COMPANION GUIDE TO ONLINE TRAINING

Use alongside the online lessons at fortunefavorstheprepared.com/nav-01-landing/

NAV-01: GRID COORDINATES AND MAP READING STUDENT COMPANION GUIDE

The Operator's Field Reference

Marginal Data, Contours and Terrain, MGRS Structure, Extraction and Plotting, and Reporting
Eight Lessons · Terrain Feature Chart · Precision Table · Grid Card Worksheet · Margin Check Worksheet

Edition v1.0 · 2026

Semper Paratus, Semper Gumby

https://fortunefavorstheprepared.com/
Nick Meacher

NAV-01: GRID COORDINATES AND MAP READING — STUDENT COMPANION GUIDE

Companion Guide to Online Training

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THIS GUIDE IS A COMPANION TO THE ONLINE TRAINING

Support the development and availability of these courses by subscribing to my Patreon. This companion guide is designed to be used alongside the NAV-01 Grid Coordinates and Map Reading online training series — the online lessons are the instruction. This guide contains reference tables, charts, and blank worksheets only. It is not a standalone document and it will not teach you to plot a grid.

ONLINE TRAINING ACCESS

The eight online lessons are available at fortunefavorstheprepared.com/nav-01-landing/. Lessons unlock in sequence; each ends with knowledge checks that must be answered correctly before the next becomes available.

INSTRUCTOR-LED GROUP TRAINING

Group sessions and facilitated training are available. Contact fortunefavorstheprepared@protonmail.com.

How to Use This Companion Guide

THE ONLINE LESSONS ARE THE INSTRUCTION

Every chapter in Part I is a condensed reference for a lesson you have already completed online. The summaries assume the teaching has happened. Read them before the lesson and they will read as a list of unexplained terms.

Subscribe for online training access:
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Online curriculum:
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What this guide contains

For each of the eight online lessons, a condensed reference covering the key terms, charts and standards — not the instruction. The terrain feature chart, the precision table and the three-errors reference are included as working references. The Margin Check, Grid Card and Verification worksheets are in Part II. The instruction is delivered online; this guide is what you carry into the field and what you fill in when you build your group's grid card.

Required workflow — online lessons BEFORE using this guide

ORDER MATTERS

Do not open a Part I chapter until the corresponding online lesson has been completed. The condensed summaries here are reference material, not instruction. The sequence below is required, not suggested.

Step 1 — Support the development and availability of these courses by subscribing to my Patreon: patreon.com/fortunefavorstheprepared

Step 2 — Access the online lessons at fortunefavorstheprepared.com/nav-01-landing/

Step 3 — Complete all eight lessons including knowledge checks

Step 4 — Use this guide in the field, and to complete your group's grid card

THIS GUIDE IS NOT A SUBSTITUTE FOR A MAP

Lessons 05 and 08 cannot be done from paper alone. You need a topographic sheet covering your own ground, a coordinate scale cut for that sheet's scale, a pencil and a straight edge. A coordinate scale printed at the wrong size produces confident, wrong answers — check any printed tool against your sheet's own bar scale before trusting it.

Guide Map — What to Reference When

When you need…	Turn to…
What the margin tells you, and the one-minute margin check	Part I, Chapter 2
The terrain feature chart — five major, three minor	Part I, Chapter 3
Which way a draw bends versus a spur	Part I, Chapter 3
The three components of a grid reference	Part I, Chapter 4
What each precision level actually promises	Part I, Chapter 4
Seating a coordinate scale, and the four extraction steps	Part I, Chapter 5
The three errors that misplace a report	Part I, Chapter 5
Device settings and the datum check	Part I, Chapter 6
Precision matched to purpose, and the confirmation loop	Part I, Chapter 7
Registering an overlay	Part I, Chapter 7
A blank Margin Check worksheet	Part II
A blank Grid Card to fill in	Part II
A blank Grid Card Verification log	Part II
How NAV-01 relates to NAV-02 and the wider curriculum	Part III, Chapter 9
Doctrinal sources behind the method	Part III, Chapter 10

PART I — QUICK REFERENCE

Chapter 1: Why Location Language Fails

Reference for Lesson 01.

