITY	Protect the site and any item of particular importance.	Use assigned security personnel and preserve controlled access.
REMOTE HAZARDS	Assess threats to personnel in isolated locations.	Consider armed guards where dangerous animals may be attracted to the wreckage.
WRECKAGE REMOVAL	Coordinate with involved authorities and agencies.	Document every item removed from the accident site.

■ Document the logistical decision, the reason, the authority involved and the evidence affected.

A survey turns the site into a reproducible spatial record

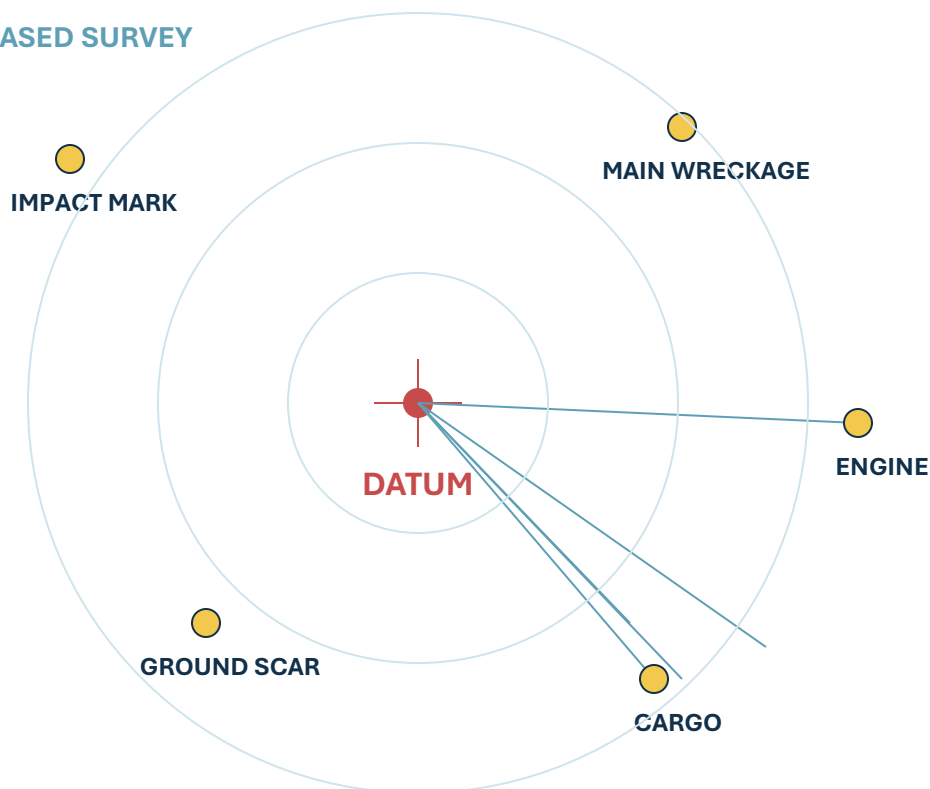
BEGIN AFTER

INITIAL INSPECTION

SITE PHOTOGRAPHY

PERISHABLE EVIDENCE RECORDED

DATUM-BASED SURVEY



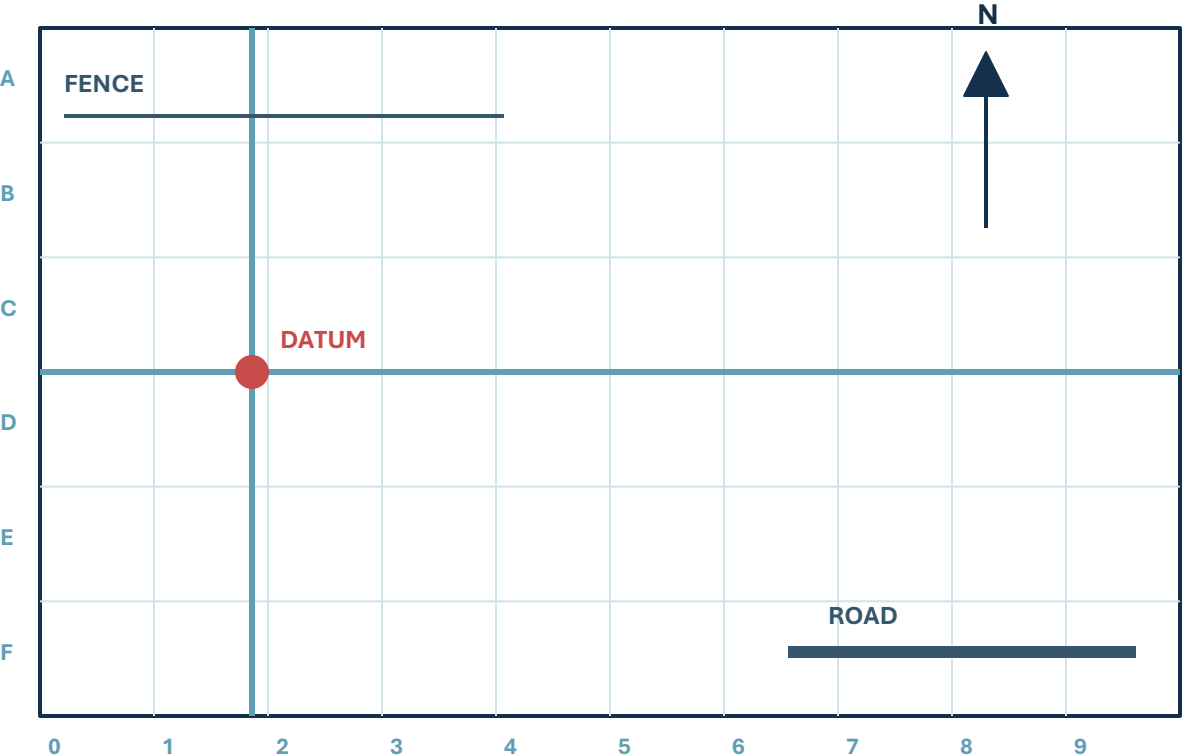
MEASURE + RECORD

- Main wreckage, scattered parts and cargo
- Survivors, victims and witness locations
- Initial contact marks, ground scars and object damage
- Impact craters, ground-fire patterns and fluid stains
- Depths, heights, relevant angles and elevations
- Rivers, roads, ravines, hills, trees and power lines

Escalate to a professional survey team when scale or complexity exceeds field capability.

