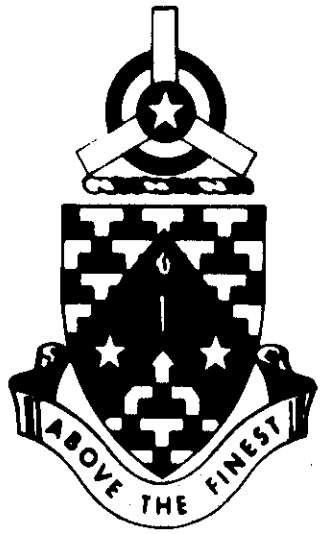
PROGRAMED TEXT

MAP READING
Part II
LOCATION (COORDINATES)

WD-37



AUGUST 1968

UNITED STATES ARMY
PRIMARY HELICOPTER SCHOOL
FORT WOLTERS, TEXAS

PROGRAMED TEXT

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FILE NO: WD-37

PROGRAM TITLE
Map Reading
Part II
Location
(Coordinates)

POI SCOPE: Location of points on large and medium scale tactical maps using the Military Grid Reference System and/or Geographic Coordinates. Use of the Coordinate Scale.

INSTRUCTOR REFERENCES: FM 21-26

PREPARED BY: MAJ E. R. Cobb, TFPL **DATE:** 21 Dec 67

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APPROVED BY: **DATE:**

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Dir, OCD

15 August 1968

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Map Reading - Part II

PREFACE

"Meet me at 21st Street and 56th Avenue." This is a method of giving a location most of us have used at some time. It works well in a city that has identified streets, but what happens out in the country or in a strange area of the world? This requires some means of identifying the location of objects in a uniform and precise manner. There are many methods of doing this. This text will teach you the primary methods used by the military for locating specific points anywhere in the world.

You will receive considerable practice with actual map-reading materials in this instruction. The following materials are essential in answering the frames in this text:

Map of LEAVENWORTH, KANSAS, 1:50,000

Map of WEATHERFORD, TEXAS, 1:50,000

Map of ABILENE, TEXAS, 1:250,000

Coordinate Scale

PERFORMANCE OBJECTIVES

Upon completion of Part II you will be able to:

A. Locate specific points on a map utilizing the Military Grid Reference System.

B. Locate points on a large scale map and give the correct grid coordinates to the nearest 10 meters (tolerance ± 50 meters).

C. Locate points on a medium scale map (1:250,000) and give their correct coordinates to the nearest 100 meters (tolerance ± 100 meters).

D. Locate and write the geographical coordinates of points on large and medium scale maps to the nearest minute.

E. Report a position by giving the correct MGRS coordinate.

PART II

LOCATION

Set 1. POINT LOCATION BY GRID COORDINATES

FRAME 1.

A grid is a network of evenly spaced horizontal and vertical lines. These lines form squares on a military map to help locate points (targets, road junctions, command posts, and so on) quickly and accurately. The grid on a map consists of squares formed by horz. and vert. lines.

(Todd Cemetery) (17)

FRAME 18.

On your Leavenworth map, what school is located in grid square 4550?

Center School.

(c. 457501) (If your answer was 451507, you reversed the 3d and 6th digits.) (34)

FRAME 35.

On your Leavenworth map, Flintlock Church is in grid square 4466. What is its 6-digit location? 444663

(b. Abilene, Texas) (The use of the 100,000m square identifier is very important) (51)

FRAME 52.

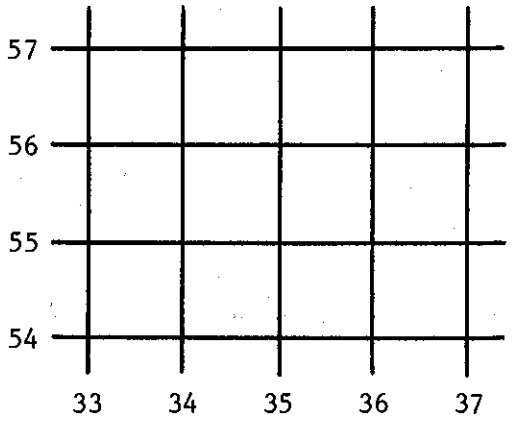
INFORMATION FRAME

Medium scale maps such as Abilene are widely used by Aviators because they cover a greater distance than large scale maps (Leavenworth). You will learn more about the map scale in Part III of Map Reading, however, in the following frames you will learn to read coordinates on a medium scale map (Abilene).

(horizontal, vertical) (1)

FRAME 2.

The horizontal and vertical lines are numbered in sequence. In the figure below, the vertical grid lines are numbered 33, 34, 35, 36, and 37, reading from left to right. Reading from the bottom up, the horizontal grid lines are numbered 54, 56, 63, and 57



(Lanter School) (18)

FRAME 19.

A four-digit coordinate locates a grid square. A six-digit coordinate pinpoints an object inside a grid square. For example, 3671 identifies a grid square; 365719 locates a road junction inside that square. The number 5 is added as the third digit; the number 9 is added as the 6th digit.

(444662) (35)

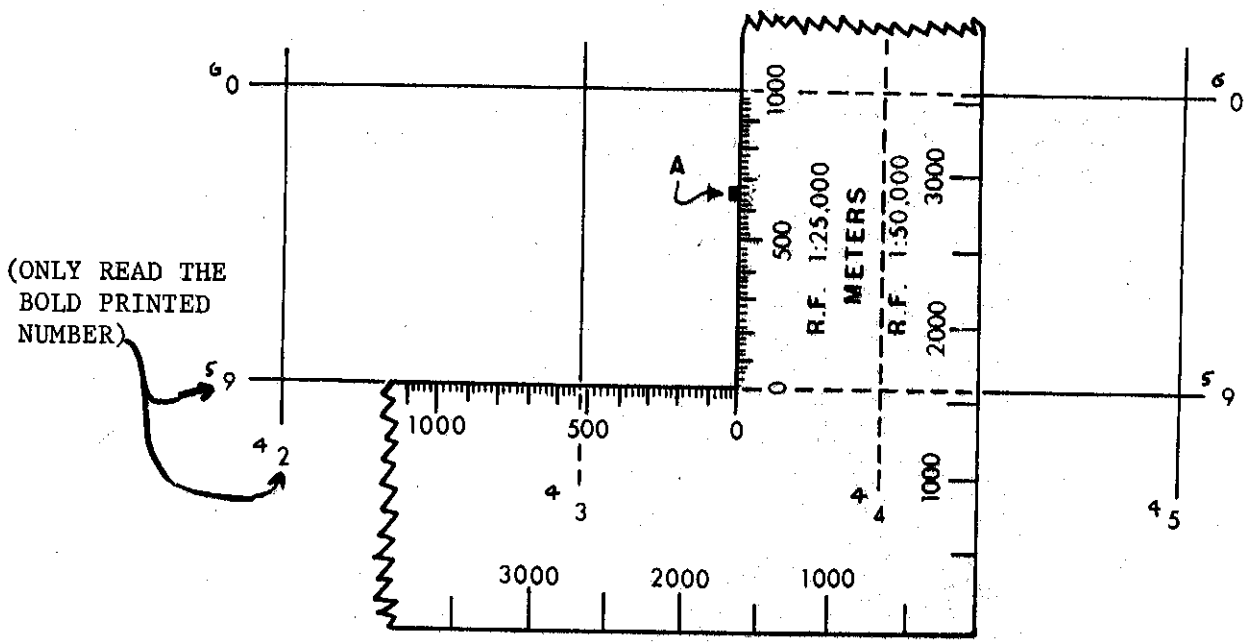
FRAME 36.