The five tests a location system must pass

Test	What it requires
Unambiguous	Resolves to one place for everyone, with no dependence on where the listener stands or what they already know.
Transmissible by voice	Can be said over a marginal link by a tired person and written down correctly by someone who has never seen it.
Verifiable by readback	An error is audible when the reference is repeated. This is the test landmarks fail outright.
Plottable without infrastructure	Can be turned into a point on paper with no power, no signal and no application.
Precision-declaring	States on its face how precisely it locates the point, so the recipient does not have to guess.

The four systems scored

System	Passes	Fails
Street address	All five where it exists	Does not exist across most terrain
Latitude / longitude	1, 3, 4	Struggles badly with 2 — long, similar, three notations
Word codes	1, 2, 5	Fails 3 and 4 — needs the application, unplottable on paper
Military grid	All five	Requires everyone to have learned it — a training problem

THE RULE THE COURSE IS BUILT ON

A group where everyone uses the same adequate system outperforms a group where each person uses their own excellent one. Location reporting is an agreement, and an agreement made during an incident is not an agreement.

Chapter 2: Reading the Margin

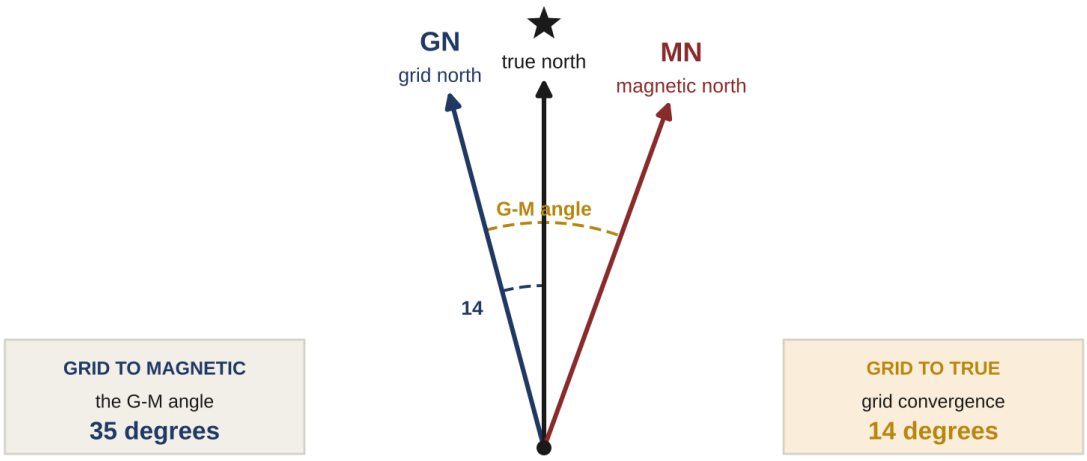
Reference for Lesson 02.

The one-minute margin check

Read	Because
Sheet name and number	Identifies the sheet, and the adjoining-sheets index gives you the neighbours before you reach an edge.
Scale	Governs which coordinate scale is valid. A tool cut for another scale gives confident, wrong answers.
Contour interval	Sets the vertical resolution. Anything smaller than the interval is not on the map and never was.
Declination diagram	Tells you the sheet uses grid north and a compass will not agree. Reading only — the conversion is NAV-02.
Edition date	Landforms are durable; tracks, buildings and vegetation are not. Only you know what has changed on your ground.

The declination diagram

Three norths, one origin. Read the printed values; the arithmetic is NAV-02.



Real diagrams are not drawn to scale. Read the printed number, never measure the angle.

Figure R-1. The three norths. Read the printed angle; the arrows are not drawn to scale.

MEASURING DISTANCE

Use the printed bar scale rather than arithmetic on the representative fraction. Paper stretches with humidity and the bar scale stretches with it. The extension sits left of zero and is subdivided: lay the right-hand end of the distance on a whole number, then read the remainder leftward into the extension.

Chapter 3: Contours and Terrain

Reference for Lesson 03.