A robust survey grid stays measurable, expandable, and anchored

FIELD GRID



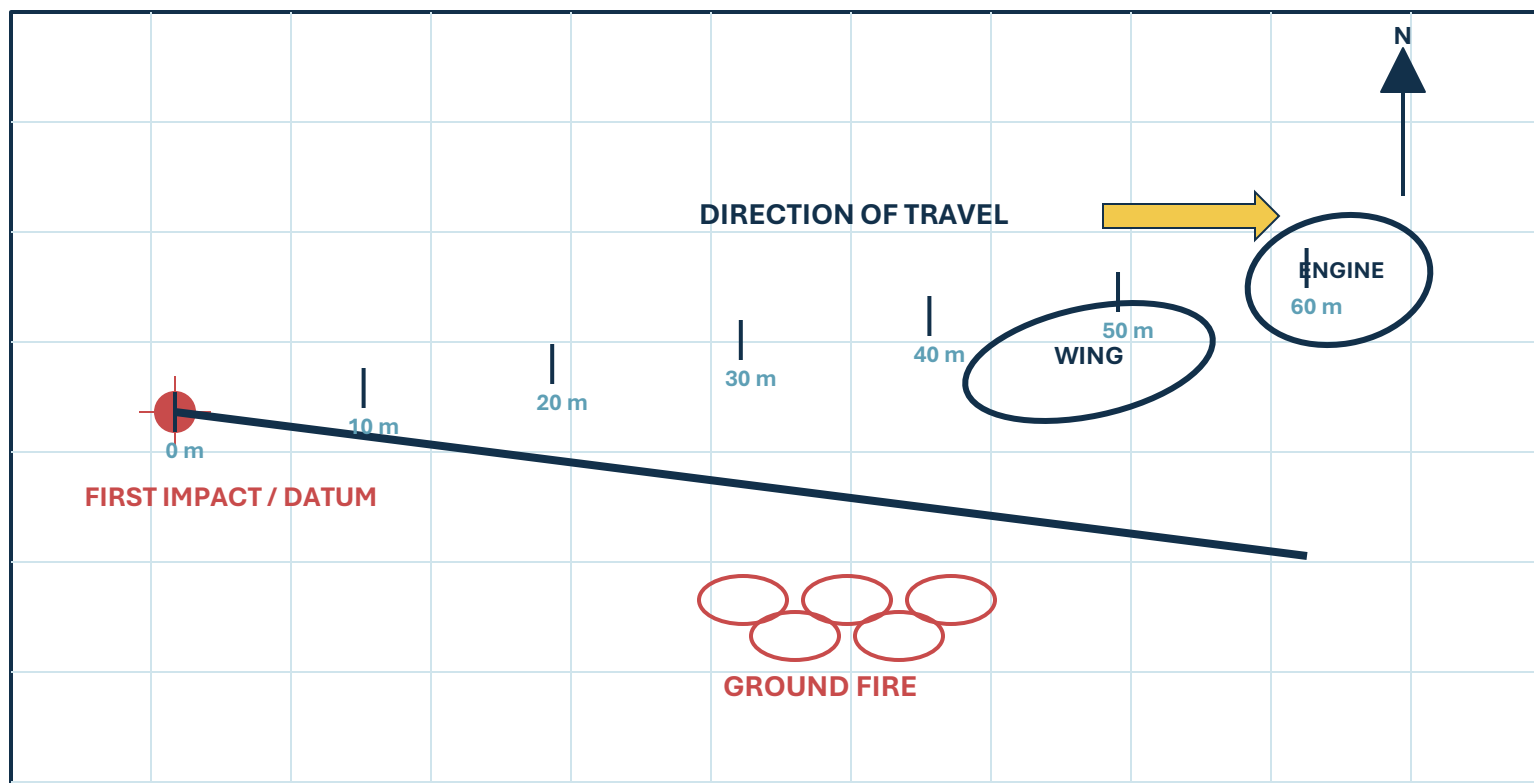
GRID REQUIREMENTS

- 01 **SUBDIVISIBLE** Supports precise measurement.
- 02 **EXPANDABLE** Extends in any direction without conflicting datum lines.
- 03 **DURABLE** Basic data points survive roads, watercourses and excavation.
- 04 **STANDARDISED** Uses a recognised grid reference for quick orientation.
- 05 **ANCHORED** References fixed terrain features such as trees, hills and fences.
- 06 **ORIENTED** Aligns the wreckage diagram with magnetic North.

Use metric units and maintain the same base units throughout the survey.

Plot from first impact along the direction of travel

WRECKAGE DIAGRAM



INCLUDE

- Scale and units
- Datum and initial impact
- Scaled centreline / travel direction
- Ground scars, stains and fire patterns
- Orientation of major components
- People and witness locations
- Terrain, landmarks and obstacles
- Pre-impact separated parts, if suspected

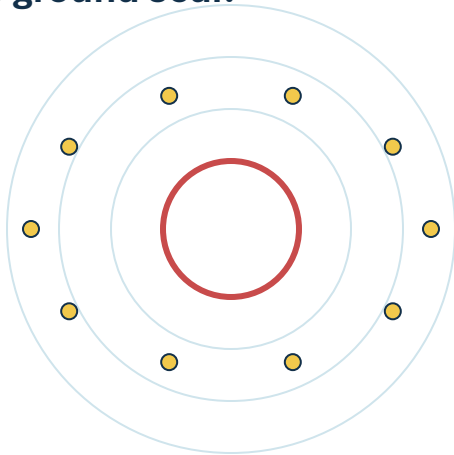