Using the coordinate scale find the point at 360706 on the Leavenworth map. What ground feature is located there?

a. cemetery
b. road junction
(c.) lake

FRAME 53.

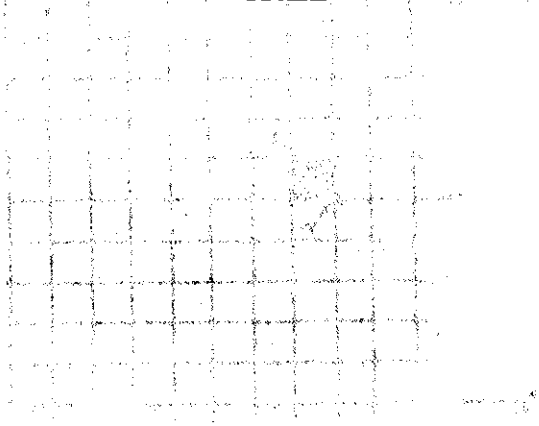
Although your coordinate square does not have a 1:250,000 scale, the 1:25,000 can be used by multiplying its value by 10, ie, each point or tick mark would then represent an area 10 times larger. This means that you can only read 6-digit coordinates which will locate a point to the nearest 100 meters. The diagram below shows you how to place your square. What is the coordinate of point A? 351 961.



(54, 55, 56, and 57) (2)

FRAME 3.

Find the numbers for the grid lines on your Leavenworth map. The line numbers are printed in the map margin and are printed in heavy black type in the middle of the map itself. Reading from left to right, the vertical lines are numbered from 25 to 49.



(6th) (19)

FRAME 20.

The 4-digit coordinate 4659 locates Platte City on your Leavenworth map. The 6-digit coordinate 468597 pinpoints a cemetery on the outskirts of the town. Compare 4659 and 468597. The 46 and 59 for the grid square are still in the 6-digit coordinate. Which digits have been added?

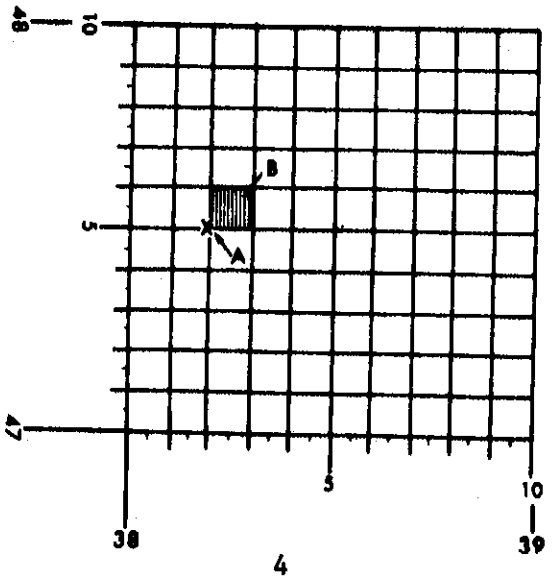
a. 1st and 4th
b. 2d and 5th
c. 3d and 6th

(c. lake) (36)

FRAME 37.

The 4-digit coordinate locates grid square 3847. The number 382475 locates one of 100 imaginary squares at point A. If the grid were divided into 10,000 imaginary squares, how many digits would be required to pinpoint B?

a. 8
b. 10
c. 12



(352966) (53)

FRAME 54.

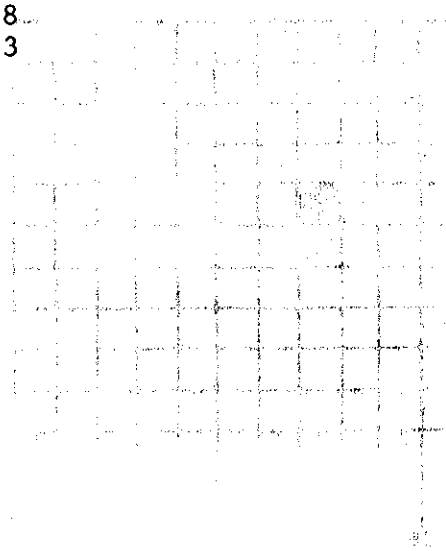
What is the MGRS coordinate of the Abilene Airport? 14SML3 35 8 7

(28) (3)

FRAME 4.

Reading up from the bottom of your Leavenworth map, what are the numbers of the horizontal lines?

a. 28 to 48
(b) 47 to 73



(c. 3d and 6th) (20)

FRAME 21.

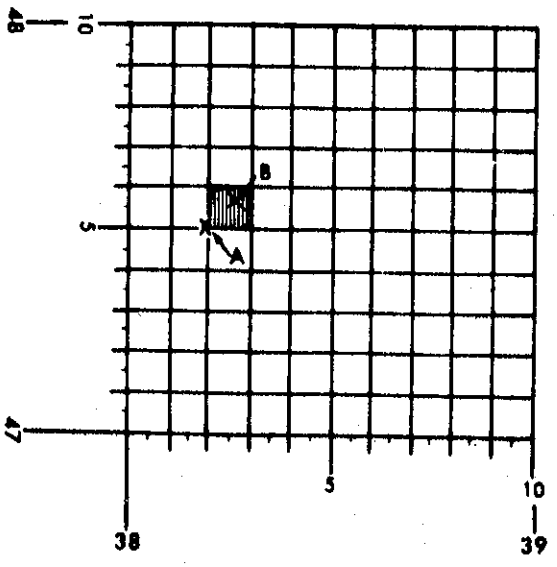
The 4-digit coordinate locates the grid square. The 6-digit coordinate locates not only the grid square, but a point within the square. In the coordinate 469494, which 2 digits locate the point within the square? 9 (3rd) and 4 (6th).

(a. 8) (37)

FRAME 38.

The 6-digit coordinate for point A was 382475. The 8-digit coordinate for point B is 38247572. Which digits were added?

a. 1st and 8th
b. 3d and 6th
c. 4th and 8th



(14SML353871) (54)

FRAME 55.

What is the MGRS coordinate of Taylor Airport located north of Albany, Texas?

14SMM722224

(b. 47 to 73) (4)

FRAME 5.

You always start to locate points by beginning in the lower left corner. First, you read the vertical lines from left to right. For the horizontal lines, you read from the bottom up. (A rule for reading coordinates: ALWAYS READ RIGHT, THEN UP.)

(3d and 6th; 9 and 4) (21)

FRAME 22.

The first 3 digits of a 6-digit coordinate are the vertical grid reading and the last 3 digits are the short grid reading of the more accurate location.

(c. 4th and 8th) (38)

FRAME 39.

No matter how many digits are used, the first half of the coordinate numbers locates the vertical line (left to right). The last half locates the horizontal line (bottom-up). The total number of digits in any coordinate is always _____.

a. odd

(b) even

(14SMM722224) (55)

FRAME 56.