Terrain feature chart

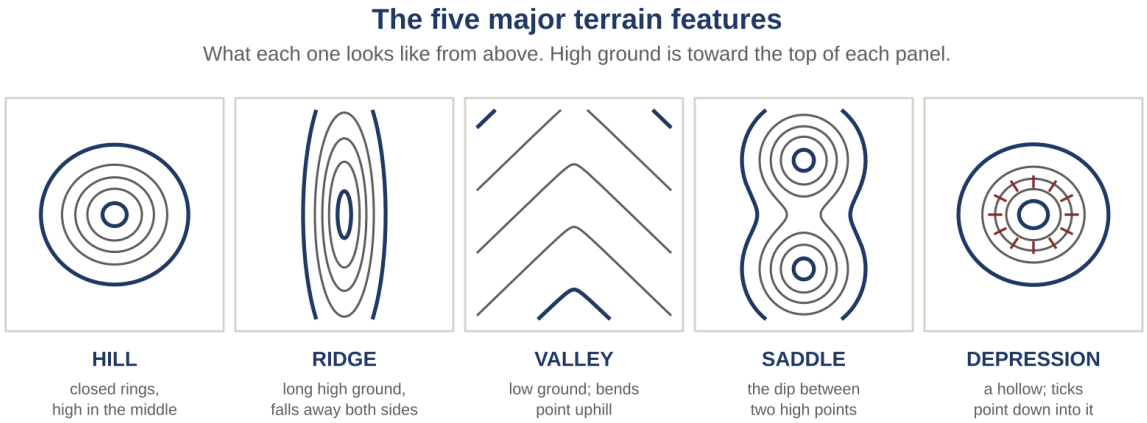


Figure R-2. The five major terrain features. High ground is toward the top of each panel.

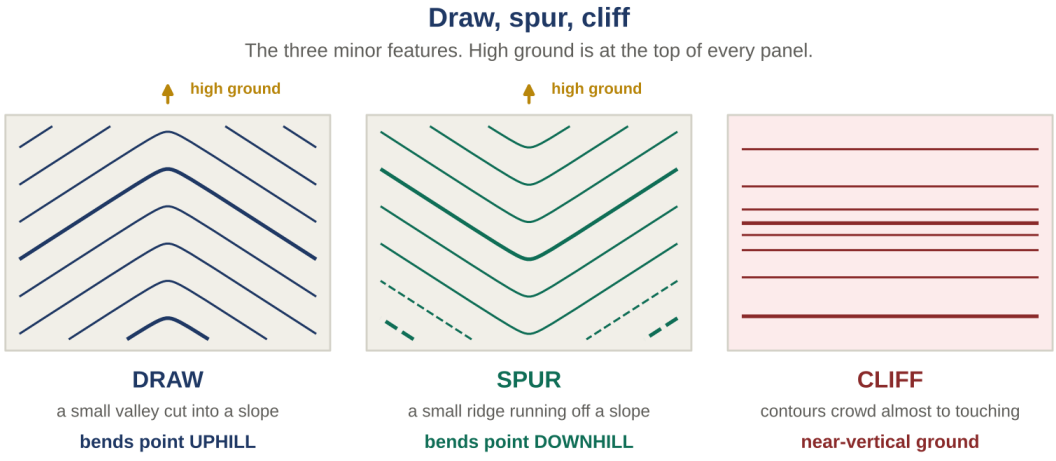


Figure R-3. The three minor features. Draw and spur are the pair most often confused.

Feature	Recognition test
Hill	Closed rings, elevations increasing inward.
Ridge	Long high ground; falls away on two sides, stays level along a third.
Valley	Contour bends point uphill. Water would run out along the axis.
Saddle	Hourglass or figure-eight, with high ground at both ends.
Depression	Closed rings like a hill, distinguished only by tick marks pointing inward.
Draw	A small valley cut into a slope. Bends point uphill. Collects water.
Spur	A small ridge running off a slope. Bends point downhill. Sheds water.
Cliff	Contours crowded to touching. Treat as impassable until proven otherwise.

TWO RULES THAT TELL YOU WHEN YOU HAVE MISREAD

Contours never cross — a point has one height. Contours never simply stop — every one closes eventually, even if it takes several sheets. If either appears to happen, you are reading two features at once.

Spacing and slope

Spacing	Means
Wide	Gentle. Walkable while talking.
Tight	Steep. Hands may be involved.
Merged or touching	Cliff. Near-vertical.
Tightening as you climb	Convex slope — the summit is not visible from the base.
Widening as you climb	Concave slope — the whole face is visible from either end.

Chapter 4: Anatomy of a Grid Reference

Reference for Lesson 04.