STAKE BASELINE AT 5–10 m INTERVALS

Distribution patterns offer hypotheses not conclusions

COMMON FIELD SIGNATURES

HIGH-SPEED DIVE

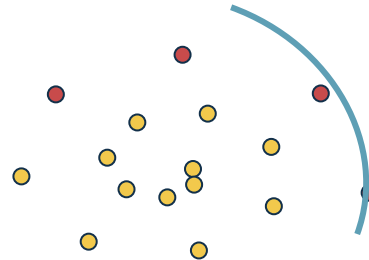
Concentrated circular field around a deep ground scar.



Wings / empennage near edge; engines may be at crater bottom.

SPIN

Small concentrated scatter with possible rotation marks.



Inside wing usually absorbs more shock; outside wing may be thrown forward.

LOW-ANGLE / LEVEL

Long, narrow distribution—especially on flat terrain.



Heavy parts farther along the path may indicate impact speed.

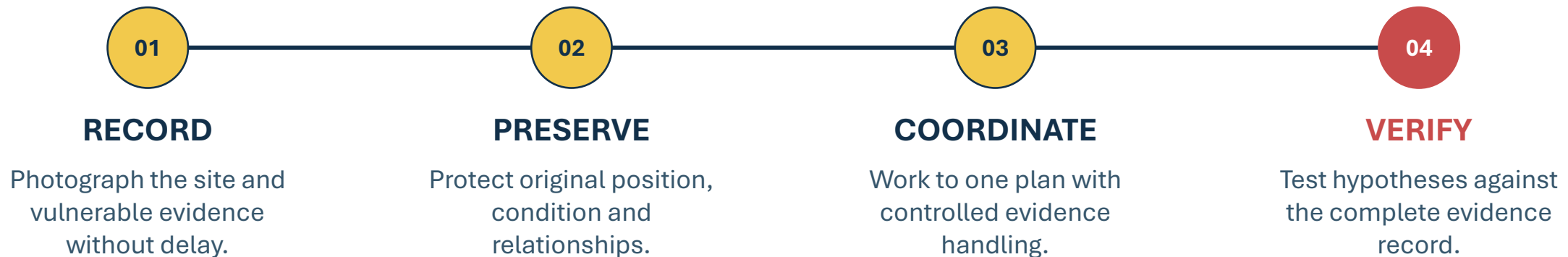
READ THE PATTERN • RECOVER THE EVIDENCE • TEST THE HYPOTHESIS

Conclusion: disciplined documentation preserves the evidence

THE FIELD DOCTRINE

Create the record before the scene changes.

Every photograph, note, tag and measurement must preserve context and remain traceable.



RECORD FIRST • PRESERVE CONTEXT • COORDINATE THE TEAM • TEST THE EVIDENCE



THANK YOU

QUESTIONS & DISCUSSION