INFORMATION FRAME.

The MGRS, which you have just learned, is used by Army ground units. As an Army aviator you are required to have a thorough understanding of it to fulfill your role as a support element. However, in your capacity as an aviator you are also required to understand the use of the oldest method of point location, that of using Geographic Coordinates (Latitude and Longitude). The following frames will teach you geographic coordinates.

(up) (5)

FRAME 6.

Every grid square has a 4-digit number, such as 3354. The first two digits (33) stand for the correct vertical line, the last two digits (54) stand for the correct ___horiz.___ line. (READ RIGHT, THEN UP)

(horizontal) (22)

FRAME 23.

You have learned that a grid coordinate with 4 digits locates a grid square. The number 4659 located Platte City on your Leavenworth map. A 6-digit coordinate is, as you have seen, more accurate. The two additional numbers (digits) locate a point within the ___grid___ square.

(b. even) (39)

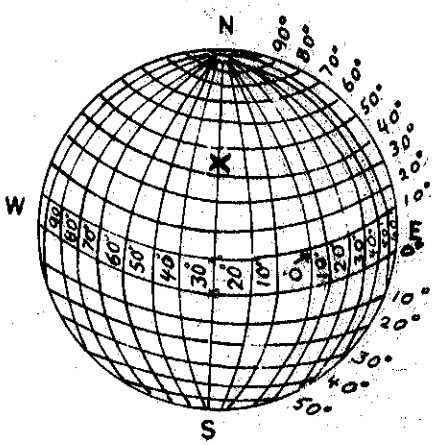
FRAME 40.

The 6-digit coordinate locates points within 100 meters of their actual ground location on the Leavenworth map. The 8-digit coordinate further divides each 100 meters into tenths. What is the accuracy of the 8-digit coordinate?

a. 10 meters
b. 20 meters
c. 50 meters

FRAME 57.

The location of any point on the earth's surface may be given by stating its distance north or south of the equator and east or west of an imaginary reference line running from the north pole to the south pole called the prime meridian. The distance a point is from the equator is its latitude. The distance a point is east or west of the prime meridian is known as its longitude. Refer to the drawing below: point "X" is located at 40° N latitude and 80° W longitude.

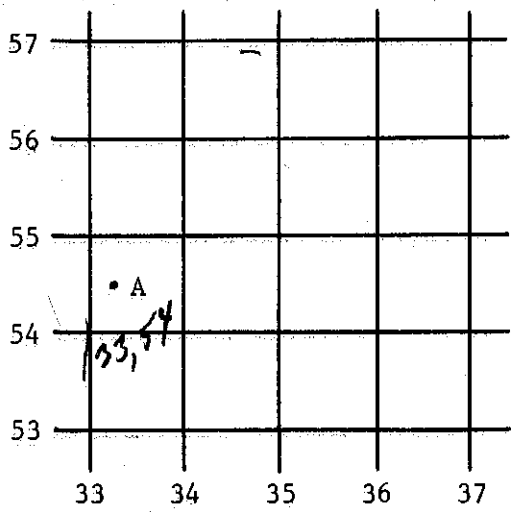


(horizontal) (6)

FRAME 7.

Every grid square number comes from the two grid lines which cross at the lower left corner of the square. Point A in the figure below is in grid square 3354. In writing the grid square number, which line number is written first?

a. vertical (right)
b. horizontal (up)

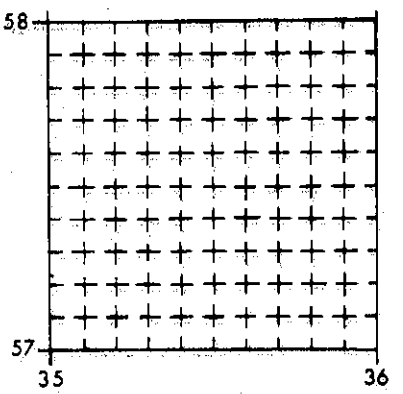


(grid) (23)

FRAME 24.

For a 6-digit coordinate, each grid square is divided into tenths with imaginary lines (shown as dotted lines here). What would be the 4-digit coordinate for this square?

a. 3557
b. 3657
c. 5736
d. 5735



(10 meters) (40)

FRAME 41.

The 8-digit coordinate locates points to within 10 meters on the ground, which is closer than average user requirements and map accuracy warrants. The center of Terminal Bridge on your Leavenworth map is 35655351. This number should locate the point to within 10 meters of the exact center of the bridge.

(45° North latitude, 30° West longitude) (57)

FRAME 58.

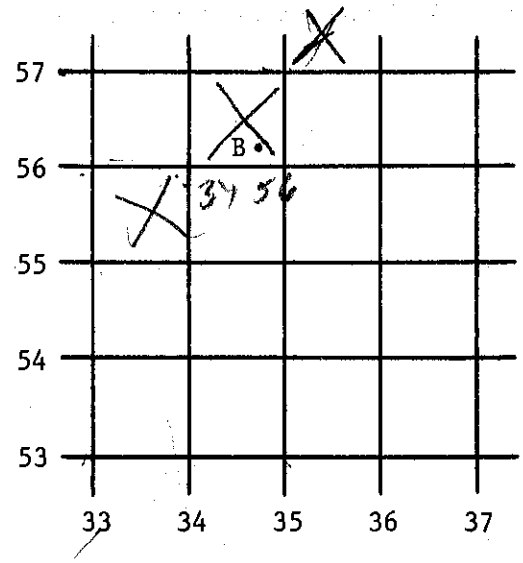
Starting at the equator, the parallels of latitude are numbered from 0 degrees (0°) to 90 degrees (90°) both north and south. The north pole is 90° north latitude and the south pole is 90° south latitude. Since it is impossible to go further north or south than the poles, latitude value can never exceed 90 °.

(a. vertical [right]) (7)

FRAME 8.

Identify the grid square containing point B. Start from the lower left.The vertical grid line which goes through the lower left corner of the square is 34. Now, find the horizontal grid line that goes through the lower left corner. What is the 4-digit number?

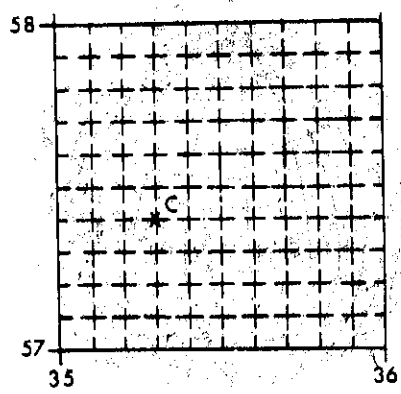
a. 3355
b. 3456
c. 3557



(a. 3557 [lower left corner, vertical line first]) (24)

FRAME 25.

In grid square 3557, the 6-digit coordinate for point C is 353574. The third digit means that point C is 3/10 of the distance between vertical grid line 35 and vertical grid line 36. The sixth digit means that point C is 4/10 of the distance between horizontal grid line 57 and horizontal grid line 58.



(10) (41)

FRAME 42.