Three components — zone, square, then numbers

Component	Example	What it narrows, and what breaks if dropped
Grid zone designator	17S	A band of the earth. Dropped: could be any of sixty zones. Usually recoverable from context.
100,000m square	HK	One 100 km square inside that zone. Dropped: the digits repeat every 100 km, worldwide, with nothing to say which.
Easting / northing	4783 9412	A point inside that square. Always an even count, split exactly in half. Mis-split: a valid grid somewhere else.

Precision levels

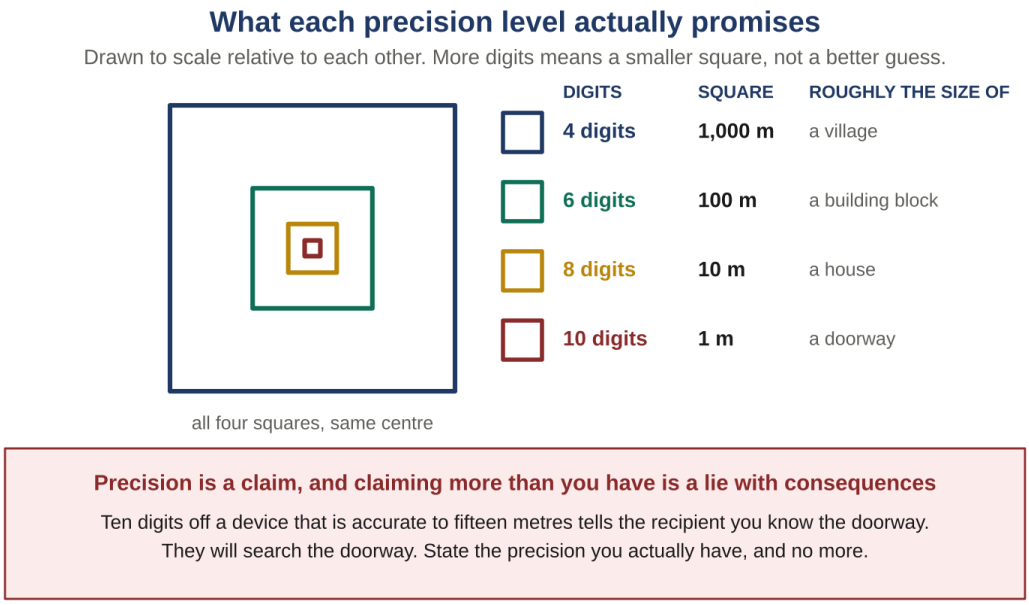


Figure R-4. The four precision levels drawn to true relative scale.

Digits	Square	Honest use
Four	1,000 m	An area, not a place. General location, or something seen at distance.
Six	100 m	The everyday working level. A building, a junction, a small clearing.
Eight	10 m	A position somebody has to reach. Achievable with a coordinate scale; roughly the limit of a consumer receiver.
Ten	1 m	Rarely honest in the field. Survey work and precisely known fixed points.

PRECISION IS A CLAIM THE RECIPIENT WILL ACT ON

Given ten digits a person searches a doorway; given four they search a field. State the precision you actually have and no more. Rounding down costs nothing that matters. If your receiver reports fifteen-metre accuracy, eight digits is already at the edge of honest.

An odd number of digits is not a grid. It is a transcription error, and because you cannot know which digit was lost, the reference has to be requested again rather than repaired.

Chapter 5: Extracting and Plotting

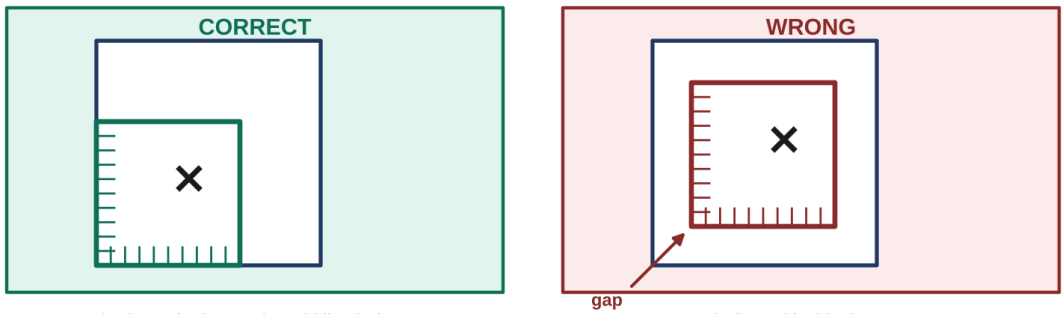
Reference for Lesson 05.

