

RESECTION

Determine the position of an unknown point by sighting on at least two, but preferably three, known positions.

Determine the azimuths from the unknown point to these positions.

Plot the back azimuths from the known positions to locate your unknown position by their intersection.

BACK AZIMUTH

RULE #1: IF THE AZIMUTH IS MORE THAN 180 DEGREES, THEN SUBTRACT 180 DEGREES.

EXAMPLE: AZIMUTH 215 DEGREES

-180 DEGREES

BACK AZIMUTH 35 DEGREES

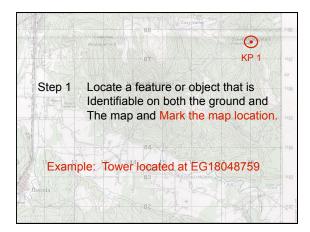
RULE #2: IF THE AZIMUTH IS 180 DEGREES OR LESS, THEN ADD 180 DEGREES.

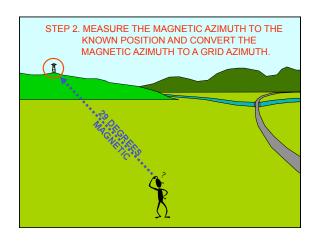
EXAMPLE: AZIMUTH

180 DEGREES +180 DEGREES

BACK AZIMUTH 360 DEGREES







STEP 2. MEASURE THE MAGNETIC AZIMUTH TO THE KNOWN POSITION AND CONVERT THE MAGNETIC AZIMUTH TO A GRID AZIMUTH.

MAGNETIC AZIMUTH: 29 DEGREES

EASTERLY G-M ANGLE: +21 DEGREES

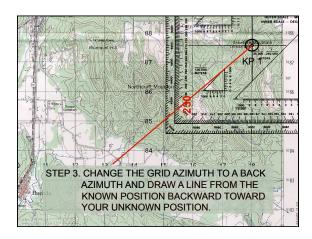
GRID AZIMUTH: 50 DEGREES

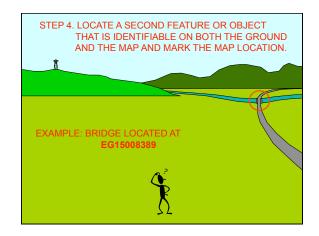
STEP 3. CHANGE THE GRID AZIMUTH TO A BACK AZIMUTH AND DRAW A LINE FROM THE KNOWN POSITION BACKWARD TOWARD YOUR UNKNOWN POSITION.

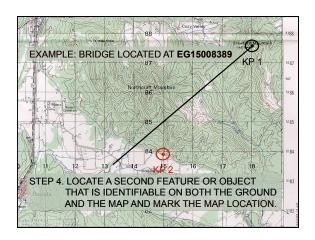
GRID AZIMUTH: 50 DEGREES

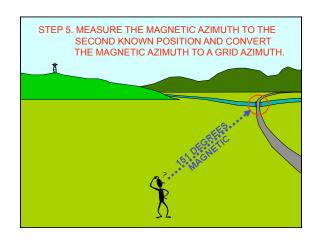
ADD: +180 DEGREES

GRID BACK AZIMUTH: 230 DEGREES









STEP 5. MEASURE THE MAGNETIC AZIMUTH TO THE SECOND KNOWN POSITION AND CONVERT THE MAGNETIC AZIMUTH TO A GRID AZIMUTH.

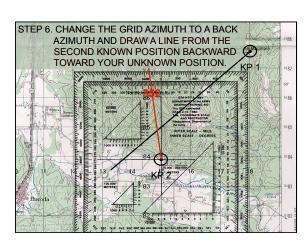
MAGNETIC AZIMUTH: 151 DEGREES
EASTERLY G-M ANGLE: +21 DEGREES
GRID AZIMUTH: 172 DEGREES

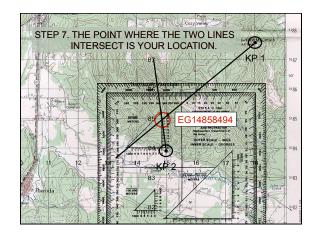
STEP 6. CHANGE THE GRID AZIMUTH TO A BACK AZIMUTH AND DRAW A LINE FROM THE SECOND KNOWN POSITION BACKWARD TOWARD YOUR UNKNOWN POSITION.

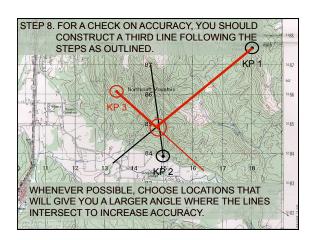
 GRID AZIMUTH:
 172 DEGREES

 ADD:
 +180 DEGREES

 GRID BACK AZIMUTH:
 352 DEGREES







RESECTION WITHOUT A COMPASS

STEP 1. ORIENT THE MAP TO THE GROUND.

STEP 2. LOCATE AT LEAST TWO KNOWN POSITIONS ON THE GROUND AND MARK THEM ON THE MAP.

STEP 3. LAY A STRAIGHT EDGE (I.E. PROTRACTOR) WITH ONE END AT THE FIRST KNOWN POSITION AS A PIVOT POINT, THEN ROTATE THE STRAIGHT EDGE TOWARD YOURSELF UNTIL YOU SIGHT THE KNOWN POSITION ALONG THE EDGE.

STEP 4. DRAW A LINE ALONG THE STRAIGHT EDGE.

STEP 5. REPEAT PROCEDURES 1 THRU 4 FOR THE NEXT KNOWN POSITION.

STEP 6. THE INTERSECTION OF LINES IS THE LOCATION OF YOUR

STEP 7. AGAIN, CHECK FOR ACCURACY, YOU MAY USE A THIRD POSITION.

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