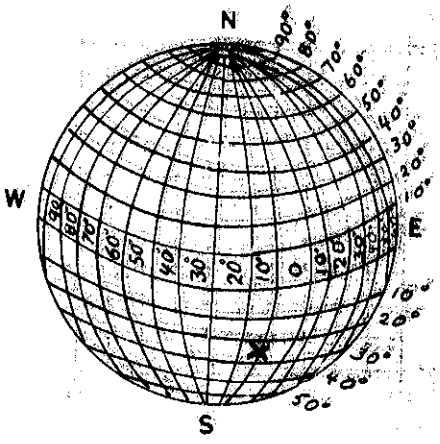
You must estimate the position of the point between divisions on your coordinate scale to determine the 4th and 8th digits. For the left-to-right reading to locate point A, you know that the first three numbers are 385. Point A is half-way (5/10) between the 5 and 6 divisions. What would the first four numbers be?

a. 3850
b. 3855
c. 3857

(90° north or south) (58)

FRAME 59.

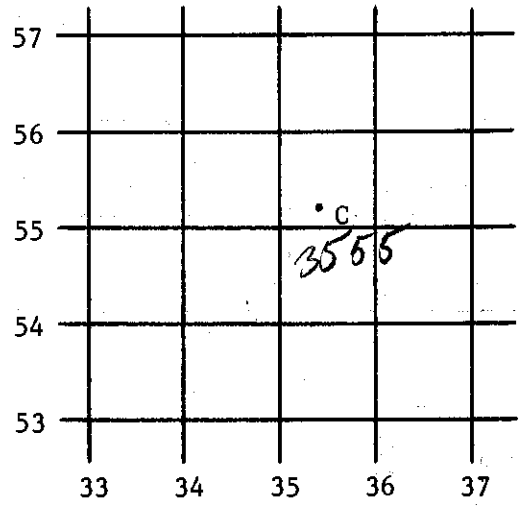
Starting at the prime meridian, which passes through Greenwich, England, longitude is measured both east and west around the world from 0° to 180°. The line directly opposite the prime meridian can have a value of both 180° east and 180° west. What is the longitude location of point "X"? 25° S.LAT 10° W.LONG.



(b. 3456) (ALWAYS READ RIGHT AND UP!) (8)

FRAME 9.

Remember the grid square is identified by the vertical and horizontal grid lines which form the lower left corner of the square. You write the number of the vertical line first, then the horizontal. The number for the grid square containing point C is 35 55.



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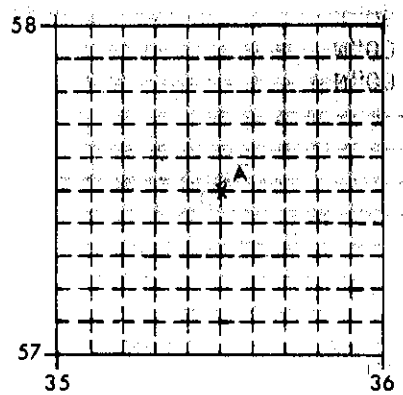
(58) (25)

FRAME 26.

Note that point A is in the center of grid square 3557. This is, A is 5/10 of the distance between vertical grid lines 35 and 36 and horizontal grid lines 57 and 58. The 6-digit coordinate would be 35 5 57 5.



(3855) (42)

FRAME 43.

A 6-digit coordinate locates a point on the Leavenworth map to within 100 meters of its actual location on the ground. Writing an 8-digit coordinate gives 10-meter accuracy. In an 8-digit coordinate the 4th digit is added to the left-to-right reading and the 8th digit is an addition to the next bottom-to-top reading.

(10° W) (59)

FRAME 60.

When giving geographic coordinates, latitude is always stated first. The degrees are further broken down into minutes (') and seconds (") with 60' making up a degree and 60" making a minute. Example: 65°30'25".

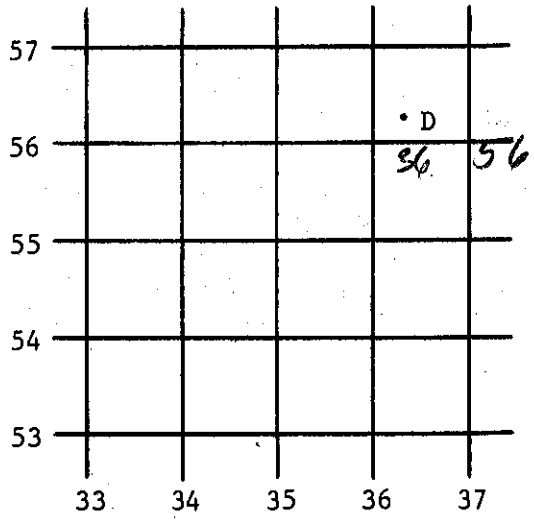
Which of the following is a correct geographic coordinate?

a. 95°08'17"E 68°16'30"S
b. 95°08'17"S 68°16'30"E
c. 87°10'27"N 63°05'00"W
d. 87°10'27"W 63°05'00"N

(3555) (35 is the vertical grid line, 55 is the horizontal grid line) (9)

FRAME 10.

Find the grid square in which D is located. It is in grid square 3656. (READ RIGHT AND UP)

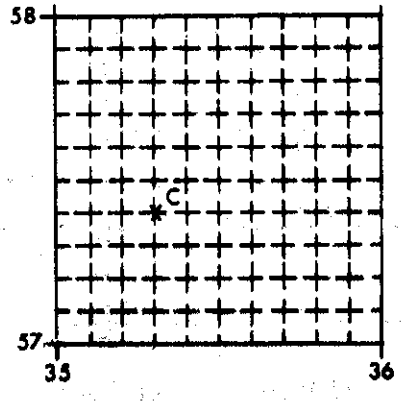


(355575) (26)

FRAME 27.

You learned that point C was on imaginary vertical line 353. The last 3 numbers in a 6-digit coordinate locates the imaginary horizontal line. What would be the correct 6-digit coordinate for point C?

a. 353572
b. 353574
c. 353576



(bottom-up) (43)

Set 2. RELATING POINT LOCATION TO THE MILITARY GRID REFERENCE SYSTEM

FRAME 44.

In the following frames you will learn how your Leavenworth map fits into the total military mapping program -- the MILITARY GRID REFERENCE SYSTEM.