The four extraction steps

Step	Action
1. Find the square	A grid square is named by the lines to its LEFT and BELOW it. That alone gives four digits.
2. Seat the scale	Horizontal edge on the line below, vertical edge touching the line to the left, slid right until it passes through the point.
3. Read right	Value along the horizontal edge, appended to the easting of the left-hand line.
4. Read up	Value along the vertical edge, appended to the northing of the line below. Then assemble: zone, square, easting, northing.

Seating the coordinate scale

Two edges touching two grid lines, corner into the bottom-left of the square.



horizontal edge on the grid line below, vertical edge on the line to the left

scale floated inside the square: both readings come out short

If the scale is not touching both lines, every digit after the first two is invented.

Figure R-5. Correct seating, left. A scale floated inside the square reads short on both axes.

THE THREE ERRORS

Transposition — easting and northing swapped. Produces a valid grid, usually kilometres out. Prevention: say it in halves and have it read back the same way.

Dropped square identifier — the letters left off because both parties are on the same sheet. Prevention: zone, square, then numbers, every time.

False precision — more digits than the method supports. Prevention: ask what produced the last two digits. If the answer is arithmetic rather than measurement, drop them.

Without a coordinate scale: tenths of a grid square can be judged reliably by eye, hundredths cannot. Six digits is the honest ceiling for eyeball interpolation.

Chapter 6: Grids From Devices

Reference for Lesson 06.

Setting	Set to	Symptom if wrong
Position format	MGRS (or UTM if MGRS is not offered)	Output visibly is not a grid. Fixed in seconds.
Map datum	Whatever the sheet's margin states	Nothing at all. A correctly formed grid pointing at the wrong ground.

The check before you transmit

Check	Ask
Match the ground	Say the terrain the grid lands on. Does it agree with what you can see?
Complete	Zone, square, then digits. Devices show the letters in small type and people omit them.
Honest precision	What accuracy is the device reporting? Choose a digit count that figure supports.
Read back	The device does not remove the transcription step at the receiving end.

WAYPOINTS — STORAGE AND RETRIEVAL ONLY

Mark your position and read the grid back. Enter a waypoint by grid when one is passed to you — this carries the same failure modes as plotting on paper. Read a stored waypoint back out at a stated precision. Navigating to a waypoint is not part of this course.

Chapter 7: Grids in Reports

Reference for Lesson 07.

Precision follows purpose

The report is for…	Precision
Something was seen	Four or six. The subject may have moved before anyone acts.
Meet me here	Six or eight. Six in open ground, eight where the feature is small or the light is bad.
Come to this exact spot	Eight, with a terrain description alongside so the receiver can confirm on arrival.
A fixed point, recorded once	Eight, measured at leisure and written down.

The confirmation loop

Step	Detail
Send in parts	Zone, square, then digits. Phonetic for letters, digit by digit for numbers. Never grouped.
Receiver reads back	From what they wrote down, not from memory. The paper is what gets plotted.
Sender confirms or corrects	Silence is not confirmation. Until this closes, nobody moves on the grid.