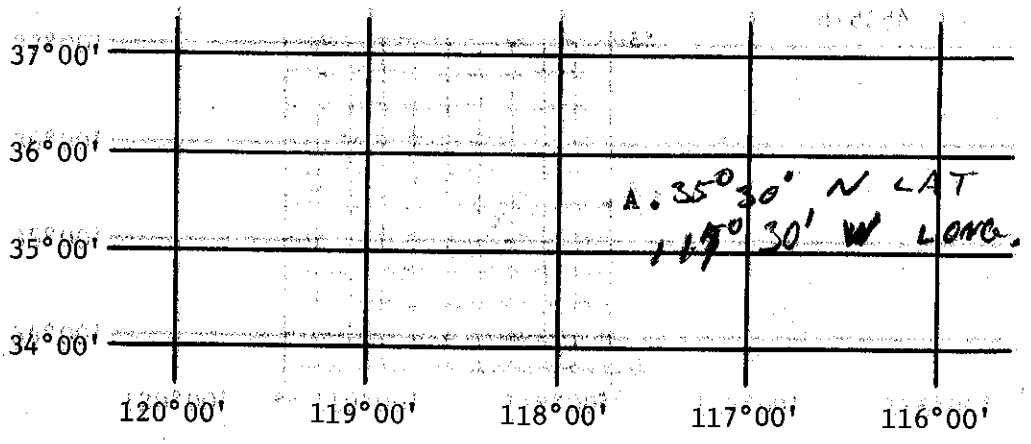
This system divides the earth into blocks, each of which is called a GRID ZONE. Each block is assigned a combination number and letter designation which is determined by reading right (numbers) and up (letters) on the panel 2-1 (page 36) drawing. What is the GRID ZONE DESIGNATION for the black square shown on panel 2-1?

a. 15 32
b. 96 S
c. 15 S

(c) (Remember! Latitude is stated first and is either north or south of the equator and cannot exceed 90°. For the remainder of Map Reading, we will require accuracy to within one minute.) (60)

FRAME 61.

By applying the rule, "all numbers increase away from the prime meridian east and west; from the equator, north and south", what is the geographic coordinate of point "A" in the drawing below?



(3656) (10)

FRAME 11.

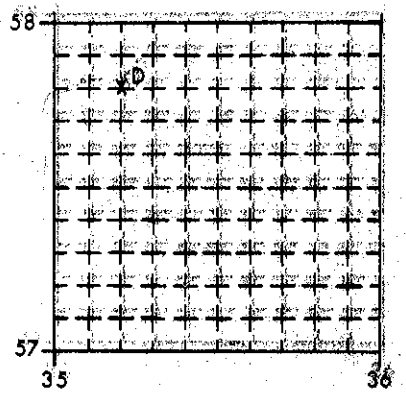
The square, you have seen, has each time been identified by giving the number of the vertical grid line first, then the horizontal grid line. In grid square 3556, 35 would be the vertical grid line and 56 the right grid line.

(b. 353574 [Point C is 4/10 of the distance up from line 57]) (27)

FRAME 28.

You combine the 3-digit "right" reading with the 3-digit "up" reading for a 6-digit coordinate. What is the 6-digit coordinate of point D?

a. 352578
b. 353574
c. 358572



(c. 15 S) (44)

FRAME 45.

Each grid zone is further divided into a certain number of 100,000 meter grid squares. Each 100,000 meter grid square is assigned two alphabetical letters as its designator (Example: MN). Your Leavenworth map covers a small part of a 100,000m square. Refer to panel 2-1 (continued), page 37, and determine the designation of the 100,000m square in which your Leavenworth map is located. Circle your choice:

a. 15 S
b. UP
c. VP

(35°30'N, 117°30'W) (61)

FRAME 62.

Geographic coordinates appear on all standard military maps. The four lines that inclose the body of the map are lines of latitude and longitude. On your Leavenworth map the figures 39°15' and 94°45' appear at the lower right corner.

What is the latitude and longitude coordinate found at the upper right corner?

a. 94°45'N 39°30'W
b. 39°30'N 94°45'W

(horizontal) (11)

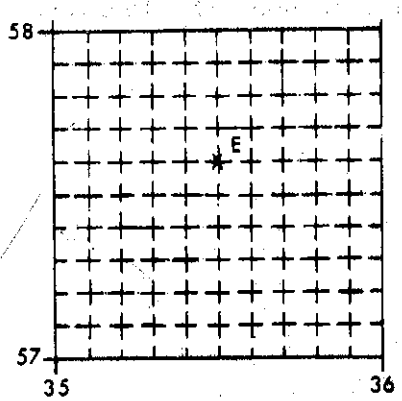
FRAME 12.

The number that identifies a grid square, is called a grid coordinate. In writing a grid coordinate, you write the number of the vertical (right) grid line first and the number of the first (up) grid line next.

(a. 352578) (28)

FRAME 29.

Practice what you have learned about writing grid coordinates. Write the 6-digit coordinate for point E. 355 576



(b. UP) (45)

FRAME 46.

The grid zone designator and the 100,000m square identifier for any map can be determined by looking at the grid reference box that appears in the center of the bottom margin of the map. Find the grid reference box on your Leavenworth map.

(b) (62)

FRAME 63.

Just above the horizontal grid line 55 on the left or right side of your Leavenworth map, you will find the number 20'. This is the point where the latitude increases from 39°15' to 39°20'. Just above horizontal grid line 64 you will find where it changes to 39°25'.

At what vertical grid line does the longitude change from 94°45' to 94°50'? 4 2

(horizontal) (12)

FRAME 13.

The combined numbers of the vertical and horizontal lines, which identify a grid square, are called a grid Coordinate.

(355576) (If you did not write this number correctly, turn back to Frame 25 and review the steps.) (29)

FRAME 30.

Any scale or rule that divides the side of a grid square into tenths can be used to read a 6-digit coordinate. Look at the training aid provided with this text. The scales are divided into tenths by the large tick marks, and are used to read a 6-digit coordinate.

(46)

GRID ZONE DESIGNATION: 15S	TO GIVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST 100 METERS	
100,000 M. SQUARE IDENTIFICATION	SAMPLE POINT: HAZELWOOD SCHOOL	
UP	1. Read letters identifying 100,000 meter square in which the point lies:	UP
	2. Locate first VERTICAL grid line to LEFT of point and read LARGE figures labeling the line either in the top or bottom margin, or on the line itself:	40
	Estimate tenths from grid line to point:	3
	3. Locate first HORIZONTAL grid line BELOW point and read LARGE figures labeling the line either in the left or right margin, or on the line itself:	62
	Estimate tenths from grid line to point:	2
IGNORE the SMALLER figures of any grid number; these are for finding the full coordinates. Use ONLY the LARGER figures of the grid number; example: 4347000	SAMPLE REFERENCE:	UP403622
	If reporting beyond 18° in any direction, prefix Grid Zone Designation, as:	15SUP403622

FRAME 47.

When the map area falls in more than one 100,000 meter square, the grid line that separates the 100,000 meter squares is shown in the grid reference box. In the example below, the map area falls in 100,000 meter squares identified as ET and ES. What is the grid zone designator? 16S

GRID ZONE DESIGNATION: 16S	TO GIVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST 100 METERS	
100,000 M. SQUARE IDENTIFICATION	SAMPLE POINT: INDIAN MOUND	
ET	1. Locate first VERTICAL grid line to LEFT of point and read LARGE figures labeling the line either in the top or bottom margin, or on the line itself:	89
4800	Estimate tenths from grid line to point:	5
ES	2. Locate first HORIZONTAL grid line BELOW point and read LARGE figures labeling the line either in the left or right margin, or on the line itself:	04
	Estimate tenths from grid line to point:	4
IGNORE the SMALLER figures of any grid number; these are for finding the full coordinates. Use ONLY the LARGER figures of the grid number; example: 4193000	SAMPLE REFERENCE:	890044
	If reporting beyond 100,000 meters or if sheet bears an overlapping grid, prefix 100,000 Meter Square Identification, as:	ET890044
	If reporting beyond 18° in any direction, prefix Grid Zone Designation as:	16SET890044

(42) (63)

FRAME 64.

In grid squares 4264, 3464, and 3455 of the Leavenworth map, you will find a cross (+). This is the point where the plotted latitude and longitude lines cross. What would be the geographic coordinate (to the nearest minute) of the Eldorado School in grid square 4155?

94°50' W. LONG
39°05'

(coordinate) (13)

FRAME 14.

Practice with the Leavenworth map. Find Terminal Bridge, which crosses the Missouri River near the center of the city of Leavenworth. What is the grid coordinate of the square in which Terminal Bridge is located?

a. 3553

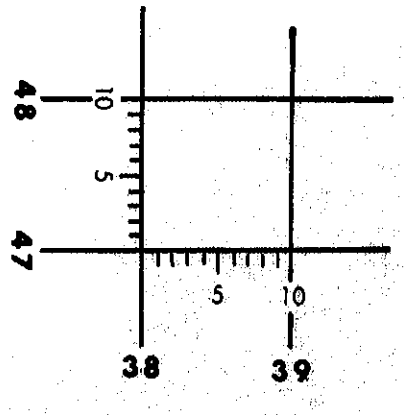
b. 5335

(coordinate) (30)

FRAME 31.

Grid square 3847 (below) is the same size as those on your Leavenworth map. Place the training aid over the scale drawn around the grid square. Which of the scales on the training aid (coordinate scale) fits exactly?

a. 1:25,000 yards
b. 1:50,000 yards
c. 1:25,000 meters
d. 1:50,000 meters



(ET and ES) (16S) (47)

FRAME 48.

The writing of a Military Grid Reference System (MGRS) coordinate consists of a group of letters and numbers which indicate the grid zone designation, the 100,000 meter square identification, and the grid coordinate of the location. Identify the parts of the MGRS coordinate shown below.

MGRS coordinate: 16SET91750106

a. Grid Zone Designation is 16S.
b. 100,000 Meter Square Identification is ET.
c. Grid Coordinate is 9175 0106.

(39°20'N 94°50'W) (64)

FRAME 65.

What is located at geographic coordinate 39°16'N 94°55'W on the Leavenworth map?

a. Hazel Dell School
b. St. Marys College
c. Lansing, Kansas
d. Mt. Calvary Cemetery

(a. 3553) (If you marked 5335, you made the mistake of placing the horizontal line number first. To read coordinates: READ RIGHT AND UP!) (14)

FRAME 15.

Find the Federal Penitentiary located just north of the city of Leavenworth. What is the grid coordinate of the grid square in which most of the penitentiary is located?

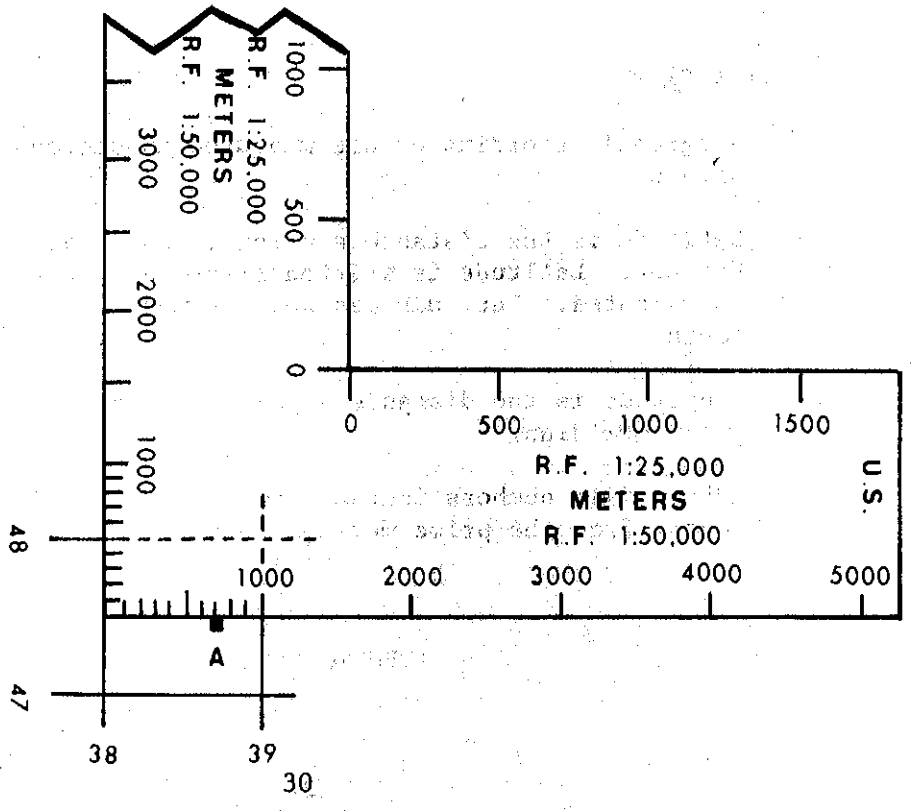
a. 3256
b. 3355
c. 3454

(d. 1:50,000 meters) (A meter scale is always used on military maps.) (31)

FRAME 32.

The sketch shows how to place the scale for the left-to-right reading of the point or object inside the grid square. Notice that point A is 7/10 of the distance from line 38 to 39. What are the first 3 digits of the grid coordinate (left-to-right reading)?

a. 381
b. 385
c. 387



(a. 16S; b. ET; c. 91750106) (48)

FRAME 49.

On smaller scale maps, there are often several 100,000m square identifiers shown. What are the four (4) 100,000m square identifiers shown on your Abilene map? MM, NM, ML, and NL.

(d) (65)

FRAME 66.

REVIEW FRAME.

1. Geographic coordinates are measured in degrees, minutes, and seconds.

2. Latitude is the distance a point is north or south from the Equator. Latitude is written first when writing geographic coordinates. Latitude can never exceed 90°00'00" north or south.

3. Longitude is the distance a point is east or west from the prime meridian.

4. RULE: "All numbers increase away from the Equator north and south; from the prime meridian east and west."

TURN TO PAGE 33.

(b. 3355) (Grid line 33 [to the right] and 55 [up] cross at the lower left corner of grid square in which the major part of the penitentiary is located) (15)

FRAME 16.

Locate grid square 4466 on your Leavenworth map. What is the name of the church located in this grid square? Methodist Church

---

(c. 387) (32)

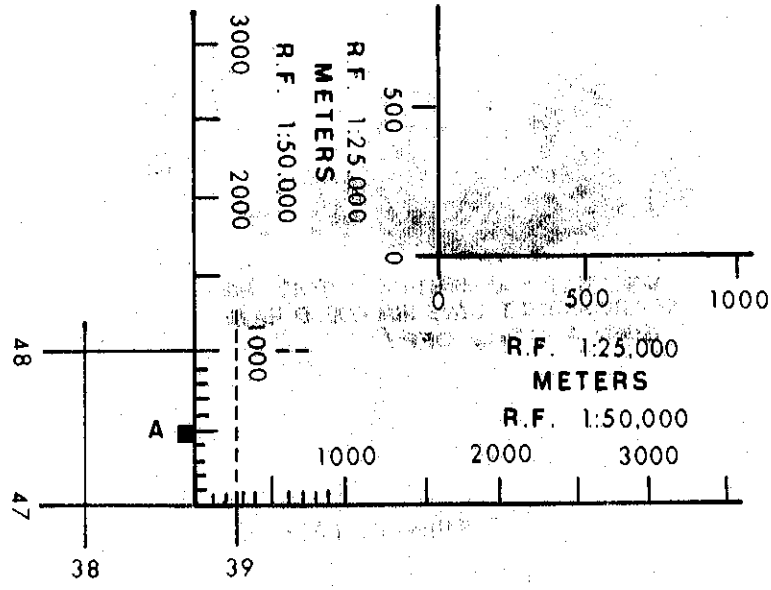
FRAME 33.