REGISTERING AN OVERLAY

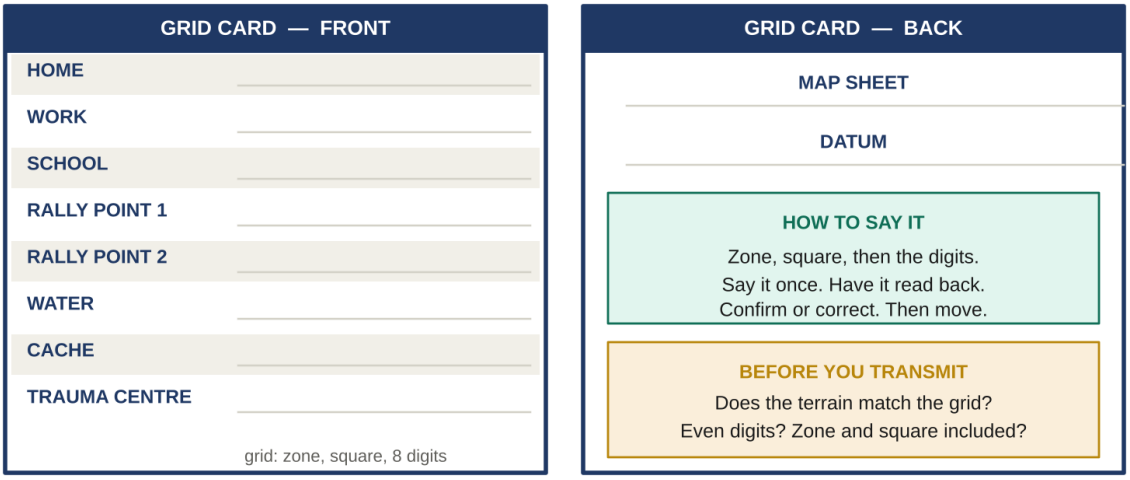
Trace the grid intersections nearest two OPPOSITE corners and label each with its coordinates. Two marks fix position and rotation together; one mark leaves the sheet free to rotate. Add the sheet name and number, the scale and a north arrow — the receiver may not be holding your sheet.

Chapter 8: The Grid Card

Reference for Lesson 08.

The pocket grid card

One card, both sides, small enough to live in a wallet. Copy this layout by hand.



Every entry gets checked on the ground once, by the person who will have to use it.

A card nobody has verified is a list of guesses in a convenient format.

Figure R-6. The pocket grid card, both sides. The blank worksheet version is in Part II.

Verification — an unverified card is a list of guesses

Step	Why
Plot each entry back	Extracting and plotting are different operations; an error in one does not reproduce in the other.
Terrain-check each entry	A grid for your own water source landing on a hilltop is wrong however carefully it was measured.
Walk one	If the first one is right the method is right. If it is wrong, every entry needs re-checking.
Have somebody else read it	The card exists so that somebody other than its author can pass a location. This is the decisive test.

PART II — WORKSHEETS

Margin Check Worksheet

One per sheet you work from. Complete before plotting anything on it.

Field	Value
Sheet name	
Sheet number	
Series	
Scale	
Contour interval	
Datum	
Edition / date	
Sheets north / south	
Sheets east / west	
What has changed on this ground since the edition date	

Grid Card Worksheet

CHOOSE PRECISION PER ENTRY

A rally point in open country is a six-digit place. A specific gate used at night is eight. Writing eight everywhere because the column is that wide is the false-precision error in a domestic setting.

Front — locations

Location	Grid (zone, square, digits)	Digits
Home		
Work		
School		
Rally point 1		
Rally point 2		
Water		
Cache		
Trauma center		

Back — the two fields the card is useless without

Field	Value
Map sheet	
Datum	

Grid Card Verification Log

Every entry gets checked by the person who will have to use it. Not by its author.

Entry	Plotted back	Terrain agrees	Walked	Read by (name)

PART III — APPENDIX

Chapter 9: How NAV-01 Relates to the Rest of the Curriculum

Course	Relationship to NAV-01
NAV-02, Map and Compass Land Navigation	The other half of the question. NAV-01 answers where is it; NAV-02 answers how do I get there. Requires this course, and opens from the grid card built in Lesson 08.
Reporting courses generally	Any course whose format contains a location line assumes you can already produce and read a grid at an appropriate precision.
Observation post and listening post work	Consumes the overlay registration taught in Lesson 07. Position selection and field sketching belong to that course, not this one.
Family and group planning	The grid card converts a plan's named places into references anyone can act on, including members who will never be on a patrol.

Chapter 10: Doctrinal Sources

Source	Publisher	Relevance
FM 3-25.26, Map Reading and Land Navigation	Department of the Army	Primary spine. Marginal information, elevation and relief, grid structure and precision, and the overlay registration procedure in Chapter 7.
MCWP 3-11.3, Scouting and Patrolling	United States Marine Corps	The SALUTE report and its location element, referenced in Chapter 7.
USGS, Finding Your Way with Map and Compass	U.S. Geological Survey	Civilian-register framing for the systems comparison in Chapter 1.

Open Items

RECORDED RATHER THAN RESOLVED

Lesson 07 references situation reports and nine-line requests as report types whose location line follows the same rule. Their full formats are not reproduced here, because the doctrinal sources for those formats are not held. When they are, this chapter gains a cross-reference rather than a restatement.