Point A is in the same location as before. The scale is placed correctly for thr bottom-up reading (last 3 digits). What is the 6-digit coordinate?

a. 387471

b. 387475

c. 387477



(MM, NM, ML, and NL) (49)

FRAME 50.

If you were told to fly to coordinate 320925 from your present position in Mineral Wells, Texas, using your Abilene map, your destination would be:

a. Ranger, Texas
b. Abilene, Texas (NE part of city)
c. I don't know
d. Need more information

There is no plus or minus over there--read them right the 1st time!

TURN TO PAGE 35.

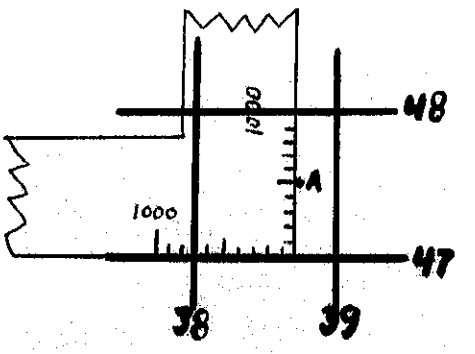
(Flintlock Church) (16)

FRAME 17.

On your Leavenworth map, what cemetery is located in grid square 4157? Todd Cemetery

RETURN TO THE BOTTOM OF PAGE 2 FOR FRAME 18.

(b. 387475) (This drawing shows how the scale would be placed to read right and up without moving it.) (33)



FRAME 34.

Now practice what you have learned by using the coordinate scale to locate points on your Leavenworth map. Find grid square 4550, in which Lanter School is located. What is the 6-digit coordinate which locates Lanter School?

a. 451507

b. 455505

c. 451501

RETURN TO THE TOP OF PAGE 3 FOR FRAME 35.

(c & d -- I don't know--need more information. It could be either Abilene or Ranger.) (50) (See next frame)

FRAME 51.

When reporting your position or when receiving coordinates from another unit, etc, always give or obtain the 100,000m square identifier. NOW! If you were told to fly to coordinate ML 320925 from your position in Mineral Wells, Texas, your destination would be:

a. Ranger, Texas

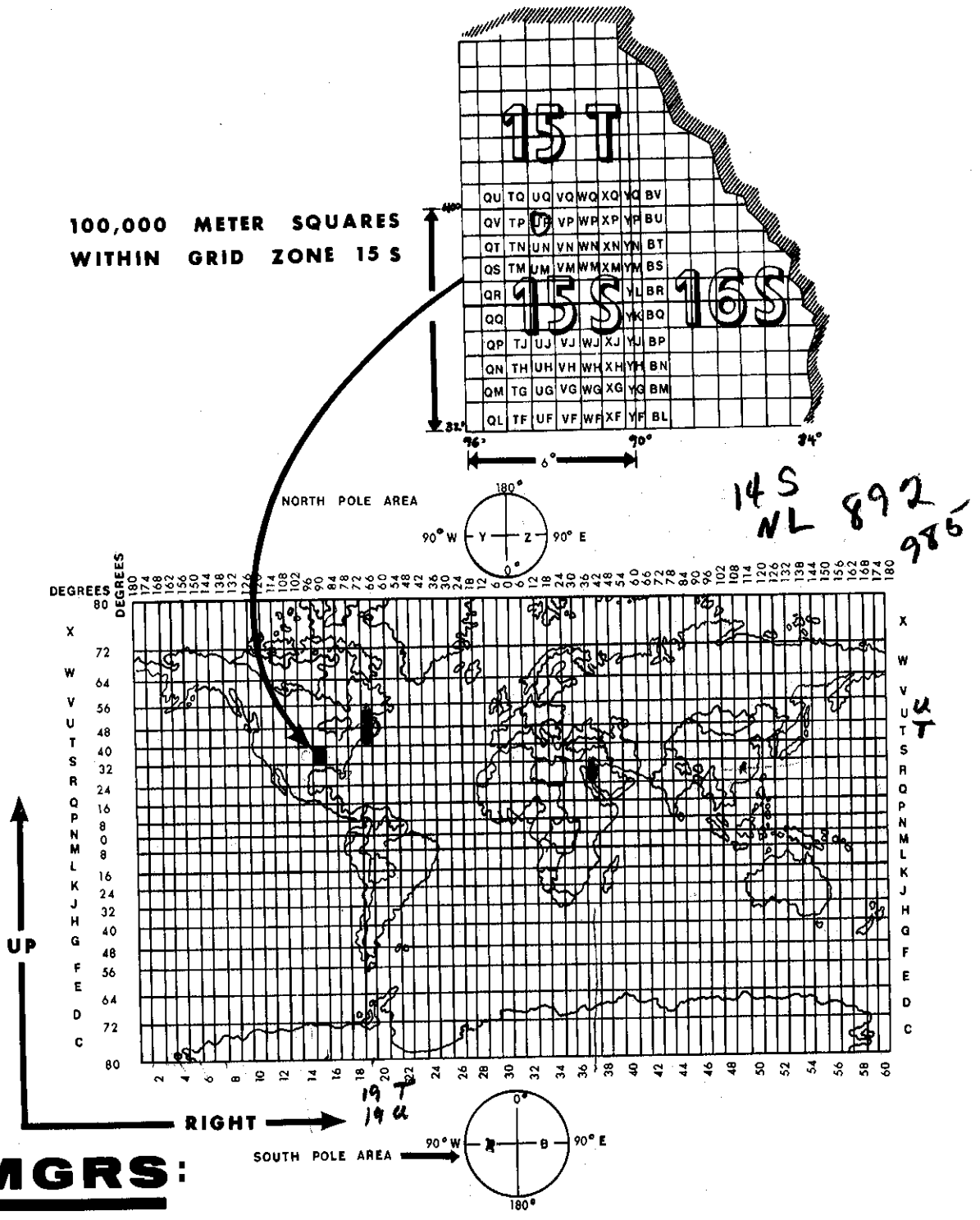
(b.) Abilene, Texas (NE part of city)

RETURN TO THE BOTTOM OF PAGE 3 FOR FRAME 52.

END OF PART II

TURN TO PAGE 38 FOR SELF EVALUATION EXERCISE

PANEL 2-1



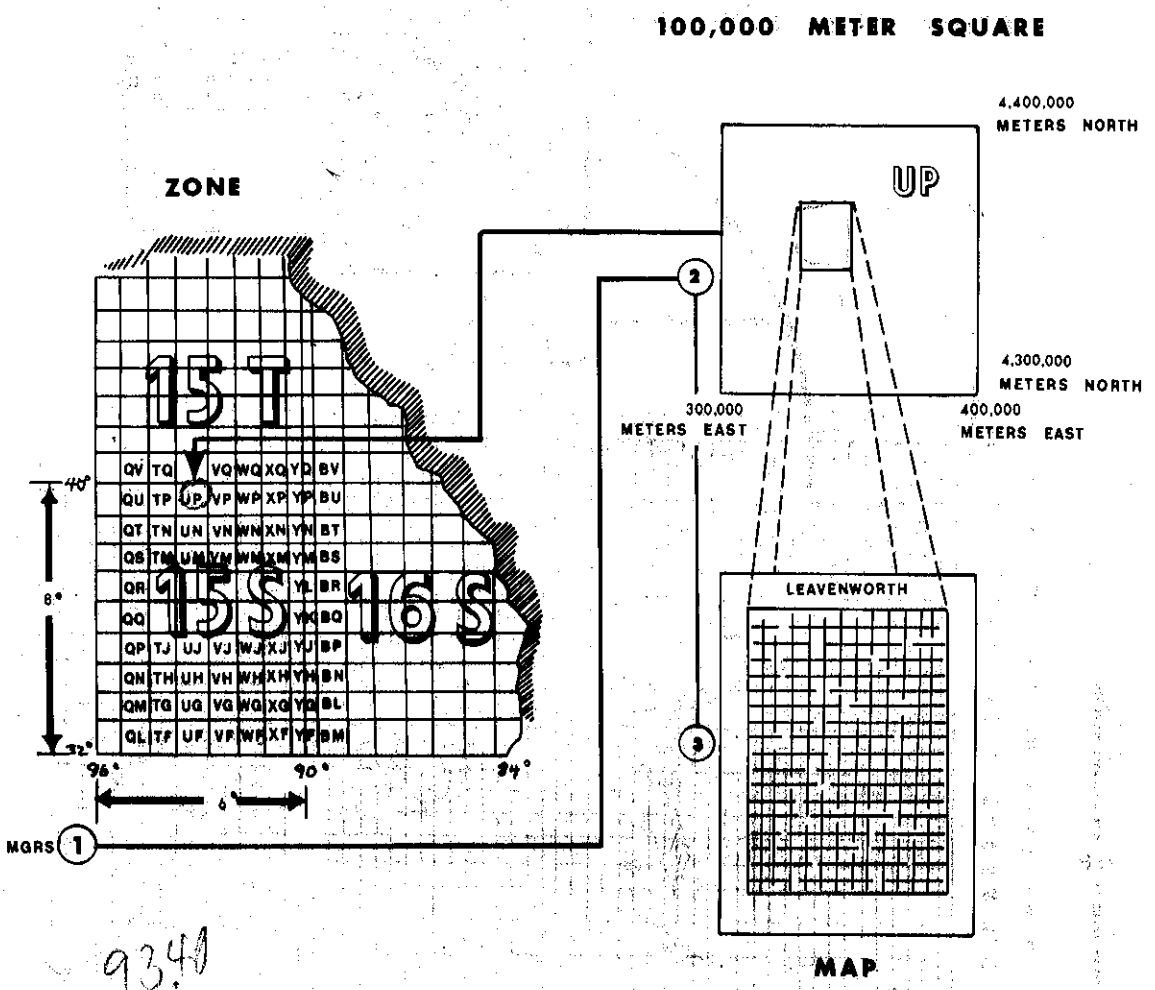
MGRS:

1 - DIVIDES THE EARTH INTO BLOCKS (8°X6°) - GRID ZONE DESIGNATION

2 - FURTHER SUBDIVIDES GRID ZONE DESIGNATION INTO 100,000 M SQUARES

3 - OF WHICH YOUR LEAVENWORTH MAP IS A PART

MAP LOCATION WITHIN GRID ZONE



9341

SELF EVALUATION EXERCISE
PART II

This exercise will test what you have learned from this programmed text. Read each question carefully and select the correct answer.

Use the WEATHERFORD map to solve the following:

1. The basic rule in reading a map coordinate is to always read right and up.

2. An eight digit coordinate is accurate to the nearest:

   a. 50 yards
   b. 100 meters
   c. 10 yards
   d. 10 meters

3. What is located at coordinate 9920 3697?

   a. Improved light duty road
   b. Curve in the road
   c. Church
   d. Cemetery

4. What is the MGRS coordinate of Bench Mark 1249 in grid square 0732?

   a. 14S PM 0725 3283
   b. 3305 1542
   c. 0725 3283
   d. PM 1550 3315

5. Follow Main Street north out of Weatherford (approximately 5 miles) until you reach Northside Consolidated School. What is the MGRS coordinate of the school?

   a. 14S PM 3305 1542
   b. 3305 1542
   c. 14S PM 1542 3305
   d. PM 1550 3315

6. Approximately one third of the way up the left side of the Weatherford map is the town of Garner. What is the MGRS coordinate of the church in Garner? 14 NS 9498 3309
9489 3310

7. What is the Grid Zone Designation in which the Weatherford map is located? 14S

8. What is the 100,000 meter square identification for the Weatherford map? QF49 DE NM/PM

9. You have had an engine failure and have successfully autorotated (emergency landing) your helicopter to the road next to the Shady Grove Church, coordinate 063284. How would you report your position for rescue?

a. 063284
b. 14S NM 063284
c. 14S PM 063284
d. 14S NM PM 063284

10. Which of the following is a correct geographic coordinate?

a. 35°17'N 15°17'E ✓
b. 91°27'S 160°10'W
c. 35°17'E 15°17'N
d. 89°01'W 130°65'S

11. What is the geographic coordinate (to the nearest minute) of the section of pipe line found in grid square 0942?

a. 97°50'W 32°55'N
b. 32°50'N 97°55'W
c. 32°55'S 97°50'E
d. 32°55'N 97°50'W

Use the ABILENE map for the following:

12. What is the geographic coordinate, to the nearest minute, for the city of Stephenville, Texas?

a. NL 750650
b. 98°15'N 32°15'W
c. 32°15'N 98°15'E
d. 32°15'N 98°15'W

13. What is the MGRS coordinate of Eaken Airport located southeast of Cross Plains in the lower center of your map?

a. 14S ML 887 510
b. 14S NL 865 548
c. ML 510 887
d. 14S MM 887 510

14. If you were located at the Cisco Airport (north of Cisco, Texas), how would you report your position to your headquarters?

a. 006 864
b. NL 106 884
c. ML 006 864
d. NL 006 864

15. What is the name and sheet number of the map that joins the Abilene map to the West? Big Spring NI 14-10

TURN THE PAGE FOR THE ANSWER TO THE ABOVE QUESTIONS.

ANSWERS - SELF EVALUATION EXERCISE PART II

1. Right and up
2. d
3. c
4. a
5. c
6. 14S NM 9489 3310
7. 14S
8. NM/PM
9. c
10. a
11. d
12. d
13. a
14. d
15. Big Springs, NI 14-10

L1826 Army-Ft. Sill, Okla.

tactical map 1/50,000 MGR system of 8 digits
gives 10 meter accuracy.